AGENDA

CITY OF ORMOND BEACH, FLORIDA

CITY COMMISSION MEETING

August 20, 2024
7:00 PM

Mayor Bill Partington

Zone 1 - Commissioner Lori Tolland
Zone 2 - Commissioner Travis Sargent
Zone 3 - Commissioner Susan Persis
Zone 4 - Commissioner Harold Briley

COMMISSION CHAMBERS
22 South Beach Street, Ormond Beach, FL 32174
Phone: 386-677-0311 **Web: www.ormondbeach.org**

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1. CALL TO ORDER

2. INVOCATION

3. PLEDGE OF ALLEGIANCE

4. PRESENTATIONS AND PROCLAMATIONS

A. Judy Rice

B. Ormond Beach MainStreet

5. AUDIENCE REMARKS - REGARDING ITEMS NOT ON THE AGENDA

6. APPROVAL OF MINUTES

A. Minutes from City Commission meeting - August 6, 2024

7. CONSENT AGENDA

The action proposed is stated for each item on the Consent Agenda. Unless a City Commissioner removes an item from the Consent Agenda, no discussion on individual items will occur and a single motion will approve all items.

A. **RESOLUTION NO. 2024-122**: A RESOLUTION AUTHORIZING THE EXECUTION OF A SERVICE CONTRACT BETWEEN THE CITY OF ORMOND BEACH AND THE ORMOND BEACH CHAMBER OF COMMERCE; AUTHORIZING THE EXPENDITURE OF FUNDING; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Brian Rademacher, Economic Development Director, (386) 676-3266*

B. **RESOLUTION NO. 2024-123:** A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF ORMOND BEACH, FLORIDA AUTHORIZING THE ISSUANCE AND SALE OF THE CITY'S CAPITAL IMPROVEMENT REVENUE BOND, SERIES 2024 IN A PRINCIPAL AMOUNT OF NOT EXCEEDING $2,500,000 IN ORDER TO FINANCE CERTAIN CAPITAL IMPROVEMENTS; MAKING CERTAIN COVENANTS AND AGREEMENTS IN CONNECTION WITH THE ISSUANCE AND SALE OF THE SERIES 2024 BOND; AUTHORIZING A NEGOTIATED SALE OF SAID SERIES 2024 BOND TO WEBSTER BANK, NATIONAL ASSOCIATION; DELEGATING CERTAIN AUTHORITY TO THE MAYOR; PROVIDING FOR CERTAIN TERMS OF THE SERIES 2024 BOND; AUTHORIZING THE EXECUTION AND DELIVERY OF THE SERIES 2024 BOND, SUCH SERIES 2024 BOND TO BE A LIMITED OBLIGATION OF THE CITY PAYABLE FROM A COVENANT TO BUDGET AND APPROPRIATE FROM LEGALLY AVAILABLE NON-AD VALOREM REVENUES AS PLEDGED HEREIN; PROVIDING FOR THE RIGHTS AND SECURITIES OF THE OWNER OF THE SERIES 2024 BOND; AUTHORIZING THE MAYOR TO TAKE CERTAIN ACTIONS AND TO EXECUTE AND DELIVER CERTAIN DOCUMENTS; MAKING CERTAIN COVENANTS AND AGREEMENTS FOR THE BENEFIT OF THE PURCHASER OF THE SERIES 2024 BOND; APPOINTING THE CITY AS PAYING AGENT AND BOND REGISTRAR FOR SAID SERIES 2024 BOND; AND PROVIDING AN EFFECTIVE DATE.

Staff Contact: *Kelly McGuire, Finance Director, (386) 676-3226*

C. **RESOLUTION NO. 2024-124:** A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF ORMOND BEACH, FLORIDA AUTHORIZING THE ISSUANCE OF NOT TO EXCEED $13,000,000 IN PRINCIPAL AMOUNT OF ITS WATER AND SEWER REVENUE BOND, SERIES 2024, FOR THE PURPOSE OF FINANCING THE CONSTRUCTION AND ACQUISITION OF CERTAIN ADDITIONS, EXTENSIONS AND IMPROVEMENTS TO THE WATER AND SEWER SYSTEM OF THE CITY; DETERMINING CERTAIN DETAILS OF SAID BOND; PROVIDING FOR THE SECURITY OF SAID BOND; AWARDING THE SALE OF SAID BOND TO THE SUCCESSFUL PROPOSER FOR SAID BOND; APPOINTING A PAYING AGENT AND REGISTRAR FOR SAID BOND; AUTHORIZING THE PROPER OFFICIALS TO DO ALL THINGS DEEMED NECESSARY IN CONNECTION WITH THE ISSUANCE, SALE AND DELIVERY OF SAID BOND; AND PROVIDING AN EFFECTIVE DATE.

Staff Contact: *Kelly McGuire, Finance Director, (386) 676-3226*

D. **RESOLUTION NO. 2024-125:** A RESOLUTION ACCEPTING THE PROPOSAL OF LANIER PLANS, INC. D/B/A KORKAT REGARDING THE PURCHASE AND INSTALLATION OF PLAYGROUND EQUIPMENT AT CENTRAL PARK 1; AUTHORIZING THE EXECUTION OF AN

AGREEMENT AND PAYMENT THEREFOR; REJECTING ALL OTHER PROPOSALS; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Alex Schumann, City Engineer, (386) 676-3302*

E. **RESOLUTION NO. 2024-126:** A RESOLUTION AUTHORIZING THE EXECUTION OF A PUBLIC TRANSPORTATION GRANT AGREEMENT BETWEEN THE CITY AND THE FLORIDA DEPARTMENT OF TRANSPORTATION REGARDING FUNDING FOR THE DESIGN PHASE OF THE AIRFIELD MARKING AND PAVEMENT REJUVENATION PROJECT AT THE ORMOND BEACH MUNICIPAL AIRPORT; AUTHORIZING THE EXECUTION OF ALL DOCUMENTS NECESSARY AND INCIDENTAL THERETO FOR THE CITY TO ACCEPT THE GRANT AWARD; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Steven Lichliter, Airport Manager, (386) 615-7019*

F. **RESOLUTION NO. 2024-127:** A RESOLUTION ACCEPTING A PROPOSAL FROM HOYLE TANNER & ASSOCIATES, INC., TO PROVIDE ENGINEERING DESIGN SERVICES REGARDING THE AIRFIELD MARKING AND PAVEMENT REJUVENATION PROJECT AT THE ORMOND BEACH MUNICIPAL AIRPORT; AUTHORIZING THE EXECUTION OF A WORK AUTHORIZATION AND PAYMENT THEREFOR; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Steven Lichliter, Airport Manager, (386) 615-7019*

G. **RESOLUTION NO. 2024-128:** A RESOLUTION ACCEPTING A PROPOSAL FROM BURGESS & NIPLE, INC. TO PERFORM A SAFETY STUDY ALONG THE NORTH HALIFAX DRIVE CORRIDOR; AUTHORIZING THE EXECUTION OF A WORK AUTHORIZATION THERETO; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Alex Schumann, City Engineer, (386) 676-3302*

H. **RESOLUTION NO. 2024-129:** A RESOLUTION ACCEPTING A PROPOSAL FROM UPHAM, INC. TO PROVIDE PROFESSIONAL ENGINEERING SERVICES FOR THE ORMOND BEACH SPORTS COMPLEX ACCESS AND DRAINAGE PROJECT; AUTHORIZING THE EXECUTION OF A WORK AUTHORIZATION THERETO; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Alex Schumann, City Engineer, (386) 676-3302*

I. **RESOLUTION NO. 2024-131:** A RESOLUTION AUTHORIZING AND DIRECTING THE EXECUTION OF AN INTERLOCAL AGREEMENT BETWEEN THE COUNTY OF VOLUSIA AND THE CITY OF ORMOND BEACH REGARDING TRANSPORTATION IMPACT COORDINATION; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Steven Spraker, Planning Director, (386) 676-3341*

J. **RESOLUTION NO. 2024-132:** A RESOLUTION ACCEPTING THE PROPOSAL OF EMPIRE COMPUTING AND CONSULTING, INC. REGARDING THE TELECOMMUNICATION SYSTEM UPGRADES & IMPROVEMENTS PROJECT; AUTHORIZING THE EXECUTION OF AN

AGREEMENT AND PAYMENT THEREFOR; REJECTING ALL OTHER PROPOSALS; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Chuck Osteen, Information Technology Manager, (386) 615-7031*

K. **Comprehensive Plan 2045 Update (aka Evaluation & Appraisal Report)**

Staff Contact: *Steven Spraker, Planning Director, (386) 676-3341*

Disposition: Approve as recommended in the City Manager staff report dated August 20, 2024.

L. **Auto Renewal - Stanley Steamer**

Staff Contact: *Robert Carolin, Leisure Services Director, (386) 676-3279*

Disposition: Approve as recommended in the City Manager staff report dated August 20, 2024.

M. **Intent to Bid - Hudson Wellfield Expansion**

Staff Contact: *Bob Preis, Utilities Manager, (386) 676-3305*

Disposition: Approve as recommended in the City Manager staff report dated August 20, 2024.

N. **Intent to Bid - Cassen Park Redesign**

Staff Contact: *Alex Schumann, City Engineer, (386) 676-3302*

Disposition: Approve as recommended in the City Manager staff report dated August 20, 2024.

O. **Travel Approval for City Commission**

Staff Contact: *Joyce Shanahan, City Manager, (386) 676-3200*

Disposition: Approve as recommended in the City Manager staff report dated August 20, 2024.

P. **City Manager's Monthly Report, August 2024**

Staff Contact: *Joyce Shanahan, City Manager, (386) 676-3200*

Disposition: Accept as information as recommended in the City Manager staff report dated August 20, 2024.

8. PUBLIC HEARINGS

A. **ORDINANCE NO. 2024-22:** AN ORDINANCE AMENDING CHAPTER 2, DISTRICT AND GENERAL REGULATIONS, ARTICLE VI, OVERLAY DISTRICTS, SECTION 2-71, HISTORIC DISTRICTS AND LANDMARKS, OF THE CITY OF ORMOND BEACH LAND DEVELOPMENT CODE BY ADDING THE PROPERTY AT 78 EAST GRANADA BOULEVARD, THE GARDENS AT THE ORMOND MEMORIAL ART MUSEUM, TO THE HISTORIC LANDMARKS LIST; REPEALING ALL INCONSISTENT ORDINANCES OR PARTS THEREOF; PROVIDING FOR SEVERABILITY; AND SETTING FORTH AN EFFECTIVE DATE. **(SECOND READING)**

Staff Contact: *Steven Spraker, Planning Director, (386) 676-3341*

B. **ORDINANCE NO. 2024-23:** AN ORDINANCE GRANTING THE PETITION

OF ORMOND CROSSING WEST, LLC, FOR ESTABLISHMENT OF A COMMUNITY DEVELOPMENT DISTRICT PURSUANT TO CHAPTER 190, FLORIDA STATUTES; CREATING AND ESTABLISHING THE ORMOND CROSSINGS WEST COMMUNITY DEVELOPMENT DISTRICT; PROVIDING FOR NAME, POWERS, AND DUTIES; PROVIDING DESCRIPTION AND BOUNDARIES; PROVIDING INITIAL MEMBERS OF BOARD OF SUPERVISORS; PROVIDING SEVERABILITY; AND SETTING FORTH AN EFFECTIVE DATE. **(SECOND READING)**

Staff Contact: *Steven Spraker, Planning Director, (386) 676-3341*

C. **ORDINANCE NO. 2024-24:** AN ORDINANCE AUTHORIZING THE EXECUTION AND ISSUANCE OF THE SECOND AMENDED DEVELOPMENT ORDER FOR A PLANNED RESIDENTIAL DEVELOPMENT KNOWN AS "PLANTATION OAKS"; AUTHORIZING AN AMENDMENT TO THE NEIGHBORHOOD COMMERCIAL LIST OF USES TO ALLOW WAREHOUSE, INDOOR MINI-RENTAL AS A PERMITTED USE UNDER CERTAIN CONDITIONS; AUTHORIZING A SITE DEVELOPMENT PLAN FOR THE NEIGHBORHOOD COMMERCIAL PARCEL LOCATED AT 1730 PLANTATION OAKS BOULEVARD; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Steven Spraker, Planning Director, (386) 676-3341*

D. **RESOLUTION NO. 2024-133:** A RESOLUTION AUTHORIZING THE EXECUTION AND ISSUANCE OF A DEVELOPMENT ORDER FOR A SPECIAL EXCEPTION TO ALLOW OUTDOOR ACTIVITY TO INCLUDE THE PERMANENT OUTDOOR STORAGE, DISPLAY, AND SALES OF MERCHANDISE AT THE LOWES HOME IMPROVEMENT STORE LOCATED AT 1340 WEST GRANADA BOULEVARD; ESTABLISHING CONDITIONS AND EXPIRATION DATE OF APPROVAL; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Steven Spraker, Planning Director, (386) 676-3341*

E. **RESOLUTION NO. 2024-134:** A RESOLUTION RESCINDING RESOLUTION 2023-193 THAT FOUND U.S. CAPITAL ALLIANCE, LLC, TO BE IN NONCOMPLIANCE WITH THE AMENDED FINAL ORDER FOR THE ORMOND BEACH HUNTER'S RIDGE DEVELOPMENT OF REGIONAL IMPACT; FINDING U.S. CAPITAL ALLIANCE, LLC, TO BE IN COMPLIANCE WITH THE AMENDED FINAL ORDER; PROVIDING FOR THE CONTINUATION OF SERVICES; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Randy Hayes, City Attorney, (386) 676-3217*

9. REPORTS, SUGGESTIONS, REQUESTS

10. ADJOURNMENT

Website Address – www.ormondbeach.org

NOTICE – Pursuant to Section 286.0105 of the Florida Statutes, if any person decides to appeal any decision made by the City Commission

with respect to any matter considered at this public meeting, such person will need a record of the proceedings and for such purpose, such person may need to ensure that a verbatim record of the proceedings is made, including the testimony and evidence upon which the appeal is to be based.



For special accommodations, please notify the City Clerk's Office at least 72 hours in advance.
Phone: 386-677-0311



Help for the hearing impaired is available through the Assistive Listening System. Receivers can be obtained from the City Clerk's Office.

In accordance with the Americans with Disabilities Act (ADA), persons with a disability, such as a vision, hearing or speech impairment, or persons needing other types of assistance, and who wish to attend City Commission meetings or any other board or committee meeting may contact the City Clerk's Office in writing, or may call 386-677-0311 for information regarding available aids and services.

MINUTES
ORMOND BEACH CITY COMMISSION
HELD AT CITY HALL COMMISSION CHAMBERS

August 6, 2024	**7:00 p.m.**	**Commission Chambers**

Present: Mayor Bill Partington, Commissioners Lori Tolland, Travis Sargent, Susan Persis, and Harold Briley, City Manager Joyce Shanahan, City Attorney Randy Hayes, Assistant City Manager Shawn Finley, Assistant City Manager Claire Whitley, and City Clerk Susan Carroll Dauderis.

A G E N D A

1. CALL TO ORDER

2. INVOCATION

3. PLEDGE OF ALLEGIANCE

4. AUDIENCE REMARKS - REGARDING ITEMS NOT ON THE AGENDA

5. APPROVAL OF MINUTES

A. Minutes from City Commission meeting - July 23, 2024

6. CONSENT AGENDA

The action proposed is stated for each item on the Consent Agenda. Unless a City Commissioner removes an item from the Consent Agenda, no discussion on individual items will occur and a single motion will approve all items.

A. **RESOLUTION NO. 2024-117:** A RESOLUTION ACCEPTING A BID FROM HINTERLAND GROUP, INC. FOR CONSTRUCTION SERVICES REGARDING THE 2024 STORM PIPE LINING PROJECT, UNDER BID NO. 2024-27; AUTHORIZING THE EXECUTION OF A CONTRACT AND PAYMENT THEREFOR; REJECTING ALL OTHER BIDS; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Alex Schumann, City Engineer, (386) 676-3302*

B. **RESOLUTION NO. 2024-118:** A RESOLUTION ACCEPTING A PROPOSAL FROM PAUL CULVER CONSTRUCTION, INC. TO PROVIDE CONSTRUCTION MANAGEMENT SERVICES TO REPLACE FIVE DOORS AT THE POLICE DEPARTMENT; AUTHORIZING THE EXECUTION OF A WORK AUTHORIZATION THERETO; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Alex Schumann, City Engineer, (386) 676-3302*

C. **RESOLUTION NO. 2024-120:** A RESOLUTION APPROVING THE SETTLEMENT OF PERSONAL INJURY CLAIMS FILED BY ADAM STANKIEWICZ; AUTHORIZING THE EXECUTION OF ALL PAPERS NECESSARY AND INCIDENTAL THERETO; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Randy Hayes, City Attorney, (386) 676-3217*

D. **RESOLUTION NO. 2024-121:** A RESOLUTION APPROVING AND AUTHORIZING THE EXECUTION OF A GLOBAL SETTLEMENT AND MUTUAL RELEASE BETWEEN THE CITY OF ORMOND BEACH, FLAGLER COUNTY, AND U.S. CAPITAL ALLIANCE, LLC, RESOLVING DISPUTED ISSUES REGARDING THE HUNTER'S RIDGE DEVELOPMENT OF REGIONAL IMPACT; APPROVING AN INTERLOCAL AGREEMENT BETWEEN THE CITY OF ORMOND BEACH AND FLAGLER COUNTY; ACCEPTING THE FORM OF A WARRANTY DEED FROM U.S. CAPITAL ALLIANCE, LLC, FOR

THE CONVEYANCE OF CONSERVATION LANDS; AUTHORIZING THE EXECUTION OF ANY AND ALL INSTRUMENTS AND DOCUMENTS THAT ARE NECESSARY AND INCIDENTAL THERETO; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Randy Hayes, City Attorney, (386) 676-3217*

E. **Intent to Bid - 2024 A1A Utility Relocation**

Staff Contact: *Alex Schumann, City Engineer, (386) 676-3302*

Disposition: Approve as recommended in the City Manager staff report dated August 6, 2024.

7. PUBLIC HEARINGS

A. **ORDINANCE NO. 2024-08:** AN ORDINANCE OF THE CITY OF ORMOND BEACH, RELATING TO COMPREHENSIVE PLANNING, ADOPTING A 2024 WATER SUPPLY WORK PLAN; ADOPTING COMPREHENSIVE PLAN AMENDMENTS TO THE CITY OF ORMOND BEACH COMPREHENSIVE PLAN, RELATED TO THE WATER SUPPLY WORK PLAN, INCLUDING THE UTILITIES ELEMENT, CONSERVATION ELEMENT, AND CAPITAL IMPROVEMENTS ELEMENT, IN ACCORDANCE WITH CHAPTER 163, PART II AND CHAPTER 373 FLORIDA STATUTES; PROVIDING FOR TRANSMITTING COPIES OF THE NOTICE AND AMENDMENTS TO THE STATE REVIEWING AGENCIES, THE VOLUSIA GROWTH MANAGEMENT COMMISSION, THE COUNTY OF VOLUSIA, AND ANY OTHER LOCAL GOVERNMENT OR GOVERNMENTAL AGENCY REQUESTING A COPY; PROVIDING FOR PUBLIC HEARINGS; PROVIDING FOR CONFLICTING ORDINANCES; AND SETTING FORTH AN EFFECTIVE DATE. **(SECOND READING)**

Staff Contact: *Steven Spraker, Planning Director, (386) 676-3341*

B. **ORDINANCE NO. 2024-16:** AN ORDINANCE AMENDING CHAPTER 2, DISTRICT AND GENERAL REGULATIONS, ARTICLE VI, OVERLAY DISTRICTS, SECTION 2-71, HISTORIC DISTRICTS AND LANDMARKS, OF THE CITY OF ORMOND BEACH LAND DEVELOPMENT CODE BY AMENDING THE NAME OF THE HISTORIC LANDMARK AT 38 EAST GRANADA BOULEVARD FROM THE “MACDONALD HOUSE” TO THE “STOUT-MACDONALD HOUSE” ON THE HISTORIC LANDMARKS LIST; REPEALING ALL INCONSISTENT ORDINANCES OR PARTS THEREOF; PROVIDING FOR SEVERABILITY; AND SETTING FORTH AN EFFECTIVE DATE. **(SECOND READING)**

Staff Contact: *Steven Spraker, Planning Director, (386) 676-3341*

C. **ORDINANCE NO. 2024-17:** AN ORDINANCE APPROVING THE FINAL PLAT FOR THE “ARCHER’S MILL, PHASE 2” SUBDIVISION, SHOWN WITHIN PHASE 3 OF THE PLANTATION OAKS PLANNED RESIDENTIAL DEVELOPMENT; ESTABLISHING CONDITIONS AND EXPIRATION DATE OF APPROVAL; AND SETTING FORTH AN EFFECTIVE DATE. **(SECOND READING)**

Staff Contact: *Steven Spraker, Planning Director, (386) 676-3341*

D. **ORDINANCE NO. 2024-18:** AN ORDINANCE APPROVING THE FINAL PLAT FOR THE “ARCHER’S MILL, PHASE 6” SUBDIVISION, SHOWN WITHIN PHASE 3 OF THE PLANTATION OAKS PLANNED RESIDENTIAL DEVELOPMENT; ESTABLISHING CONDITIONS AND EXPIRATION DATE OF APPROVAL; AND SETTING FORTH AN EFFECTIVE DATE. **(SECOND READING)**

Staff Contact: *Steven Spraker, Planning Director, (386) 676-3341*

E. **ORDINANCE NO. 2024-19:** AN ORDINANCE APPROVING THE FINAL PLAT FOR THE "TIDES EDGE AT ORMOND BEACH" SUBDIVISION; ESTABLISHING CONDITIONS AND EXPIRATION DATE OF APPROVAL; AND SETTING FORTH AN EFFECTIVE DATE. **(SECOND READING)**

Staff Contact: *Steven Spraker, Planning Director, (386) 676-3341*

F. **ORDINANCE NO. 2024-20:** AN ORDINANCE AMENDING THE FUTURE LAND USE ELEMENT OF THE COMPREHENSIVE PLAN OF THE CITY OF ORMOND BEACH BY AMENDING THE FUTURE LAND USE MAP TO CHANGE THE DESIGNATION OF 1.33± ACRES, LOCATED ALONG BENTON STREET, NORTH OF ATLANTIC ROAD (VOLUSIA COUNTY PARCEL NUMBERS 3136-01-34-0220 AND 3136-01-01-0022) FROM 'MEDIUM DENSITY RESIDENTIAL" TO "LOW INTENSITY COMMERCIAL"; PROVIDING FOR CONFLICT; AUTHORIZING TRANSMITTAL; AND SETTING FORTH AN EFFECTIVE DATE. **(SECOND READING)**

Staff Contact: *Steven Spraker, Planning Director, (386) 676-3341*

G. **ORDINANCE NO. 2024-22:** AN ORDINANCE AMENDING CHAPTER 2, DISTRICT AND GENERAL REGULATIONS, ARTICLE VI, OVERLAY DISTRICTS, SECTION 2-71, HISTORIC DISTRICTS AND LANDMARKS, OF THE CITY OF ORMOND BEACH LAND DEVELOPMENT CODE BY ADDING THE PROPERTY AT 78 EAST GRANADA BOULEVARD, THE GARDENS AT THE ORMOND MEMORIAL ART MUSEUM, TO THE HISTORIC LANDMARKS LIST; REPEALING ALL INCONSISTENT ORDINANCES OR PARTS THEREOF; PROVIDING FOR SEVERABILITY; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Steven Spraker, Planning Director, (386) 676-3341*

H. **ORDINANCE NO. 2024-23:** AN ORDINANCE GRANTING THE PETITION OF ORMOND CROSSING WEST, LLC, FOR ESTABLISHMENT OF A COMMUNITY DEVELOPMENT DISTRICT PURSUANT TO CHAPTER 190, FLORIDA STATUTES; CREATING AND ESTABLISHING THE ORMOND CROSSINGS WEST COMMUNITY DEVELOPMENT DISTRICT; PROVIDING FOR NAME, POWERS, AND DUTIES; PROVIDING DESCRIPTION AND BOUNDARIES; PROVIDING INITIAL MEMBERS OF BOARD OF SUPERVISORS; PROVIDING SEVERABILITY; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Steven Spraker, Planning Director, (386) 676-3341*

8. SECOND READING OF ORDINANCES

A. **ORDINANCE NO. 2024-21:** AN ORDINANCE AMENDING SECTION 3.3-24, TIE-DOWN FEES, OF ARTICLE III, AIRCRAFT GROUND OPERATIONS, OF CHAPTER 3.3, AIRCRAFT AND AIRPORT, OF THE CODE OF ORDINANCES OF THE CITY OF ORMOND BEACH, FLORIDA; REPEALING ALL INCONSISTENT ORDINANCES OR PARTS THEREOF; PROVIDING SEVERABILITY; AND SETTING FORTH AN EFFECTIVE DATE. **(SECOND READING)**

Staff Contact: *Steven Lichliter, Airport Manager, (386) 615-7019*

9. RESOLUTIONS

A. **RESOLUTION NO. 2024-119**: A RESOLUTION RECOMMENDING DENIAL OF THE REMOVAL OF AN HISTORIC TREE LOCATED AT 1510 NORTH U.S. HIGHWAY 1; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Alex Schumann, City Engineer, (386) 676-3302*

10. REPORTS, SUGGESTIONS, REQUESTS

11. ADJOURNMENT

M I N U T E S

Item #1 – Meeting Call to Order

Mayor Partington called the meeting to order at 7:01 p.m.

Item #2 – Invocation

Reverend Jason Hefner, Lighthouse Christ Presbyterian Church, provided the invocation.

Item #3 – Pledge of Allegiance

Mayor Partington led the Pledge of Allegiance.

Item #4 – Audience Remarks

Mr. Ike Leary, 1 South Beach Street, commended the city on the 4th of July celebration and fireworks and requested an update on the status of the Cassen Park redesign; whereby, Mr. Shawn Finley explained there were delays with permitting.

Volusia County Council Member Troy Kent, 130 Magnolia Drive, informed the Commission the Volusia County Council approved free on and off beach parking for Volusia County residents starting October 1, 2024, by a super-majority vote and thanked those Council Members who supported the vote. He discussed the benefits of the new initiative.

Commissioner Briley, Commissioner Persis, and Commissioner Tolland thanked Council Member Kent for his leadership and advocacy for the city with the Volusia County Council.

Item #5 – Approval of Minutes

Mayor Partington advised the minutes from the July 23, 2024, meeting had been sent to the Commission for review and posted on the city's website for public viewing. He asked for any corrections, additions, or omissions. He stated, hearing no corrections, the minutes would stand approved as presented.

Commissioner Sargent moved, seconded by Commissioner Briley, for approval of the July 23, 2024, City Commission meeting minutes.

The motion passed by voice vote.

Item #6 – Consent Agenda

Mayor Partington advised the actions proposed for the items on the Consent Agenda were so stated on the agenda. He asked if any member of the Commission had questions or wished to discuss any items separately.

Commissioner Persis moved, seconded by Commissioner Sargent, for approval of the Consent Agenda.

Call Vote:	Commissioner Tolland	Yes
	Commissioner Sargent	Yes
	Commissioner Persis	Yes
	Commissioner Briley	Yes
Carried.	Mayor Partington	Yes

Item #7 – Public Hearings

Mayor Partington opened the Public Hearings.

Item #7A – Comprehensive Plan Amendments, Water Supply Work Plan

City Clerk Susan C. Dauderis read by title only:

ORDINANCE NO. 2024-08

AN ORDINANCE OF THE CITY OF ORMOND BEACH, RELATING TO COMPREHENSIVE PLANNING, ADOPTING A 2024 WATER SUPPLY WORK PLAN; ADOPTING COMPREHENSIVE PLAN AMENDMENTS TO THE CITY OF ORMOND BEACH COMPREHENSIVE PLAN, RELATED TO THE WATER SUPPLY WORK PLAN, INCLUDING THE UTILITIES ELEMENT, CONSERVATION ELEMENT, AND CAPITAL IMPROVEMENTS ELEMENT, IN ACCORDANCE WITH CHAPTER 163, PART II AND CHAPTER 373 FLORIDA STATUTES; PROVIDING FOR TRANSMITTING COPIES OF THE NOTICE AND AMENDMENTS TO THE STATE REVIEWING AGENCIES, THE VOLUSIA GROWTH MANAGEMENT COMMISSION, THE COUNTY OF VOLUSIA, AND ANY OTHER LOCAL GOVERNMENT OR GOVERNMENTAL AGENCY REQUESTING A COPY; PROVIDING FOR PUBLIC HEARINGS; PROVIDING FOR CONFLICTING ORDINANCES; AND SETTING FORTH AN EFFECTIVE DATE. **(SECOND READING)**

Commissioner Briley moved, seconded by Commissioner Tolland, to approve Ordinance No. 2024-08, on second reading, as read by title only.

Call Vote:	Commissioner Sargent	Yes
	Commissioner Persis	Yes
	Commissioner Briley	Yes
	Commissioner Tolland	Yes
Carried.	Mayor Partington	Yes

Item #7B – LDC Amendment, Local Landmark List, Stout-MacDonald House Name Change

City Clerk Susan C. Dauderis read by title only:

ORDINANCE NO. 2024-16

AN ORDINANCE AMENDING CHAPTER 2, DISTRICT AND GENERAL REGULATIONS, ARTICLE VI, OVERLAY DISTRICTS, SECTION 2-71, HISTORIC DISTRICTS AND LANDMARKS, OF THE CITY OF ORMOND BEACH LAND DEVELOPMENT CODE BY AMENDING THE NAME OF THE HISTORIC LANDMARK AT 38 EAST GRANADA BOULEVARD FROM THE “MACDONALD HOUSE” TO THE “STOUT-MACDONALD HOUSE” ON THE HISTORIC LANDMARKS LIST; REPEALING ALL INCONSISTENT ORDINANCES OR PARTS THEREOF; PROVIDING FOR SEVERABILITY; AND SETTING FORTH AN EFFECTIVE DATE. **(SECOND READING)**

Commissioner Persis moved, seconded by Commissioner Sargent, to approve Ordinance No. 2024-16, on second reading, as read by title only.

Call Vote:	Commissioner Persis	Yes
	Commissioner Briley	Yes
	Commissioner Tolland	Yes
	Commissioner Sargent	Yes
Carried.	Mayor Partington	Yes

Item #7C – Archer's Mill, Phase 2, Final Plat

City Clerk Susan C. Dauderis read by title only:

ORDINANCE NO. 2024-17

AN ORDINANCE APPROVING THE FINAL PLAT FOR THE "ARCHER'S MILL, PHASE 2" SUBDIVISION, SHOWN WITHIN PHASE 3 OF THE PLANTATION OAKS PLANNED RESIDENTIAL DEVELOPMENT; ESTABLISHING CONDITIONS AND EXPIRATION DATE OF APPROVAL; AND SETTING FORTH AN EFFECTIVE DATE. **(SECOND READING)**

Commissioner Briley moved, seconded by Commissioner Sargent, to approve Ordinance No. 2024-17, on second reading, as read by title only.

Call Vote:	Commissioner Briley	Yes
	Commissioner Tolland	Yes
	Commissioner Sargent	Yes
	Commissioner Persis	Yes
Carried.	Mayor Partington	Yes

Item #7D – Archer's Mill, Phase 6, Final Plat

City Clerk Susan C. Dauderis read by title only:

ORDINANCE NO. 2024-18

AN ORDINANCE APPROVING THE FINAL PLAT FOR THE "ARCHER'S MILL, PHASE 6" SUBDIVISION, SHOWN WITHIN PHASE 3 OF THE PLANTATION OAKS PLANNED RESIDENTIAL DEVELOPMENT; ESTABLISHING CONDITIONS AND EXPIRATION DATE OF APPROVAL; AND SETTING FORTH AN EFFECTIVE DATE. **(SECOND READING)**

Commissioner Sargent moved, seconded by Commissioner Persis, to approve Ordinance No. 2024-18, on second reading, as read by title only.

Call Vote:	Commissioner Tolland	Yes
	Commissioner Sargent	Yes
	Commissioner Persis	Yes
	Commissioner Briley	Yes
Carried.	Mayor Partington	Yes

Item #7E – Tides Edge at Ormond Beach Subdivision, Final Plat

City Clerk Susan C. Dauderis read by title only:

ORDINANCE NO. 2024-19

AN ORDINANCE APPROVING THE FINAL PLAT FOR THE "TIDES EDGE AT ORMOND BEACH" SUBDIVISION; ESTABLISHING CONDITIONS AND EXPIRATION DATE OF APPROVAL; AND SETTING FORTH AN EFFECTIVE DATE. **(SECOND READING)**

Commissioner Persis moved, seconded by Commissioner Sargent, to approve Ordinance No. 2024-19, on second reading, as read by title only.

Call Vote:	Commissioner Sargent	Yes
	Commissioner Persis	Yes
	Commissioner Briley	Yes
	Commissioner Tolland	Yes
Carried.	Mayor Partington	Yes

Item #7F – Woodsprings Suites, Comprehensive Plan Amendment

City Clerk Susan C. Dauderis read by title only:

ORDINANCE NO. 2024-20

AN ORDINANCE AMENDING THE FUTURE LAND USE ELEMENT OF THE COMPREHENSIVE PLAN OF THE CITY OF ORMOND BEACH BY AMENDING THE FUTURE LAND USE MAP TO CHANGE THE DESIGNATION OF 1.33± ACRES, LOCATED ALONG BENTON STREET,

NORTH OF ATLANTIC ROAD (VOLUSIA COUNTY PARCEL NUMBERS 3136-01-34-0220 AND 3136-01-01-0022) FROM 'MEDIUM DENSITY RESIDENTIAL" TO "LOW INTENSITY COMMERCIAL"; PROVIDING FOR CONFLICT; AUTHORIZING TRANSMITTAL; AND SETTING FORTH AN EFFECTIVE DATE. **(SECOND READING)**

Mayor Partington noted the applicant was available if there were any questions.

Commissioner Briley moved, seconded by Commissioner Tolland, to approve Ordinance No. 2024-20, on second reading, as read by title only.

Call Vote:	Commissioner Persis	Yes
	Commissioner Briley	Yes
	Commissioner Tolland	Yes
	Commissioner Sargent	Yes
Carried.	Mayor Partington	Yes

Item #7G – Land Development Code Amendment, Local Landmark List, 78 East Granada Boulevard

City Clerk Susan C. Dauderis read by title only:

ORDINANCE NO. 2024-22

AN ORDINANCE AMENDING CHAPTER 2, DISTRICT AND GENERAL REGULATIONS, ARTICLE VI, OVERLAY DISTRICTS, SECTION 2-71, HISTORIC DISTRICTS AND LANDMARKS, OF THE CITY OF ORMOND BEACH LAND DEVELOPMENT CODE BY ADDING THE PROPERTY AT 78 EAST GRANADA BOULEVARD, THE GARDENS AT THE ORMOND MEMORIAL ART MUSEUM, TO THE HISTORIC LANDMARKS LIST; REPEALING ALL INCONSISTENT ORDINANCES OR PARTS THEREOF; PROVIDING FOR SEVERABILITY; AND SETTING FORTH AN EFFECTIVE DATE.

Commissioner Briley moved, seconded by Commissioner Persis, to approve Ordinance No. 2024-22, on first reading, as read by title only.

Call Vote:	Commissioner Briley	Yes
	Commissioner Tolland	Yes
	Commissioner Sargent	Yes
	Commissioner Persis	Yes
Carried.	Mayor Partington	Yes

Item #7H – Ormond Crossings West, Establishment of a CDD

City Clerk Susan C. Dauderis read by title only:

ORDINANCE NO. 2024-23

AN ORDINANCE GRANTING THE PETITION OF ORMOND CROSSING WEST, LLC, FOR ESTABLISHMENT OF A COMMUNITY DEVELOPMENT DISTRICT PURSUANT TO CHAPTER 190, FLORIDA STATUTES; CREATING AND ESTABLISHING THE ORMOND CROSSINGS WEST COMMUNITY DEVELOPMENT DISTRICT; PROVIDING FOR NAME, POWERS, AND DUTIES; PROVIDING DESCRIPTION AND BOUNDARIES; PROVIDING INITIAL MEMBERS OF BOARD OF SUPERVISORS; PROVIDING SEVERABILITY; AND SETTING FORTH AN EFFECTIVE DATE.

Mr. Steven Spraker, Planning Director, explained Ormond Crossings was approved with a development agreement in 2010, and the agreement was amended in 2017, noting the zoning was established in 2013. He reviewed the highlights of the plans submitted in 2013. He noted in the original approvals there was a revision that allowed the developers to use a Community Development District (CDD) to assist with financing. He noted the benefits of utilizing a CDD and the impacts to the city. He stated the request was consistent with state statutes and staff recommended approval.

Commissioner Tolland inquired why the developer selected just the residential portion for the CDD; whereby, Mr. Spraker stated there could be future CDDs requested in the

future but the applicants request was due to construction contracts for the residential portion.

Mr. Johnathan Johnson, 107 West College Avenue, Tallahassee, 32303, thanked the Commission and staff for their support and noted they did expect to come back in the future for the other areas to become a CDD.

Commissioner Briley moved, seconded by Commissioner Sargent, to approve Ordinance No. 2024-23, on first reading, as read by title only.

Call Vote:	Commissioner Tolland	Yes
	Commissioner Sargent	Yes
	Commissioner Persis	Yes
	Commissioner Briley	Yes
Carried.	Mayor Partington	Yes

Mayor Partington closed the Public Hearings.

Item #8 – Second Reading of Ordinances

Item #8A – Airport Fees Ordinance

City Clerk Susan C. Dauderis read by title only:

ORDINANCE NO. 2024-21

AN ORDINANCE AMENDING SECTION 3.3-24, TIE-DOWN FEES, OF ARTICLE III, AIRCRAFT GROUND OPERATIONS, OF CHAPTER 3.3, AIRCRAFT AND AIRPORT, OF THE CODE OF ORDINANCES OF THE CITY OF ORMOND BEACH, FLORIDA; REPEALING ALL INCONSISTENT ORDINANCES OR PARTS THEREOF; PROVIDING SEVERABILITY; AND SETTING FORTH AN EFFECTIVE DATE. **(SECOND READING)**

Commissioner Persis moved, seconded by Commissioner Sargent, for approval of Ordinance No. 2024-21, on second reading, as read by title only.

Call Vote:	Commissioner Sargent	Yes
	Commissioner Persis	Yes
	Commissioner Briley	Yes
	Commissioner Tolland	Yes
Carried.	Mayor Partington	Yes

Item #9 – Resolutions

Item #9A – Historic Tree Removal - 1510 North US Highway 1

City Clerk Susan C. Dauderis read by title only:

RESOLUTION NO. 2024-119

A RESOLUTION RECOMMENDING DENIAL OF THE REMOVAL OF AN HISTORIC TREE LOCATED AT 1510 NORTH U.S. HIGHWAY 1; AND SETTING FORTH AN EFFECTIVE DATE.

Ms. Cara Culliver, City's Landscape Architect, reviewed the trees on the property and discussed the applicant's request to remove a historic live oak tree. She explained staff recommended denial of the application and provided staff recommendations for the Commission to consider should they decide to approve the historic tree removal.

Commissioner Briley clarified the applicant was requesting the tree marked number nine on the rendering; whereby, Ms. Culliver confirmed that was accurate.

Commissioner Persis inquired who would maintain the trees; whereby, Ms. Culliver stated it would be the property owner's responsibility. She asked what type of trees would need to be planted if the historic tree was removed; whereby, Ms. Culliver indicated staff's recommendation was native trees with a preference of live oaks. She questioned if the developer was amenable to adding the new trees to the property; whereby, Ms. Culliver indicated the developer had the option to add the trees or donate to the tree mitigation fund, noting she was unaware of any issues around planting the trees on the property.

Commissioner Briley questioned the size of the lot; whereby, Ms. Culliver stated it was 1.36 acres. He expressed concerns regarding the planting of 11 live oaks in the space due to the amount of room they take up; whereby, Ms. Culliver stated the developer could plant a couple live oaks then plant other native trees that would fit the space.

Mr. Parker Mychenberg, 1729 Ridgewood Avenue, Daytona Beach, 32117, stated he understood the reason for staff's recommendation of denial. He reviewed nearby project similarities, the space to be set aside for the new trees, the anticipated type of trees, and Volusia County ingress and egress requirements.

Commissioner Persis expressed support of the project and growth of the surrounding areas.

Commissioner Tolland disclosed she met with Mr. Scott Vanacore, applicant for the item. She discussed the preserved trees, support of the removal of tree 9, and the development of the property.

Commissioner Sargent discussed support of the removal of the tree due to the proposed project and enhancement to the community. He disclosed he met with Mr. Vanacore and reviewed Mr. Vanacore's contributions to the city.

Commissioner Briley discussed Mr. Vanacore's previous work and disclosed he met with Mr. Vanacore to discuss the project. He expressed support of the development of the area, calling it the "Gateway to Ormond Beach."

Mayor Partington inquired if Mr. Vanacore was accepting of staff's recommendations if the Commission approved the tree removal; whereby, Mr. Vanacore stated he was. He discussed Mr. Vanacore's recent community contributions.

Commissioner Persis disclosed meeting with Mr. Vanacore.

Commissioner Tolland moved, seconded by Commissioner Persis, for approval of Resolution 2024-119, as read by title only.

Mayor Partington and Commissioner Briley clarified the resolution was approving denial of the tree removal; whereby Commissioner Tolland and Commissioner Persis rescinded their motion and second, respectively.

Commissioner Tolland moved, seconded by Commissioner Persis, for approval of the applicants request to remove the historic trees with staff's tree mitigation recommendation.

Call Vote:	Commissioner Persis	Yes
	Commissioner Briley	Yes
	Commissioner Tolland	Yes
	Commissioner Sargent	Yes
Carried.	Mayor Partington	Yes

Item #10 – Reports, Suggestions, Requests

ReGrow the Loop

Council Member Kent discussed the Volusia County Council updates to the ReGrow the Loop initiative, which would be ReGrow Volusia in its new phase, due to the overwhelming popularity and success of the program. He provided updates on how the program would continue and thanked Mr. Vanacore, Mr. Alan Burton, and the city for their support of the program.

Commissioner Briley and Commissioner Persis thanked Council Member Kent for the updates and support of the city.

Council Member Kent and Commissioner Tolland expressed gratitude to specific citizens and community organizations who played a key part in the ReGrow the Loop initiative.

Mr. Vanacore thanked Commissioner Tolland and Council Member Kent for their support. He discussed potential future beachfront parking near Ormond Beach and reviewed process and funding.

Ms. Joyce Shanahan, City Manager, explained Mr. Burton provided the city with a check for $10,000, on behalf of the Ormond Beach Kiwanis' Tree Fund to be used to establish a tree fund that would accept private donations to be used for native oak trees to be planted along the Ormond Beach Scenic Loop and Trail, and one tree at Rockefeller Gardens. She indicated staff would bring something back to the Commission for their input.

Events, Updates, and Congratulations

Ms. Shanahan reviewed upcoming meetings, events, and city updates, such as the Community Engagement Meeting for the Comprehensive Plan Review and Christmas Parade theme selection.

Commissioner Persis stated residents expressed concerns regarding speeding along South Saint Andrews Drive; whereby, Ms. Shanahan stated there was radar feedback sign on the street and the police department had directed patrols in the area to help enforce the speed limit.

Mayor Partington inquired about the Community Engagement Meeting for the Comprehensive Plan and requested staff to promote the meeting as much as possible. He discussed a flyer he received regarding the Ormond Beach Scenic Loop and Trail and requested the flyer be added to the website.

150th City Anniversary Celebration

Commissioner Briley discussed events he attended. He stated he would like to see a 150th anniversary celebration of Ormond Beach from April 18 through April 22 of 2030. He discussed potential locations, community organizations who would support, and events that could take place, and reviewed planning needs.

Commissioner Persis, Commissioner Tolland, and Commissioner Sargent expressed support of the celebration, noting the need for a citizen task force to help staff plan.

Commissioner Tolland thanked Mr. Vanacore for all his support and generosity within the community. She discussed the American Heart Association walk in October.

Volusia County Life Guards

Commissioner Persis expressed concerns regarding beach safety and a shortage of lifeguards on the beaches and inquired if the Commission would support sending a letter to Volusia County; whereby, Commissioner Tolland expressed support.

Mayor Partington indicated Volusia County recently hired a new Beach Safety director and believed that was a top priority and requested Ms. Shanahan discuss with Council Member Kent before a letter was sent.

Commissioner Sargent discussed the new Volusia County Beach Safety Director, noting Council Member Kent tasked the new director with hiring more lifeguards. He thanked Council Member Kent for all his hard work with the Volusia County Council.

Cassen Park

Commissioner Tolland inquired about the Cassen Park project; whereby, Mr. Finley indicated there were issues with permitting, rights-of-way, and stormwater design, but noted staff was working through them and would bring back an update at the next meeting.

Commissioner Sargent discussed new water quality strategies; whereby, Mr. Finley stated the stormwater design would incorporate multiple things to improve water quality and would be a model of environmental stewardship with the design, noting he did not want to add anything that would further delay the project.

Lake County Police Department

Commissioner Sargent requested everyone keep the Lake County Police Department in their thoughts and prayers for the fallen officer and for the two other officers who were injured.

Volusia County Schools

Commissioner Sargent inquired about steps needed to get more information regarding the Volusia County Schools Championship Field partnership; whereby, Ms. Shanahan stated staff would need a separate partnership agreement for the field, explaining a

separate agreement from the current agreement preserving Ormond Beach's interest in the field. She noted staff would keep the Commission updated with any discussions.

Item #11 – Adjournment

The meeting was adjourned at 8:20 p.m.

APPROVED: August 20, 2024

BY: _____
Bill Partington, Mayor

ATTEST:

_____
Susan Carroll Dauderis,
City Clerk

City of Ormond Beach
AGENDA ITEM

August 20, 2024 - City Commission

Number: 7.A

Section:	CONSENT AGENDA		
Item Category:	Consent - Resolution	**Res./Ord. No:**	2024-122
Strategic Goal:	Economic Development - Continue attracting and retaining high-wage jobs and the development of Ormond Crossings		
Department:	Economic Development		
Subject:	Service Contract - Ormond Beach Chamber of Commerce		
Summary:	This item requests approval of a one-year renewal of the service contract with the Ormond Beach Chamber of Commerce (Chamber) which currently expires on September 30, 2024. For over 35 years, the City has provided varying levels of financial support to the Chamber. The partnership with the City utilizes public funds to provide a variety of programs, events, services, and publications which are vital to enhancing the quality of life for residents. The Chamber initiatives promote economic development, stimulate the local business climate, welcome tourists and new residents, and present a positive image of Ormond Beach. Additionally, the Chamber works closely with the City to accomplish several major annual joint events, including the Mayor's State of the City Address, Ormond Leadership Program, Economic Prosperity Hour bi-monthly meetings, publication of the Doing Business in Ormond Beach Business Guide, and publication of the Ormond Beach Tourism Brochure.		
Financial Impact:	The $35,000 funding amount is included in the Fiscal Year 2024-2025 General Fund budget.		
Citizen Impact:	The Chamber works closely with the City to enhance the economic development program of business retention, expansion, and recruitment. The funding of the annual contract is a positive impact to the citizens, as it improves the business climate and provides additional capital expenditure and job creation opportunities.		

Recommended Action (Staff, Advisory Board and/or Other):	Staff recommends approval of the continued financial support and contract with the Chamber.
Staff Contact:	Brian Rademacher, Economic Development Director, (386) 676-3266
Attachments:	1. 24-122 Ormond Chamber Agmt (P24-0133G) 2. Chamber of Commerce Service Agr (P24- 0133G) 3. City Service Contract Report_Funding Request
Approval:	Kelly McGuire, Finance Director 7/30/2024 Shawn Finley, Assistant City Manager 8/8/2024 Joyce Shanahan, City Manager 8/14/2024

RESOLUTION NO. 2024-122

A RESOLUTION AUTHORIZING THE EXECUTION OF A SERVICE CONTRACT BETWEEN THE CITY OF ORMOND BEACH AND THE ORMOND BEACH CHAMBER OF COMMERCE; AUTHORIZING THE EXPENDITURE OF FUNDING; AND SETTING FORTH AN EFFECTIVE DATE.

WHEREAS, the City Commission desires to enter into a Service Contract with the Ormond Beach Chamber of Commerce, Inc., to provide a variety of programs, events, services and publications which are vital to enhancing the quality of life for residents, and

WHEREAS, the City Manager has certified that the City's $35,000.00 funding contribution has been appropriated in the General Fund (001) and has not been appropriated for any other purpose, now therefore,

BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF ORMOND BEACH, FLORIDA, THAT:

SECTION ONE. The Mayor and the City Manager are hereby authorized and directed to execute a Service Contract between the City of Ormond Beach and the Ormond Beach Chamber of Commerce, Inc., a copy of which is attached hereto and incorporated herein by reference, and to pay the cost therefor from the General Fund (001).

SECTION TWO. This Resolution shall take effect immediately upon its adoption.

[Remainder of page intentionally left blank]

APPROVED AND AUTHENTICATED this 20th day of August, 2024.

_____
BILL PARTINGTON
Mayor

ATTEST:

_____
SUSAN CARROLL DAUDERIS
City Clerk

SERVICE CONTRACT

AGREEMENT made this ____ day of _____, 2024, by and between the **CITY OF ORMOND BEACH**, a Florida municipal corporation ("the City"), and the **ORMOND BEACH CHAMBER OF COMMERCE, INC.,** a Florida non-profit corporation ("the Chamber").

WHEREAS, the City is willing to pay public funds to the Chamber in order to accomplish various public purposes, as hereinafter more particularly set forth, and

WHEREAS, the City desires sufficient control over the public funds to be paid in order to comply with the requirements of the law as articulated by the Florida Supreme Court in *O'Neill v. Burns*, 198 So.2d 1 (Fla. 1967) and by the Attorney General of Florida in *Op.Atty.Gen.* 075-221 (July 24, 1975),

NOW THEREFORE, in consideration of their mutual promises made herein, and for other good and valuable consideration, receipt of which is hereby acknowledged by each party, the parties, intending to be legally bound, hereby agree as follows:

1 *Recitals*. The parties agree that the foregoing recitals are true and correct and are incorporated herein by reference and are part of this Agreement.

2. *Term*. This Agreement shall become effective on October 1, 2024 and shall continue in effect through and including September 30, 2025. Thereafter, this Agreement may be renewed for additional one (1) year periods based upon the City's fiscal year, which fiscal year begins on October 1 of each given year and ends on September 30 of the following year.

3. *Responsibilities of the Respective Parties*.

a. *The Chamber shall be responsible for the following*:

i. prepare and update (or obtain from other sources) the City of Ormond Beach's visitor attraction guidebooks, area maps, economic development materials, real estate brochures, tourism publications, and school information;

ii. distribute the materials described in ¶(3)(a)(i) at the Chamber's public Welcome Center; *via* telephone, mail, and personal requests by the general public; and to the five (5) State of Florida Welcome Centers at the state boundaries;

iii. answer the public's walk-in, telephone, and mail inquiries about the Ormond Beach area;

iv. be open for business from 9:00 a.m. until 5:00 p.m., Monday through Friday, exclusive of legal holidays, special Chamber events and meetings, and modified summer hours;

v. provide, in cooperation with the Central Florida Better Business Bureau, mediation and referral services for consumer complaints against businesses licensed to operate within the corporate limits of the City;

vi. provide semi-annual reports, due on March 31 and September 30 of each year, to the City, which reports shall summarize the number of requests for visitor/relocation information, better business inquiries, community/social events, and miscellaneous requests, the types of business complaints received, and the disposition of the complaints. The annual estimated number of inquiries, by category, is indicated by the number in parenthesis;

vii. maintain a Small Business Partnership with VISIT FLORIDA. The State's official tourism marketing corporation that serves as Florida's official source for travel planning to visitors; and

viii. provide and maintain a public information website www.ormondchamber.com. In addition, the Chamber owns three website domains www.Visitormondbeach.org, www.visitormond.com and www.northeastvolusiachamber.com . The Chamber website is a resource for information about Ormond Beach visitors, residents and the business community.

b. *The City*: The City shall pay to the Chamber the total sum of thirty-five thousand and 00/100 dollars ($35,000.00), in a single payment, within ten (10) days of the date of execution of this Agreement by both parties.

4. *Board Appointment*. The Mayor shall be appointed as an honorary director of the Chamber's Board of Directors. The City Manager shall serve as the City's liaison to the Board of Directors of the Chamber, in accordance with the Charter and By-Laws of the Chamber. Both Mayor and City Manager or his designee shall have all rights to participation except for the right to vote.

5. *Termination of Agreement*. Either party may terminate this Agreement, without cause, upon giving the other party at least sixty (60) days' prior written notice of the intention to terminate this Agreement.

6. *Relationship of Parties*. Neither the City, including any of its elected or appointed officers, employees, agents or other representatives, nor the Chamber, including any of its directors, officers, employees, agents or other representatives, are the employee, agent, or other representative of the other party, and all activities performed by either party pursuant to and in furtherance of this Agreement, whether directly or indirectly related to this Agreement, shall constitute the separate and independent act of the respective party performing such act.

7. *Liability and Indemnification*. The Chamber shall fully defend, indemnify, save, and hold the City, including its elected and appointed officers, employees, agents, and other representatives, harmless from and against all suits, action, claims, proceedings, demands, or liability of any nature whatsoever, including attorney's fees through and including all appeals, arising from any injury, loss, or damage to any person or property, which is directly or indirectly caused by or results from any act or negligence of the Chamber, including its directors, officers, employees, agents and other representatives.

8. *Miscellaneous*. The Chamber shall:

a. obtain and maintain at its sole expense, all applicable licenses, permits and certificates which are necessary to discharge The Chamber's duties under this Agreement;

b. be solely responsible for paying all costs relative to the discharge of its duties under this Agreement, except as otherwise indicated herein; and

c. comply with all applicable federal, state, and local laws, rules, and regulations.

9. *Assignment*. Neither this Agreement nor any part thereof may be assigned to any other person or entity without the prior written consent of the City Commission of the City and the Board of Directors of the Chamber.

10. *Sovereign Immunity*. The City expressly retains all rights, privileges, immunities, and benefits of sovereign immunity. This provision shall be construed broadly in favor of the City.

11. *Complete Agreement*. This Agreement constitutes the entire and complete agreement by and between the parties, and the promises and covenants herein contained shall survive the life of this Agreement.

12. *Amendments*. This Agreement may not be amended unless such amendments are reduced to writing and approved by the City Commission and by the Board of Directors of the Chamber, and signed by both parties.

13. *Compliance With Florida Public Records Law*. Contractor expressly agrees that it shall comply with the public records law provided in Florida Statutes, Chapter 119, and specifically to:

(a) Keep and maintain public records that ordinarily and necessarily would be required by the City in order to perform the contracted service.

(b) Provide the public with access to public records on the same terms and conditions that the City would provide the records and at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes, or as otherwise provided by law.

(c) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law.

(d) Meet all requirements for retaining public records and transfer, at no cost, to the City all public records in possession of the contractor upon termination of the contract and destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. All records stored electronically must be provided to the City in a format that is compatible with the information technology systems of the City.

(e) Failure of the Contractor to comply with Public Records Law as provided by Florida Statutes, Chapter 119, shall subject the Agreement to termination for cause by the City.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

CITY CLERK
22 SOUTH BEACH STREET
ORMOND BEACH, FLORIDA 32174
(386) 676-3331
CITYCLERK@ORMONDBEACH.ORG

Ref: Fla. Stat. §119.0701(2016)

IN WITNESS WHEREOF, the parties have signed this Agreement as of the day and year first above written.

Witnesses:

Signature: _____
Print:: _____

Signature: _____
Print: _____

CITY OF ORMOND BEACH, a Florida municipal corporation

By: _____
BILL PARTINGTON
Mayor

Attest: _____
JOYCE A. SHANAHAN
City Manager

Witnesses:

Signature: _____
Print: _____

Signature: _____
Print: _____

ORMOND BEACH CHAMBER OF COMMERCE, INC., a Florida non-profit corporation

By: _____
DEBBIE COTTON
President and Chief Executive Officer

Attest: _____
EVA MCMULLIN
Chairman

MEMORANDUM

July 8, 2024

- **TO:** Joyce Shanahan cc: file
  (City Manager – City of Ormond Beach)
- **FROM:** Debbie Cotton
  President/CEO – Ormond Beach Chamber of Commerce
- **SUBJECT:** Annual Service Contract Report/ Funding Request

Mission Statement

- To serve the community by advocating for businesses, developing leaders and promoting economic growth.

General Points About the Chamber

The Ormond Beach Chamber works to improve the business environment in Ormond Beach by advocating policies that encourage business success while respecting the interests of residents and the natural environment. The Chamber helps small businesses succeed and grow through participation in our networking opportunities, publications, high-traffic website, distribution of brochures at the Visitor Information Center, and more. Chamber members share their business knowledge and experience on a variety of committees which provide further benefit to the community.

- The Ormond Beach Chamber of Commerce assures businesses joining the chamber they are investing in a 501(C)6 not-for-profit corporation whose revenues are utilized for business and public good and not personal gain. In addition, standard procedures/policies and best practices are in place. The Chamber shall observe all local, state and federal laws which apply to Nonprofit organizations defined in Section 501(c)(6) of the Internal Revenue Code.

- The Ormond Beach Chamber is governed by a volunteer Board of Directors. It is nonpartisan and nonsectarian, and takes no part in nor lends its influence, either directly or indirectly, to the nomination, election, or appointment of any candidate for office in the City, County, State, or Nation. Chamber funds are limited to Chamber projects, which advance the commercial, residential, industrial, civic, and general interests of the City of Ormond Beach as provided for in the Articles of Incorporation and By Laws. No funds are otherwise distributed.

- Ormond Beach Chamber of Commerce is a Certified Plus Chamber, designation was awarded in 2019 by the Florida Association of Chamber Professionals. The certification is awarded to top chambers in the state of Florida for their outstanding achievement and dedication to the industry. The Certified Plus Designation is given to chambers that score an 86 or above during the judging process and recognize chambers that have met high standards such as excellence in organization management, service intent and capacity, professional administration, financial management and marketing/public relations. Certified Plus Chambers also strengthened free enterprise by protecting the business environment. This Certification has to be reapplied every five years and was resubmitted in June 2024.

Ormond Beach Chamber of Commerce Service Contract Responsibilities

The Ormond Beach Chamber of Commerce and the City of Ormond Beach has entered into an agreement to provide the following services:

- Prepare and update (or obtain from other sources) the City of Ormond Beach's Business Annual Visitor Guide & Chamber Membership Directory Publication, bi-annual Area Map, Economic Development Materials such as the Bi-Annual "Doing Business in Ormond Beach" publication, real estate and other business brochures, and school information.

- Distribute/display/convey above materials at the Chamber's public Visitor's Welcome Center, via telephone, mail, e-mail, and internet, personal requests by the general public.

- Maintain a Small Business Partnership with Visit Florida, www.visitflorida.org . The State's official tourism marketing corporation that serves as Florida's official source for travel planning to visitors.

- Provide and maintain a public information website www.ormondchamber.com. In addition, the Chamber owns three main website domains. www.Visitormondbeach.org, www.visitormond.com and www.northeastvolusiachamber.com, www.Leadershipormondbeach.com and www.leadershipormondbeach.org. The chamber website is a resource for information about Ormond Beach visitors, residents and the business community.

- Answer/assist the general public's walk-in, telephone, e-mail, internet and mail inquiries about Ormond Beach and the surrounding area.

- Maintain open business hours from 9:00 a.m. to 5:00 p.m., Monday through Friday. Summer hours are 9:00 a.m. to noon to accommodate the seasons. Exclusive of legal holidays, special chamber events and meetings.

- Provide, in cooperation with the Central Florida Better Business Bureau, as a referral service for consumer complaints against businesses licensed to operate within the corporate limits of the city.

- Provide reporting to the city, summarizing the number of requests for visitor/relocation information, better business inquiries, community/social events, and miscellaneous requests.

Benefit to City of Ormond Beach Residents/Businesses

The Ormond Beach Chamber of Commerce serves the residents, as well as the businesses, of our city by engaging in a variety of economic development programs designed to:

- Increase wealth and prosperity for residents

- Ensure job opportunities for residents

- Expand the tax base of the City of Ormond Beach to provide greater services and reduce the financial burden on residents

- Improve the quality of life of residents by increasing the standard of living

- Ensure a bright economic future for the city

- Be a total business and community resource

- Located on one of the busiest roads in Volusia County, our location provides countless opportunities for visitors and new residents. The Ormond Beach Chamber of Commerce serves as the official visitor center for Northeast Volusia County and works with the Daytona CVB, increasing our reach and effectiveness in representing the City of Ormond Beach as a vacation and business destination. The Chamber also partners with VISIT Florida, the State of Florida's official tourism marketing corporation. The Chamber's partnership provides access to VISIT Florida's extensive tourism marketing resources.

- The Ormond Beach Chamber operates as a distribution center for a host of publications including a Visitor's Map, Membership Directory (which includes Ormond Beach history, demographics, school information, economic development information), Doing Business in Ormond Beach publication, club & organization lists, street maps, City of Ormond Beach publications and several additional brochures and information highlighting and promoting Chamber members. Information and brochures are provided at no charge to our visitors and members.

- The Chamber works with the Cities GIS Department to produce the Ormond Beach Map every 18- 24 month.

- The Chamber accepts requests for information through the mail, walk-in traffic, telephone, e-mail, through the Chamber website www.ormondchamber.com. The chamber has a page on the website for individuals to request information 24/7 http://business.ormondchamber.com/info/ .

- The Chamber updates and shares information on our Facebook page daily with up-to-date alerts that are relevant to our residents, visitors and businesses. To date we have over 7,000 followers. https://www.facebook.com/ormondchamber/ . Other Social media channels include:

  - **Instagram:** https://www.instagram.com/ormondbeachchamber/
  - **LinkedIn**: https://www.linkedin.com/company/ormond-beach-chamber-of-commerce/?viewAsMember=true
  - **YouTube:** https://www.youtube.com/channel/UCgWHdFDL8QvEAyCSvXnj6NA
  - **Ormond Beach take out, delivery and curbside Pickup Facebook** group

- The Ormond Beach Chamber of Commerce represents about 630+ business members and indirectly benefits the 2,100+ licensed businesses (City BTR) and 21,000 labor force reported by the Florida Department of Economic Opportunity in 2020. We strive to serve over 43,000 residents of Ormond Beach according to the US Census, through the above programs and promotion of "business," as well as through a myriad of Chamber hosted events and programs/initiatives.

- The Chamber receives a monthly list of new business licenses that contains new BTR's issued within the city. Staff reaches out to each to introduce the chamber and our services to the business community. Staff reaches out to each business to extend a welcome and introduces them to the Chamber of Commerce.

- The Chamber continues to remain a resource to our businesses/residents and is very active in communicating information to the public prior to and after a natural disaster or a public health pandemic.

Other Chamber Activities of Benefit to Members, Residents and Businesses:

- Monthly Networking Business After-Hours which showcase a host venue business and provide connectivity for members of the business community. This event is open to all businesses in the community and held on the 2nd Wednesday of each month from 4:30 to 6:30 pm. This timeline allows our business members to attend the event and still be home with their families earlier in the evening.

- The annual "**Leadership Ormond Beach Program"** graduated class XX (20) in June 2024. The program is 9 half-day sessions. Leadership Ormond Beach program initiated by the Ormond Beach Chamber of Commerce is designed to increase awareness of our community, city and educational services and, to provide a forum for emerging community leaders. The classes average around 20 to 25 business and community members each year. Class XXI (21) will begin in Spring of 2025.

- The Chamber graduated its very first **Youth Leadership Class** in November of 2022. **Class 3** will begin in September of 2024 and consists of students from Eastside High Schools and Home-Schooled students that qualify. The Youth Leadership program is designed for afternoon sessions on early release days.

  Sessions to include Reaction Course, Health & Wellness, Government, Public Safety, Historical Day, Economic Development and Graduation. This program introduces students to all different career opportunities in our community and allows them to learn more about all the Career Opportunities in Ormond Beach.

- Four established Networking Groups comprised of Business Owners and representatives, formed for the purpose of generating local Business to Business and Chamber Member to Chamber member leads, referrals and doing business locally. All four groups meet at the chamber office and utilize the Chamber's audio-visual equipment for presentations.

- Ambassador Committee consist of 14 chamber members who attend and represent the Chamber at various functions including, but not limited to, ribbon cuttings, grand openings, member visitation, city events and special events. Ribbon cuttings are held on Thursday afternoons at 4:00 PM and are listed on the chamber's calendar on our website, promoted on our Facebook page and promoted in the Ormond Beach Observer newspaper each week.
  - Ambassador committee reaches out to the business community on a monthly basis by welcoming new members and visits renewing members when appropriate.

- In 2023 the Chamber conducted 19 new business Ribbon Cutting Ceremonies.
  - 2024 Ribbon cuttings to date, as of June 30, 2024: 17

- The Ormond Beach Chamber has partnered with Halifax Health to host bi-monthly **Economic Prosperity Breakfast** forum. The Chamber fully supports the forum which brings community leaders, business owners and government officials together. We continue working with the City's Economic Development Director to present to our members various challenges and/or viewpoints facing the local business community, demographic market shifts, and economic diversification and to recognize our local business leaders. This event is open to all businesses in the community.

- The 2024 calendar includes 6 events on the 3rd Wednesday in February, April, June, August, October and (December event will be the first Wednesday) of 2023. Three of which are on-site events
  - Halifax Health, Daytona Beach
  - CO2 Meter, Ormond Beach
  - Super Petrel, Ormond Beach
- 2024 meetings held on site as of June 30, 2024
  - GermFree Lab, Ormond Beach
  - Foundation Risk Partners, Ormond Beach

- The Chamber's Education Committee continues to focus on our teachers through the **Teacher of the Quarter Awards and Annual Luncheon**. The chamber has coordinated this program for 20+ years.

  - The Chamber continues to recognize our teachers in the following schools: Seabreeze high, Beachside Elementary, Ormond Beach Elementary, Ormond Beach Middle, Pine Trail Elementary, Pathways Elementary, Hinson Middle and Tomoka Elementary Schools.

  - 2023-2024 Teacher of the Quarter Annual Luncheon is held at the end of each school year and hosted by our newest restaurant in Ormond Beach, Alexanders' Prime. The chamber invites all 36 teachers and school principals we have recognized throughout the year to a nice lunch with their peers to once again thank them for shaping our future leaders. The Chamber also invites the Mayor and our Volusia County School Board members, District 4 and OBCC Board members.

- 2024 is the 9th year the Chamber offered the **Rob Ridder Scholarship** to Volusia County High School seniors that are children of Ormond Beach Chamber members. Our Chamber has been the chamber in Volusia County that offers a scholarship program. To date the chamber has awarded 50 scholarships for a total of *$53,500.* Scholarships are based on community activity, GPA and financial need. Our chamber continues to raise funds to distribute $1,000.00 (one-time) scholarships. In 2024 the Board of Directors voted to increase our scholarship amount to $1,500 per student. The committee conducts interviews with each candidate during the months of April & May and this year (2023) selected 7 recipients. 4 - Seabreeze High School, 1- Spruce Creek High School, 1- New Smyrna Beach High School and 1- Father Lopez High School. Board members attended Seabreeze high school and Father Lopez High Schools's award ceremony to present the award checks to the students and the remaining 2 checks were presented checks at the May Board of Directors meeting at the Chamber.

- The Government Affairs Committee works on behalf of our businesses to advocate for businesses and will take up issues locally or statewide. We have signed support letters with the Florida Chamber to support initiatives that affect our business

community.

Committee Description: The Ormond Beach Chamber of Commerce Government Affairs committee (known as GA committee) takes a proactive approach in addressing local, state and national issues important to the Chamber and its mission of our membership and business community. This committee works to understand issues of interest to the businesses in the Ormond Beach and Volusia County area and to educate and communicate issues to the chamber members and community leaders.
Governmental Affairs Mission Statement: Identify and monitor legislative activity by promoting Public Policy in our state, region and city that affect the economy and culture of the Ormond Beach area.

The GA committee took a position on two issues in 2023- 1. Support of the Dog Beach Pilot Program and 2. Strongly opposed to the Belvedere project**.**

- **Workforce Committee** – launched in January 2023, in line with our Strategic Plan the Chamber has proudly established a dynamic Workforce Committee. Our mission is to attract, grow and train the workforce to support Ormond Beach's current and future business needs. The committee is establishing where we can be a resource to employers.
- The lack of workforce in different industries and possibles reasons why.
    - Employees Want Work life Balance.
    - Workforce Not Desperate for employment
    - Need to "Think Different" – Employees might want something different

Workforce Committee key responsibilities include:

1. Crafting and executing innovative workforce development programs and dynamic training initiatives.
2. Analyzing the local labor market to identify trends and skill gaps for targeted actions.
3. Collaborating closely with local community partners to align programs seamlessly with specific business needs.
4. Advocating for workforce-related policies and legislation that elevate the local workforce landscape.
5. Unlocking the workforce's voice through data-rich surveys, guiding our actions with precision.
6. Equipping business with invaluable resources and guidance to help address workforce challenges.
7. Creating an atmosphere of networking opportunities and peer learning among businesses to foster

knowledge exchange.

Together, the committee aims to support business in attracting and retaining skilled talent while contributing to the overall economic growth and prosperity of the Ormond Beach community. We are committed to fulfilling this mission through dedicated efforts and collaborative partnerships.

- **BOSS program**: **B**usiness **O**wners **S**haring **S**olutions – This program is one of our mission driven programs. BOSS is a bi-annual educational platform for the business community and promotes professional development. This program features a four-person panel of experts from the chamber membership that have expertise in business topics, some of our past topics have been:
  - How to be an Effective Leader
  - How to Network and Build Relationships
  - How to give amazing Customer Service
  - How to enhance your Social Media Presence
- In 2023, we introduced **BOSS 2.0-** with a focus on a expert in their perspective industry to lead a workshop with breakout sessions. In December, the topic was how to Use AI to boost your Business.
- This program has been so successful with workshops and professional Development for our members, we have scheduled 3 in 2024. Topics:
  - How to Navigate Cybersecurity Challenges- February
  - How to how Linked In to benefit your business – August

- Chamber President, Debbie Cotton serves as the Treasurer for the Volusia County Alliance. The Alliance is a non-profit organization, with a focus on public education, existing industry expansion, new business recruitment and job creation for the citizens of Volusia County and all of her cities. The Alliance consist of all 7 chambers in Volusia County. We are partnering together to connect, inspire and grow our business community. Each year the Alliance hosts a Mega Mixer, which combines a business expo and a business after-hours. This annual event offers chamber members from all of our chambers to display and advertise their products and service to a large number of potential customers. Typically, we have over 100 vendors and 500 in attendance.

- In January 2024, The Chamber launched a new, more user friendly informative, functional website which contains over 1,000 links to local businesses, city services, county information, etc.

2023 – **January to December:**

Business Member page hits- 108,911 (increased 32% from 2022)
Member search hits – 203,875 (increased 3.5% from 2022)

2024 - January to June:

Business Member page hits – 49,323 (decreased 27% from same period in 2023).

Member Search hits- 181, 787 (Increased 37% from same period in 2023).

2024 Established Signature Events:

2024

- January 25th - Annual Installation/Awards Banquet- Hard Rock Hotel, DB
- March 22th - Women2Women Spring Luncheon- Hard Rock Hotel, DB
- April 26th - 55th Annual Mayors Golf Tournament, Halifax Plantation
  - Mayor's Tee-Off Reception- Oceanside Country Club
- June 6th - Chamber Alliance Mega Mixer (Multi chamber business expo)
- October 8th State of the City Luncheon, Oceanside Country Club
- November 2[8d] Women2Women Fall Seminar & Luncheon, Hard Rock Hotel, DB

2024 Recurring events/programs

- 2nd Wednesday Monthly Business After-Hours
- Bi-Monthly - Chamber, Coffee, Connect (New Member Orientation)
- Weekly Ribbon Cuttings for New Business
- Bi-Monthly Economic Prosperity Hour events
- Bi-Weekly Net Group meetings for 4 groups

Visitor Center Update:

- The Chamber and Visitor Information Center at 165 W. Granada Boulevard, presents a positive public image of Ormond Beach to tens of thousands of people each year. Our full-time staff welcomes thousands of visitors and hundreds of new residents to Ormond Beach each year. The Chamber distributes publications, handles better business services, and works on a host of community projects.

Visitor/Inquiry tallies for the period indicated below:

2022-2023	OCT	NOV	DEC	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	TOTALS
Walk ins	120	99	167	166	189	140	195	209	180	145	273	244	2127
Telephone	196	98	138	204	166	93	85	98	100	84	131	106	1499
Email	4688	3842	3787	159	161	98	76	79	65	55	73	70	13153
Totals	5004	4039	3972	529	516	331	356	386	345	284	477	420	16659
2023-2024	OCT	NOV	DEC	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	TOTALS
Walk ins	252	118	109	234	158	148	176	190	186				1571
Telephone	104	110	80	90	116	110	114	120	131				975
Email	77	65	74	61	70	72	78	79	97				673
Totals	433	293	263	385	344	330	368	389	414				3219

Summary- In January 2023 we changed the way we were calculating data to be more accurate with actual visitor and/or relocation inquiries so the numbers are skewed. Information requests from our website (ormondchamber.com)
2022-355
2023 -251 (down 29% from 2022)
January to June 30, 2024 to date: 94

The Chamber has 5 full-time staff as of June 2024, 1 staff member is dedicated to working with visitors as our Office Manager. Our season trends to fall and winter for visitors, snowbirds and relocation inquiry. We typically get very slow in the summer months (May- September) with walk in traffic and phone inquiries.

2023 Member Highlights

- 102 New Members, Retention rate 80% (down 5 % from 2022 that was 85%)
- Members as of December 31, 2023 – 626
- Event attendees 2,800+

2024 Member Highlights to date (June 30, 2024):

- 60 New members
- Members as of June 30, 2024- 629
- Member locations: 415 businesses in Ormond Beach, 94 businesses in Daytona Beach

- 2023 – A updated Visitor Street map was printed in 2023, chamber has over 5,000 copies to provide visitors as they come to the office. The map is updated every 18 months. This street map is one of the most requested items in the Chamber office by visitors and people relocating to our community.

- 2024 - The Annual 2024-2025 Visitors Guide & Membership Directory will be completed and received in July 2024. This publication features all the chamber members, city information for relocation and tourist information. This is distributed to all chamber members, HOA's, city staff and anyone looking for information on

our business community. The chamber prints 1,500 copies. A digital flipbook is available on our website to allow our guests to use our business members.

- 2024-2025 Media partnerships include the following media outlets: Money Pages, Ormond Beach Observer to showcase current or upcoming Chamber activities and new members.
    - We also work with Beach 92 FM on a co-op to promote the Chamber and Chamber members.

- The Chamber's electronic newsletter, "The Chamber Insider" is sent out weekly on Tuesday afternoons with a distribution to over 2,000+ businesses, with an average open rate of 47% and an average click rate of 10%. The newsletter features chamber events, community events and member highlights. The Chamber continues to enhance our visibility with information provided through our Website, consistent with Social Media presence.

- Social media is where we find most people follow us with news and event updates; To date we have 7.5K followers.

    - January to June- 6 month – Facebook post reach – 104,000 and Instagram is 3,900.
    - Profile Visits – Facebook is 15,000 and Instagram is 822

- The Chamber continues the "Partnership" Program. The Chamber and Business Members entered into an annual agreement for overall sponsorship/advertising/consistent exposure throughout the year. This program continues to grow with businesses that support our Mission. To date we have to 28 Partnerships.

COMPLIANCE WITH FLORIDA PUBLIC RECORDS LAW

Contractor expressly agrees that it shall comply with the public records law provided in Florida Statutes, Chapter 119, and specifically to:

(a) Keep and maintain public records that ordinarily and necessarily would be required by the City in order to perform the contracted service.

(b) Provide the public with access to public records on the same terms and conditions that the City would provide the records and at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes, or as otherwise provided by law.

(c) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law.

(d) Meet all requirements for retaining public records and transfer, at no cost, to the City all public records in possession of the contractor upon termination of the contract and destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. All records stored electronically must be provided to the City in a format that is compatible with the information technology systems of the City.

(e) Failure of the Contractor to comply with Public Records Law as provided by Florida Statutes, Chapter 119, shall subject the Agreement to termination for cause by the City.

The above report is a synopsis of all the services, programs, functions, and events the Chamber has performed.

We respectfully request consideration for an Annual Contract Amount requested by Ormond Beach Chamber of Commerce for 2024-2025**:** **$35,000.00**

This requested amount is the same amount as last year (2023-2024).

The Ormond Beach Chamber of Commerce respectfully submits this request for renewal of contract services to the City of Ormond Beach, for consideration during its budget preparation process. The requested amount represents approximately 7.6% of our operating budget.

Thank you for your consideration in allowing us to continue to provide high quality services to the business community and to those who visit our beautiful city and relocate here.

If any additional information is required, please do not hesitate to contact me directly.

Respectfully submitted,

Debbie Cotton

Debbie Cotton, FCCP, IOM
President/CEO
Ormond Beach Chamber of Commerce

City of Ormond Beach
AGENDA ITEM

August 20, 2024 - City Commission

Number: 7.B

Section:	CONSENT AGENDA		
Item Category:	Consent - Resolution	**Res./Ord. No:**	2024-123
Strategic Goal:	Governance		
Department:	Finance		
Subject:	RFP Award - Intent to Award RFP 2024-35 Capital Improvement Revenue Bond, Series 2024		
Summary:	The City currently utilizes an AT&T Central Exchange, Centrex, (AT&T) system installed over 30 years ago; the last major upgrade was the addition of voicemail 23 years ago. The system has since been discontinued and is dependent on equipment no longer manufactured. Due to the obsolescence of the system the City, in September, 2023, issued an RFP to replace the existing telecommunication system; a contract with Empire Computing is proposed for approval by separate agenda item on this agenda. Additionally, the proposed Capital Improvement Plan provides for an additional technology project to update the City's data center infrastructure in FY 2024-2025. Since both projects require financing, the City issued RFP 2024-35 Capital Improvement Revenue Bonds, Series 2024. Five proposals were received and reviewed by Finance Department Staff, City's Financial Bond Advisor, and City's Bond Counsel. The team agreed the best proposal was provided by Webster Bank with the following terms: Financing Amount: $2,300,000 Interest Rate: 4.29% Prepayment Options: No penalty after year 4		
Financial Impact:	Funding for the repayment of this debt has been included in the proposed FY 2024-25 budget of Fund 205-Debt Service Fund.		
Citizen Impact:	This provides the necessary financing to upgrade the City's telecommunication system which will enhance the public's ability to communicate with City staff and the infrastructure improvements to enhance cyber security.		

Recommended Action (Staff, Advisory Board and/or Other):	Staff recommends approval of Webster Bank's proposal to provide $2.3 million for the financing of information technology upgrades.
Staff Contact:	Kelly McGuire, Finance Director, (386) 676-3226
Attachments:	1. 24-123 Capital Improvement(700023741.2) (002)
Approval:	Kelly McGuire, Finance Director 8/6/2024 Shawn Finley, Assistant City Manager 8/15/2024 Joyce Shanahan, City Manager 8/15/2024

RESOLUTION NO. 2024-123

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF ORMOND BEACH, FLORIDA AUTHORIZING THE ISSUANCE AND SALE OF THE CITY'S CAPITAL IMPROVEMENT REVENUE BOND, SERIES 2024 IN A PRINCIPAL AMOUNT OF NOT EXCEEDING $2,500,000 IN ORDER TO FINANCE CERTAIN CAPITAL IMPROVEMENTS; MAKING CERTAIN COVENANTS AND AGREEMENTS IN CONNECTION WITH THE ISSUANCE AND SALE OF THE SERIES 2024 BOND; AUTHORIZING A NEGOTIATED SALE OF SAID SERIES 2024 BOND TO WEBSTER BANK, NATIONAL ASSOCIATION; DELEGATING CERTAIN AUTHORITY TO THE MAYOR; PROVIDING FOR CERTAIN TERMS OF THE SERIES 2024 BOND; AUTHORIZING THE EXECUTION AND DELIVERY OF THE SERIES 2024 BOND, SUCH SERIES 2024 BOND TO BE A LIMITED OBLIGATION OF THE CITY PAYABLE FROM A COVENANT TO BUDGET AND APPROPRIATE FROM LEGALLY AVAILABLE NON-AD VALOREM REVENUES AS PLEDGED HEREIN; PROVIDING FOR THE RIGHTS AND SECURITIES OF THE OWNER OF THE SERIES 2024 BOND; AUTHORIZING THE MAYOR TO TAKE CERTAIN ACTIONS AND TO EXECUTE AND DELIVER CERTAIN DOCUMENTS; MAKING CERTAIN COVENANTS AND AGREEMENTS FOR THE BENEFIT OF THE PURCHASER OF THE SERIES 2024 BOND; APPOINTING THE CITY AS PAYING AGENT AND BOND REGISTRAR FOR SAID SERIES 2024 BOND; AND PROVIDING AN EFFECTIVE DATE.

BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF ORMOND BEACH, FLORIDA:

SECTION ONE. AUTHORIZATION. This Resolution is adopted pursuant to the provisions of Chapter 166, Part II, Florida Statutes, and the Charter of the City of Ormond Beach, Florida (the "City"), and other applicable provisions of law.

SECTION TWO. DEFINITIONS. Unless otherwise defined herein, capitalized terms shall have the meanings set forth below.

"Act" means Chapter 166, Part II, Florida Statutes, the Charter of the City, and other applicable provisions of law.

"Authorized Depository" means any bank, trust company, national banking association, savings and loan association, savings bank or other banking association selected by the City as a depository, which is authorized under Florida law to be a depository of municipal funds and which

has complied with all applicable state and federal requirements concerning the receipt of City funds.

"Bond Counsel" shall mean Greenberg Traurig, P.A., or any attorney at law or firm of nationally recognized bond counsel designated by the City.

"**Bond Registrar**" shall mean the City via the Finance Director, who shall maintain the registration books of the City and be responsible for the transfer and exchange of the Series 2024 Bond, and who shall also be the paying agent for the Series 2024 Bond.

"Business Day" shall mean any day other than a Saturday, Sunday or day on which banking institutions within the State of Florida are authorized or required by law to remain closed.

"Charter" means the charter of the City of Ormond Beach, Florida.

"City" means the City of Ormond Beach, Florida, a municipal corporation of the State of Florida, or any successor thereto.

"City Attorney" means the City Attorney of the City or his or her designee.

"City Clerk" means the City Clerk or assistant or deputy City Clerk of the City, or such other person as may be duly authorized by the City Commission of the City to act on his or her behalf.

"City Commission" means the City Commission of the City, or its successor in function.

"City Manager" means the City Manager of the City or his or her designee.

"**Code**" shall mean the Internal Revenue Code of 1986, as amended.

"Debt" means as of any date and without duplication, all of the following to the extent that they are payable in whole or in part from any Non-Ad Valorem Revenues: (i) all obligations of the City for borrowed money or evidenced by bonds, debentures, notes or other similar instruments; (ii) all obligations of the City to pay the deferred purchase price of property or services, except trade accounts payable under normal trade terms and which arise in the ordinary course of business; (iii) all obligations of the City as lessee under capitalized leases; and (iv) all indebtedness of other persons to the extent guaranteed by, or secured by Non-Ad Valorem Revenues of the City.

"**Event of Default**" shall mean the occurrence and continuance of one or more of the following events:

(a) payment of the principal of the Series 2024 Bond is not made when the same shall become due and payable; or

(b) payment of any installment of interest or any other amount payable on the Series 2024 Bond is not made when the same shall become due and payable; or

(c) the City shall default in the due and punctual performance of any other of the covenants, conditions, agreements and provisions contained in the Series 2024 Bond or this Resolution and such default shall continue for thirty (30) days from the earlier of (a) after written notice shall have been received by the City from the Bondholder specifying such default and requiring the same to be remedied or (b) when notice was required to be given by the City pursuant to Section 6 hereof; provided, however, that if, in the reasonable judgment of the Bondholder, the City shall proceed to take such curative action which, if begun and prosecuted with due diligence, cannot be completed within a period of thirty (30) days, then such period shall, upon the written consent of the Bondholder, be increased to such extent as shall be necessary to enable the City to diligently complete such curative action; provided further, however, that in no event shall the cure period exceed sixty (60) days; or

(d) any representation or warranty made in writing by or on behalf of the City in this Resolution or the Series 2024 Bond shall prove to have been false or incorrect in any material respect on the date made or reaffirmed; or

(e) the City admits in writing its inability to pay its debts generally as they become due, or files a petition in bankruptcy or makes an assignment for the benefit of its creditors, declares a financial emergency or consents to the appointment of a receiver or trustee for itself or shall file a petition or answer seeking reorganization or any arrangement under the federal bankruptcy laws or any other applicable law or statute of the United States of America or any state thereof or the involuntary appointment of a receiver or trustee for the City, where such event continues for at least sixty (60) days undismissed or undischarged.

"Event of Taxability" means the occurrence after the date hereof of a final decree or judgment of any Federal court or a final action of the Internal Revenue Service determining that interest paid or payable on all or a portion of the Series 2024 Bond is or was includable in the gross income of the Owner for Federal income tax purposes; provided, that no such decree, judgment, or action will be considered final for this purpose, however, unless the City has been given written notice and, if it is so desired and is legally allowed, has been afforded the opportunity at the City's own expense to contest the same, either directly or in the name of the Owner, and until the conclusion of any appellate review, if sought. An Event of Taxability does not include and is not triggered by a change in law by Congress that causes the interest to be includable under the Owner's gross income. For all purposes of this definition, the effective date of any Event of Taxability will be the first date as of which interest is deemed includable in the gross income of the Owner of the Series 2024 Bond.

"Finance Director" means the Finance Director of the City or his or her designee.

"**Interest Rate**" shall mean a per annum rate equal to 4.29%, prior to the occurrence of an Event of Taxability, and after an Event of Taxability shall mean the Taxable Rate.

"Mayor" means the Mayor of the City or his or her designee.

"Non-Ad Valorem Revenues" means all revenues of the City not derived from ad valorem taxation and which are lawfully available to be used to pay debt service on amounts due under the

Series 2024 Bond as the same shall become due, all as more particularly set forth in Section 8 hereof.

"Owner" or "Bondholder" means the Person or Persons in whose name or names the Series 2024 Bond shall be registered on the books of the City kept for that purpose in accordance with the provisions of this Resolution.

"Payment Date" means March 1 and September 1 of each year.

"Person" means natural persons, firms, trusts, estates, associations, corporations, partnerships and public bodies.

"Purchaser" means Webster Bank, National Association and its successors and assigns.

"**Record Date**" shall mean the 15th day of the month immediately preceding any interest payment date for the Series 2024 Bond.

"Resolution" means this Resolution pursuant to which the Series 2024 Bond is authorized to be issued, including any supplemental resolution(s).

"Series 2024 Bond" or "Series 2024 Bonds" means the not to exceed $2,500,000 City of Ormond Beach, Florida Capital Improvement Revenue Bond, Series 2024 authorized by Section 6 hereof.

"Series 2024 Project" means certain capital improvements to the City's telecommunications system and data center infrastructure, as the same may be amended and supplemented from time to time.

"State" means the State of Florida.

"Taxable Period" shall mean the period of time between (a) the date that interest on the Series 2024 Bond is deemed to be includable in the gross income of the owner thereof for federal income tax purposes as a result of an Event of Taxability, and (b) the date of the Event of Taxability and after which the Series 2024 Bond bears interest at the Taxable Rate.

"Taxable Rate" shall mean the interest rate per annum that shall provide the Owner with the same after-tax yield that the Owner would have otherwise received had the Event of Taxability not occurred, taking into account the increased taxable income of the Owner as a result of such Event of Taxability. The Owner shall provide the City with a written statement explaining the calculation of the Taxable Rate, which statement shall, in the absence of manifest error, be conclusive and binding on the City.

SECTION THREE. FINDINGS. The City Commission hereby finds and determines that:

(a) The City is a duly constituted and validly existing municipality within the State of Florida with requisite home rule powers derived from the Constitution and Laws of the State of Florida.

(b) The City desires to obtain funds in the amount not to exceed $2,500,000 to finance improvements to the City's telecommunications system and data center infrastructure, including related capital improvements (the "Series 2024 Project").

(c) In order to finance the Series 2024 Project, it is necessary and desirable to provide for the issuance of a capital improvement revenue bond (the "Series 2024 Bond").

(d) The capital improvement revenue bond to be issued to finance the Series 2024 Project will be secured by a covenant to budget and appropriate certain legally available Non-Ad Valorem Revenues of the City as set forth herein.

(e) Debt service on the Series 2024 Bond will be paid from legally available Non-Ad Valorem Revenues budgeted and appropriated in accordance with this Resolution. The Non-Ad Valorem Revenues are expected to be sufficient to pay the principal and interest on the Series 2024 Bond, as the same become due.

(f) The Series 2024 Bond to be issued under this Resolution does not constitute an indebtedness within the meaning of any constitutional or statutory debt limitation or restriction and is not subject to the provisions of any other law or charter relating to the authorization, issuance, or sale of bonds.

(g) The City has received responses to its Request for Proposals No. 2024-35 issued on June 9, 2024, for the financing of the Series 2024 Project pursuant to which the Finance Director, in conjunction with its financial advisor, has recommended Webster Bank, National Association (the "Purchaser") as the response containing the terms most favorable to the City. Due to the immediate need for funds, prevailing market conditions, and the nature of the contemplated financing, it is hereby determined that it is in the best interests of the public and the City to issue and sell the Series 2024 Bond to the Purchaser.

(h) The principal of and interest on the Series 2024 Bond shall be payable from and secured solely by a covenant to budget and appropriate legally available Non-Ad Valorem Revenues. Neither the City, nor the State of Florida or any political subdivision thereof or governmental authority or body therein, shall ever be required to levy ad valorem taxes to pay the principal of and interest on the Series 2024 Bond or any amounts due on the Series 2024 Bond, and the Series 2024 Bond shall not constitute a lien upon the Series 2024 Project, or upon any properties owned by or situated within the City except as provided herein with respect to the covenant to budget and appropriate legally available Non-Ad Valorem Revenues.

SECTION FOUR. RESOLUTION TO CONSTITUTE CONTRACT. In consideration of the acceptance of the Series 2024 Bond authorized to be issued hereunder by those who shall hold the same from time to time, this Resolution shall be deemed to be and shall constitute a contract between the City and such Owner. The covenants and agreements herein set forth to be performed by the City shall be for the benefit, protection and security of the legal Owner of the Series 2024 Bond.

SECTION FIVE. APPROVAL OF THE SERIES 2024 BOND AND SALE OF THE SERIES 2024 BOND TO PURCHASER; COVENANTS. The City hereby approves the issuance of the Series 2024 Bond and sale of same to the Purchaser. While the Series 2024 Bond

remains outstanding, the City shall deliver to the Owner: (i) a copy of the City's Annual Comprehensive Financial Report within 270 days after the end of each fiscal year, which may be in electronic .PDF format, and a copy of the annual budget of the City for each fiscal year within forty-five (45) days after adoption; and (ii) such other financial information as the Owner may reasonably request from time to time. The electronic audit or link may be sent to the following email address (or such other address as the Owner supplies to the City in writing): PublicFinance@WebsterBank.com. If the audit is not available within 270 days after the end of the City's fiscal year, the City will furnish unaudited financial statements to the Owner in the manner described in this Section, and will then furnish the audit to the Owner immediately upon the availability thereof.

SECTION SIX. AUTHORIZATION OF THE SERIES 2024 BOND AND SERIES 2024 PROJECT. Subject and pursuant to the provisions of this Resolution, an obligation of the City to be known as the "City of Ormond Beach, Florida Capital Improvement Revenue Bond, Series 2024" is hereby authorized to be issued under and secured by this Resolution, in the principal amount of not exceeding $2,500,000 for the purpose of providing funds to pay the costs of the Series 2024 Project and to pay the costs of issuing the Series 2024 Bond. The Series 2024 Bond shall be substantially in the form attached hereto as Exhibit "A" and is hereby approved, with such changes therein as shall be approved by any of the authorized officers executing the same, with such execution to constitute conclusive evidence of such officer's approval and the City's approval of any changes therein from the form set forth herein. The Finance Director of the City is hereby appointed Registrar and Paying Agent for the Series 2024 Bond.

The City shall pay interest upon the unpaid principal balance of the Series 2024 Bond at the Interest Rate, subject to adjustment as provided herein. Interest shall be due and payable semi-annually on each March 1 and September 1, commencing March 1, 2025, and shall be calculated based upon a year of 360 days consisting of twelve 30-day months. Principal of and interest on the Series 2024 Bond shall be payable from, and secured by, the legally available Non-Ad Valorem Revenues budgeted and appropriated by the City as provided in Section 8 hereof.

The Series 2024 Bond is subject to prepayment as set forth in Section 15 hereof and in the Series 2024 Bond.

In any case in which interest is due or the maturity date of the Series 2024 Bond or the date fixed for the redemption of the Series 2024 Bond shall be other than a Business Day, then payment of interest, principal or redemption price need not be made on such date but may be made on the next succeeding Business Day, with the same force and effect as if made on the due date, and no interest on such payment shall accrue for the period after such due date if payment is made on such next succeeding Business Day.

Except as otherwise provided herein, upon the occurrence of an Event of Taxability and for as long as the Series 2024 Bond remains outstanding, the Interest Rate on the Series 2024 Bond shall be converted to the Taxable Rate and this adjustment shall survive payment on the Series 2024 Bond until such time as the federal statute of limitations under which the interest on the Series 2024 Bond could be declared taxable under the Code shall have expired. In addition, upon an Event of Taxability, the City shall, immediately upon demand, pay to the Owner (or prior holders, if applicable) (i) an additional amount equal to the difference between (A) the amount of

interest actually paid on the Series 2024 Bond during the Taxable Period and (B) the amount of interest that would have been paid during the Taxable Period had the Series 2024 Bond borne interest at the Taxable Rate, and (ii) an amount equal to any interest, penalties and additions to tax (as referred to in Subchapter A of Chapter 68 of the Code) owed by the Owner as a result of the Event of Taxability (the "Additional Amount").

The Owner shall promptly notify the City in writing of any adjustments pursuant hereto. Such adjustments shall become effective as of the effective date of the event causing such adjustment. Adjustments pursuant hereto may be retroactive. The Owner shall provide to the City in writing the Additional Amount, if any, due to such Owner as a result of an adjustment pursuant hereto. Notwithstanding any provision hereto the contrary, in no event shall the interest rate on the Series 2024 Bond exceed the maximum rate permitted by law.

The Series 2024 Bond shall be issued in fully registered form without coupons; shall be issued as a current interest paying Series 2024 Bond; shall be payable in lawful money of the United States of America; and shall bear interest from its date, payable by direct debit of an account maintained by the City or other direct electronic payment to the Owner acceptable to the City and Owner.

The Series 2024 Bond shall be issued in certificated form and registered in the name of the Purchaser.

The Series 2024 Bond may only be transferred, in whole, to an "accredited investor" within the meaning of Rule 501 of the Securities Act of 1933, as amended (the "Securities Act") or a "qualified institutional buyer" within the meaning of Rule 144A promulgated under the Securities Act and shall bear a legend to such effect at the top of the first page thereof. Notwithstanding the foregoing, the Owner, in its sole discretion, shall have the right to assign the Series 2024 Bond, in whole, to an affiliate of the Owner.

The City shall within ten (10) days after it acquires knowledge thereof, notify the Owner in writing at its notice address (a) of any change in any material fact or circumstance represented or warranted by the City in this Resolution or in connection with the issuance of the Series 2024 Bond; (b) upon the happening, occurrence, or existence of any Event of Default, and (c) any event or condition which with the passage of time or giving of notice, or both, would constitute an Event of Default, and shall provide the Owner, with such written notice, a detailed statement by a responsible officer of the City of all relevant facts and the action being taken or proposed to be taken by the City with respect thereto. Regardless of the date of receipt of such notice by the Owner, such date shall not in any way modify the date of occurrence of the actual Event of Default.

The Series 2024 Project is hereby authorized.

SECTION SEVEN. CONDITIONS TO PURCHASE OF SERIES 2024 BOND BY PURCHASER. The City shall not be required to sell the Series 2024 Bond to the Purchaser and the Purchaser shall not be required to purchase the Series 2024 Bond until such time as the following conditions have been satisfied:

(a) Receipt by the Mayor of a Purchaser's letter of representations, and a disclosure letter containing the information required by Section 218.385, Florida Statutes.

(b) Receipt by the Purchaser of the City Attorney's opinion as to the due authorization, execution, delivery and enforceability of this Resolution, the Series 2024 Bond and such other matters required by the Purchaser.

(c) Receipt by the City, with a Reliance Letter to the Purchaser, of an opinion of Bond Counsel as to the exclusion of the interest on the Series 2024 Bond from gross income for federal tax purposes under the Code, and certain other matters related to the Series 2024 Bond.

(d) Such other conditions as shall be deemed necessary by Bond Counsel or the City Attorney.

Upon satisfaction of all the requirements set forth in this Section 7, the Mayor, upon the advice of the City's financial advisor as to the satisfaction of the provisions of this Resolution, is authorized to execute and deliver the Series 2024 Bond in exchange for the principal amount thereof from the Purchaser.

SECTION EIGHT. COVENANT TO BUDGET AND APPROPRIATE. The City covenants and agrees to appropriate in its annual budget, by amendment, if necessary, from Non-Ad Valorem Revenues lawfully available in each fiscal year, amounts sufficient to pay the principal of and interest on the Series 2024 Bond when due, and all other amounts due hereunder, all in accordance with the provisions of this Resolution. Such covenant and agreement on the part of the City to budget and appropriate such amounts of legally available Non-Ad Valorem Revenues shall be cumulative to the extent not paid and shall continue until such legally available Non-Ad Valorem Revenues or other legally available funds in amounts sufficient to make all such required payments shall have been budgeted, appropriated and actually paid. Notwithstanding the foregoing covenant of the City, the City does not covenant to maintain any services or programs, now provided or maintained by the City, which generate Non-Ad Valorem Revenues.

Such covenant to budget and appropriate does not create any lien upon or pledge of such Non-Ad Valorem Revenues, nor does it preclude the City from pledging in the future its Non-Ad Valorem Revenues, nor does it require the City to levy and collect any particular Non-Ad Valorem Revenues, nor does it give the Owner of the Series 2024 Bond a prior claim on the Non-Ad Valorem Revenues as opposed to claims of general creditors of such City. Such covenant to budget and appropriate legally available Non-Ad Valorem Revenues is subject in all respects to the payment of obligations secured by a pledge of such legally available Non-Ad Valorem Revenues heretofore or hereafter entered into (including the payment of debt service on bonds and other debt instruments). However, the covenant to budget and appropriate for the purposes and in the manner stated herein shall have the effect of making available for the payment of the Series 2024 Bond, in the manner described herein, legally available Non-Ad Valorem Revenues, and placing on the City a positive duty to appropriate and budget, by amendment, if necessary, amounts sufficient to meet its obligations hereunder; subject, however, to the payment of services and programs which are for essential public purposes affecting the health, welfare and safety of the inhabitants of the City ("Essential Government Services") and is subject further in all respects to the provisions of Section 166.241, Florida Statutes.

Anything in this Resolution to the contrary notwithstanding, it is understood and agreed that all obligations of the City hereunder shall be payable from the portion of legally available

Non-Ad Valorem Revenues budgeted and appropriated as provided for hereunder and nothing herein shall be deemed to pledge ad valorem tax revenues or to permit or constitute a mortgage or lien upon any assets owned by the City, and no Owner of the Series 2024 Bond, nor any other person, may compel the levy of ad valorem taxes on real or personal property within the boundaries of the City. Except as provided hereafter, neither this Resolution nor the obligations of the City hereunder shall be construed as a pledge of or a lien on all or any legally available Non-Ad Valorem Revenues of the City, but shall be payable solely as provided herein and is subject to the payment of services and programs which are for essential public purposes affecting the health, welfare and safety of the inhabitants of the City, and is subject further in all respects to the provisions of Section 166.241, Florida Statutes, provided that, except to the extent required to provide for Essential Government Services and payment of debt secured by a lien on specific non-ad valorem revenues, the City shall not be entitled to fail to budget and appropriate debt service on the Series 2024 Bond in order to balance its budget.

SECTION NINE. **ANTI-DILUTION TEST**. The City may incur additional Debt secured by all or a portion of the Non-Ad Valorem Revenues only if the total amount of Non-Ad Valorem Revenues for the prior Fiscal Year were at least 2.00 times the maximum annual debt service of all Debt to be paid from Non-Ad Valorem Revenues, including any Debt payable from one or several specific revenue sources, as reflected in a certificate of the City's Finance Director or Mayor and delivered to the Owner.

For purposes of calculating maximum annual debt service if the terms of the Debt are such that interest thereon for any future period of time is to be calculated at a rate which is not then susceptible of precise determination ("Variable Rate Debt"), interest on such Variable Rate Debt shall be computed as follows:

(a) if the principal amount of Variable Rate Debt (including any Variable Rate Debt proposed to be incurred) is less than or equal to 25% of the principal amount of all Debt (including the Debt proposed to be incurred), an interest rate equal to the higher of 12% per annum or The Bond Buyer 40 Index shall be assumed; or

(b) if the principal amount of Variable Rate Debt (including any Variable Rate Debt proposed to be incurred) is more than 25% of the principal amount of all Debt (including the Debt proposed to be incurred), the maximum rate which could be borne by such Variable Rate Debt shall be assumed.

For purposes of calculating maximum annual debt service, balloon indebtedness shall be assumed to amortize in up to 20 years (from the date of calculation) on a level debt service basis. In the event that the City is required to fund a reserve fund, the funding of such reserve fund shall be included in the calculation of debt service. For purposes of this paragraph, "balloon indebtedness" includes indebtedness if 25% or more of the principal amount thereof comes due in any one year.

SECTION TEN. **EXECUTION OF SERIES 2024 BOND**. The Series 2024 Bond shall be executed in the name of the City by its Mayor or Deputy Mayor, and the corporate seal of the City or a facsimile thereof shall be affixed thereto or reproduced thereon and attested by its City Clerk. The authorized signatures for the Mayor and City Clerk shall be either manual or in

facsimile. The Certificate of Authentication of the Bond Registrar shall appear on the Series 2024 Bond, and no Series 2024 Bond shall be valid or obligatory for any purpose or be entitled to any security or benefit under this Resolution unless such certificate shall have been duly executed on such Series 2024 Bond. The authorized signature for the Bond Registrar shall be either manual or in facsimile; provided, however, that at least one of the above signatures, including that of the authorized signature for the Bond Registrar, appearing on the Series 2024 Bond shall at all times be a manual signature. In case any one or more of the officers who shall have signed or sealed the Series 2024 Bond shall cease to be such officer of the City before the Series 2024 Bond so signed and sealed shall have been actually sold and delivered, such Series 2024 Bond may nevertheless be sold and delivered as herein provided and may be issued as if the person who signed or sealed such Series 2024 Bond had not ceased to hold such office. The Series 2024 Bond may be signed and sealed on behalf of the City by such person as at the actual time of the execution of such Series 2024 Bond shall hold the proper office, although at the date of such Series 2024 Bond such person may not have held such office or may not have been so authorized.

SECTION ELEVEN. **NEGOTIABILITY**. The Series 2024 Bond shall be and have all the qualities and incidents of a negotiable instrument under the laws of the State of Florida, and each successive Owner, in accepting any of the Series 2024 Bond, shall be conclusively deemed to have agreed that such Series 2024 Bond shall be and have all of the qualities and incidents of negotiable instruments under the laws of the State of Florida.

SECTION TWELVE. **REGISTRATION**. The City, through the Finance Director as Bond Registrar, shall be responsible for maintaining the books for the registration and transfer of the Series 2024 Bond. Upon surrender to the Bond Registrar for transfer or exchange of the Series 2024 Bond, duly endorsed for transfer or accompanied by an assignment or written authorization for exchange, whichever is applicable, duly executed by the Bondholder or his/her attorney duly authorized in writing, the Bond Registrar shall deliver in the name of the Bondholder or the transferee or transferees, as the case may be, a new fully registered Series 2024 Bond of the same maturity and interest rate and for the outstanding principal amount which the Bondholder is entitled to receive.

Any Series 2024 Bond presented for transfer or exchange (if so required by the City) shall be accompanied by a written instrument or instruments of transfer or authorization for exchange, in form and with guaranty of signature satisfactory to the City, duly executed by the Bondholder or by his/her duly authorized attorney. No presentment shall be required for any payment on the Series 2024 Bond except upon final maturity in which the Series 2024 Bond will be marked cancelled and promptly returned upon payment.

The City may require payment from the Bondholder or transferee of a sum sufficient to cover any tax, fee or other governmental charge (other than those imposed by the City) that may be imposed in connection with any exchange or transfer of the Series 2024 Bond. Such charges and expenses shall be paid before a new Series 2024 Bond shall be delivered.

Interest on and principal installments for the Series 2024 Bond shall be paid to the Bondholder whose name appears on the books of the Bond Registrar as of 5:00 p.m. (eastern time) on the Record Date.

A new Series 2024 Bond delivered upon any transfer or exchange shall be a valid obligation of the City, evidencing the same debt as the Series 2024 Bond surrendered, and shall be entitled to benefits hereof to the same extent surrendered, shall be secured by this Resolution and entitled to all of the security as the Series 2024 Bond surrendered.

The City and the Bond Registrar may treat the Owner of the Series 2024 Bond as the absolute owner thereof for all purposes, whether or not such Series 2024 Bond shall be overdue, and shall not be bound by any notice to the contrary.

SECTION THIRTEEN. **DISPOSITION OF SERIES 2024 BONDS PAID OR REPLACED**. Whenever the Series 2024 Bond shall be delivered to the Bond Registrar for cancellation, upon payment of the principal amount thereof, or for replacement, transfer or exchange, such Series 2024 Bond shall, after cancellation, either be retained by the Bond Registrar for a period of time specified in writing by the City, or at the option of the City, shall be destroyed by the Bond Registrar in accordance with the laws of the State, and counterparts of a certificate of destruction evidencing such destruction shall be furnished to the City.

SECTION FOURTEEN. **SERIES 2024 BONDS MUTILATED, DESTROYED, STOLEN OR LOST**. In case the Series 2024 Bond shall become mutilated, or be destroyed, stolen or lost, the City, acting as the Bond Registrar, may in its discretion issue and deliver a new Series 2024 Bond of like tenor as the Series 2024 Bond so mutilated, destroyed, stolen, or lost, in exchange and substitution for such mutilated Series 2024 Bond, upon surrender and cancellation of such mutilated Series 2024 Bond; or in lieu of and substitution for the Series 2024 Bond destroyed, stolen or lost, and upon the Bondholder furnishing proof of his ownership and the loss thereof (if lost, stolen or destroyed) and complying with such other reasonable regulations and conditions as the City may prescribe and paying (in advance if so required by the City) such taxes, governmental charges, attorneys fees, printing costs, and other expenses as the City may charge and/or incur. The Series 2024 Bond so surrendered shall be cancelled by the Bond Registrar. Any such duplicate Series 2024 Bond issued pursuant to this Section shall constitute an original contractual obligation on the part of the City, whether or not the lost, stolen or destroyed Series 2024 Bond shall be at any time found by anyone; and such duplicate Series 2024 Bond shall be entitled to equal and proportionate benefits and rights as to lien, source and security for payment, pursuant to this Resolution from the funds, as hereinafter provided, to the same extent as the original Series 2024 Bond issued under this Resolution.

SECTION FIFTEEN. **PROVISIONS FOR PREPAYMENT**. The Series 2024 Bond is not subject to prepayment prior to September 1, 2026. On or after September 1, 2026, the Series 2024 Bond may be pre-paid in whole or in part on any Payment Date subject to the terms hereof and upon at least thirty (30) days' prior written notice to the Owner specifying the amount of prepayment. For prepayment dates on September 1, 2026 through and including August 31, 2027, a prepayment premium equal to two percent (2%) of the principal amount being prepaid shall be payable to the Owner. For prepayment dates on September 1, 2027 through and including August 31, 2028, a prepayment premium equal to one percent (1%) of the principal amount being prepaid shall be payable to the Owner. For prepayment dates on or after September 1, 2028, no prepayment premium shall be due.

Any partial prepayment shall (a) occur on a Payment Date, (b) occur no more than once during any consecutive 12-month period, (c) be in a principal amount of not less than $250,000, and (d) be applied to the then remaining principal repayment schedule in inverse order of installments coming due.

Any notice of prepayment shall set forth the date fixed for prepayment, the prepayment price to be paid and, if less than all of the unpaid principal balance of the Series 2024 Bond then Outstanding shall be called for prepayment, the portion of the principal amount thereof to be prepaid. Any notice mailed as provided in this subsection shall be conclusively presumed to have been duly given, whether or not the Owner actually receives such notice.

SECTION SIXTEEN. **FORM OF SERIES 2024 BOND**. The text of the Series 2024 Bond, together with the Certificate of Authentication of the Bond Registrar, shall be substantially of the tenor set forth in Exhibit "A" hereto, with such omissions, insertions and variations as may be necessary or desirable and authorized or permitted by this Resolution or any subsequent resolution adopted prior to the issuance thereof; or as may be necessary to comply with applicable laws, rules and regulations of the United States Government and the State of Florida in effect upon the issuance thereof.

SECTION SEVENTEEN. **APPLICATION OF SERIES 2024 BOND PROCEEDS**. Upon the issuance of the Series 2024 Bond, the proceeds received from the sale of the Series 2024 Bond shall be applied by the City simultaneously with its delivery to the Purchaser as follows:

(a) An amount equal to the amount determined by the Finance Director to be necessary to finance the Series 2024 Project shall be deposited or invested in a manner consistent with Section 18 of this Resolution at the direction of the Finance Director, who shall apply such moneys to pay or reimburse the costs of the Series 2024 Project. Any balance remaining after payment or provision for payment of such costs shall be used solely to pay principal of and interest on the Series 2024 Bond.

(b) The remainder of the proceeds shall be deposited or invested in a manner consistent with Section 18 of this Resolution at the direction of the Finance Director and shall be disbursed at the direction of the Finance Director (i) for payment of costs and expenses incurred in issuing the Series 2024 Bond (including payment of the expenses of the City), and (ii) for payment of any costs, payments, or expenses of entering into, or otherwise due from the City under, any agreement entered into in connection with the issuance of the Series 2024 Bond. Any balance remaining after payment or provision for payment of such costs and expenses has been made shall be used solely to pay principal of and interest on the Series 2024 Bond.

SECTION EIGHTEEN. **INVESTMENT OF BOND PROCEEDS**. All proceeds of the Series 2024 Bond may be deposited in an Authorized Depository and/or invested in such investments as may be permitted by applicable law from time to time.

SECTION NINETEEN. **REMEDIES**. Upon the occurrence and during the continuance of an Event of Default, the Owner may proceed to protect and enforce its rights under the laws of the State or under this Resolution by such suits, actions or special proceedings in equity or at law,

or by proceedings in the office of any board or officer having jurisdiction, either for the specific performance of any covenant or agreement contained herein or in aid or execution of any power herein granted or for the enforcement of any proper legal or equitable remedy, as the Owner shall deem most effective to protect and enforce such rights. Without limiting the generality of the foregoing, the Owner shall have the right to bring a mandamus action to require the City to perform its obligations under this Resolution, provided, the Owner shall never have the right to compel the exercise of the ad valorem taxing power of the City or the taxation in any form of any property to pay the Series 2024 Bond or the interest thereon.

In the enforcement of any remedy under this Resolution, to the extent permitted by law, an Owner shall be entitled to sue for, enforce payment of and receive any and all amounts then or during any default becoming due from the City for principal, interest or otherwise under any of the provisions of this Resolution or of the Series 2024 Bond then unpaid, together with any and all costs and expenses of collection and of all proceedings hereunder and under the Series 2024 Bond (including, without limitation, reasonable legal fees in all proceedings, including administrative, appellate and bankruptcy proceedings), but payable from only the legally available Non-Ad Valorem Revenues budgeted and appropriated by the City as provided herein, without prejudice to any other right or remedy of the Owner, and to recover and enforce any judgment or decree against the City, but solely as provided herein and in the Series 2024 Bond, for any portion of such amounts remaining unpaid and interest, costs, and expenses as above provided, and to collect (but only from the legally available Non-Ad Valorem Revenues budgeted and appropriated by the City as provided herein) in any manner provided by law, the moneys adjudged or decreed to be payable.

SECTION TWENTY. REMEDIES NOT EXCLUSIVE. No remedy herein conferred upon or reserved to an Owner is intended to be exclusive of any other remedy or remedies herein provided, and each and every such remedy shall be cumulative and shall be in addition to every other remedy given hereunder.

SECTION TWENTY-ONE. WAIVERS, ETC. No delay or omission of an Owner to exercise any right or power accruing upon any default shall impair any such right or power or shall be construed to be a waiver of any such default or any acquiescence therein; and every power and remedy given by this Resolution to an Owner may be exercised from time to time and as often as may be deemed expedient.

An Owner may waive any default which in its opinion shall have been remedied before the entry of final judgment or decree in any suit, action or proceeding instituted by it under the provisions of this Resolution or before the completion of the enforcement of any other remedy under this Resolution, but no such waiver shall be effective unless in writing and no such waiver shall extend to or affect any other existing or any subsequent default or defaults or impair any rights or remedies consequent thereon.

SECTION TWENTY-TWO. TAX COVENANTS. The City will not take any action or omit to take any action which action or omission would result in inclusion in gross income for federal income tax purposes of interest on the Series 2024 Bond. Particularly, (i) the City will not take any action or omit to take any action which action or omission would cause the Series 2024 Bond to be "arbitrage bonds" within the meaning of Section 148 of the Code; (ii) the City will not take any action or omit to take any action which would cause the Series 2024 Bond not intended

on its date of issuance to be "private activity bonds" within the meaning of Section 141 of the Code to be "private activity bonds" within the meaning of that Section; and (iii) the City will not take any action or omit to take any action which would cause the Series 2024 Bond intended on its date of issuance to be "private activity bonds" within the meaning of Section 141 of the Code not to be "qualified bonds" as that term is defined in said Section. In the event that an adverse determination is made or threatened by the Internal Revenue Service with respect to any of the matters described in the foregoing clauses (i), (ii) or (iii), the City shall use its best efforts and undertake all reasonable action in order to vigorously contest such adverse determination. In furtherance of the foregoing covenants, the City agrees that it will comply with the provisions of a tax compliance certificate to be prepared by Bond Counsel and executed and delivered on the date of issuance of the Series 2024 Bond. The Finance Director or such other appropriate official of the City is hereby authorized to execute and deliver such tax compliance certificate.

The City shall comply with and shall make all calculations required to be made pursuant to the arbitrage rebate covenants contained or provided for in the tax compliance certificates of the City delivered in connection with the issuance of the Series 2024 Bond. Notwithstanding anything in this Resolution to the contrary, the requirement of the City to rebate any amounts due to the United States pursuant to Section 148 of the Code in connection with the Series 2024 Bond shall survive the payment or provision for payment of the principal, interest and redemption premium, if any, with respect to the Series 2024 Bond or any portion of the Series 2024 Bond.

SECTION TWENTY-THREE. AUTHORIZATION OF EXECUTION OF OTHER CERTIFICATES AND OTHER INSTRUMENTS. The Mayor or other members of the City Commission or authorized City staff is hereby authorized and directed to execute and deliver certificates of the City certifying such facts as Greenberg Traurig, P.A., as bond counsel, shall require, in connection with the issuance, sale and delivery of the Series 2024 Bond and to execute and deliver such other instruments as shall be necessary or desirable to perform the City's obligations under any agreement securing such Series 2024 Bond.

SECTION TWENTY-FOUR. GENERAL AUTHORITY. The City Manager, the Finance Director, the members of the City Commission, the Mayor and its officers, counsel, agents and officials are hereby authorized to do all acts and things required of them consistent with the requirements of this Resolution and any other document relating to the issuance of the Series 2024 Bond for the full punctual and complete performance of all the terms, covenants and agreements contained in the Series 2024 Bond, this Resolution and such other documents. The Deputy Mayor and any other member of the City Commission is authorized to do all things required or permitted by this Resolution of the Mayor in his or her absence or unavailability.

SECTION TWENTY-FIVE. SEVERABILITY OF INVALID PROVISIONS. If any one or more of the covenants, agreements or provisions contained herein shall be held contrary to any express provisions of law or contrary to the policy of express law, though not expressly prohibited, or against public policy, or shall for any reason whatsoever be held invalid, then such covenants, agreements or provisions shall be null and void and shall be deemed severable from the remaining covenants, agreements or provisions hereof and shall in no way affect the validity of any of the other provisions of this Resolution.

SECTION TWENTY-SIX. WAIVER OF JURY TRIAL. The City knowingly, voluntarily, and intentionally waives any right it may have to a trial by jury, with respect to any litigation or legal proceedings based on or arising out of this Resolution or the Series 2024 Bond, including any course of conduct, course of dealings, verbal or written statement or actions or omissions of any party which in any way relates to the Series 2024 Bond or this Resolution.

SECTION TWENTY-SEVEN. APPLICABLE LAW AND VENUE. The Series 2024 Bond shall be governed by applicable federal law and the laws of the State of Florida. Unless applicable law provides otherwise, in the event of any legal proceeding arising out of or related to the Series 2024 Bond, the jurisdiction and venue shall be in Volusia County, Florida.

SECTION TWENTY-EIGHT. MODIFICATION OR AMENDMENT. No modification or amendment of this Resolution or of any resolution amendatory hereof or supplemental hereto may be made except with the written consent of the Owner.

SECTION TWENTY-NINE. NOTICES. Unless otherwise provided herein, all demands, notices, approvals, consents, requests, opinions, and other communications given hereunder shall be in writing and shall be deemed to have been given when delivered in person, when transmitted if transmitted by telecopy, or other similar electronic or digital transmission method (provided customary evidence of receipt is obtained), or mailed by first class registered or certified mail, postage prepaid, addressed as follows:

To the City:	City of Ormond Beach, Florida 22 South Beach Street Ormond Beach, Florida 32174 Attention: Kelly McGuire, Finance Director Telephone: (386) 676-3226 Email: Kelly.McGuire@ormondbeach.org
To the Purchaser:	Webster Bank, National Association 360 Lexington Avenue, 5th Floor New York, NY 10017 Attn: Public Sector Finance Telephone: (212) 847-7158 Email: PublicFinance@websterbank.com

SECTION THIRTY. PUBLIC RECORDS. The Purchaser, to the extent required by law, shall comply with the requirements set forth under Section 119.0701, Florida Statutes. Nothing in this section shall be construed as a determination of the applicability of Section 119.0701, Florida Statutes with respect to the Purchaser.

SECTION THIRTY-ONE. **REPEAL OF INCONSISTENT PROVISIONS**. All resolutions or parts thereof in conflict with this Resolution are hereby repealed to the extent of such conflict.

SECTION THIRTY-TWO. NO ADVISORY OR FIDUCIARY RELATIONSHIP. In connection with all aspects of each transaction contemplated hereunder (including in connection

with any amendment, waiver or other modification hereof or of the Series 2024 Bond), the City acknowledges and agrees, that: (a) (i) the City has consulted its own financial and/or municipal, legal, accounting, regulatory and tax advisors to the extent it has deemed appropriate, (ii) the City is capable of evaluating, and understands and accepts, the terms, risks and conditions of the transactions contemplated hereby and by the Series 2024 Bond, (iii) the Purchaser is not acting as a municipal advisor or financial advisor to the City, and (iv) the Purchaser has no fiduciary duty pursuant to Section 15B of the Securities Exchange Act to the City with respect to the transactions contemplated hereby and the discussions, undertakings and procedures leading thereto (irrespective of whether the Purchaser has provided other services or is currently providing other services to the City on other matters); (b) (i) the Purchaser is and has been acting solely as a principal in an arm's length lending transaction and has not been, is not, and will not be acting as an advisor, agent or fiduciary, for the City or any other person and (ii) the Purchaser has no obligation to the City, with respect to the transactions contemplated hereby except those obligations expressly set forth herein and in the Series 2024 Bond; (c) notwithstanding anything herein to the contrary, it is the intention of the City and the Purchaser that the Series 2024 Bond represent a commercial loan transaction not involving the issuance and sale of a municipal security, and that any bond, note or other debt instrument that may be delivered to the Purchaser is delivered solely to evidence the repayment obligations of the City under the Series 2024 Bond; and (d) the Purchaser may be engaged in a broad range of transactions that involve interests that differ from those of the City, and the Purchaser has no obligation to disclose any of such interests to the City. The City acknowledges that the Purchaser is purchasing the Series 2024 Bond pursuant to and in reliance upon the bank exemption and/or the institutional buyer exemption provided under the municipal advisor rules of the Securities and Exchange Commission, Rule 15Bal-1 *et seq*, to the extent that such rules apply to the transactions contemplated hereunder.

SECTION THIRTY-THREE. **PERMISSION TO USE INFORMATION**. The City agrees and consents that the Purchaser shall be permitted to use information related to the transaction in connection with marketing, press releases or other transactional announcements or updates provided to investors or trade publications, including, but not limited to, the placement of the logo or other identifying name on marketing materials or of "tombstone" advertisements in publications of its choice at its own expense.

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SECTION THIRTY-FOUR. EFFECTIVE DATE. This Resolution shall become effective immediately upon its adoption.

ADOPTED by the City Commission at a meeting held on the 20th day of August, 2024.

CITY OF ORMOND BEACH, FLORIDA

By:_____
BILL PARTINGTON
Mayor

ATTEST:

By:_____
SUSAN CARROLL DAUDERIS
City Clerk

APPROVED AS TO FORM AND
LEGAL SUFFICIENCY:

By:_____
RANDY HAYES
City Attorney

CERTIFICATE

STATE OF FLORIDA)
COUNTY OF VOLUSIA) SS:
CITY OF ORMOND BEACH)

I, SUSAN CARROLL DAUDERIS, as City Clerk of the City of Ormond Beach, Florida; do hereby certify that the foregoing is a true, correct and complete copy of Resolution No. 2024-123 as the same appears of record at City Hall, City of Ormond Beach, Florida.

Dated this 20th day of August, 2024.

_____
SUSAN CARROLL DAUDERIS
City Clerk
CITY OF ORMOND BEACH, FLORIDA

EXHIBIT A

Form of Bond

THIS SERIES 2024 BOND MAY ONLY BE TRANSFERRED, IN WHOLE, TO A REGISTERED OWNER CERTIFYING THAT SUCH REGISTERED OWNER IS AN "ACCREDITED INVESTOR" WITHIN THE MEANING OF RULE 501 OF REGULATION D PROMULGATED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, A "QUALIFIED INSTITUTIONAL BUYER" WITHIN THE MEANING OF RULE 144A PROMULGATED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, OR AN AFFILIATE OF THE REGISTERED OWNER.

No. R-1 $_____

UNITED STATES OF AMERICA
STATE OF FLORIDA
CITY OF ORMOND BEACH
CAPITAL IMPROVEMENT REVENUE BOND, SERIES 2024

RATE OF INTEREST	**MATURITY DATE**	**DATE OF ORIGINAL ISSUE**
4.29% (subject to adjustment as provided in the Resolution)	September 1, 2034	August 26, 2024

REGISTERED OWNER: WEBSTER BANK, NATIONAL ASSOCIATION

PRINCIPAL AMOUNT: _____

KNOW ALL MEN BY THESE PRESENTS, that the City of Ormond Beach, Florida (the "City"), for value received hereby promises to pay to the Registered Owner designated above, or registered assigns, solely from the special funds hereinafter mentioned, on the Maturity Date identified above (or earlier as hereinafter provided) and in the amounts payable in principal installments set forth on the payment schedule attached hereto and to pay solely from such special funds, interest hereon from the date of this Series 2024 Bond or from the most recent interest payment date to which interest has been paid, whichever is applicable, until payment of such sum, at the rate per annum set forth above, calculated on the basis of a 360-day year consisting of twelve 30-day months, payable semiannually on March 1 and September 1 in each year, commencing on March 1, 2025 (or if any such date is not a Business Day (as defined in the Resolution), then on the next Business Day thereafter), by direct debit or other direct electronic payment to the Registered Owner acceptable to the City and Registered Owner, on the registration books of the City. The principal of, premium, if any, and interest on this Series 2024 Bond are payable in lawful money of the United States of America. No presentment shall be required for any payment on this Series 2024 Bond and upon final maturity shall be cancelled by the Registered Owner and promptly returned to the City.

This Series 2024 Bond constitutes the sole bond of an authorized issue of bonds issued to finance certain capital improvements to the City's telecommunications system and data center infrastructure, under the authority of and in full compliance with the Constitution and Statutes of the State of Florida, including particularly Chapter 166, Part II, Florida Statutes, and the Charter

of the City of Ormond Beach, Florida, Resolution No. 2024-123, adopted on August 20, 2024 (the "Resolution") and other applicable provisions of law. Terms not otherwise defined in this Series 2024 Bond shall have the meanings ascribed to them in the Resolution.

The City covenants and agrees to appropriate in its annual budget, by amendment, if necessary, from Non-Ad Valorem Revenues lawfully available in each fiscal year, amounts sufficient to pay the principal of and interest on this Series 2024 Bond when due, all in accordance with the provisions of the Resolution. Such covenant and agreement on the part of the City to budget and appropriate such amounts of legally available Non-Ad Valorem Revenues shall be cumulative to the extent not paid and shall continue until such legally available Non-Ad Valorem Revenues or other legally available funds in amounts sufficient to make all such required payments shall have been budgeted, appropriated and actually paid. Notwithstanding the foregoing covenant of the City, the City does not covenant to maintain any services or programs, now provided or maintained by the City, which generate Non-Ad Valorem Revenues.

Such covenant to budget and appropriate does not create any lien upon or pledge of such Non-Ad Valorem Revenues, nor does it preclude the City from pledging in the future its Non-Ad Valorem Revenues, nor does it require the City to levy and collect any particular Non-Ad Valorem Revenues, nor does it give the Registered Owner of this Series 2024 Bond a prior claim on the Non-Ad Valorem Revenues as opposed to claims of general creditors of the City. Such covenant to budget and appropriate legally available Non-Ad Valorem Revenues is subject in all respects to the payment of obligations secured by a pledge of such legally available Non-Ad Valorem Revenues heretofore or hereafter entered into (including the payment of debt service on bonds and other debt instruments). However, the covenant to budget and appropriate for the purposes and in the manner stated herein shall have the effect of making available for the payment of this Series 2024 Bond, in the manner described herein, legally available Non-Ad Valorem Revenues, and placing on the City a positive duty to appropriate and budget, by amendment, if necessary, amounts sufficient to meet its obligations hereunder; subject, however, to the payment of services and programs which are for Essential Government Services and is subject further in all respects to the provisions of Section 166.241, Florida Statutes.

Anything herein to the contrary notwithstanding, it is understood and agreed that all obligations of the City hereunder shall be payable from the portion of legally available Non-Ad Valorem Revenues budgeted and appropriated as provided for hereunder and nothing herein shall be deemed to pledge ad valorem tax revenues or to permit or constitute a mortgage or lien upon any assets owned by the City, and no Registered Owner of this Series 2024 Bond, nor any other person, may compel the levy of ad valorem taxes on real or personal property within the boundaries of the City. Except as provided hereafter, neither the Resolution nor the obligations of the City thereunder shall be construed as a pledge of or a lien on all or any legally available Non-Ad Valorem Revenues of the City, but shall be payable solely as provided therein and is subject to the payment of services and programs which are for essential public purposes affecting the health, welfare and safety of the inhabitants of the City, and is subject further in all respects to the provisions of Section 166.241, Florida Statutes, provided that, except to the extent required to provide for Essential Government Services and payment of debt secured by a lien on specific non-ad valorem revenues, the City shall not be entitled to fail to budget and appropriate debt service on this Series 2024 Bond in order to balance its budget.

It is expressly agreed by the Registered Owner of this Series 2024 Bond that such Registered Owner shall never have the right to require or compel the levy of ad valorem taxes for the payment of the principal of and interest on this Series 2024 Bond or for the making of any

sinking fund or other payment specified in the Resolution. This Series 2024 Bond and the indebtedness evidenced thereby shall not constitute a lien upon any property of or in the City, but shall constitute a lien only upon the legally available Non-Ad Valorem Revenues budgeted and appropriated by the City, in the manner and to the extent provided in the Resolution.

Except as otherwise provided herein, upon the occurrence of an Event of Taxability and for as long as this Series 2024 Bond remains outstanding, the Interest Rate on this Series 2024 Bond shall be converted to the Taxable Rate and this adjustment shall survive payment on this Series 2024 Bond until such time as the federal statute of limitations under which the interest on the Series 2024 Bond could be declared taxable under the Code shall have expired. In addition, upon an Event of Taxability, the City shall, immediately upon demand, pay to the Registered Owner (or prior Registered Owner(s), if applicable) (i) an additional amount equal to the difference between (A) the amount of interest actually paid on this Series 2024 Bond during the Taxable Period and (B) the amount of interest that would have been paid during the Taxable Period had this Series 2024 Bond borne interest at the Taxable Rate, and (ii) an amount equal to any interest, penalties and additions to tax (as referred to in Subchapter A of Chapter 68 of the Code) owed by the Registered Owner as a result of the Event of Taxability.

This Series 2024 Bond may be transferred upon the books of the City upon surrender hereof to the City with an assignment duly executed by the Registered Owner or his duly authorized attorney, but only in the manner, subject to the limitations and upon payment of a sum sufficient to cover any tax, fee or governmental charge (other than those of the City), if any, that may be imposed in connection with any such transfer, as provided in the Resolution. Upon any such transfer, there shall be executed in the name of the transferee, and the City shall deliver, a new registered bond in the same outstanding principal amount, maturity and interest rate as this Series 2024 Bond.

In like manner, subject to such conditions and upon the payment of a sum sufficient to cover any tax, fee or governmental charge, if any, that may be imposed in connection with any such exchange, the Registered Owner of this Series 2024 Bond may surrender the same (together with a written instrument of transfer satisfactory to the City duly executed by the Registered Owner or his duly authorized attorney) in exchange for an equal outstanding principal amount thereof and of the same maturity and interest rate as this Series 2024 Bond.

It is hereby certified and recited that all acts, conditions and things required to exist, to happen and to be performed precedent to and in the issuance of this Series 2024 Bond exist, have happened and have been performed in regular and due form and time as required by the Statutes and Constitution of the State of Florida applicable thereto; and that the issuance of this Series 2024 Bond, does not violate any constitutional or statutory limitation.

The Series 2024 Bond is not subject to prepayment prior to September 1, 2026. On or after September 1, 2026, the Series 2024 Bond may be pre-paid in whole or in part on any Payment Date subject to the terms hereof and upon at least thirty (30) days' prior written notice to the Registered Owner specifying the amount of prepayment. For prepayment dates on September 1, 2026 through and including August 31, 2027, a prepayment premium equal to two percent (2%) of the principal amount being prepaid shall be payable to the Registered Owner. For prepayment dates on September 1, 2027 through and including August 31, 2028, a prepayment premium equal to one percent (1%) of the principal amount being prepaid shall be payable to the Registered Owner. For prepayment dates on or after September 1, 2028, no prepayment premium shall be due. Any partial prepayment shall (a) occur on a Payment Date, (b) occur no more than once

during any consecutive 12-month period, (c) be in a principal amount of not less than $250,000, and (d) be applied to the then remaining principal repayment schedule in inverse order of installments coming due hereunder.

This Series 2024 Bond is and has all the qualities and incidents of a negotiable instrument under the laws of the State of Florida.

This Series 2024 Bond shall not be valid or become obligatory for any purpose or be entitled to any security or benefit under the Resolution until the certificate of authentication hereon shall have been executed by the City as Bond Registrar.

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IN WITNESS WHEREOF, the City of Ormond Beach, Florida, has issued this Series 2024 Bond and has caused the same to be executed by its Mayor, and its corporate seal to be impressed, imprinted or otherwise reproduced hereon and attested by its City Clerk, all as of August 26, 2024.

(SEAL) **CITY OF ORMOND BEACH, FLORIDA**

By:_____
Bill Partington, Mayor

ATTESTED:

By: _____
Susan Carroll Dauderis, City Clerk

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CERTIFICATE OF AUTHENTICATION OF BOND REGISTRAR

This Series 2024 Bond is the Series 2024 Bond described in the Resolution.

CITY OF ORMOND BEACH, FLORIDA

By:_____
Bill Partington, Mayor

Date of Authentication: August 26, 2024

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ABBREVIATIONS

The following abbreviations, when used in the inscription on the face of the within bond, shall be construed as though they were written out in full according to applicable laws or regulations:

TEN COM -	as tenants in common	UNIF GIF/TRANS MIN ACT -	_____ (Cust.)
TEN ENT -	as tenants by the entireties	Custodian for	_____ (Minor)
JT TEN -	as joint tenants with right of survivorship and not as tenants in common	under Uniform Gifts/Transfers to Minors Act of	_____ (State)

Additional abbreviations may also be used though not in list above.

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ASSIGNMENT

FOR VALUE RECEIVED, the undersigned sells, assigns and transfers to _____ _____ (PLEASE INSERT NAME, ADDRESS AND SOCIAL SECURITY OR ASSIGNEE) the within bond and does OTHER IDENTIFYING NUMBER OF hereby irrevocably constitute and appoint _____ as his agent to transfer the bond with full power of on the books kept for registration thereof, substitution in the premises.

Dated:

NOTICE: The signature to this assignment must correspond with the name of the Registered Owner as it appears upon the face of the within bond in every particular, without alteration or enlargement or change whatever.

Signature guaranteed:

Signature guarantee by guarantor institution participating in Securities Transfer Agents Medallion Program, or in other guarantee program acceptable to Bond Registrar

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PRINCIPAL PAYMENT SCHEDULE

$2,500,000

Date	Principal $
TOTAL:	$2,500,000.00

City of Ormond Beach
AGENDA ITEM

August 20, 2024 - City Commission

Number: 7.C

Section:	CONSENT AGENDA		
Item Category:	Consent - Resolution	**Res./Ord. No:**	2024-124
Strategic Goal:	Governance - Other		
Department:	Finance		
Subject:	RFP Award - 2024-34, Water & Sewer Bonds 2024		

Summary:

On June 4, 2024, the City Commission approved the issuance of RFP 2024-34, Water & Sewer Bonds 2024 to provide the necessary financing for these 3 planned projects.

Project	Description	Estimated Borrowing Needed
Water Reclaimation Facility UV Disinfection Conversion	Conversion from using chlorine contact chamber to disinfect wastewater to ultraviolet light treatment.	$5,000,000
State Road 40 Watermain & Forcemain	Completion of a watermain and forcemain loop to improve services to the western area of the City.	$6,000,000
Aerator & Clearwell Project	Replacement of the aeration and clearwell systems.	$2,000,000

Five proposals were received and reviewed by Finance Dept staff, City's Financial Bond Advisor, and City's Bond Counsel. The team agreed the best proposal was provided by TD Bank with the following terms:

Financing Amount:	$13,000,000
Interest Rate:	4.17%
Prepayment Options:	Prepayment without penalty any time upon 30 days prior notice

Financial Impact:	Funding to repay the water and sewer bonds is available in Fund 414-Water & Wastewater Debt Service Fund.
Citizen Impact:	Replacement of water and sewer infrastructure is critical to maintaining a safe and reliable utility system.
Recommended Action (Staff, Advisory Board and/or Other):	Staff recommends approval of the proposal from TD Bank to provide $13,000,000 in financing for the 3 utility projects.
Staff Contact:	Kelly McGuire, Finance Director, (386) 676-3226
Attachments:	1. 24-124 Ormond W S Bonds-699603136
Approval:	Kelly McGuire, Finance Director 8/6/2024 Shawn Finley, Assistant City Manager 8/9/2024 Joyce Shanahan, City Manager 8/14/2024

RESOLUTION NO. 2024-124

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF ORMOND BEACH, FLORIDA AUTHORIZING THE ISSUANCE OF NOT TO EXCEED $13,000,000 IN PRINCIPAL AMOUNT OF ITS WATER AND SEWER REVENUE BOND, SERIES 2024, FOR THE PURPOSE OF FINANCING THE CONSTRUCTION AND ACQUISITION OF CERTAIN ADDITIONS, EXTENSIONS AND IMPROVEMENTS TO THE WATER AND SEWER SYSTEM OF THE CITY; DETERMINING CERTAIN DETAILS OF SAID BOND; PROVIDING FOR THE SECURITY OF SAID BOND; AWARDING THE SALE OF SAID BOND TO THE SUCCESSFUL PROPOSER FOR SAID BOND; APPOINTING A PAYING AGENT AND REGISTRAR FOR SAID BOND; AUTHORIZING THE PROPER OFFICIALS TO DO ALL THINGS DEEMED NECESSARY IN CONNECTION WITH THE ISSUANCE, SALE AND DELIVERY OF SAID BOND; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, on June 21, 1988, the City Commission (the "City Commission") of the City of Ormond Beach, Florida (the "City"), duly adopted Resolution No. 88-96 (the "Original Resolution"), authorizing the issuance of not exceeding $34,000,000 City of Ormond Beach, Florida Water and Sewer Revenue Bonds, Series 1988 (the "1988 Bonds") to finance the cost of refunding certain outstanding water and sewer revenue bonds of the City and to provide the funds necessary for the construction and acquisition of additions, extensions and improvements to the water and sewer system of the City; and

WHEREAS, on July 5, 1988, the City Commission duly adopted Resolution No. 88-105, which, among other things, established certain details of the 1988 Bonds; and

WHEREAS, on July 14, 1988, the City issued the 1988 Bonds in an aggregate principal amount of $33,495,000; and

WHEREAS, on March 10, 1992, the City Commission duly adopted Resolution No. 92-54, amending the Original Resolution to further secure the bonds issued and to be issued from time to time thereunder; and

WHEREAS, on March 10, 1992, the City Commission duly adopted Resolution No. 92-55, supplementing the Original Resolution by authorizing the issuance of not exceeding $32,000,000 City of Ormond Beach, Florida Water and Sewer Refunding Revenue Bonds, Series 1992 (the "1992 Bonds") to finance the cost of refunding a portion of the then outstanding 1988 Bonds; and

WHEREAS, on June 17, 1992, the City issued the 1992 Bonds in an aggregate principal amount of $30,565,000; and

WHEREAS, on April 2, 1996, the City Commission duly adopted Resolution No. 96-86 (the "1996 Series Resolution"), further supplementing and amending the Original Resolution by authorizing the issuance of not exceeding $3,500,000 City of Ormond Beach, Florida Water and Sewer Revenue Bonds, Series 1996 (the "1996 Bonds") for the purpose of (i) paying all or a portion of the costs of improvements to and expansion of the reclaimed water reuse component of the Water and Sewer System of the City; (ii) paying certain capitalized interest on the 1996 Bonds; (iii) making a deposit to the Debt Service Reserve Account (as defined in the Original Resolution); and (iv) paying certain costs associated with the issuance of the 1996 Bonds; and

WHEREAS, on June 5, 1996, the City Commission duly adopted Resolution No. 96-131, amending and supplementing the 1996 Series Resolution and further amending and supplementing the Original Resolution in certain respects; and

WHEREAS, on June 6, 1996, the City issued the 1996 Bonds in an aggregate principal amount of $3,200,000; and

WHEREAS, on November 21, 2000, the City Commission duly adopted Resolution No. 2000-201, further amending and supplementing the Original Resolution by authorizing the issuance of not exceeding $26,000,000 City of Ormond Beach, Florida Water and Sewer Refunding Revenue Bonds, Series 2000 (the "2000 Bonds") to finance the cost of refunding the then outstanding 1992 Bonds; and

WHEREAS, on January 30, 2001, the City issued the 2000 Bonds in an aggregate principal amount of $25,445,000; and

WHEREAS, on September 7, 2004, the City Commission duly adopted Resolution No. 2004-140, supplementing the Original Resolution by authorizing the issuance of not exceeding $2,650,000 City of Ormond Beach, Florida Water and Sewer Refunding Revenue Bonds, Series 2004 (the "2004 Bonds") to finance the cost of refunding the then outstanding 1996 Bonds; and

WHEREAS, on September 8, 2004, the City issued the 2004 Bonds as a single bond in the principal amount of $2,586,000; and

WHEREAS, on April 4, 2006, the City Commission duly adopted Resolution No. 2006-79, supplementing the Original Resolution by authorizing the issuance of not exceeding $9,000,000 City of Ormond Beach, Florida Water and Sewer Revenue Bond, Series 2006 (the "2006 Bond") to finance the cost of the construction and acquisition of certain additions, extensions and improvements to the water and sewer system of the City; and

WHEREAS, on April 5, 2006, the City issued the 2006 Bond in the principal amount of $8,300,000; and

WHEREAS, on June 19, 2007, the City Commission duly adopted Resolution No. 2007-87, supplementing the Original Resolution by authorizing the issuance of not exceeding $7,000,000 City of Ormond Beach, Florida Water and Sewer Revenue Bond, Series 2007 (the "2007 Bond") to finance the cost of the construction and acquisition of certain additions, extensions and improvements to the water and sewer system of the City; and

WHEREAS, on June 20, 2007, the City issued the 2007 Bond in the principal amount of $6,550,000; and

WHEREAS, on July 20, 2010, the City Commission duly adopted Resolution No. 2010-98, supplementing the Original Resolution by authorizing the issuance of: (i) the $20,000,000 City of Ormond Beach, Florida Water and Sewer Revenue Bond, Series 2010A (the "2010A Bond") to finance the cost of the construction and acquisition of certain additions, extensions and improvements to the water and sewer system of the City; and (ii) the City of Ormond Beach, Florida Water and Sewer Revenue Refunding Bond, Series 2010B (the "2010B Bond") in the principal amount of $2,800,000 for the purpose of refunding the then outstanding 2000 Bonds; and

WHEREAS, on July 21, 2010, the City issued the 2010A Bond in the principal amount of $20,000,000 and the 2010B Bond in the principal amount of $2,800,000; and

WHEREAS, on April 16, 2013, the City Commission duly adopted Resolution No. 2013-75, supplementing the Original Resolution by authorizing the issuance of: (i) $3,420,000 City of Ormond Beach, Florida Water and Sewer Revenue Bond, Series 2013A (the "2013A Bond") to finance the cost of the construction and acquisition of certain additions, extensions and improvements to the water and sewer system of the City; (ii) the City of Ormond Beach, Florida Water and Sewer Revenue Refunding Bond, Series 2013B (the "2013B Bond") in the principal amount of $6,575,000 for the purpose of refunding the then outstanding 2007 Bond; and (iii) the City of Ormond Beach, Florida Water and Sewer Revenue Refunding Bond, Series 2013C (the "2013C Bond") in the principal amount of $6,750,000 for the purpose of refunding the then outstanding 2006 Bond; and

WHEREAS, on June 21, 2013, the City issued the 2013A Bond in the principal amount of $3,420,000, the 2013B Bond in the principal amount of $6,565,000 and the 2013C Bond in the principal amount of $6,680,000; and

WHEREAS, on August 5, 2015, the City Commission duly adopted Resolution No. 2015-154, supplementing the Original Resolution by authorizing the issuance of the $2,600,000 City of Ormond Beach, Florida Water and Sewer Revenue Bond, Series 2015 (the "2015 Bond") to finance the cost of the construction and acquisition of certain additions, extensions and improvements to the water and sewer system of the City; and

WHEREAS, on August 7, 2015, the City issued the 2015 Bond in the principal amount of $2,600,000; and

WHEREAS, on May 16, 2017, the City Commission duly adopted Resolution No. 2017-95, supplementing the Original Resolution by authorizing the issuance of the City of Ormond Beach, Florida Water and Sewer Revenue Bond, Series 2017 (the "2017 Bond") in a principal amount not to exceed $4,050,000 to finance the cost of the construction and acquisition of certain additions, extensions and improvements to the water and sewer system of the City; and

WHEREAS, on May 19, 2017, the City issued the 2017 Bond in the principal amount of $4,045,000; and

WHEREAS, on June 4, 2019, the City Commission duly adopted Resolution No. 2019-109, supplementing the Original Resolution by authorizing the issuance of the City of Ormond Beach, Florida Water and Sewer Revenue Bond, Series 2019 (the "2019 Bond") in a principal amount not to exceed $4,555,000 to finance the cost of the construction and acquisition of certain additions, extensions and improvements to the water and sewer system of the City; and

WHEREAS, on June 6, 2019, the City issued the 2019 Bond in the principal amount of $4,543,000; and

WHEREAS, the Original Resolution, as so amended and supplemented and as further supplemented by this resolution (this "2024 Resolution"), is referred to hereinafter as the "Resolution"; and

WHEREAS, the Resolution provides that the City may issue additional bonds under the Resolution on a parity with the Bonds (as defined in the Original Resolution) that currently remain outstanding as to right and priority of payment from the Net Revenues and Impact Fees (as such terms are defined in the Original Resolution) and that certain details of such additional parity bonds and certain other matters shall be determined by subsequent proceedings of the City, which shall be deemed to be supplemental to the Resolution; and

WHEREAS, the City desires to issue a single bond as a series of bonds under the Resolution to be designated "City of Ormond Beach, Florida Water and Sewer Revenue Bond, Series 2024" (the "Series 2024 Bond") in a principal amount not to exceed $13,000,000 to finance the cost of the construction and acquisition of certain additions, extensions and improvements to the water and sewer system of the City described more particularly in Exhibit A to this Resolution (the "2024 Project"); and

WHEREAS, on June 9, 2024, the City issued its Request for Proposals No. 2024-34 for Water and Sewer Revenue Bond, Series 2024 (the "RFP"), in order to identify a purchaser of the Series 2024 Bond; and

WHEREAS, City staff has recommended that the City accept the proposal of TD Public Finance LLC (together with its successors and assigns, the "Purchaser") to purchase the Series 2024 Bond;

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF ORMOND BEACH, FLORIDA AS FOLLOWS:

SECTION ONE. All terms used herein (including in the Recitals to this 2024 Resolution) in capitalized form, unless otherwise defined herein, shall have the meanings ascribed to them in the Original Resolution, as previously amended and supplemented.

SECTION TWO. This 2024 Resolution is adopted pursuant to the Act and the Original Resolution, as previously amended and supplemented.

SECTION THREE.

A. The findings and declarations of the City contained in the Original Resolution, as previously amended and supplemented, are hereby expressly approved, reaffirmed and ratified.

B. The City is authorized under the Act and the Original Resolution, as previously amended and supplemented, to issue the Series 2024 Bond as additional parity Bonds and to use the proceeds thereof for the purpose of paying the cost of the 2024 Project and certain costs associated with the issuance of the Series 2024 Bond. The Series 2024 Bond shall constitute additional parity Bonds under the Original Resolution, as previously amended and supplemented.

C. The Series 2024 Bond will not be issued unless all applicable requirements of Section 304(K) of the Original Resolution, as previously amended and supplemented, are satisfied on or prior to the issuance of the Series 2024 Bond and, upon issuance in accordance with the terms thereof, the Series 2024 Bond will constitute additional parity Bonds under the Resolution and will be entitled to all the security and benefits thereof.

D. There is no reserve requirement with respect to the Series 2024 Bond and, consequently, there shall be no subaccount created or maintained in the Debt Service Reserve Account established under the Original Resolution with respect to the Series 2024 Bond.

SECTION FOUR. In consideration of the acceptance of the Series 2024 Bond authorized to be issued under the Resolution by those who shall hold the same from time to time, the Resolution shall be deemed to be and shall constitute a contract between the City and the registered owner from time to time of the Series 2024 Bond. The covenants and agreements set forth herein and in the Resolution to be performed by the City shall be for the equal benefit, protection and security of the registered owner of the Series 2024 Bond, and the Series 2024 Bond shall be of equal rank with all of the other Bonds Outstanding under the Resolution without preference, priority or distinction over any other thereof. All covenants contained in the Original Resolution, as previously amended and supplemented, are incorporated herein by reference and shall be fully applicable to the Series 2024 Bond as if originally issued thereunder.

SECTION FIVE.

A. Subject and pursuant to the provisions hereof, the Series 2024 Bond to be known as "City of Ormond Beach, Florida Water and Sewer Revenue Bond, Series 2024" is hereby

authorized to be issued as one registered bond constituting a single series in a principal amount not to exceed $13,000,000 or such lesser amount as may be necessary to pay the cost of the 2024 Project and the costs of issuance of the Series 2024 Bond. Notwithstanding anything contained herein to the contrary, the Series 2024 Bond shall not be issued until the conditions precedent to the issuance of additional parity Bonds contained in Section 304(K) of the Original Resolution, as previously amended and supplemented, have been complied with.

B. The City hereby accepts the proposal of the Purchaser to purchase the Series 2024 Bond and awards the sale of the Series 2024 Bond to the Purchaser, upon payment of the purchase price therefor and satisfaction of the other terms and conditions set forth in the RFP. The City hereby determines and finds that it is in the best interest of the City to negotiate the sale of the Series 2024 Bond to the Purchaser, because such method of sale, in the judgment of the City, will provide the most favorable financing terms available to the City and will result in lower costs associated with the issuance of the Series 2024 Bond than other available methods of sale.

C. Interest payments on the outstanding principal balance of the Series 2024 Bond shall be calculated on the basis of a 360 day year comprised of twelve 30 day months and shall be paid semiannually on March 1 and September 1, of each year, beginning March 1, 2025.

D. The Series 2024 Bond and any replacement therefor shall be numbered consecutively from 1 upward, preceded by the letter "R" prefixed to the number.

E. The Series 2024 Bond shall be dated such date, shall bear interest from the date thereof, at the rate of 4.17% per annum (the "Interest Rate"), subject to adjustment as provided herein. The Series 2024 Bond shall mature as set forth in or determined in accordance with the terms of the Resolution, the RFP and the successful proposal of the Purchaser, as such date, rate, maturity schedule and other terms may be approved by the Finance Director and determined by the Finance Director to be consistent with the requirements of the Resolution.

F. Principal shall be subject to amortization payments, on such dates and amounts as shall be provided in the Series 2024 Bond. Execution of such Series 2024 Bond by the Mayor shall be conclusive evidence of the approval of such terms of the Series 2024 Bond. The Series 2024 Bond shall be payable as to principal and interest by bank wire transfer or in such other manner as is agreed to between the City and the registered owner of the Series 2024 Bond in whose name the Series 2024 Bond shall be registered on the registration books maintained by the City as of the close of business on the business day next preceding an Interest Payment Date; provided, that the registered owner of the Series 2024 Bond shall provide evidence that such Series 2024 Bond has been paid and is no longer outstanding in its payment in full. Principal of and interest on the Series 2024 Bond shall be payable in any coin or currency of the United States of America which, at the time of payment, are legal tender for the payment of public and private debts.

G. The Series 2024 Bond shall be subject to prepayment (without penalty or premium), prior to its maturity in whole or in part on any date upon at least thirty (30) days' prior written notice to the Purchaser specifying the amount of prepayment and in such manner as shall be

approved by the Finance Director and determined by the Finance Director to be consistent with the requirements of the Resolution, the RFP and the successful proposal of the Purchaser.

H. Such notice shall set forth the date fixed for redemption, the rate of interest borne by the Series 2024 Bond, the date of publication, if any, of a notice of redemption, the name and address of the Registrar and Paying Agent, the redemption price to be paid and, if less than the entire unpaid principal balance of the Series 2024 Bond then Outstanding shall be called for redemption, the portion of the principal amount thereof to be redeemed. Presentment of the Series 2024 Bond shall not be required for payment, except at maturity or final prepayment.

I. Whenever the Series 2024 Bond is redeemed (other than from amounts on deposit in the Bond Redemption Account (as defined in the Original Resolution)) or is delivered by the City to the Paying Agent for cancellation, in whole or in part, the amount of the Series 2024 Bond so retired shall be credited against the Bond Redemption Account installment requirements for the Series 2024 Bond in inverse order of amortization installments or in such other manner as may be agreed to by the Purchaser and the Finance Director.

J. The text of the Series 2024 Bond and the form of the assignment for the Series 2024 Bond shall be substantially in the form provided in Exhibit A of the Original Resolution, with such omissions, insertions and variations as may be necessary or desirable and authorized by the Resolution or by any subsequent resolution or ordinance adopted prior to the issuance thereof, including, without limitation, such changes as may be required to indicate the series designation of the Series 2024 Bond, the parity status of the Series 2024 Bond as additional parity Bonds under the Resolution, the use of the proceeds of the Series 2024 Bond, or as otherwise may be necessary or desirable.

K. The Series 2024 Bond may only be transferred, in whole, to an "accredited investor" within the meaning of Rule 501 of the Securities Act of 1933, as amended (the "Securities Act") or a "qualified institutional buyer" within the meaning of Rule 144A promulgated under the Securities Act and shall bear a legend to such effect at the top of the first page thereof. Notwithstanding the foregoing, the registered owner, in its sole discretion, shall have the right to assign the Series 2024 Bond, in whole, to an affiliate of the registered owner.

L. Except as otherwise provided herein, upon the occurrence of an Event of Taxability and for as long as the Series 2024 Bond remains outstanding, the Interest Rate on the Series 2024 Bond shall be converted to the Taxable Rate and this adjustment shall survive payment on the Series 2024 Bond until such time as the federal statute of limitations under which the interest on the Series 2024 Bond could be declared taxable under the Internal Revenue Code of 1986, as amended (the "Code") shall have expired. In addition, upon an Event of Taxability, the City shall, immediately upon demand, pay to the registered owner of the Series 2024 Bond (or prior holders, if applicable) (i) an additional amount equal to the difference between (A) the amount of interest actually paid on the Series 2024 Bond during the Taxable Period and (B) the amount of interest that would have been paid during the Taxable Period had the Series 2024 Bond borne interest at the Taxable Rate, and (ii) an amount equal to any interest, penalties and additions to tax (as referred

to in Subchapter A of Chapter 68 of the Code) owed by the registered owner as a result of the Event of Taxability (the "Additional Amount").

The registered owner shall promptly notify the City in writing of any adjustments pursuant hereto. Such adjustments shall become effective as of the effective date of the event causing such adjustment. Adjustments pursuant hereto may be retroactive. The registered owner shall provide to the City in writing the Additional Amount, if any, due to such registered owner as a result of an adjustment pursuant hereto. Notwithstanding any provision hereto the contrary, in no event shall the interest rate on the Series 2024 Bond exceed the maximum rate permitted by law.

"Event of Taxability" means the occurrence after the dated date of the Series 2024 Bond of a final decree or judgment of any Federal court or a final action of the Internal Revenue Service determining that interest paid or payable with respect to all or a portion of the Series 2024 Bond is or was includable in the gross income of the registered owner of the Series 2024 Bond for Federal income tax purposes solely as a result of the action or inaction of the City; provided, that no such decree, judgment, or action will be considered final for this purpose, however, unless the City has been given written notice and, if it is so desired and is legally allowed, has been afforded the opportunity at the City's own expense to contest the same, either directly or in the name of the registered owner, and until the conclusion of any appellate review, if sought. For all purposes of this definition, the effective date of any Event of Taxability will be the first date as of which interest is deemed includable in the gross income of the registered owner of the Series 2024 Bond.

"Taxable Period" means the period of time between (a) the date that interest represented by the Series 2024 Bond is deemed to be includable in the gross income of the registered owner of the Series 2024 Bond for Federal income tax purposes as a result of an Event of Taxability, and (b) the date of the Event of Taxability and after which the Series 2024 Bond bears interest at the Taxable Rate.

"Taxable Rate" means the interest rate per annum that shall provide the registered owner of the Series 2024 Bond with the same after-tax yield that the registered owner would have otherwise received had the Event of Taxability not occurred, taking into account the increased taxable income of the registered owner as a result of such Event of Taxability. The registered owner of the Series 2024 Bond shall provide the City with a written statement explaining the calculation of the Taxable Rate and the Taxable Period, which statement shall, in the absence of manifest error, be conclusive and binding on the City.

M. If after the dated date of the Series 2024 Bond the City shall, under the terms of an ordinance or resolution or other document or instrument authorizing the issuance of debt secured by the Net Revenues, grant other bondholders a right of acceleration (whether by declaration or tender upon a default), then such right of acceleration shall also apply with respect to the Series 2024 Bond.

N. The City shall not establish a subaccount in the Debt Service Reserve Account with respect to any additional parity Bonds without the prior written consent of the Purchaser.

O. No amendment to any financial covenant or provision of the Resolution shall be made without the prior written consent of the Purchaser.

SECTION SIX. Proceeds from the sale of the Series 2024 Bond shall be applied by the City, simultaneously with the delivery of the Series 2024 Bond, in the manner prescribed in Section 303(b) of the Original Resolution.

The Finance Director shall, if necessary, determine in a certificate to be delivered at the time of issuance and delivery of the Series 2024 Bond, any necessary or desirable application or allocation of funds held under the Resolution that is permitted under the Resolution as a result of the issuance of the Series 2024 Bond. Such certificate may also provide for an allocation of proceeds of the Series 2024 Bond different from that set forth above, where such allocation is necessary or desirable to accomplish the issuance of the Series 2024 Bond.

SECTION SEVEN. The Finance Director shall cause the proceeds of the Series 2024 Bond to be invested in a manner permitted under the Resolution and under applicable law.

SECTION EIGHT. The City will not take any action or omit to take any action which action or omission would result in inclusion in gross income for federal income tax purposes of interest on any Series 2024 Bond. Particularly, (i) the City will not take any action or omit to take any action which action or omission would cause any of the Series 2024 Bond to be "arbitrage bonds" within the meaning of Section 148 of the Code; (ii) the City will not take any action or omit to take any action which would cause any of the Series 2024 Bond not intended on their date of issuance to be "private activity bonds" within the meaning of Section 141 of the Code to be "private activity bonds" within the meaning of that Section; and (iii) the City will not take any action or omit to take any action which would cause the Series 2024 Bond intended on their date of issuance to be "private activity bonds" within the meaning of Section 141 of the Code not to be "qualified bonds" as that term is defined in said Section. In the event that an adverse determination is made or threatened by the Internal Revenue Service with respect to any of the matters described in the foregoing clauses (i), (ii) or (iii), the City shall use its best efforts and undertake all reasonable action in order to vigorously contest such adverse determination. In furtherance of the foregoing covenants, the City agrees that it will comply with the provisions of a tax compliance certificate to be prepared by Bond Counsel and executed and delivered on the date of issuance of the Series 2024 Bond. The Finance Director or such other appropriate official of the City is hereby authorized to execute and deliver such tax compliance certificate.

The City shall comply with and shall make all calculations required to be made pursuant to the arbitrage rebate covenants contained or provided for in the tax compliance certificates of the City delivered in connection with the issuance of the Series 2024 Bond. Notwithstanding anything in this 2024 Resolution to the contrary, the requirement of the City to rebate any amounts due to the United States pursuant to Section 148 of the Code in connection with the Series 2024 Bond shall survive the payment or provision for payment of the principal and interest, with respect to the Series 2024 Bond or any portion of the Series 2024 Bond.

SECTION NINE. The Finance Director of the City is hereby appointed as the initial Paying Agent and Bond Registrar for the Series 2024 Bond.

SECTION TEN. While the Series 2024 Bond remains outstanding: (i) the City shall deliver to the Purchaser within two hundred and seventy (270) days after the end of each fiscal year a copy of its Annual Comprehensive Financial Report for such fiscal year, together with a certificate of compliance signed by the Finance Director confirming compliance with the rate covenant set forth in Section 304(C) of the Original Resolution, (ii) a copy of its annual budget within sixty (60) days after adoption; and (iii) shall provide such other financial information to the Purchaser as it may reasonably request from time to time.

SECTION ELEVEN. In addition to the events of default in the Original Resolution to the contrary, the following shall constitute an event of default ("Event of Default") with respect to the Series 2024 Bond:

(a) The failure to pay principal or interest or any other amount due (i.e., late fee) when the same shall become due and payable to the Purchaser pursuant to the Resolution or the Series 2024 Bond, either at maturity or redemption;

(b) Thirty (30) days after the earlier of (i) when the City should have provided notice of a failure to comply with Section 10(i) and (ii) above or (ii) the Purchaser notifies the City of such breach; provided, however, if the failure cannot be cured within thirty (30) days, the cure period may be extended, not to exceed an additional thirty (30) days;

(c) Any representation or warranty made by the City in the Resolution has been proven to be incorrect when made or confirmed;

(d) A default has occurred under the Resolution or with respect to any Outstanding Bonds or any additional parity Bonds;

(e) The City is adjudged insolvent by a court of competent jurisdiction, or is adjudged a bankrupt on a petition in bankruptcy filed against the City, or an order, judgment or decree is entered by a court of competent jurisdiction appointing, without the consent of the City, a receiver or trustee of the City or of any part of its property and any of the aforesaid adjudications, orders, judgments or decrees shall not be vacated or set aside or stayed within ninety days from the date of entry thereof;

If any payment of principal or interest on the Series 2024 Bond is not made within fifteen (15) days after the due date, the City will pay the Purchaser on demand a late fee of 6.00% of such late payment.

Upon the occurrence and during the continuance of an Event of Default, the Series 2024 Bond shall bear interest at a rate per annum equal to the lesser of (i) the "Prime Rate" as last quoted in the Wall Street Journal, plus 6%, provided, however, that the Prime Rate shall have a floor of 3%, or (ii) the maximum rate permitted by law.

Upon an Event of Default, the Purchaser may pursue any remedy provided in the Original Resolution or provided by law or equity. Acceleration shall not be a permitted remedy, except and to the extent otherwise provided herein.

The City shall within ten (10) days after it acquires knowledge thereof, notify the Purchaser in writing at its notice address (a) upon the happening, occurrence, or existence of any Event of Default, and (b) any event or condition which with the passage of time or giving of notice, or both, would constitute an Event of Default, and shall provide the Purchaser, with such written notice, a detailed statement by a responsible officer of the City of all relevant facts and the action being taken or proposed to be taken by the City with respect thereto. Regardless of the date of receipt of such notice by the Purchaser, such date shall not in any way modify the date of occurrence of the actual Event of Default.

SECTION TWELVE. The Mayor, the City Manager, the Finance Director, the City Attorney, the City Clerk and all other officers, officials and employees of the City are authorized and empowered, collectively or individually, to take all action and steps and to execute all instruments, documents and contracts on behalf of the City that are necessary or desirable in connection with the execution and delivery of the Series 2024 Bond, and which are specifically authorized or are not inconsistent with the terms and provisions of the Resolution or any action relating to the Series 2024 Bond heretofore taken by the City.

SECTION THIRTEEN. Upon receipt of the purchase price, a proper receipt therefor shall be executed by the City and by the Purchaser.

SECTION FOURTEEN. All resolutions or proceedings, or parts thereof, in conflict with the provisions hereof are to the extent of such conflict hereby repealed or amended, to the extent of such inconsistency.

SECTION FIFTEEN. The City hereby waives any right it may have to a trial by jury in respect of any litigation based on, or arising out of, under or in connection with the Resolution or the Series 2024 Bond.

SECTION SIXTEEN. Unless otherwise provided herein, all demands, notices, approvals, consents, requests, opinions, and other communications given hereunder shall be in writing and shall be deemed to have been given when delivered in person, when transmitted if transmitted by telecopy, or other similar electronic or digital transmission method (provided customary evidence of receipt is obtained), or mailed by first class registered or certified mail, postage prepaid, addressed as follows:

To the City:

City of Ormond Beach, Florida
22 South Beach Street
Ormond Beach, Florida 32174
Attention: Kelly McGuire, Finance Director
Telephone: (386) 676-3226
Email: kelly.mcguire@ormondbeach.org

To the Purchaser: TD Public Finance LLC
104 South Main St.
Greenville, SC 29601
Attn: Sydney Hayes, Vice President
Telephone: (336) 775-7161
Email: sydney.hayes@td.com

SECTION SEVENTEEN. In connection with all aspects of each transaction contemplated hereunder (including in connection with any amendment, waiver or other modification hereof or of the Series 2024 Bond), the City acknowledges and agrees, that: (a) (i) the City has consulted its own legal, accounting, regulatory and tax advisors to the extent it has deemed appropriate, (ii) the City is capable of evaluating, and understands and accepts, the terms, risks and conditions of the transactions contemplated hereby and by the Series 2024 Bond, (iii) the Purchaser is not acting as a municipal advisor or financial advisor to the City, and (iv) the Purchaser has no fiduciary duty pursuant to Section 15B of the Securities Exchange Act to the City with respect to the transactions contemplated hereby and the discussions, undertakings and procedures leading thereto (irrespective of whether the Purchaser has provided other services or is currently providing other services to the City on other matters); (b) (i) the Purchaser is and has been acting solely as a principal and, except as expressly agreed in writing by the relevant parties, has not been, is not, and will not be acting as an advisor, agent or fiduciary, for the City or any other person and (ii) the Purchaser has no obligation to the City, with respect to the transactions contemplated hereby except those obligations expressly set forth herein and in the Series 2024 Bond; and (c) the Purchaser may be engaged in a broad range of transactions that involve interests that differ from those of the City, and the Purchaser has no obligation to disclose any of such interests to the City. The City acknowledges that the Purchaser is purchasing the Series 2024 Bond pursuant to and in reliance upon the bank exemption and/or the institutional buyer exemption provided under the municipal advisor rules of the Securities and Exchange Commission, Rule 15Bal-1 *et seq*, to the extent that such rules apply to the transactions contemplated hereunder.

SECTION EIGHTEEN. The City acknowledges and agrees that the Purchaser shall be permitted to use information related to the Series 2024 Bond in connection with marketing, press releases or other transactional announcements or updates provided to investors or trade publications, including, but not limited to, the placement of the logo of the Purchaser or other identifying name on marketing materials or of "tombstone" advertisements in publications of the Purchaser's choice at the Purchaser's expense.

SECTION NINETEEN. The City has been notified by the Purchaser that pursuant to the requirements of the USA PATRIOT Act (Title III of Pub. L. 107-56 signed into law October 26, 2001) (the "Patriot Act"), the Purchaser may be required to obtain, verify and record information that identifies the City, which information includes the name and address of the City and other information that will allow the Purchaser to identify the City in accordance with the Patriot Act.

SECTION TWENTY. This 2024 Resolution shall become effective immediately upon its adoption.

ADOPTED by the City Commission at a meeting held on the 20th day of August, 2024.

CITY OF ORMOND BEACH, FLORIDA

By: _____

[SEAL]

BILL PARTINGTON
Mayor

Attest:

_____
SUSAN CARROLL DAUDERIS
City Clerk

APPROVED AS TO FORM AND LEGAL SUFFICIENCY:

_____
RANDY HAYES
City Attorney

CERTIFICATE

STATE OF FLORIDA)
COUNTY OF VOLUSIA) SS:
CITY OF ORMOND BEACH)

I, SUSAN CARROLL DAUDERIS, as City Clerk of the City of Ormond Beach, Florida; do hereby certify that the foregoing is a true, correct and complete copy of Resolution No. 2024-124 as the same appears of record at City Hall, City of Ormond Beach, Florida.

Dated this 20th day of August, 2024.

_____

SUSAN CARROLL DAUDERIS
CITY CLERK
CITY OF ORMOND BEACH, FLORIDA

EXHIBIT A

The 2024 Project

Water Treatment System enhancements to include the conversion of the Water Reclamation Facility to an UV light disinfection system, the completion of the State Road 40 watermain and force main loop, and the replacement of aeration and clearwell systems.

The foregoing notwithstanding, the City, in its sole discretion, may modify or amend all or any portion of the Water and Sewer System projects described above or any component thereof, to (1) delete one or more of such projects or any component thereof, if the City determines it is not feasible or is otherwise not in the best interests of the City to pursue or (2) substitute or modify one or more of such projects with any other Water and Sewer System project, if the City determines such substitution or modification better serves City purposes; provided such modified or substituted facility, improvement or equipment is a capital improvement that is eligible to be financed with proceeds of tax-exempt obligations such as the Series 2024 Bond.

City of Ormond Beach
AGENDA ITEM

August 20, 2024 - City Commission

Number: 7.D

Section:	CONSENT AGENDA		
Item Category:	Consent - Resolution	**Res./Ord. No:**	2024-125
Strategic Goal:	Public Safety - Other		
Department:	Public Works - Engineering		
Subject:	RFP Award - Central Park 1 Playground Equipment		
Summary:	This is a request to award an RFP to install a new playground within Central Park 1 off of Fleming Avenue. The project is located at 601 Fleming Ave and is a highly used facility by the surrounding community and public. This project proposes to replace the existing equipment with new playground equipment between the existing community gardens and the pavilion. This new playground will replace the existing deteriorated equipment installed in the early 2000s. Central Park is a 149 acre City-owned and operated neighborhood park that is open to the public. At their June 4, 2024 meeting, the City Commission approved the advertisement of request for proposals (RFP) which directed respondents to provide up to 3 options of playground equipment meeting the City's budget and providing varied play experiences. A total of 4 RFP proposals were received from different companies. The designs submitted were graded by 3 staff members and each scored based on the RFP written criteria/evaluation. The company chosen with the highest score was Lanier Plans, Inc. dba KorKat, with Option 2, a copy of this proposal accompanied by a schematic layout of the proposed playground is included in this item.		
Financial Impact:	Funding for this project will be Fund 317 Facility renewal and replacement. Funds in the amount of $40,000 are available from FY 2023-2024.		
Citizen Impact:	The construction of this new playground will have a short-term impact on the public while the project is being completed. Upon completion, it will provide enhanced play experiences in this highly used park and will likely increase the number of visitors to Central Park.		

Recommended Action (Staff, Advisory Board and/or Other):	Staff recommends awarding the RFP proposal to Lanier Plans, Inc. dba KorKat, in the amount of $39,997.20 for the construction of the new playground within Central Park 1.
Staff Contact:	Alex Schumann, City Engineer, (386) 676-3302
Attachments:	1. 24-125 Central Park Playground-Lanier (P24-0140G) 2. Lanier Plans dba KorKat CP1 Playground Agreement 3. Central Park 1 Playground Location Map 4. RFP 2024-31 with Addendums 5. RFP 2024-31 Evaluation Summary
Approval:	Kelly McGuire, Finance Director 8/6/2024 Shawn Finley, Assistant City Manager 8/8/2024 Joyce Shanahan, City Manager 8/14/2024

RESOLUTION NO. 2024-125

A RESOLUTION ACCEPTING THE PROPOSAL OF LANIER PLANS, INC. d/b/a KORKAT REGARDING THE PURCHASE AND INSTALLATION OF PLAYGROUND EQUIPMENT AT CENTRAL PARK 1; AUTHORIZING THE EXECUTION OF AN AGREEMENT AND PAYMENT THEREFOR; REJECTING ALL OTHER PROPOSALS; AND SETTING FORTH AN EFFECTIVE DATE.

WHEREAS, the City solicited proposals for the purchase and installation of playground equipment at Central Park 1 (the Project) (City RFP No. 2024-31), in accordance with Section 2-300, *Code of Ordinances*, and

WHEREAS, the City's evaluation committee reviewed the four (4) proposals received and determined that the most advantageous proposal for the City is the proposal submitted by Lanier Plans, Inc. d/b/a KorKat regarding the purchase and installation of playground equipment (design option 2) at Central Park 1 in the amount of $39,997.20 (a copy of said proposal being incorporated in the contract which is attached hereto and incorporated herein by reference), and

WHEREAS, based on the foregoing the City's professional staff recommends that the City Commission accept the proposal of Lanier Plans, Inc. d/b/a KorKat and execute an agreement for the Project, now therefore,

BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF ORMOND BEACH, FLORIDA, THAT:

SECTION ONE. The proposal of Lanier Plans, Inc. d/b/a KorKat regarding the purchase and installation of playground equipment at Central Park 1 is hereby accepted.

SECTION TWO. All other proposals relative to the aforedescribed Project shall be deemed rejected upon the execution of an agreement with Lanier Plans, Inc. d/b/a KorKat.

SECTION THREE The Mayor and the City Manager are hereby authorized and directed to execute an Agreement between the City and Lanier Plans, Inc. d/b/a KorKat for the Project in an amount of $39,997.20, and to pay the cost thereof from the Facility Renewal and Replacement Fund (317).

SECTION FOUR. This Resolution shall take effect immediately upon its adoption.

APPROVED AND AUTHENTICATED this 20th day of August, 2024.

_____
BILL PARTINGTON
Mayor

ATTEST:

_____
SUSAN CARROLL DAUDERIS
City Clerk

AGREEMENT

THIS AGREEMENT is made and entered into by and between the **City of Ormond Beach** ("City"), a Florida municipal corporation, 22 South Beach Street, Ormond Beach, Volusia County, Florida and **Lanier Plans, Inc. d/b/a KorKat** ("Contractor"), 221 Cable Industrial Way, Carrollton, GA 30117, and in consideration of the mutual promises and covenants herein contained, the receipt and sufficiency of which are hereby acknowledged, the parties hereby agree to the following:

1. **Scope of Work.** The Request for Proposals dated July 3, 2024 (RFP 2024-31 "Central Park 1 Playground Equipment" including the Contractor's proposal to complete Design Option 2), as attached hereto as Exhibit "A", is incorporated herein by reference and is a material part of this Agreement. The Contractor shall complete Design Option 2 as provided in the attached exhibit. The Contractor shall fully comply with the terms and conditions described in the attached exhibit.

2. **Term.** This Agreement shall be effective on the date it is fully executed by the parties and will remain in effect through the completion of the installation of all playground equipment (estimated duration of Project is 150 days).

3. **Consideration.** Contractor shall provide the equipment and perform the services for the total sum of $39,997.20 as set forth on the attached exhibit. Contractor shall prepare and submit a final invoice to the City at the address set forth in Paragraph 9 of this Agreement. Final payment will be made only after delivery and installation of the equipment and completion of the City's final acceptance inspection.

4. **Delivery.** Contractor shall complete the project within the time frame set forth on Exhibit "A". The project is estimated to reach final completion at 150 days from notice to proceed.

5. **Termination of Agreement**.
   (a) The City Commission shall have the right to terminate the Agreement in the event the Contractor files any petition or proceeding for bankruptcy relief, or is adjudicated to be bankrupt or insolvent, or fails to pay just debts as they ordinarily become due; or for a material breach of this agreement that remains uncured for at least thirty days after prior written receipt of a notice of violation of same.

   (b) This Agreement may not be terminated by the Contractor.

6. **Assignment**. The Contractor shall not assign, convey or transfer all or any part of this Agreement, or all or any part of Contractor's interest herein, or all or any part of any interest in the Contractor, without the prior written consent of the City Commission, which consent shall not be unreasonably withheld.

7. **Complete Agreement**. This Agreement, including the provisions set forth in the exhibit attached hereto and incorporated by reference herein, constitutes the entire and complete

agreement of the parties, and the promises and covenants herein contained shall survive the life of this Agreement.

8. **Amendment to Agreement**. Any amendment, change, or modification of this Agreement must be in writing and fully executed by both parties.

9. **Notices**. All notices which are required by this Agreement shall be provided to the parties at the following addresses, or such other addresses as may be requested in writing by either party:

City of Ormond Beach	**Lanier Plans, Inc. d/b/a Korkat**
Joyce Shanahan, City Manager	Shane Lanier, CEO
(copy to City Attorney)	221 Cable Industrial Way
22 South Beach Street	Carrollton, GA 30117
Ormond Beach, FL 32174	

10. **Sovereign Immunity**. The City expressly retains and reserves all rights, privileges, immunities, and benefits of sovereign immunity. This provision shall be construed broadly in favor of the City.

11. **Venue**. The terms and conditions of this Agreement shall be construed and enforced under the laws of the State of Florida. Any action or proceeding, either at law or in equity, regarding this Agreement shall be brought in the circuit court, Seventh Judicial Circuit in and for Volusia County, Florida. Venue in any other jurisdiction or forum, whether it be any other circuit, state or federal venue, is hereby expressly waived.

12. **Waiver of Conditions**. No waiver by the City of any condition or breach of performance by the Contractor shall constitute an irrevocable, continuing, or subsequent waiver by the City of the same condition or breach of performance, or of any other condition or other breach of performance.

13. **Severability**. If any part of this Agreement is declared to be unenforceable or void by a court of competent jurisdiction, the remaining parts of the Agreement shall remain in full force and effect as long as the services to be provided by the Contractor are not materially affected, altered or impaired as a result of said judicial declaration.

14. **Conflicting Provisions.** In the event of any conflict between the provisions of this Agreement and any exhibits, the provision most favorable to the City shall control and shall be given full force and effect.

15. **Indemnification**. The City, its agents, employees, and officials, both elected and appointed, shall be indemnified and held harmless by Contractor from any and all liabilities, claims, and causes of action which may arise out of the willful, negligent, or unlawful acts or omissions of the Contractor or its subcontractors in the performance of this Agreement, unless such claims are a result of the City's sole negligence, as determined by the final decision maker of such claim.

16. **Duty to Defend.** The Contractor shall defend all suits and administrative actions, including all appellate proceedings, brought against the City, its agents, employees, and officials, both elected and appointed and shall pay all attorneys' fees and costs associated with the City's legal defense, as may be selected by the City, arising from all claims and causes of action described in Section 15 above. Such payment on behalf of the City shall be in addition to any and all other legal or equitable remedies available to the City and shall not be considered to be the City's exclusive remedy.

17. **Contractor's Insurance**. The Contractor shall purchase and maintain for the entire life of this Agreement, including any and all approved time extensions, until its final acceptance by the City, such insurance as will protect the Contractor from claims under Workers' Compensation, disability benefit laws or other similar employee benefit laws; from claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees; from claims insured by usual or unusual injury liability coverage; from claims or injury to or destruction of tangible property and from claims insured by usual Commercial General Liability coverage. This includes loss of use resulting therefrom, any or all of which may arise out of the Contractor's operations under this Agreement, whether such operations be by the Contractor, or by any Subcontractor, or by anyone directly or indirectly employed by any of them or for whose acts any of them may be legally liable. The Contractor's deductibles/self-insured retentions shall be disclosed to the City and may be disapproved by the City, and may be reduced or eliminated at the sole discretion of the City. The Contractor is responsible for the amount of any deductible or self-insured retention.

18. **Types of Insurance and Limits of Liability**

The insurance required herein shall be written for not less than any limits of liability specified and incorporated as part of the Contract Documents or as required by law, whichever is greater, and shall include and not limited to the following:

(a) Workers' Compensation Insurance in statutory limits for the State of Florida with Coverage B - Employer's Liability limits of not less than:

$100,000 Each Accident Bodily Injury by Accident
$100,000 Each Employee Bodily Injury by Disease
$500,000 Policy Limit Bodily Injury by Disease

Certificate of Exemptions. If the contractor has a State-issued Certificate of Exemption, the contractor may provide a copy in place of the requirement for coverage. However, if the contractor subcontracts or retains any other person or entity to perform under the contract, that person or entity must provide proof of workers' compensation insurance as required by law or provide a Certificate of Exemption.

It is the intent of the City that any individual who either contracts directly with the city or performs any work on behalf of any such contractor be covered by workers' compensation insurance or have a valid exemption from said coverage.

(If applicable to the Project, the policy must include benefits under the United States Longshoremen's and Harbor Workers' Act and the Jones Act coverage--all maritime coverage.)

(b) Commercial General Liability Insurance shall be written on a coverage form as broad as Insurance Services Office (ISO) Form CG 00 01 11 85, or its successor form, including but not limited to the following coverage (any deviation shall be noted on the Certificates of Insurance):

a. Premises, Operations, Products and Completed Operations
b. Owners' & Contractors' Protective
c. Products & Completed Operation
d. Explosion, Collapse & Underground Conditions
e. Blanket Contractual Liability
f. Personal Injury Liability
g. Broad Form Property Damage Endorsement, including Completed Operations
h. Independent Contractors
i. Watercraft--Owned and Non-Owned (if applicable, endorsement must be included in General Liability policy or a separate Protection & Indemnity Policy must be written)
j. Pollution Liability (if applicable)
k. Asbestos Abatement (if applicable)
l. Fire Damage Liability

Certain coverage outlined above may not be required if they do not relate to the Project, as may be determined at the sole discretion of the City.

Commercial General Liability Coverage shall be written on an occurrence basis and the limits shall be no less and not limited to the following amounts:

Limits (not less than)

$1 Million Each Occurrence
$2 Million General Aggregate
$1 Million Aggregate Products & Completed Operations

NOTE: Commercial General Liability Coverage must be purchased on either a project basis (separate policy per contract) or an endorsement allocating an aggregate limit per location or specified project.

(c) Automobile Liability Insurance is required if an Automobile(s) is used in the performance of the contract.

ISO Symbol 1 (Any Auto), or alternatively a combination of Symbol 2 (Owned Autos), Symbol 8 (Hired Autos), and Symbol 9 (Non-Owned Autos), and limits shall be no less than:

$1 Million	Combined Single Limit for Bodily Injury and Property Damage

(d) Excess Liability

For contracts $250,000 or greater an Excess Liability Policy of at least but not limited to $1,000,000 in addition to the scheduled underlying policies for Commercial General Liability, Automobile Liability and Employers' Liability, the Contractor shall also provide an Excess Liability Policy with a maximum self-insured retention not to exceed $25,0000 per occurrence.

(e) Builder's Risk

Contractor shall purchase Builder's Risk Insurance for any contracts that are deemed to be vertical construction on an All-Risk policy, and shall also include coverage for wind, hail, and named storm. Limits of coverage shall be at least and not limited to the value of the project.

(f) Professional Liability, Malpractice and/or Errors and Omissions

The Contractor shall purchase and maintain professional liability, malpractice, or errors or omissions insurance with minimum limits of $1,000,000 per occurrence. If a claims made form of coverage is provided, the retroactive date of coverage shall be no later than the inception date of claims made coverage, unless the prior policy was extended indefinitely to cover prior acts. Coverage shall be extended beyond the policy year either by a supplemental extended reporting period (ERP) of as great a duration as is available, and with no less coverage and with reinstated aggregate limits, or by requiring that any new policy provides a retroactive date no later than the inception date of claims made coverage.

19. **Requirements for Certificates of Insurance**.

(a) With the execution of this Agreement, the Contractor shall provide certificates of such insurance acceptable to the City. These certificates and insurance policies shall contain a provision that the coverage under the policies will not be canceled, non-renewed or materially changed until at least **thirty (30)** days' prior written notice of such cancellation, non-renewal or change [except for nonpayment of premium, which shall be **ten (10)** days] has been given to the City. The Contractor shall be required to replace any expired or canceled policies in like amount and coverage to the satisfaction of the City. The Certificate of Insurance shall be the ACCORD

FORM 25-S (7/90), or its successor form, and shall be made a part of this Agreement.

(b) New certificates of insurance shall be provided to the City at least fifteen (15) days prior to coverage renewals.

(c) If requested by the City, the Contractor shall furnish complete copies of the Contractor's insurance policies, forms and endorsements.

(d) For Commercial General Liability coverage the Contractor shall, at the option of the City, provide an indication of the amount of claims payments or reserves chargeable to the aggregate amount of liability coverage. If the Commercial General Liability form of coverage includes an annual aggregate limitation on the amount of insurance provided, a separate project aggregate limit may be required by the City for the given contract.

(e) If the Contractor fails to obtain and maintain for the life of the Agreement the insurance required hereby or to replace any such expired or canceled policy, the City may obtain and maintain such insurance with such company as it deems satisfactory. Any amounts expended by the City in payment of premiums for such insurance shall be deducted by the City from the amount due the Contractor for the work covered by the Agreement.

(f) **Policies of Insurance**

1. Except as otherwise provided herein, all insurance policies shall be issued by insurers licensed to do business in the State of Florida on an admitted basis or which is an eligible surplus lines insurer in the State of Florida, and any such insuring company is required to have a minimum financial rating of (A-) in the latest edition of "Best's Key Rating Guide", published by A. M. Best Co., Inc., or some similarly nationally recognized rating authority, including Standard and Poors and Demotech.

2. For Workers' Compensation coverage only, self-insurance programs are acceptable with a minimum A- rated reinsurance carriers; written confirmation is required.

3. All policies of insurance or certificates thereof referred to herein shall be deposited with the City Clerk.

4. The City shall be named an Additional Insured on General Liability and Automobile Liability policies of insurance and certificates thereof.

20. **Enforcement of Costs**. If any legal action or other proceeding is brought for the enforcement of this Agreement, or because of an alleged dispute, breach, default, or misrepresentation in connection with any provision of this Agreement, the successful or prevailing party or parties shall be entitled to recover reasonable attorneys' fees, court

costs, and all expenses even if not taxable court costs (including, without limitation, all such fees, costs and expenses incident to arbitration, appellate, bankruptcy, and post-judgment proceedings), incurred in that action or proceeding or any appeal, in addition to any other relief to which the party or parties may be entitled. Attorneys' fees include legal assistant fees, expert witness fees, investigative fees, administrative costs, and all other charges billed by the attorney for the prevailing party.

21. **Compliance With Laws.** Contractor shall comply with all applicable federal, state and local laws and regulations.

22. **Compliance With Florida Public Records Law**. Contractor expressly agrees that it shall comply with the public records law provided in Florida Statutes, Chapter 119, and specifically to:

(a) Keep and maintain public records required by the City to perform the contracted service.
(b) Upon request from the City Clerk, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes, or as otherwise provided by law.
(c) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the contractor does not transfer the records to the City.
(d) Upon completion of the contract, transfer at no cost, to the City all public records in possession of the contractor or keep and maintain public records required by the City to perform the service. If the contractor transfers all public records to the City upon completion of the contract, the contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the contractor keeps and maintains public records upon the completion of the contract, the contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City Clerk, in a format that is compatible with the information technology systems of the City.
(e) Failure of the Contractor to comply with Public Records Law as provided by Florida Statutes, Chapter 119, shall subject the Contractor to penalties under Chapter 119.10 and subject this Agreement to termination for cause by the City.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

CITY CLERK
22 SOUTH BEACH STREET
ORMOND BEACH, FLORIDA 32175. (386)677-0311
CITYCLERK@ORMONDBEACH.ORG

Ref: Fla. Stat. §119.0701(2016)

23. **Limitation of Remedy and Liability.** Contractor and Owner expressly waive any claim for consequential damages against the other including but not limited to, a waiver of claims for diminished bonding capacity, loss of financing, loss of business reputation, lost profits on other projects or other lost opportunity damage claims.

Contractor expressly agrees that any claim (tort, contract, claim in equity, or otherwise) by Contractor for damages against Owner shall not exceed the total amount of the contract price, less any amounts actually paid to the Contractor by the Owner.

24. **Waiver of Right to Jury Trial.** THE PARTIES HEREBY KNOWINGLY, VOLUNTARILY AND INTENTIONALLY WAIVE ANY RIGHT WHICH ANY PARTY MAY HAVE TO TRIAL BY JURY IN RESPECT OF ANY PROCEEDING, LITIGATION OR COUNTERCLAIM BASED ON, OR ARISING OUT OF, UNDER OR IN CONNECTION WITH THIS AGREEMENT OR ANY COURSE OF CONDUCT, COURSE OF DEALING, STATEMENTS (WHETHER VERBAL OR WRITTEN) OR ACTIONS OF ANY PARTY. IF THE SUBJECT MATTER OF ANY LAWSUIT IS ONE IN WHICH THE WAIVER OF JURY TRIAL IS PROHIBITED, NO PARTY TO THIS AGREEMENT SHALL PRESENT AS A NON-COMPULSORY COUNTERCLAIM IN ANY SUCH LAWSUIT ANY CLAIM BASED ON, OR ARISING OUT OF, UNDER OR IN CONNECTION WITH THIS AGREEMENT. FURTHERMORE, NO PARTY TO THIS AGREEMENT SHALL SEEK TO CONSOLIDATE ANY SUCH ACTION IN WHICH A JURY TRIAL CANNOT BE WAIVED.

25. **Verification of Employment Status Using E-Verify System**

(a) Section 448.09, *Florida Statutes*, makes it unlawful for any person to knowingly employ, hire, recruit, or refer, either for herself or himself, or on behalf of another, for private or public employment within the state, an alien who is not duly authorized to work in the United States. Contractor warrants that it is registered with the U.S. Department of Homeland Security's E-Verify system, and is compliant with the requirements of Sections 448.09 and 448.095, *Florida Statutes*.

(b) Contractor agrees that if the contractor enters into an agreement with a subcontractor, the subcontractor must provide the contractor with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, and contractor warrants it shall maintain any such affidavits for the duration of the contract. If the City has a good faith belief that a subcontractor knowingly violated Section 448.09 (1), the City shall promptly notify the contractor and order the contractor to immediately terminate the contract with the subcontractor.

(c) In the event the City has a good faith belief that the contractor has knowingly violated Section 448.09 (1), *Florida Statutes*, the City shall terminate the contract, and as provided by statute, the contractor may not be awarded a public contract for at least one (1) year after the date of termination. The contractor may also be held liable for any additional costs incurred by the City as a result of the termination of the contract.

26. **No Conflict of Interest.** The Contractor warrants and agrees that neither it, nor any of its employees, agents, officers, directors, shareholders and independent contractors are, or will become, under contract with or accept compensation from any individual, business, corporation or governmental entity that has the possibility of an adverse interest to those of the City of Ormond Beach. The Contractor and its officers, directors, shareholders, employers, agents and subcontractors, agree not to provide any services or assistance to any entity directly or indirectly relating to the services provided to the City and to immediately notify the City Manager and City Attorney of any contact with any entity that has, or potentially has, a conflict of interest with the City of Ormond Beach. This provision shall be interpreted as broadly as possible to prevent any potential or actual conflict of interest presently or in the future by the Contractor.

27. **Warranty.** All warranties shall be as specified in Exhibit A.

28. **Effective Date**. This Agreement shall become effective upon the date last signed by the parties hereto.

IN WITNESS WHEREOF**,** the undersigned parties have caused this Agreement to be signed on the dates indicated hereinbelow.

DATED this _____ day of _____, 2024.

Witnesses:

CITY OF ORMOND BEACH

_____

By: _____
BILL PARTINGTON
Mayor

Print Name: _____

_____

By: _____
JOYCE SHANAHAN
City Manager

Print Name: _____

DATED this _____ day of _____, 2024.

Witnesses:

LANIER PLANS, INC. dba KorKat

_____

By: _____

Print Name: _____

Print Name: _____

Title: _____

_____

Attest: _____

Print Name: _____

Print Name: _____

Title: _____

City of Ormond Beach

22 South Beach Street
Ormond Beach, Florida 32174
Telephone (386) 676-3223
Fax (386) 676-3374

REQUEST FOR PROPOSALS

PROPOSER ACKNOWLEDGEMENT FORM

THIS FORM MUST BE COMPLETED AND RETURNED WITH YOUR PROPOSAL

RFP TITLE: **Central Park 1 Playground Equipment**

RFP NUMBER: **2024-31**

RFP OPENING DATE & TIME: **July 11, 2024 at 3:00 PM**

RFP OPENING LOCATION: **City Hall Training Room at Ormond Beach City Hall**

PRE-PROPOSAL MEETING DATE & TIME: **June 25, 2024 at 2:00 PM, City Hall Room 103**

PRE-SUBMITTAL MEETING: **N/A**

Submittals Received After The Above Date And Time Will Not Be Accepted.

PROPOSER'S NAME: Lanier Plans, Inc dba KorKat

PROPOSER'S MAILING ADDRESS: 221 Cable Industrial Way

CITY-STATE-ZIP: Carrollton, GA 30117

F.E.I.N.: 86-1063618

PHONE NUMBER: 770-214-9322

EMAIL: ShaneL@KorKat.com

If returning as a "No Submittal", please state reason (s): _____

I certify that this Proposal is made without prior understanding, agreement, or connection with any corporation, firm, or person submitting a Proposal for the same materials, services, supplies, or equipment, and is in all respects fair and made without collusion or fraud. I agree to abide by all conditions of this RFP and certify that I am authorized to sign this RFP for the Proposer. In submitting a RFP to the City of Ormond Beach, the Proposer offers and agrees that if the Proposal is accepted, the Proposer will convey, assign or transfer to the City of Ormond Beach all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the Antitrust laws of the United States and the State of Florida for price fixing relating to the particular commodities or services purchased or acquired by the City of Ormond Beach. At the City's discretion, such assignment shall be made and become effective at the time the City tenders final payment to the Proposer.

X _____
AUTHORIZED SIGNATURE (MANUAL)

Shane Lanier
NAME (TYPED)

CEO
TITLE

7/3/2024
DATED

GENERAL CONDITIONS

PUBLIC ENTITY CRIMES: A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a Bid or Proposal on a contract to provide any goods or services to a public entity, may not submit a Bid or Proposal on a contract with a public entity for the construction or repair of a public building or public work, may not submit Bids or Proposals on leases or real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.

DISCRIMINATION: Pursuant to Section 287.134(2)(a), Florida Statutes, an entity or affiliate who has been placed on the discriminatory vendor list may not submit a bid or proposal on a contract to provide any goods or services to a public entity, may not submit a bid or proposal on a contract with a public entity for the construction or repair of a public building or public work, may not submit bid or proposal on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity.

NON-CONFIDENTIALITY OF BIDS AND/OR PROPOSALS/PUBLIC RECORDS: The City of Ormond Beach cannot and does not warrant the confidentiality of any information submitted in response to this solicitation. Florida law provides that municipal records shall at all times be open for personal inspection by any person, Section 119.01, F.S., The Public Records Law. Information and materials received by the City of Ormond Beach in connection with all Proposers' response shall be deemed to be public records subject to public inspection upon award, recommendation for award, or 30 days after bid/proposal opening, whichever occurs first. Section 119.071, F.S.

DISTRIBUTION OF BIDS AND RFP'S: The City uses the services of DemandStar (www.demandstar.com) to distribute its bids and RFP's on-line on the Internet. If you have received a copy of this RFP from any source other than DemandStar, please be aware that you may not have received the latest version of the RFP or any related addendums.

SUBMISSION OF PROPOSALS: All Proposals shall be submitted in a sealed envelope. The Request for Proposals (RFP) number, title, and opening date shall be clearly displayed on the outside of the sealed envelope. The **delivery of said Proposal** to the **Purchasing Coordinator City Hall Room 102** on or before the specified opening date and time is solely and strictly the responsibility of the Proposer. Any Proposal received by the Purchasing Coordinator City Hall Room 102 after the specified date and time will not be accepted. Proposals must be submitted on forms provided by the City. No other forms will be accepted. No Proposal may be modified after opening. No Proposal may be withdrawn after opening for a period of ninety (90) days unless otherwise specified.

EXECUTION OF RFP: Proposal must contain a manual signature of authorized representative in the space(s) provided. Proposals must be typed or printed in ink. Use of erasable ink is not permitted. All corrections made by Proposer to any Proposal entry must be initialed. The company name and Federal Employer Identification Number (F.E.I.N.) shall appear in the space(s) provided.

RFP OPENING: Proposals shall be opened at the time, date and place specified in the RFP, and the name of the Proposer shall be read aloud publicly.

RFP TABULATION: Any Proposer wishing to receive a copy of the RFP tabulation is required to enclose a stamped, self-addressed envelope with their Proposal. The RFP tabulation will be posted on DemandStar.com.

CLARIFICATION/CORRECTION OF RFP ENTRY: The City of Ormond Beach reserves the right to allow for the clarification of questionable entries and for the correction of obvious mistakes.

INTERPRETATION: Any questions concerning conditions and specifications shall be directed to the City's Purchasing Coordinator, unless otherwise specified in the RFP. Those interpretations which may affect the eventual outcome of this Proposal will be furnished in writing to all prospective Proposers. No interpretation shall be considered binding unless provided in writing by the City of Ormond Beach.

MINORITY POLICIES: The City of Ormond Beach, Florida, encourages the full participation of Disadvantaged and Women Business Enterprises (D&WBE) in the provision of goods and services.

LICENSES AND PERMITS: The Vendor/Contractor is responsible for obtaining all necessary permits and licenses to comply with all Federal, State, local laws, rules and regulations required to perform work in accordance with the specifications.

ADDITIONAL TERMS AND CONDITIONS: The City of Ormond Beach reserves the right to reject Proposals containing any additional terms or conditions not specifically requested in the original conditions and specifications.

TAXES: The City of Ormond Beach is exempt from Federal Excise Taxes and all Sales Taxes.

ASSIGNMENT: Any purchase order or contract issued pursuant to an RFP and the monies which may become due thereunder are not assignable except with the prior written approval of the City Manager or City Commission, whichever authorized the purchase order or contract.

LIABILITY: The vendor shall hold and save the City of Ormond Beach, its officers, agents, and employees harmless against claims by third parties resulting from the vendor's or supplier's breach of contract or negligence, including all attorney's fees and costs, and shall pay any and all damages, fees, and costs assessed on behalf of the City. The City expressly reserves all rights, privileges and benefits of sovereign immunity.

AWARDS: The City reserves the right, in its sole discretion, as the best interest of the City may require, to make award(s) by individual item, group of items, all or none, or a combination thereof; on a geographical basis and/or with one or more vendors or contractors; or to reject any and all Proposals or waive any minor irregularity or technicality in the Proposals received.

NON-APPROPRIATION OF FUNDS: In the event sufficient budget funds are not available for a new fiscal period, the CITY shall notify the VENDOR/CONTRACTOR of such occurrence and the contract shall terminate on the last day of the current fiscal period, without any penalty or expense to the CITY of any kind whatsoever.

OTHER AGENCIES: All Bidder(s) awarded contracts from this bid or proposal may, permit any municipality or other government agency to participate in the contract under the same prices, terms, and conditions, if agreed to by both parties.

It is understood that at no time will any city, municipality, or other agency be obligated for placing an order for any other city, municipality, or agency: nor will any city, municipality, or agency be obligated for any bills incurred by any other city, municipality, or agency. Further, it is understood that each agency will issue its own purchase orders to the awarded bidder(s).

COMPLIANCE WITH FLORIDA PUBLIC RECORDS LAW

Contractor expressly agrees that it shall comply with the public records law provided in Florida Statutes, Chapter 119, and specifically to:

(a) Keep and maintain public records required by the City to perform the contracted service.
(b) Upon request from the City Clerk, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes, or as otherwise provided by law.
(c) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the contractor does not transfer the records to the City.
(d) Upon completion of the contract transfer, at no cost to the City, all public records in possession of the contractor or keep and maintain public records required by the City to perform the service. If the contractor transfers all public records to the City upon completion of the contract, the contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the contractor keeps and maintains public records upon the completion of the contract, the contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City Clerk, in a format that is compatible with the information technology systems of the City.
(e) Failure of the Contractor to comply with Public Records Law as provided by Florida Statutes, Chapter 119, shall subject the Contractor to penalties under Chapter 119.10 and subject this Agreement to termination for cause by the City.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

CITY CLERK
22 SOUTH BEACH STREET
ORMOND BEACH, FLORIDA 32175. (386) 676-0311
CITYCLERK@ORMONDBEACH.ORG

Ref: Fla. Stat. §119.0701(2016)

THE CITY OF ORMOND BEACH RESERVES THE RIGHT TO REJECT ANY OR ALL PROPOSALS, AND TO WAIVE INFORMALITIES, AS MAY BE DEEMED TO BE IN THE BEST INTEREST OF THE CITY.

REQUEST FOR PROPOSALS

FLEMING PLAYGROUND
RFP NO. 2024-31

The City of Ormond Beach, in compliance and in accordance with the provisions of Section 287.057, Procurement of Contractual Services, Florida Statutes, is seeking proposals from companies who are qualified to design and all playground equipment components for this project. The document package necessary for participating in this RFP can be obtained on-line at www.demandstar.com, or by calling DemandStar at (206) 940-0305. If you have any difficulty obtaining the RFP documents, please contact the City's purchasing office at (386) 676-3223.

There will be a pre-submittal meeting on **June 25, 2024 at 2:00 PM** at the City Hall In Room 103, 22 South Beach Street, Ormond Beach. This meeting is not mandatory. **The deadline to submit questions is July 5, 2024 at 5:00pm.**

One (1) signed original of the complete proposal packet along with one (1) fully complete electronic file in pdf format on either a CD or thumb drive. Both versions must be submitted in a single sealed envelope to the Purchasing Coordinator City Hall Room 102, 22 South Beach Street, Ormond Beach, FL 32174, no later than **July 11, 2024 at 3:00 PM.**

THE CITY RESERVES THE RIGHT to reject any or all proposals or parts thereof, or to accept the proposal or parts thereof when considered in the best interest of the City. Any proposal received after the time and date specified will not be considered.

THE CITY OF ORMOND BEACH

By: Rob Hart
Purchasing Coordinator

STATEMENT OF PURPOSE

The City of Ormond Beach, Florida, is requesting proposals and services from companies who are qualified to design and install all playground equipment components for this project. The equipment shall meet all current playground/fitness safety standards and certifications including, but not limited to, CPSC, ASTM, DIN and IPEMA.

Background

The proposed playground will be located off of Fleming Avenue and is within Central Park 1. This new playground will replace the existing deteriorated equipment that was installed in the early 2000's. Central Park is a city-owned and operated neighborhood park which is 149 acres that is open to the public. The project is located at 601 Fleming Avenue in Ormond Beach and is a highly used facility by the surrounding community and general public.

The project area is located on the north side of the existing community gardens and south of the existing pavilion, see attached map for location and pictures. The defined playground area is approximately 46' width x 65' length maximum which encompasses this area.

Scope of Work/Layout Design

This is a turn-key project to design the new playground layout, supply materials, deliver and install new exterior commercial playground equipment, including required permitting. The selected company shall be issued a contract for services for this project.

Vendors are required to develop and provide equipment layout plan for the project area utilizing the scale of 1"=10'. Complete three-dimensional drawings or photos of equipment and plan view drawing showing the layout within the provided use zone are required. All design plans/drawings shall be shown in complimentary color families.

One design layout is required, however additional designs are optional. Each vendor can provide 3 different designs maximum for this submittal. Each design should be labeled Option 1, Option 2 and Option 3.

The general dimensions of the area are provided for planning purposes, vendors are responsible for ensuring the accuracy of these measurements and for ensuring that any equipment layout proposed will fit the actual site dimensions.

Current Conditions

See attached aerial map that shows project location and existing surrounding site elements.

Playground Equipment

The playground equipment chosen shall be durable and designed for outdoor use. This playground equipment selected shall incorporate the latest playground design philosophy and technology addressing the physical and creative needs of children. The playground equipment selected shall be appropriate for ages 5-12 and stressing the importance of durability. The equipment and area around the equipment shall be accessible to all children and meet all current ADA requirements at

a minimum, with ADA inclusive features possible within the funding amount. The playground equipment could be one large unit or multiple pieces for different play experiences.

Equipment shall meet National Playground standards as referenced in the American Society for Testing and Materials (ASTM) document F1487-17; Standard Consumer Safety Performance Specification for Playground Equipment for Public Safety. Evidence of compliance shall be submitted and stamped on equipment as required.

Construction in compliance with ASTM F2373, ADA guidelines for surfacing and ASTM F1292 for Impact Attenuation and F1951 for wheelchair accessibility.

Equipment shall meet National playground standards as referenced in the U.S. Consumer Product Safety Commission's Public Playground Safety Handbook.

All proposed equipment and surfacing shall be IPEMA certified by the Manufacturer.

The equipment shall accommodate a minimum of 30 children, with a minimum of 7 play events.

The equipment which shall be incorporated in the design, supplied, and installed could include, but not be limited to the following.

Types of Equipment to Encourage The Play Experience
Auditory, balancing, gathering/social/imaginative, manipulative, climbing, sliding and spinning
Equipment that could be include in the design:
ADA Transfer Platform with Guardrail & Hand Grips
Climber
Open slide
Swings
Play panel or interactive element
Spinner
Ladder

Types of Materials for Equipment
Primary considerations are safety, durability, longevity and low maintenance
Stainless Steel bolts, anchors and fasteners
Bridges, walkways and platforms shall be slip resistant
Two coat powder coating process 3.0-5.0 mil thickness minimum
Materials that are long lasting
No wood products for playground equipment
Shade components allowed

Borders with Accessible Border System
Supply and install playground borders around the entire perimeter of the play area and include an ADA accessible border system. Borders to be 12" height, made from recycled plastic content including galvanized stakes to secure in place.

Surfacing
Surfacing is proposed to be engineered wood fiber and shall be installed as per manufacturer installation recommendations.

Park Benches
Supply and install a total of (1) backed bench to hold a minimum of two people. The bench shall be installed inside the plastic border and shall be surface mounted or embedded. Bench shall have all stainless steel hardware and color/finish shall compliment equipment color scheme.

Site Area Clean Up
The site shall be kept clean and free of tools, trash, and debris and installation materials on a daily basis. Products may be stored on site during installation with appropriate protective measures and approval by the Cities Project Manager. If periphery areas are damaged due to implementation than site restoration will be required and restored with like materials at companies cost.

Removal of Existing Playground Equipment:
City staff will be removing the existing playground equipment prior to the start of this project. The playground company will be responsible to remove the existing mulch on the existing playground.

Project Budget:

This is a Facilities Renewal & Replacement funded project and the allocated funds are $40,000 for this project.

SCHEDULE OF PROPOSAL

June 9, 2024	Legal Advertisement
June 25, 2024 2:00 PM	Non-mandatory pre-submittal meeting City Hall Room 103, 22 South Beach Street
July 5, 2024 5:00 PM	Last day for questions
July 11, 2024 3:00 PM	Proposals Due - one (1) original of the complete proposal packet along with one (1) fully complete electronic file in pdf format on either a CD or thumb drive. Both versions must be in a single sealed envelope. Submit proposals to the Purchasing Coordinator City Hall Room 102, City Hall, 22 South Beach Street, Ormond Beach, FL 32174.
July 19, 2024 11:00 AM	Proposal Review and Rankings
August 20, 2024 7:00 PM	City Commission Award of Contract

TERM OF AGREEMENT

The contract will be for the duration of this project.

GENERAL INSTRUCTIONS

- Inquiries: Questions may arise as firms are preparing their proposals. Please direct questions in writing to:

  Rob Hart
  Purchasing Coordinator
  22 South Beach Street
  Ormond Beach, Florida 32174
  Telephone: (386) 676-3223
  e-mail: Rob.Hart@ormondbeach.org

The last day to submit questions is July 5, 2024 at 5:00 pm.

- Signature Requirements: Proposals must be signed by a duly authorized officer(s) of the proposing firm. Consortiums, joint ventures, or teams submitting proposals, although permitted and encouraged, will not be considered responsive unless it is established that all contractual responsibility rests solely with one firm or legal entity which shall not be a subsidiary or affiliate with limited resources. Each proposal shall indicate the entity responsible for execution on behalf of the proposal team.

- Proposal Delivery: The City of Ormond Beach must receive one (1) original of the complete proposal packet along with one (1) fully complete electronic file in pdf format on either a CD or thumb drive. Both versions must be in a single sealed envelope. Submit proposals to Purchasing Coordinator City Hall Room 102, City Hall, 22 South Beach Street, Ormond Beach, FL 32174, no later than **July 11, 2024 at 3:00 PM**. Proposals shall be in a sealed envelope with the RFP title and number plainly marked on the outside of the envelope or package. It is solely the responsibility of the submitter to ensure that the Proposal is delivered on or before the specified date and time. Late submittals will not be accepted.

- Addenda and Supplements to the Request for Proposals (RFP): In the event that it becomes necessary to revise any part of this RFP, or if additional information is necessary to enable the proposing firm to make an adequate interpretation of the provisions of this RFP, a supplement to the RFP will be provided to each firm that has requested a copy of this document.

- Rejection Rights: The City of Ormond Beach reserves the right, at any time, to modify, waive or otherwise vary the terms and conditions of this RFP including, but not limited to, the deadlines for submission and submission requirements. The City further reserves the right to reject any or all submittals, to cancel or withdraw this RFP at any time and to negotiate with any party prior to or after submittal of proposals. Selection is also dependent upon the negotiation of a mutually acceptable contract with the successful proposers.

- Cost of Proposal Preparation: No reimbursement will be made by the City of Ormond Beach for any costs incurred in the preparation of the proposal or presentation.

- Proposals to be in Effect: Each proposal shall state that it is valid for a period of not less than 90 days from date of receipt.

SELECTION OF COMPANY

Professional Qualifications: Any firm or individual experienced and authorized to do business in the State of Florida is invited to submit a qualifications packet. The firm must possess professional service registrations and construction licenses in accordance with applicable statutes, regulations, and rules. The firm must be able to demonstrate financial strength appropriate to the scale of projects to be managed.

Insurance Requirements: The firm shall purchase at his own expense and maintain throughout the duration of the contract the types and amounts of insurance in form and from companies satisfactory to the City and shall furnish proof of insurance prior to commencing work. The firm shall indemnify and hold harmless the City and its employees from and against all claims, damages, losses, and expenses including, but not limited to, attorneys' fees arising out of or resulting from work provided that the claim, damages, loss and expense is caused in whole or in part.

Information to be Submitted:

One (1) original of the complete proposal packet along with one (1) fully complete electronic file in pdf format on either a CD or thumb drive:

TAB 1 – General – 20 Points

1. Letter of interest and cover letter signed by an authorized officer of the firm or company. Include name(s), telephone number(s), and email(s) of the authorized contact person(s) concerning this proposal.
2. RFP response form, completed.
3. Whether or not the firm or individual is a certified Minority Business Enterprise as defined by the Florida Small and Minority Business Assistance Act of 1985.
4. Provide a copy of applicable Florida business license. Provide proof of being registered to do business in the State of Florida.
5. Copy of firm's certificate of insurance.
6. **Note:** firm or company selected will be required to provide performance and payment bonds for this project.
7. Completed Conflict, Non-Conflict of Interest Statement/Litigation Statement.
8. Completed Drug-Free Workplace Certification.
9. Completed form - Verification of Employment Status Using E-Verify System

TAB 2 – Experience – 30 Points

1. Provide a brief introduction narrative letter highlighting the qualifications of the firm including legal nature of organization, number of years in business, pertinent capabilities, and experience in contracting and managing municipal projects.

2. Provide an organizational chart of the firm to include a depiction of subcontractors, if any, proposed for use for accomplishment of the project scope of work. List all subcontractors and/or agents who shall be part of your team on this project, and state what their involvement and specific duties shall be (i.e. installer, manufacturer, etc.).

3. Provide a listing of at least 3 projects and references completed by the firm comparable in nature and costs which demonstrate the firm's ability to perform the required services as described within the RFP. If applicable list examples of projects in the State of Florida and particularly municipal projects. Include the following for each project:
    a. Name and location of the project.
    b. The nature of the firm's responsibility on the project.
    c. Project owner's representative name, address, telephone and e-mail contact information.
    d. Date project was completed or is anticipated to be completed.
    e. Firm's project manager and other key professionals involved on the project.

TAB 3– Proposed Playground Equipment and Configuration – 30 Points

1. Provide the manufacturer's name and model/name of the equipment you are proposing.
2. Vendors are required to develop and provide equipment layout plan for the project area utilizing the scale of 1"=10'. Complete three-dimensional drawings or photos of equipment and plan view drawing showing the layout including the use zones. See scope of work/layout design sections for more requirement details.
3. Does the equipment meet all the most current safety standards and certifications as required in this RFP?
4. Provide the manufacturer's warranty on all components including powder coating/paints & poured in place surfacing.
5. Provide details on the equipment materials.
6. How many people can use this equipment at a given time and how many play events?
7. Does the equipment layout allow space between the components and allow clearance for a wheel chair (ADA accessible)?
8. Provide a cut sheet of all equipment being proposed and include technical specifications, including the plastic borders and engineered wood fiber.

TAB 4 – Written Proposal & Project Schedule – 20 Points

1. Please provide a written proposal. Project is within the stated budget. Building permit fees shall be included in written proposal and signed and sealed documents as needed for Building Permit approval and include payment & performance bonds.

2. Provide a project schedule that details equipment manufacturing time and the projected timeframe for installation of all components within this RFP.

Evaluation Criteria:

The most important evaluation emphasis will be placed upon the experience and past performance of the firm and the overall qualifications of the firm. Evaluation will also be based upon a creative

equipment layout that enhances the play experience for children between the ages of 5-12 and incorporates all components listed in this RFP.

Selection Process: A designated selection committee will review and evaluate responses to this RFP for each firm and will rank the submittals based on the Evaluation Form attached as Exhibit 1. These proposers may be invited to appear for interview by City staff or be asked to further demonstrate their qualifications. The City intends to select one (1) firm for this contract. A final contract will then be submitted for approval and recommendation by the City Commission.

Project Milestones:

Contract Awarded at City Commission Meeting: August 20, 2024
Pre-Construction Meeting: Prior to NTP
Notice to Proceed: The NTP Will Be Issued When The Equipment Arrives
Project Substantially Complete (120 days):
Project Final Completion (150 days):

REGISTRATION AND INSURANCE REQUIREMENTS FOR VENDOR/CONTRACTOR WORKING ON CITY PROJECTS

Registration Requirements

VENDOR'S doing business within the City Limits must be registered with the City. Requirements for registering a business are as follows:

Copy of City Business Tax Receipt (where your business is located).
Certificate of Insurance showing General Liability and Workers' Comp (or State Workers' Comp Exemption form).
Application Fee: $25.00 For more information, contact the City's Business Tax Receipt official.

State Certified/Registered Contractors

All registered contractors must be registered with Volusia County. Volusia County Contractor Licensing, 123 W. Indiana Ave., Rm 203, Deland, Fl. 32720 (386) 736-5957 Opt. 2 –(386) 248-8158 Fax. Certified Contractors have the option of registering with Volusia County, or providing information directly to the business tax receipt official.

If you have any questions regarding the above requirements, please contact the business tax receipt official at (386) 676-3370.

Risk Management and Insurance Requirements

A. Payment and Performance Bonds

1. Except as otherwise provided herein, the Contractor shall, prior to beginning performance, deliver to the City, and the City shall record in the public records of Volusia County, Florida, the Contractor's Payment and Performance Bond in an amount equal to the full amount of the Contract.

2. **(a)** Payment and Performance Bonds shall not be required for any contract except those which are for the construction of a public building, for the prosecution and completion of a public work (as described in Section 180.06, **Florida Statutes,** as amended from time to time) or for repairs upon a public building or public work (as described in Section 180.06, **Florida Statutes**, as amended from time to time).

   (b) With respect to those Contracts for which Payment and Performance Bonds are otherwise required:

      i. Unless the City Manager, or designee, determines such Bond to be necessary to protect the interests of the City, no Contractor shall be required to provide a Payment and Performance Bond for any Contract which is for $25,000.00 or less.

      ii. Upon the request of the contractor, good cause shown by the Contractor, and a determination that the public health, safety and welfare will be sufficiently protected, the City Commission may exempt the contractor from the requirement of providing a Payment and Performance Bond for any Contract which is for more than $25,000.00 but is less than $200,000.00.

3. The Payment and Performance Bond shall list the Contractor as Principal and be issued by a surety insurer authorized to do business in Florida as a surety and listed as an acceptable surety in the Federal Register.

4. The Payment and Performance Bond shall be executed pursuant to Section 255.05, **Florida Statutes**, and be in a form substantially similar to the form set forth in Section 255.05(3), **Florida Statutes**.

5. The Payment and Performance Bond shall specifically provide coverage for delay damages due to a default by the Contractor.

6. The Payment and Performance Bond shall not make the Contract part of the Bond agreement.

7. In lieu of the Payment and Performance Bond, the Contractor may file with the Finance Director of the City, in an amount equal to the full amount of the Contract, cash, a money order, a certified check, a cashier's check, an irrevocable letter of credit, or a security of a type listed in Part II, Chapter 625, **Florida Statutes**.

8. In the event the surety on any Payment and Performance Bond furnished by the Contractor is declared bankrupt or becomes insolvent, or its right to do business in the State of Florida is terminated, the Contractor shall, within five (5) working days thereafter, substitute another Payment and Performance Bond and surety acceptable to the City.

9. The Contractor is totally and solely responsible for keeping its surety informed as to the Base Contract Price as bid, significant changes in the Project Scope, and the overall progress and completion of the Project for the entire life of the Contract.

10. The payment and performance bond requirements stated herein above shall not be applicable to service-related contracts unless otherwise determined by the City Manager in order to protect the health, safety and welfare of the general public.

B. Contractual Provisions Relative to Risk Management

All contracts for any public works to be performed, and service-related contracts, for or on behalf of the City shall include at a minimum, the following, or substantially similar, provisions:

1. Hold Harmless and Indemnity

The Contractor agrees to assume liability for and indemnify, hold harmless, and defend the City, its commissioners, mayor, officers, employees, agents, and attorneys of, from, and against all liability and expense, including reasonable attorney's fees, in connection with any and all claims, demands, damages, actions, causes of action, and suits in equity of whatever kind or nature, including claims for personal injury, property damage, equitable relief, or loss of use, to the extent caused by the negligence, recklessness, or intentionally wrongful conduct of the Contractor, its agents, officers, contractors, subcontractors, employees, or anyone else employed or utilized by the Contractor in the performance of this Contract. The Contractor's liability hereunder shall include all attorney's fees and costs incurred by the City in the enforcement of this provision.

2. Payment on Behalf of City

The Contractor shall pay all costs of the City's legal defense, as may be selected by the City, for all claims described in the Hold Harmless paragraph.

Such payment on behalf of the City shall be in addition to any and all other legal remedies available to the City and shall not be considered to be the City's exclusive remedy.

3. Loss Control/Safety

Precaution shall be exercised at all times by the Contractor for the protection of all persons, including employees and property. The Contractor shall comply with all applicable laws, regulations and ordinances related to safety and health, shall make special efforts to detect hazardous conditions, and shall take prompt action when loss control/safety measures are reasonably necessary.

The City may order work to be stopped if conditions exist that present an immediate danger to persons or property. The Contractor acknowledges that such work stoppage will not shift responsibility for any damages from the Contractor to the City.

4. Service Bond

For Service-related contracts only, the City may require the Contractor to secure a service bond with a minimum $25,000 coverage limit for the period of the service agreement. The service bond covers dishonest acts of the contractor's employees against the City. A copy of the bond shall be provided to the City when the agreement commences.

Service-related contracts include and are not limited to businesses providing janitorial, pest control, general repair, security, carpet cleaning, locksmith, temporary employment, painting, moving services or other contracts as determined in the discretion of the Risk Manager as necessary to minimize loss.

C. Contractor's Insurance

1. General

The Contractor, including service-related contractors, shall purchase and maintain for the entire life of the Project, including any and all approved time extensions, until its final acceptance by the City, such insurance as will protect the Contractor from claims under Workers' Compensation, disability benefit laws or other similar employee benefit laws; from claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees; from claims insured by usual or unusual injury liability coverage; from claims or injury to or destruction of tangible property and from claims insured by usual Commercial General Liability coverage. This includes loss of use resulting therefrom, any or all of which may arise out of the Contractor's operations under the Contract Documents, whether such operations be by the Contractor, by any Subcontractor, or by anyone directly or indirectly employed by any of them or for whose acts any

of them may be legally liable. The Contractor's deductibles/self-insured retentions shall be disclosed to the City and may be disapproved by the City, and may be reduced or eliminated at the sole discretion of the City. The Contractor is responsible for the amount of any deductible or self-insured retention.

2. Types of Insurance and Limits of Liability

The insurance required herein shall be written for not less than any limits of liability specified and incorporated as part of the Contract Documents or as required by law, whichever is greater, and shall include and not limited to the following:

(a) Workers' Compensation Insurance in statutory limits for the State of Florida with Coverage B - Employer's Liability limits of not less than:

$100,000 Each Accident Bodily Injury by Accident
$100,000 Each Employee Bodily Injury by Disease
$500,000 Policy Limit Bodily Injury by Disease

Certificate of Exemptions. If the contractor has a State-issued Certificate of Exemption, the contractor may provide a copy in place of the requirement for coverage. However, if the contractor subcontracts or retains any other person or entity to perform under the contract, that person or entity must provide proof of workers' compensation insurance as required by law or provide a Certificate of Exemption.

It is the intent of the City that any individual who either contracts directly with the city or performs any work on behalf of any such contractor be covered by workers' compensation insurance or have a valid exemption from said coverage.

(If applicable to the Project, the policy must include benefits under the United States Longshoremen's and Harbor Workers' Act and the Jones Act coverage--all maritime coverage.)

(b) Commercial General Liability Insurance shall be written on a coverage form as broad as Insurance Services Office (ISO) Form CG 00 01 11 85, or its successor form, including but not limited to the following coverage (any deviation shall be noted on the Certificates of Insurance):

a. Premises, Operations, Products and Completed Operations
b. Owners' & Contractors' Protective
c. Products & Completed Operation
d. Explosion, Collapse & Underground Conditions
e. Blanket Contractual Liability
f. Personal Injury Liability
g. Broad Form Property Damage Endorsement, including Completed Operations

h. Independent Contractors
i. Watercraft--Owned and Non-Owned (if applicable, endorsement must be included in General Liability policy or a separate Protection & Indemnity Policy must be written)
j. Pollution Liability (if applicable)
k. Asbestos Abatement (if applicable)
l. Fire Damage Liability

Certain coverage outlined above may not be required if they do not relate to the Project, as may be determined at the sole discretion of the City.

Commercial General Liability Coverage shall be written on an occurrence basis and the limits shall be no less and not limited to the following amounts:

Limits (not less than)

$1 Million Each Occurrence
$2 Million General Aggregate
$1 Million Aggregate Products & Completed Operations

NOTE: Commercial General Liability Coverage must be purchased on either a project basis (separate policy per contract) or an endorsement allocating an aggregate limit per location or specified project.

(c) Automobile Liability Insurance is required if an Automobile(s) is used in the performance of the contract.

ISO Symbol 1 (Any Auto), or alternatively a combination of Symbol 2 (Owned Autos), Symbol 8 (Hired Autos), and Symbol 9 (Non-Owned Autos), and limits shall be no less than:

$1 Million	Combined Single Limit for Bodily Injury and Property Damage

(d) Excess Liability

For contracts $250,000 or greater an Excess Liability Policy of at least but not limited to $1,000,000 in addition to the scheduled underlying policies for Commercial General Liability, Automobile Liability and Employers' Liability, the Contractor shall also provide an Excess Liability Policy with a maximum self-insured retention not to exceed $25,0000 per occurrence.

(e) Builder's Risk

Contractor shall purchase Builder's Risk Insurance for any contracts that are deemed to be vertical construction on an All-Risk policy, and shall also

include coverage for wind, hail, and named storm. Limits of coverage shall be at least and not limited to the value of the project.

(f) Professional Liability, Malpractice and/or Errors and Omissions

The Contractor shall purchase and maintain professional liability, malpractice, or errors or omissions insurance with minimum limits of $1,000,000 per occurrence. If a claims made form of coverage is provided, the retroactive date of coverage shall be no later than the inception date of claims made coverage, unless the prior policy was extended indefinitely to cover prior acts. Coverage shall be extended beyond the policy year either by a supplemental extended reporting period (ERP) of as great a duration as is available, and with no less coverage and with reinstated aggregate limits, or by requiring that any new policy provides a retroactive date no later than the inception date of claims made coverage.

D. Requirements for Certificates of Insurance

1. With the execution of the Contract Documents, the Contractor, including service-related contractors, shall provide certificates of such insurance acceptable to the City. These certificates and insurance policies shall contain an endorsement that the coverage under the policies will not be canceled, non-renewed or materially changed until at least thirty (30) days' prior written notice of such cancellation, non-renewal or change (except for nonpayment of premium, which shall be ten (10) days) and a copy of the cancellation endorsement signed by an authorized representative of the insurer, be given to the City. The contractor shall be required to replace any expired or canceled policies in like amount and coverage to the satisfaction of the City. The Certificate of Insurance shall be the ACORD FORM 25-S (7/90), or its successor form, and shall be made a part of the Contract Documents.

2. New certificates of insurance shall be provided to the City at least fifteen (15) days prior to coverage renewals.

3. If requested by the City, the contractor shall immediately furnish complete copies of the Contractor's insurance policies, forms and endorsements.

4. For Commercial General Liability coverage the Contractor shall, at the option of the City, provide an indication of the amount of claims payments or reserves chargeable to the aggregate amount of liability coverage. If the Commercial General Liability form of coverage includes an annual aggregate limitation on the amount of insurance provided, a separate project aggregate limit may be required by the City for the given contract.

5. If the Contractor fails to obtain and maintain for the life of the Project the insurance required hereby or to replace any such expired or canceled policy, the City may obtain and maintain such insurance with such company as it deems satisfactory. Any amounts expended by the City in payment of premiums for such insurance

shall be deducted by the City form the amount due the Contractor for the work covered by the Contract.

E. Policies of Insurance

1. Except as otherwise provided in this Exhibit, all insurance policies shall be issued by insurers licensed to do business in the State of Florida on an admitted basis or which is an eligible surplus lines insurer in the State of Florida, and any such insuring company is required to have a minimum financial rating of (A-), in the latest edition of "Best's Key Rating Guide", published by A. M. Best Co., Inc., or some similarly nationally recognized rating authority, including Standard and Poors and Demotech.

2. For Workers' Compensation coverage only, self-insurance programs are acceptable with a minimum A- rated reinsurance carrier; written confirmation is required.

3. All policies of insurance or certificates thereof referred to in this Exhibit shall be deposited with the City Clerk.

4. The City shall be named an Additional Insured on General Liability including products and completed operations and Automobile Liability policies of insurance and certificates thereof.

City of Ormond Beach

Request for Proposals (RFP)
FLEMING PLAYGROUND
(RFP No. 2024-31)
RFP RESPONSE FORM

THIS RESPONSE IS SUBMITTED TO:

Purchasing Coordinator
City of Ormond Beach
22 S. Beach Street
Ormond Beach, Florida 32174

The undersigned SUBMITTER proposes and agrees, if this Submittal is accepted, to enter into a Contract with the CITY that reflects the items of this Request for Proposal (RFP) and to provide all services, as specified or indicated in the RFP Documents, in full accordance with the terms and conditions set forth in therein.

SUBMITTER accepts all of the terms and conditions of the General Conditions. SUBMITTER will sign the Contract) and submit the Contract security (when applicable) and other documents required by the Contract Documents within ten (10) days after the date of CITY's Notice of Award.

In submitting this information, SUBMITTER represents, as more fully set forth in the Agreement, that:

SUBMITTER has examined copies of all the RFP Documents and of the following Addenda:

Addendum Date	Addendum Number
6/20/2024	1
6/27/2024	2

Receipt of all of which is hereby acknowledged.

This Submittal is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; SUBMITTER has not directly or indirectly induced or solicited any other Submitter to submit a false or sham Submittal; SUBMITTER has not solicited or induced any person, firm or a corporation to refrain from bidding; and SUBMITTER has not sought by collusion to obtain for himself any advantage over any other Bidder or over the CITY.

THIS RESPONSE IS SUBMITTED BY:

COMPANY NAME: Lanier Plans, Inc dba KorKat

VENDOR/CONTRACTOR LICENSE NUMBER: CGC1515875

ADDRESS: 221 Cable Industrial Way Carrollton, GA 30117

PHONE NO.: 770-214-9322 FAX NO.: 770-214-9323

SUBMITTER'S NAME: Shane Lanier
(Typed or Printed in Ink)

TITLE: CEO

AUTHORIZED SIGNATURE: I, _____ hereby
(Original signature required in each document)

declare that I have read and fully understand the RFP Documents and, including the General Conditions and the Scope of Work, and that I am duly authorized to sign and submit this Submittal.

The CITY reserves the right to reject any and all Submittals, to waive informalities, and to accept any Submittal or parts thereof as the CITY, in its sole discretion, determines to be in the best interest of the CITY.

PROPOSER: PLEASE ENSURE THAT YOU HAVE SIGNED THE RFP RESPONSE FORM OF THIS REQUEST FOR PROPOSAL. OMISSION OF A SIGNATURE ON THAT PAGE MAY RESULT IN REJECTION OF YOUR PROPOSAL.

City of Ormond Beach
Request for Proposals (RFP)
FLEMING PLAYGROUND
(RFP No. 2024-31)
CITY OF ORMOND BEACH, FLORIDA

CONFLICT, NON-CONFLICT OF INTEREST STATEMENT
LITIGATION STATEMENT

1.

[M] To the best of our knowledge, the undersigned firm has no potential conflicts of interest due to any other clients or contracts for this project.

[ ] The undersigned firm, by attachment to this form, submits information which may be a potential conflict of interest due to other clients or contracts for this project.

2.

[M] The undersigned firm has had no litigation on any project in the last five (5) years.

[ ] The undersigned firm, by attachment to this form, submits a summary and disposition of individual cases of litigation during the past five (5) years.

Lanier Plans, Inc dba KorKat
COMPANY NAME

AUTHORIZED SIGNATURE

Shane Lanier
NAME (PRINT OR TYPE)

CEO
TITLE

7/8/2024
DATE

CITY OF ORMOND BEACH, FLORIDA
Request for Proposals (RFP)
FLEMING PLAYGROUND
(RFP No. 2024-31)
DRUG-FREE WORKPLACE CERTIFICATION

IDENTICAL OR "TIE" SUBMITTALS: Preference shall be given to businesses with drug-free workplace programs. Whenever two or more proposals which are equal in respect to price, quality, and service are received by the State or by any political subdivision for the procurement of commodities or contractual services, a bid received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. Established procedures for processing tie bids will be followed if none of the tied vendors have a drug-free workplace program. In order to have a drug-free workplace program, a business shall:

1) Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2) Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violation.

3) Give each employee that engages in providing the commodities or contractual services that are under bid a copy of the statement specified in subsection (1).

4) In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) calendar days after such conviction.

5) Impose sanctions on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.

6) Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

Lanier Plans, Inc dba KorKat
Company Name

Authorized Signature

Shane Lanier
Print Name

CEO
Title

Exhibit 1

EVALUATION FORM
Fleming Playground
RFP 2024-31

OPTION 1

Name of Firm: _____

Reviewer: _____

Date: _____

	Points
General (20 pts max.)	_____
Experience (30 pts max.)	_____
Proposed Fitness Equipment Stations and Configuration (30 pts max.)	_____
Written Proposal & Project Schedule (20 pts max.)	_____
TOTAL POINTS:	_____

Scoring Criteria:

Each reviewer above will score each design option submitted and scores will be added together. The company with the highest score will be awarded the project.

Exhibit 2

EVALUATION FORM
Fleming Playground
RFP 2024-31

OPTION 2

Name of Firm: _____

Reviewer: _____

Date: _____

	Points
General (20 pts max.)	_____
Experience (30 pts max.)	_____
Proposed Fitness Equipment Stations and Configuration (30 pts max.)	_____
Written Proposal & Project Schedule (20 pts max.)	_____
TOTAL POINTS:	_____

Scoring Criteria:

Each reviewer above will score each design option submitted and scores will be added together. The company with the highest score will be awarded the project.

Exhibit 3

EVALUATION FORM
Fleming Playground
RFP 2024-31

OPTION 3

Name of Firm: _____

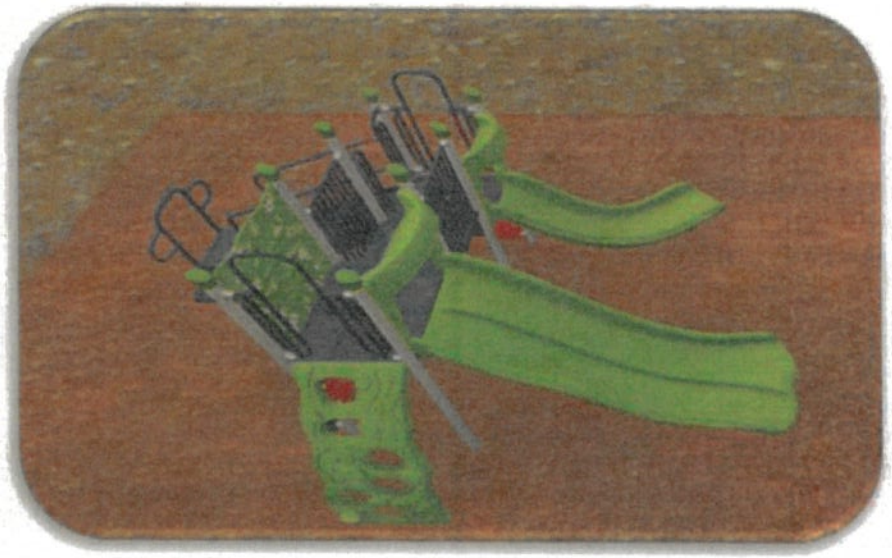
Reviewer: _____

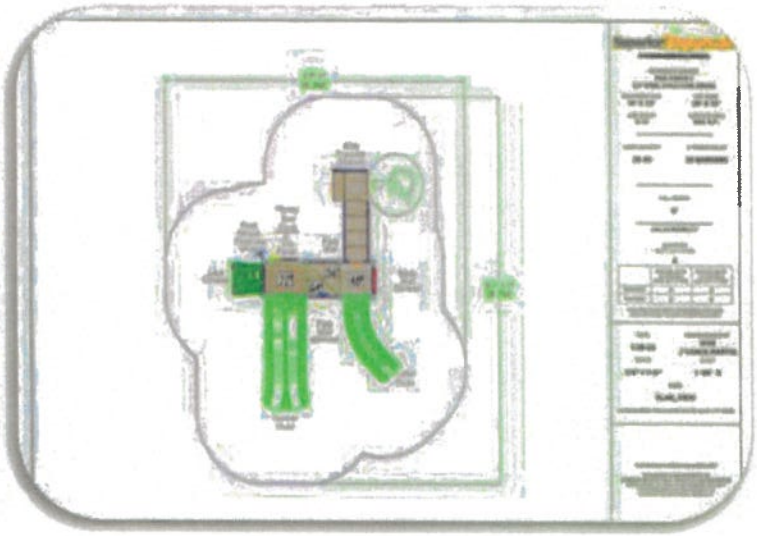
Date: _____

	Points
General (20 pts max.)	_____
Experience (30 pts max.)	_____
Proposed Fitness Equipment Stations and Configuration (30 pts max.)	_____
Written Proposal & Project Schedule (20 pts max.)	_____
TOTAL POINTS:	_____

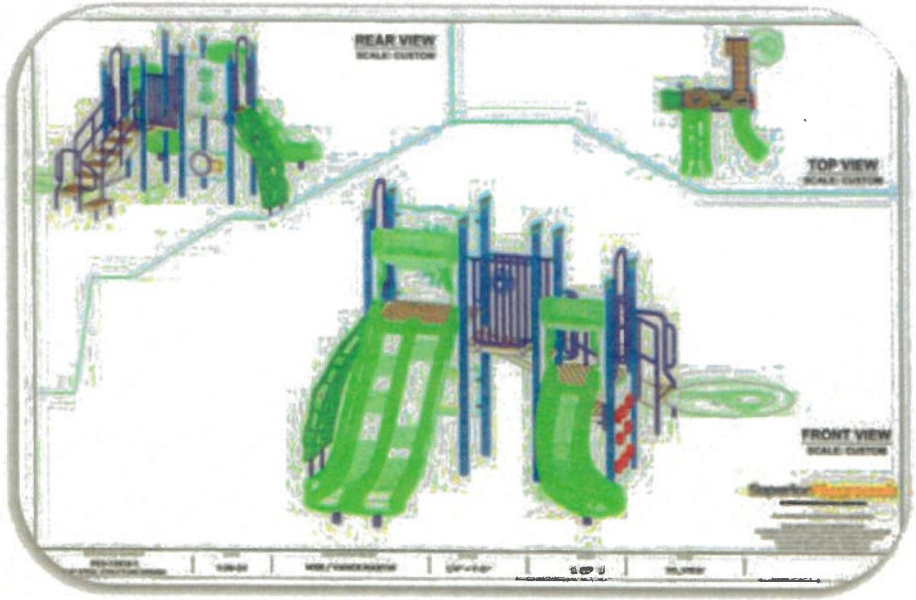
Scoring Criteria:

Each reviewer above will score each design option submitted and scores will be added together. The company with the highest score will be awarded the project.





Central Park
Ormond Beach
FL



OPTION TWO

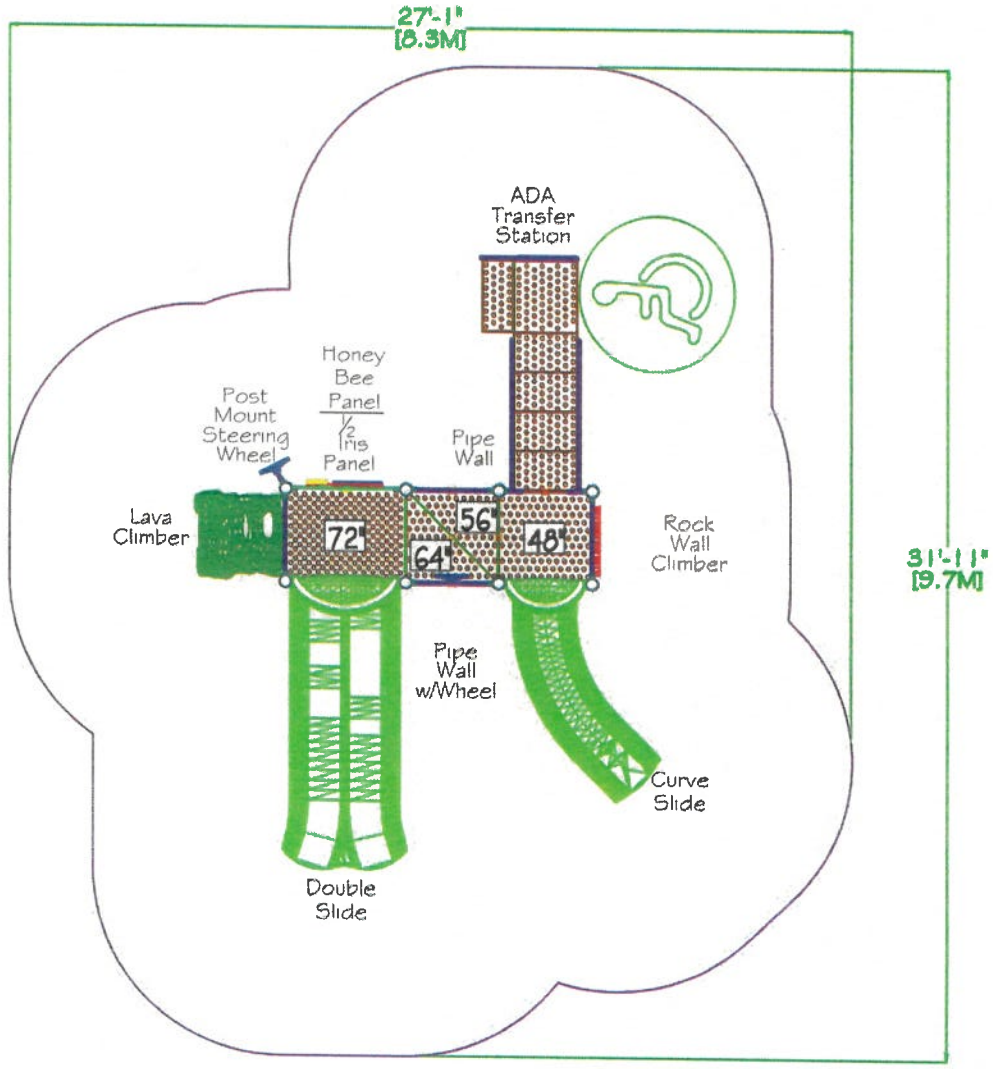
This ADA compliant 5-12 playground features a capacity of 30, three different slides, a lava climber, a rock wall climber and a pipe wall! New black playground timbers, an ADA ramp and fresh playground safe engineered wood fiber mulch along with a bench for seating round out Option Two. This long-lasting playground will be custom made in the USA in colors chosen to best compliment the park or those chosen by the city.

Turnkey
Price
$39,997.20

PLAYGROUNDS & SITE AMENITIES

Site Plan - Option 2

Can hold 25-30 users at any given time with 6 play events



SuperiorPlaygrounds

BY SUPERIOR RECREATIONAL PRODUCTS

REFERENCE NUMBER
PS3-72613-1
3.5" STEEL STRUCTURE DESIGN

EQUIPMENT SIZE	USE ZONE
16' X 20'	28' X 32'
AGE GROUP	SURFACE AREA
5-12	652 S.F.

USER CAPACITY	4" TIMBER COUNT
25-30	26 BORDERS

FALL HEIGHT
6'

ADA ACCESSIBILITY

ELEVATED PLAY ACTIVITIES
6

	GROUND LEVEL ACCESSIBLE PLAY ACTIVITIES	GROUND LEVEL ACCESSIBLE ACTIVITY TYPES
REQUIRED	2	2
PROVIDED	2	2

THIS STRUCTURE MEETS OR EXCEEDS CPSC #325 AND ASTM F1487 UNLESS OTHERWISE NOTED.

DATE	DRAWN/SAVED BY
1-29-24	WSB / VANCE.MARTIN
SCALE	SHEET
1/4" = 1'-0"	1 OF 3

PAGE
PLAN_VIEW

WE RECOMMEND THIS PLAN BE PRINTED ON 11" x 17" PAPER

PLAYGROUND SUPERVISION IS REQUIRED.

THIS DESIGN IS THE PROPERTY OF SUPERIOR RECREATIONAL PRODUCTS AND MAY NOT BE REPRODUCED OR USED IN ANY MANNER WITHOUT THE EXPRESSED WRITTEN CONSENT OF SUPERIOR RECREATIONAL PRODUCTS.

KOR KAT

PLAYGROUNDS & SITE AMENITIES

Warranty & Color Options

We Meet or Exceed *industry standards*

In our effort to provide quality and safe play products for children, our products meet or exceed the standards set forth by the below organizations. Additionally, we follow our own strict in-house standards and guidelines.

International Play Equipment Manufacturers Association™

In the interest of playground safety, the International Play Equipment Manufacturers Association (IPEMA™) provides a third-party certification service whereby a designated independent laboratory, TÜV SÜD America Inc., (TÜV), validates an equipment manufacturer's certification of conformance to the standards below.

- ASTM F1487-11, excluding sections 7.1.1, 10 and 12.6.1: Standard Consumer Safety Performance Specification for Playground Equipment for Public Use
- CAN/CSA-Z614-14, excluding clauses 9.8, 10, and 11: Children's Playspaces and Equipment

A list of current validated products may be viewed on their website at www.ipema.org. SRP is a member of this organization.

American Society for Testing and Materials

The American Society for Testing and Materials (ASTM) is an independent and world renowned developer of technical standards utilized in testing a multitude of products. ASTM developed F1487 Standard Consumer Safety Performance Specifications for Playground Equipment for Public Use. The current standard is F1487-11, published in 2011.

U.S. Consumer Product Safety Commission

The U.S. Consumer Product Safety Commission (CPSC) presents safety guidelines through the publication of their Public Playground Safety Handbook. This handbook promotes greater safety awareness among those who purchase, install, and maintain public playground equipment. The handbook can be viewed on the CPSC's website, cpsc.gov.

United States Access Board

The U.S. Access Board is a federal agency that promotes equality for people with disabilities. They've developed guidelines and standards for built environments, such as playgrounds.

ISO 9001 and ISO 14001

ISO industry certification processes are issued by International Organization for Standardization. ISO 9001 is used to measure manufacturing standards and to certify company compliance with quality management systems covering design, development, production, installation, inspection, and testing. ISO 4001, also known as the "Green Certification," specifies the requirements of an organization having an environmental management system (EMS). SRP's steel playground line is manufactured in an ISO 9001 and ISO 14001 certified facility.

PCI 4000

Certification by the Powder Coating Institute recognizes competency and processes in place to consistently produce high-quality powder coated products. PCI certification is the result of an extensive and rigorous audit process and SRP's steel playground manufacturing facility has this certification.

In-House Standards

At Superior, we only use quality playground materials. Our playgrounds are proudly made in the USA and are built to last.

To ensure the safest play for your children, we offer:

- Quality control inspection on all parts and shipments
- All products must pass inspection in our IPEMA Certified In-House Testing Facility
- In-house production of most products
- All products meet or exceed CPSC, ASTM, and ADA Safety Guidelines
- On-staff CPSI certified employees
- Local field factory trained installation technicians
- Direct connect component attachment system
- Products constructed from Allied's heavy-wall galvanized steel tubing, which is protected by Allied's patented Flo-Coat+ process that uses triple-coat corrosion protection (zinc, conversion coating, and clear organic topcoat) to provide a smooth, shiny product appearance that is unmatched in terms of strength and durability

MADE IN THE USA

Our Leading warranty

Our warranty guarantees years of unlimited fun. **View our full warranty by visiting us online at srpplayground.com/warranty.**

Superior Recreational Products (SRP) warrants that its product will be free from defects in materials and workmanship as well as maintain structural integrity for the periods listed below from the date of invoice and once SRP has been paid in full. This warranty is in effect only if the product has been assembled and installed strictly in accordance with the setup instructions provided by SRP, good construction practices, and has been subjected only to normal use and exposure.

- Lifetime* Warranty on playground steel and recycled posts, all stainless steel hardware, c-line fittings, and aluminum post caps
- 20-Year Limited Warranty on steel Shade structures
- 15-Year Limited Warranty on playground pipes, rungs, loops and rails, roto-molded plastics, HDPE plastic sheets, punched steel decks, and recycled decks
- 10-Year Limited Warranty on Shelter structures and shade fabric
- 5-Year Limited Warranty on powder coat and nets
- 3-Year Limited Warranty on electronic play
- 1-Year Limited warranty on moving parts, cables, and materials not covered above

Limited Warranty: Structural Steel
SRP offers a *Lifetime Limited Warranty on structural steel frames against failure due to rust-through corrosion under normal environmental conditions. Should the parts need to be replaced under the warranty, SRP will manufacture and ship new replacement parts at no charge for the first ten years, thereafter pro-rated at 50% for the second ten years and 25% from there on. Workmanship is warranted for a period of five years. This steel warranty shall be void if damage to the steel is caused by the installer or from physical damage, damage by salt spray or sprinkler systems, contact with chemicals, chlorine, pollution, misuse, vandalism, or any act of God.

Limited Warranty: Powder Coat
Superior Recreational Products offers a 5-year Limited Warranty for powder coating to the original purchaser. This Limited Warranty is for factory applied finish only. Damage occurring from shipping, erection, vandalism, accidents, or field modification is not covered in this limited warranty and will require field touch-up immediately and periodically thereafter. The owner must report any defect in powder coat at the time the installation is completed. Not covered by this Limited Warranty are acute angles, welds, and end plates.

The Limited Warranty for powder coating provides the following after a 5-year exposure period when applied according to the recommendations listed on the product's technical data sheet and appropriate surface preparation has been utilized.

- The coatings shall retain their original color with a ΔE of <7.5 units for high chroma colors (yellows, reds, oranges, etc.) and a ΔE of<5.0 units for low chroma colors, when tested in accordance with ASTM D 2244.
- The coating shall retain a minimum of 50% of its original gloss level after washing, when tested in accordance with ASTM D 523.
- The coating shall exhibit chalking no worse than numerical rating of 6, when evaluated in accordance with ASTM D 659-80.

Stainless Steel Series (Powered by Playdale Playgrounds)
Playdale Playgrounds warrants its products to the original customer to be free from structural failure due to defect in materials or workmanship during normal use and installation in accordance with the published specifications. The warranty shall commence on the date of the invoice and terminate at the end of the period on the full warranty statement. The warranty is valid only if the products are installed properly and in conformance of the specifications, installation guides, Playdale Playgrounds design layout, and properly maintained in accordance with the maintenance schedule provided within the installation instructions. Playdale Playgrounds reserves the right to accept or reject any claim in whole or in part. Playdale Playgrounds will not accept the return of any product without prior approval by Playdale management.

Electronic Play
SRP guarantees the speakers, sound chips, and circuit boards used in the production of their electronic play products for 3 years, against electronic failure caused by manufacturing defects. This guarantee does not include failure as a result of any form of misuse, vandalism or neglect including, but not limited to accidental damage while changing the batteries or servicing the internal electronics, a failure to follow the battery replacement guide, the troubleshooting guide or the care and maintenance instructions for the electronics units.

Pricing, Cancellation, Return, and Shipping Policies
All prices are F.O.B. factor and do not include freight, installation, shipping and handling, surfacing, or applicable taxes. All prices listed were current at the time of printing and in U.S. currency. Prices are subject to change without notice. To view our return policy, please visit superiorrecreationalproducts.com/returns. For information on Return Material Authorizations please call 1.800.327.8774. To view our shipping policy, please visit superiorrecreationalproducts.com/shipping. For any further information, please call 1.800.327.8774.

**For the purpose of this warranty, lifetime encompasses no specific term of years, but rather that seller warrants to its original customer for as long as the original customer owns the product and uses the product for its intended purpose that the product and all parts will be free from defects in materials and manufacturing workmanship. This warranty does not cover damage caused by vandalism, misuse or abuse, altered or modified parts, or cosmetic damage such as scratches, dents, or fading or weathering and normal wear and tear. This warranty is valid only if the structures are installed in conformity with instructions provided by Superior Recreational Products using approved Superior Recreational Products parts. Superior Recreational Products will deliver the repaired or replacement part or parts to the site free of charge, but will not be responsible for labor or the labor costs of replacement. Warranty claims must be filed within the applicable warranty period and accompanied by a sales order or invoice number.*

Playgrounds

Superior Playgrounds Warranty

We offer an industry-leading warranty on our playground equipment.

Superior Recreational Products (SRP) warrants that its product will be free from defects in materials and workmanship as well as maintain structural integrity for the periods listed below from the date of invoice and once SRP has been paid in full. This warranty is in effect only if the product has been assembled and installed strictly in accordance with the setup instructions provided by SRP, good construction practices, and has been subjected only to normal use and exposure.

- Lifetime* Warranty: playground steel and recycled posts, all stainless steel hardware, c-line fittings, and aluminum post caps
- 15-Year Limited Warranty: playground pipes, rungs, loops and rails, roto-molded plastics, HDPE plastic sheets, punched steel decks, and recycled decks
- 10-Year Limited Warranty: shade fabric and Ascend Rope Climber cable breakage
- 5-Year Limited Warranty: climber netting cable and powder coat
- 3-Year Limited Warranty: electronic play and Ascend Rope Climber flexible rubber belting
- 1-Year Limited Warranty: moving parts, shade cable, and materials not covered above.

The Limited Warranty excludes abnormal conditions, contingent liability, cosmetic defects such as scratches, dents, marring, stripping, peeling, or fading; damage due to incorrect installation, vandalism, misuse, accident wear and tear from normal use; exposure to extreme weather, immersion in salt or chlorine water, damage due to sand, salt spray, or other abrasive and corrosive material; unauthorized repair or modification, abnormal use, or lack of

maintenance. The warranty does not cover damages due to "acts of God" such as hail, flooding, lightning, tornadoes, sandstorms, shifts of terrain, earthquakes, mudslides, and windstorms.

SRP does not warrant the product for defects caused by erection, harsh site conditions, lack of maintenance, and/or other conditions beyond SRP's control. SRP will not be held responsible for any materials that were not properly stored prior to installation. SRP reserves the right to void the limited warranty if it is not installed per the installation instructions and/or unauthorized modifications.

In the unlikely event of failure, SRP reserves the right to alter the design, color, or contributing factors to rectify the condition and help prevent any future reoccurrence(s). SRP has the option to repair or replace any defect in materials.

The warranty is void if any changes, modifications, additions, or attachments are made to the product without the written consent of the manufacturer.

No signs, objects, ornaments, fans, lights, fixtures, or decorations may be hung from the structure unless specifically designed and engineered by the manufacturer or has the manufacturer's written approval.

SRP excludes any implied warranty of merchantability, fitness, or purpose, and there are no warranties that extend beyond the description of the face hereof. Under no circumstances will SRP be responsible for any indirect, special, consequential, incidental, or liquidated damages due to breach of warranty and such damages are specifically excluded from the warranty.

The owner shall notify SRP with the original Sales Order Number issued from SRP to arrange for an inspection within 30 days after discovery of any defect under this warranty and before any alteration or repair is made or attempted. This Limited Warranty shall be null and void if the owner makes any alterations in design.

This warranty is the only express warranty given by the company. No person has the authority to change or add to these obligations and liabilities. The company reserves the right to determine whether the fault is caused by faulty workmanship, material, or the part that is defective.

SRP will repair or replace at its discretion any defective part/s on an Ex-Works basis only. It is the responsibility of the customer to return the whole unit or the defective part/s at their own cost back to SRP for inspection along with proof of the date of purchase. SRP will not be liable for any costs incurred by the customer as a result of replacing the defective part/s, including but not limited to the costs of site visits and the labor costs involved with the

removal and reinstallation of the whole unit or the defective part/s. Furthermore, SRP will not be liable for any claimed compensation while the unit is not working or not present at the site whatsoever. This guarantee does not entitle the customer to a completely new product due to a defective component.

Limited Warranty: Structural Steel

SRP offers a *Lifetime Limited Warranty on structural steel frames against failure due to rust-through corrosion under normal environmental conditions. Should the parts need to be replaced under the warranty, SRP will manufacture and ship new replacement parts at no charge for the first ten years, thereafter pro-rated at 50% for the second ten years and 25% from thereon.

Workmanship is warranted for a period of five years. This steel warranty shall be void if damage to the steel is caused by the installer or from physical damage, damage by salt spray or sprinkler systems, contact with chemicals, chlorine, pollution, misuse, vandalism, or any act of God.

Limited Warranty: Powder Coat

Superior Recreational Products offers a 5-year Limited Warranty for powder coating to the original purchaser. This Limited Warranty is for factory applied finish only. Damage occurring from shipping, erection, vandalism, accidents, or field modification is not covered in this limited warranty and will require field touch-up immediately and periodically thereafter. The owner must report any defect in powder coat at the time the installation is completed. Not covered by this Limited Warranty are acute angles, welds, and end plates.

The Limited Warranty for powder coating provides the following after a 5-year exposure period when applied according to the recommendations listed on the product's technical data sheet and appropriate surface preparation has been utilized.

- The coatings shall retain their original color with a ΔE of <7.5 units for high chroma colors (yellows, reds, oranges, etc.) and a ΔE of<5.0 units for low chroma colors, when tested in accordance with ASTM D 2244.
- The coating shall retain a minimum of 50% of its original gloss level after washing, when tested in accordance with ASTM D 523.
- The coating shall exhibit chalking no worse than numerical rating of 6, when evaluated in accordance with ASTM D 659-80.

Stainless Steel Series Powered by Playdale Playgrounds

Playdale Playgrounds warrants its products to the original customer to be free from structural failure due to defect in materials or workmanship during normal use and installation in accordance with the published specifications. The warranty shall commence on the date of the invoice and terminate at the end of the period on the full warranty statement. The warranty is valid only if the products are installed properly and in conformance of the specifications, installation guides, Playdale Playgrounds design layout, and properly maintained in accordance with the maintenance schedule provided within the installation instructions. Playdale Playgrounds reserves the right to accept or reject any claim in whole or in part. Playdale Playgrounds will not accept the return of any product without prior approval by Playdale management.

SRP offers a 7-year Limited Warranty to the original purchaser of the products to be free of corrosion on seats and tops that results in bare metal exposure after the date of purchase, excluding any corrosion that may be the result of vandalism or intentional stripping of any of the coating.

Electronic Play

SRP guarantees the speakers, sound chips, and circuit boards used in the production of their electronic play products for 3 years against electronic failure caused by manufacturing defects. This guarantee does not include failure as a result of any form of misuse, vandalism, or neglect including, but not limited to, accidental damage while changing the batteries or servicing the internal electronics, a failure to follow the battery replacement guide, the troubleshooting guide, or the care and maintenance instructions for the electronics units.

Shade Fabric

Shade Fabric | Traditional shade fabric made with PTFE fiber that is high strength and low shrinkage carries a 10-year limited warranty. This warrants that the sewing thread used on the traditional shade fabric will be free from defects in material and workmanship and will not be damaged by exposure to sunlight, weather, and water. All other warranties are disclaimed.

SRP fabrics carry a 10-year Limited Manufacturer's Warranty from the date of delivery against failure from significant fading**, deterioration, breakdown, outdoor heat, cold, or discoloration. Should the fabric need to be replaced under the warranty, SRP will manufacture and ship new fabric at no charge for the first six years, thereafter pro-rated at 18% per annum over the last four years.

**The colors red and yellow are warranted against significant fading for only two years. If the corners of the fabric are equipped with both holes in the fabric corner PLUS reinforcing

straps, BOTH the strap and fabric hole must be placed over each corner hook or the fabric warranty is void.

Fabric curtains, valences, or flat vertical panels are not covered under the warranty.

Fabric is not warranted where it is installed on a structure that is not engineered and built by SRP or its agents.

This warranty shall be void if damage to or failure to the shade is caused by contact with chemicals, chlorine, bleaching agents, hydrocarbons or hydrocarbon containing solvents, misuse, vandalism, or any act of God, including but not limited to wind in excess of the wind limitations set forth below.

All fabric tops are warranted for sustained winds up to 76mph (Hurricane Force 1) and for gusts of up to 3 seconds duration up to 90mph. Removal of the shade fabric is required if damaging winds are forecasted. Damage due to snow and/or ice accumulation is not covered by this warranty. Canopies should be removed during the "off season."

These structures have been designed to eliminate any friction between the rafters and the fabric. The warranty will, therefore, be voided if any modification (temporary or permanent) is made to the rafter, cross pieces, or ridge beams, or if the fastening apparatus or canopy are not secured accordingly.

Structures are warranted for winds up to 90 or 105 mph only if shade canopies have been removed as per requirement set forth above in the fabric paragraph. Removal and re-installation must be performed by a qualified person or authorized dealer.

Pricing Policy

All prices are F.O.B. factor and do not include freight, installation, shipping and handling, surfacing, or applicable taxes. All prices listed were current at the time of printing and in U.S. currency. Prices are subject to change without notice.

Cancellation and Return Policy

To view our return policy, please visit superiorrecreationalproducts.com/returns. For Information on Return Material Authorizations please call 1.866.547.4281.

Shipping Policy

To view our shipping policy, please visit superiorrecreationalproducts.com/shipping. For Information any further information please call 1.866.547.4281.

*For the purpose of this warranty, lifetime encompasses no specific term of years, but rather that seller warrants to its original customer for as long as the original customer owns the product and uses the product for its intended purpose that the product and all parts will be free from defects in materials and manufacturing workmanship. This warranty does not cover damage caused by vandalism, misuse or abuse, altered or modified parts, or cosmetic damage such as scratches, dents, or fading or weathering and normal wear and tear. This warranty is valid only if the structures are installed in conformity with instructions provided by Superior Recreational Products using approved Superior Recreational Products parts. Superior Recreational Products will deliver the repaired or replacement part or parts to the site free of charge, but will not be responsible for labor or the labor costs of replacement. Warranty claims must be filed within the applicable warranty period and accompanied by a sales order or invoice number.

SuperiorPlaygrounds

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Warranty and Options

LIMITED WARRANTY

All SRP's thermo-plastic, PVC coated products have a limited warranty to the original purchaser of the products to be free of corrosion on seats and tops that results in bare metal exposure for a period of 5 years after the date of purchase, excluding any corrosion that may be the result of vandalism or intentional stripping of any of the coating.

SRP's site amenities structural supports for tables and benches have a limited warranty to the original purchaser to be free of rust outs that would compromise structural integrity for a period of 5 years after date of purchase. Surface rust or cosmetic paint deterioration is excluded.

SRP site amenity products not listed above have a one year warranty on workmanship and materials when installed and maintained properly. Items not covered under warranty include acts of God, normal aging, weathering, and public abuse or vandalism. Claims for defects must be accompanied by copies of the original invoice or invoice number. A one year limited warranty is offered on steel, recycled plastics, and wood site furnishings. Wood products are subject to weathering, cracking, splintering, and insects and are not covered in our one year limited warranty.

CANCELLATIONS AND RETURNS

Cancellations and returns must be approved by SRP and an authorization number, issued by the SRP Customer Care Department, must accompany the return. All returned items must be carefully packed and received in a condition that allows for easy identification and sale of product. A restocking fee of 25% will be applied to any returned item not in error of SRP. SRP may asses an additional handling fee of up to 15% if condition of returned item is in disarray or item is in a non-sellable state.

POWER COATING

The Limited Warranty for Powder Coating provides for the following after a five year exposure period when applied according to the recommendations listed on the product's technical data sheet and appropriate surface preparation has been utilized.

- The coatings shall retain their original color with a ΔE of < 7.5 units for high chroma colors, (Yellows, Reds, Oranges, Etc.) and a ΔE of < 5.0 units for low chroma colors, when tested in accordance with ASTM D 2244.
- The coating shall retain a minimum of 50% of its original gloss level after washing, when tested in accordance with ASTM D 523.
- The coating shall exhibit chalking no worse than a numerical rating of 6, when evaluated in accordance with ASTM D 659-80.

TOP AND SEAT COATING OPTIONS

SRP Site Amenities is the only company in our industry that offers the two industry standard coatings for outdoor furniture and site amenities. ***Plastisol***, the traditional coating, is a liquid PVC. Product is dipped in plastisol and baked, creating a hardened surface. ***Polyethylene***, a powder, is placed in a fluidized vat where the product is dipped and then baked. You may choose a plastisol or polyethylene coating for your SRP Site Amenities product.

All frames are coated with a highly durable polyester powder coat. Textured polyethylene is available for all products at additional cost. See below for a list of products that are only available in textured polyethylene.

- solid top tables
- Plasti-Plank products
- custom letter products
- trash receptacles
- one piece benches
- bike loops

PLASTISOL

SRP Site Amenities is the only company that puts a ***90% gloss shine*** on our plastisol products. Not only does our gloss enhance the overall look of our product, it also helps with UV protection. In addition to our 90% gloss shine, our plastisol products have a ***smooth surface***. While our competitors' products have a porous surface that is susceptible to stains and dirt build-up, SRP's plastisol is completely smooth which acts as a stain repellent and helps prevent dirt build-up.

TEXTURED POLYETHYLENE

Traditionally, Polyethylene is very easily scratched and marred. Unfortunately, it is difficult to fix a scratched or marred surface on polyethylene. By using a ***textured surface***, SRP has eliminated this problem! Our textured polyethylene coating helps hide the scratches and mars, while keeping the product looking better longer. Unlike Plastisol, polyethylene leaves ***no drips*** on the product.

WHAT'S THE DIFFERENCE?

	PLASTISOL	TEXTURED POLYETHYLENE
FEEL	Softer Feel	Harder Feel
THICKNESS	Approx. 1/4" Thick	Approx. 1/8" Thick
DRIPS	Very Possible	No
UV PROTECTION	Yes	Yes
APPLICATION	Outdoor/Indoor	Outdoor/Indoor
ANTI-FUNGUS	Yes	Yes
FINISH	High Gloss Shine	Textured Finish

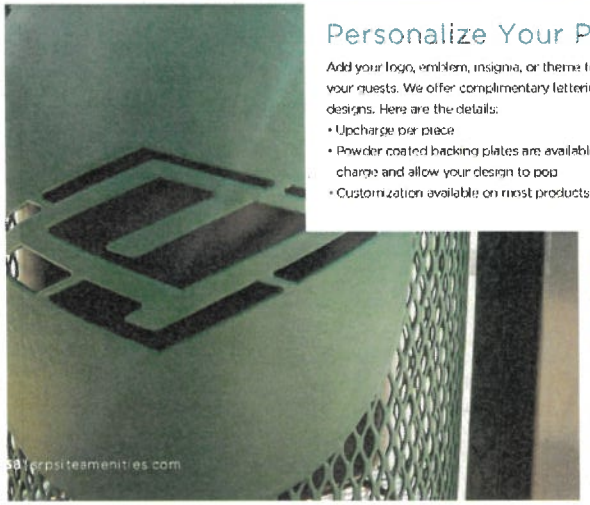
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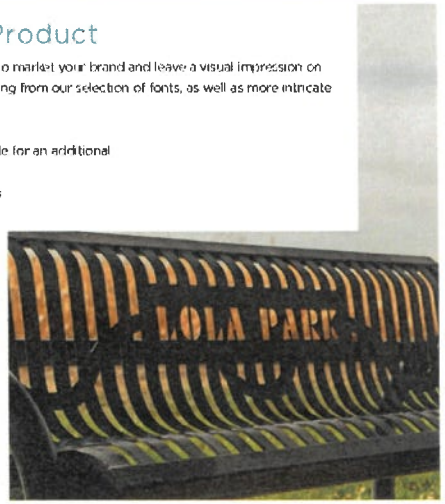




Personalize Your Product

Add your logo, emblem, insignia, or theme to market your brand and leave a visual impression on your guests. We offer complimentary lettering from our selection of fonts, as well as more intricate designs. Here are the details:

- Upcharge per piece
- Powder coated backing plates are available for an additional charge and allow your design to pop
- Customization available on most products



Warranty and Options

LIMITED WARRANTY

Superior Recreational Products (SRP) warrants that its product will be free from defects in materials and workmanship as well as maintain structural integrity for the periods listed below from the date of invoice and once SRP has been paid in full. This warranty is in effect only if the product has been assembled and installed strictly in accordance with the setup instructions provided by SRP, good installation practices, and has been subjected only to normal use and exposure.

- Lifetime* Warranty on Stainless Steel Hardware
- 7-Year Limited Warranty on Textured Polyethylene and Thermoplastic
- 5-Year Limited Warranty on Frames and Powder Coat
- 1-Year Limited warranty on moving parts and materials not covered above

The Limited Warranty excludes abnormal conditions, contingent liability, cosmetic defects such as scratches, dents, marring, stripping, peeling, or fading; damage due to incorrect installation, vandalism, misuse, accident wear and tear from normal use, exposure to extreme weather, corrosion in salt or chlorine water, damage due to sand, salt spray, or other abrasive and corrosive material, unauthorized repair or modification, abnormal use, or lack of maintenance. The warranty does not cover damages due to "acts of God" such as hail, flooding, lightning, tornadoes, sand storms, shafts of tarmin, earthquakes, mud slides and windstorms. SRP does not warrant product for defects caused by erection, harsh site conditions, lack of maintenance, and/or other conditions beyond SRP's control. SRP will not be held responsible for any materials that were not properly stored prior to installation. SRP reserves the right to void the limited warranty if it not installed per the installation instructions and/or unauthorized modifications.

In the unlikely event of failure, SRP reserves the right to alter the design, color, or contributing factors to rectify the condition and help prevent any future occurrences. SRP has the option to repair or replace any defect in materials.

The warranty is void if any changes, modifications, additions, or attachments are made to the product without the written consent of the manufacturer.

SRP excludes any implied warranty of merchantability, fitness, or purpose, and there are no warranties which extend beyond the description of the face hereof. Under no circumstances, will SRP be responsible for any indirect, special, consequential, incidental, or liquidated damages due to breach of warranty and such damages are specifically excluded from the warranty.

The owner shall notify SRP with original Sales Order Number issued from SRP to arrange for an inspection within 30 days after discovery of any defect under this warranty and before any alteration or repair is made or attempted. This Limited Warranty shall be null and void if the owner makes any alterations in design.

This warranty is the only express warranty given by the company. No person has authority to change or add to these obligations and liabilities. The company reserves the right to determine whether the fault is caused by faulty workmanship, material, or the part that is defective.

SRP will repair or replace at its discretion any defective part/s on an Ex Works basis only. It is the responsibility of the customer to return the whole unit or the defective part/s at their own cost back to SRP for inspection along with proof of the date of purchase. SRP will not be liable for any costs incurred by the customer as a result of replacing the defective part/s, including but not limited to the costs of site visits and the labor costs involved with the removal and reinstallation of the whole unit or the defective part/s. Furthermore SRP will not be liable for any claimed compensation while the unit is not working or not present at the site whatsoever. This guarantee does not entitle the customer to a complete new product due to a defective component.

Structural Steel SRP offers a 5-year limited warranty on structural supports for tables and benches to the original purchaser to be free of rust units that would compromise structural integrity. Workmanship is warranted for a period of five years. This steel warranty shall be void if damage to the steel is caused by the installer or from physical damage, damage by salt spray or sprinkler systems, contact with chemicals, chlorine, pollution, misuse, vandalism, or any act of God.

Powder Coat SRP offers a 5 year Limited Warranty for powder coating to the original purchaser. The Limited Warranty is for factory applied finish only. Damage occurring from shipping, erection, vandalism, accidents, or field modification is not covered in the limited warranty and will require field touch-up immediately and periodically thereafter. The owner must report any defect in powder coat at the time the installation is completed. Not covered by this Limited Warranty are at the angles, welds, and end plates.

The Limited Warranty for powder coating provides the following after a 5-year exposure period when applied according to the recommendations listed on the product's technical data sheet and appropriate surface preparation has been utilized:

- The coatings shall retain their original color with a ΔE of ≤75 units for high chroma colors (yellows, reds, oranges, etc.) and a ΔE of ≤5.0 units for low chroma colors, when tested in accordance with ASTM D 2244
- The coating shall retain a minimum of 50% of its original gloss level after washing, when tested in accordance with ASTM D 523.
- The coating shall exhibit chalking no worse than numerical rating of 8, when evaluated in accordance with ASTM D 659-80

Textured Polyethylene & Thermoplastic SRP offers a 7-year limited warranty to the original purchaser of the products to be free of corrosion on seats and tops that results in bare metal exposure after the date of purchase, excluding any corrosion that may be the result of vandalism or intentional chipping of any of the coating.

Pricing, Cancellation, and Shipping Policy All prices are FOB factor and do not include freight, installation, shipping and handling, sustaining, or applicable taxes. All prices listed were current at the time of printing and in U.S. currency. Prices are subject to change without notice. To view our return policy, please visit superiorrecreationalproducts.com/returns. To view our shipping policy, please visit superiorrecreationalproducts.com/shipping. For further information any further information please call 1800.527.8774.

TOP AND SEAT COATING

Our powder based textured polyethylene is placed in a fluidized vat where the product is dipped and then baked. Traditionally, polyethylene is very easily scratched and marred causing it to be difficult to fix. By using a textured surface, SRP has eliminated this problem. Our textured polyethylene coating helps hide the scratches and marks, while keeping the product looking better longer. This coating is maintenance free.

FEEL	Harder Feel	**APPLICATION**	Outdoor/Indoor
THICKNESS	Approx. 60° thick	**ANTI-FUNGUS**	Yes
DRIPS	No	**FINISH**	Textured Finish
UV PROTECTION	Yes		

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*For the purpose of this warranty, lifetime encompasses no specific term of years, but rather that seller warrants to its original customer for as long as the original customer owns the product and uses the product for its intended purpose that the product and all parts will be free from defects in materials and manufacturing workmanship. This warranty does not cover damage caused by vandalism, misuse or abuse, altered or modified parts, or cosmetic damage such as scratches, dents, or fading or weathering and normal wear and tear. The warranty is valid only if the structures are installed in conformity with instructions provided by Superior Recreational Products using approved Superior Recreational Products parts. Superior Recreational Products will deliver the repaired or replacement part or parts to the site free of charge, but will not be responsible for labor or the labor costs of replacement. Warranty claims must be filed within the applicable warranty period and accompanied by a sales order or invoice number.

Color Options

Metal Colors

Gloss



Matte or Metallic



Plastic Colors



Activity Panel & Panel Colors

Solid Core



Sandwich Core



Shade Colors | More Available!



Steel Deck Colors

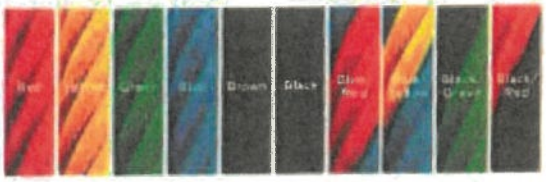


Recycled Deck & Post Colors



*May affect delivery lead time

Ascend Rope Colors



Bolt Seat Colors



Color Schemes



Succulent
- Champagne
- Royal Purple
- Light Green
- Steel Gray

NEW! Shade Color Recommendation



NEW! Espresso
- Vanilla
- Brown
- Beige
- Cream



Nature Trail
- Brown
- Beige
- Spring Green
- Orange
- Beige



Northern Lights
- Dark Blue
- Champagne
- Black
- Light Green
- Silver



Earth
- Spring Green
- Blue
- Beige
- Brown
- Rivergum Green



Deep Ocean
- Bronze
- Champagne
- White
- Sky Blue
- Blue
- Silver



Wilderness
- Green
- Beige
- White
- Light Green
- Brown
- Forest Green



Modern Marsh
- Champagne
- Green
- Spring Green
- Bronze
- Rivergum Green



Terra
- Burgundy
- Beige
- Spring Green
- Beige



Galaxy
- Dark Blue
- Butterscotch
- Champagne
- Black
- Midnight



Forest
- Burgundy
- Beige
- Green
- Beige



NEW! Monarch
- Champagne
- Black
- Orange
- Yellow
- Yellow



Electric
- Chartreuse
- Champagne
- Blue
- White
- Silver



Circus
- Red
- Yellow
- Sky Blue
- Yellow



Santorini
- Blue
- Champagne
- Vanilla
- Beige
- Beige



Eclectic
- Chartreuse
- Orange
- Burgundy
- Champagne
- Steel Gray



NEW! Wisteria
- Champagne
- Periwinkle
- Royal Purple
- Yellow
- Purple



Spring Bloom
- Sky Blue
- White
- Spring Green
- Orange
- Rivergum Green



NEW! Cosmos
- Champagne
- Chartreuse
- Royal Purple
- Sky Blue
- True Blue



Spring Storm
- Champagne
- Spring Green
- Sky Blue
- Black
- Lime



NEW! Pistachio
- Vanilla
- Chartreuse
- Burgundy
- Beige
- Lime



Reptile
- Metallic
- Yellow
- Spring Green
- Red
- White
- Rivergum Green



NEW! Oasis
- White
- Blue
- Spring Green
- Orange
- True Blue



Van Gogh
- Bronze
- Metallic
- Champagne
- Periwinkle
- Steel Gray

Color & Metal Options

ESSENTIALS AMENITIES | TEXTURED POLYETHYLENE

Our textured polyethylene coating is backed by a 7-year limited warranty.

- Red
- Yellow
- Green
- Mystic Blue
- Mariner Blue
- Burgundy
- Clay
- Brown
- Black
- Grey

BASIC AMENITIES | THERMOPLASTIC

Our thermoplastic coating is backed by a 7-year limited warranty.

- Red
- Green
- Blue
- Black

POWDER COAT

Our Superdurable powder coat is backed by a 5-year limited warranty.

Gloss

- Red
- Orange
- Yellow
- Spring Green
- Green
- Navy
- Sky Blue
- Blue
- Royal Purple
- Burgundy
- Brown
- Beige
- Dark Gray
- Black
- White

Matte, Textured & Metallic

- Champagne
- Silver Metallic
- Silver Vein
- Spartan Bronze
- Matte Black
- Blue Vein

RECYCLED UPTOWN AMENITIES | RECYCLED PLANKS

Our recycled plastic planking is backed by a 10-year limited warranty.

- Green
- Gray
- Cedar
- Brown

ESSENTIALS AMENITIES | METAL DESIGNS

Regal | RC
¾" #9 expanded metal inside a 2" x 2" iron frame



Perforated | PERF
⅜" diameter punched steel with rolled corners



Innovated | INNV
⅜" diameter punched steel with round corners



Rolled | ROLL
¾" #9 expanded metal with rolled edges



Classic | CLASS
¾" #9 expanded metal inside ribbed steel with rolled edges



BASIC AMENITIES | METAL DESIGNS

UltraLeisure® | UL
¾" #9 expanded metal inside a 1" x 1 ¼" metal strap frame



MOUNTING OPTIONS



Portable | In-ground | Surface Mount

Colors are for reference only. Ask your representative for color samples.







Product Showcase

Don't just stop at site amenities! We have shade and shelter options available in many shapes and sizes to meet the needs of your outdoor space. We also offer an extensive line of steel and recycled playgrounds that are sure to be the star of your space. Create the perfect outdoor gathering space, no matter how big or small, by utilizing all of Superior's great product lines. ***Visit srpshelter.com, srpshade.com, and srpplayground.com for more information.***

KOR KAT

PLAYGROUNDS & SITE AMENITIES

Pricing - Option 2

Lanier Plans, Inc. dba KorKat
221 Cable Industrial Way
Carrollton, GA 30117
770-214-9322

PROPOSAL

Date	Estimate #
7/19/2024	54148

Name & Address for Bill To:

City of Ormond Beach
22 South Beach St
Ormond Beach, Florida 32174

Ship To

Central Park
601 Fleming Ave
Ormond Beach, Florida 32174

Project or PO #	Rep
	KL

Item	Description	Qty	Cost	Total
	OPTION 2			
PS3-72613-1	PLAY STRUCTURE	1	36,395.00	36,395.00T
DISCOUNT	DISCOUNT **2024 Q2 SALE – VALID 3/6/24 – 6/12/24**		-18,197.00	-18,197.00
90022004XX	4' BLACK LANDSCAPE TIMBER KIT	31	92.00	2,852.00T
TFR0591XX	ADA ACCESSIBLE RAMP SYSTEM - HALF SYSTEM	1	1,148.00	1,148.00T
	SUBTOTAL			22,198.00
DISCOUNT 10%	DISCOUNT 10%		-10.00%	-2,219.80
	SUBTOTAL			19,978.20
INSTALL-PLAYGROUND	INSTALL-PLAYGROUND	1	12,119.00	12,119.00
	SUBTOTAL			12,119.00
ENGINEERED DRAWINGS	ENGINEERED DRAWINGS WITH CALCULATIONS	1	1,125.00	1,125.00
MULCH	36 CUBIC YARDS OF PLAYGROUND SAFE ENGINEERED WOOD FIBER MULCH TO COVER APPROX 965 SF	1	2,340.00	2,340.00T
	SUBTOTAL			3,465.00
B6WBULS	6FT. BENCH WITH BACK, 3/4" #9 EXPANDED METAL, ROUNDED CORNERS, TWO 2 3/8" LEGS, IN-GROUND MT.	1	642.00	642.00T
INSTALL-AMENITIES	INSTALL-AMENITIES	1	193.00	193.00
PERMITTING	MINIMUM PERMITTING FEE - PERMIT FEES (WHICH COULD INCLUDE ADDITIONAL ENGINEERING COSTS, SITE PLANS OR PERMIT RUNNER FEES) OVER $1,200.00 WILL BE THE RESPONSIBILITY OF THE CUSTOMER WITH PROOF OF RECEIPTS FOR ALL CHARGES. INCLUDES PAYMENT AND PERFORMANCE BONDS	1	1,200.00	1,200.00

Prices quoted are good for 15 days and are subject to total purchase except for shipping which is subject to market changes. Installation price assumes normal soil conditions and does not include rock excavation, unforeseen conditions, or replacement of bad soil conditions. Any additional work will be priced prior to the continuation of installation.

Payment of 100% is due at the time of order for all equipment purchases without installation.

Phone #	Fax #	E-mail	**Total**
770-214-9322	770-214-9323	DeannaP@KorKat.com	**Signature**



Lanier Plans, Inc. dba KorKat
221 Cable Industrial Way
Carrollton, GA 30117
770-214-9322

PROPOSAL

Date	Estimate #
7/19/2024	54148

Name & Address for Bill To:

City of Ormond Beach
22 South Beach St
Ormond Beach, Florida 32174

Ship To

Central Park
601 Fleming Ave
Ormond Beach, Florida 32174

Project or PO #	Rep
	KL

Item	Description	Qty	Cost	Total
FREIGHT	SHIPPING & HANDLING	1	2,400.00	2,400.00
	KORKAT CONTACT KRISTIN LIBBY 407-747-1669 KristinL@KorKat.com			
	Total sales tax calculated by AvaTax		0.00	0.00
	Select this as a transaction's tax to use AvaTax			0.00

Prices quoted are good for 15 days and are subject to total purchase except for shipping which is subject to market changes. Installation price assumes normal soil conditions and does not include rock excavation, unforeseen conditions, or replacement of bad soil conditions. Any additional work will be priced prior to the continuation of installation.

Payment of 100% is due at the time of order for all equipment purchases without installation.

Phone #	Fax #	E-mail	**Total**	$39,997.20
770-214-9322	770-214-9323	DeannaP@KorKat.com	**Signature**	



FUTURE FLEMING PLAYGROUND

CENTRAL PARK
(601 FLEMING AVE)

Prepared By: The City of Ormond Beach
G.I.S. Department - April 15, 2024

N
W
E
S

1 inch = 150 feet

City of Ormond Beach

22 South Beach Street
Ormond Beach, Florida 32174
Telephone (386) 676-3223
Fax (386) 676-3374

REQUEST FOR PROPOSALS

PROPOSER ACKNOWLEDGEMENT FORM

THIS FORM MUST BE COMPLETED AND RETURNED WITH YOUR PROPOSAL

RFP TITLE: **Central Park 1 Playground Equipment**

RFP NUMBER: **2024-31**

RFP OPENING DATE & TIME: **July 11, 2024 at 3:00 PM**

RFP OPENING LOCATION: **City Hall Training Room at Ormond Beach City Hall**

PRE-PROPOSAL MEETING DATE & TIME: **June 25, 2024 at 2:00 PM, City Hall Room 103**

PRE-SUBMITTAL MEETING: **N/A**

Submittals Received After The Above Date And Time Will Not Be Accepted.

PROPOSER'S NAME: _____

PROPOSER'S MAILING ADDRESS: _____

CITY-STATE-ZIP: _____

F.E.I.N.: _____
PHONE NUMBER: _____

EMAIL: _____
If returning as a "No Submittal", please state reason (s): _____

I certify that this Proposal is made without prior understanding, agreement, or connection with any corporation, firm, or person submitting a Proposal for the same materials, services, supplies, or equipment, and is in all respects fair and made without collusion or fraud. I agree to abide by all conditions of this RFP and certify that I am authorized to sign this RFP for the Proposer. In submitting a RFP to the City of Ormond Beach, the Proposer offers and agrees that if the Proposal is accepted, the Proposer will convey, assign or transfer to the City of Ormond Beach all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the Antitrust laws of the United States and the State of Florida for price fixing relating to the particular commodities or services purchased or acquired by the City of Ormond Beach. At the City's discretion, such assignment shall be made and become effective at the time the City tenders final payment to the Proposer.

X _____
AUTHORIZED SIGNATURE (MANUAL)

_____
NAME (TYPED)

_____
TITLE

_____
DATED

GENERAL CONDITIONS

PUBLIC ENTITY CRIMES: A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a Bid or Proposal on a contract to provide any goods or services to a public entity, may not submit a Bid or Proposal on a contract with a public entity for the construction or repair of a public building or public work, may not submit Bids or Proposals on leases or real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.

DISCRIMINATION: Pursuant to Section 287.134(2)(a), Florida Statutes, an entity or affiliate who has been placed on the discriminatory vendor list may not submit a bid or proposal on a contract to provide any goods or services to a public entity, may not submit a bid or proposal on a contract with a public entity for the construction or repair of a public building or public work, may not submit bid or proposal on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity.

NON-CONFIDENTIALITY OF BIDS AND/OR PROPOSALS/PUBLIC RECORDS: The City of Ormond Beach cannot and does not warrant the confidentiality of any information submitted in response to this solicitation. Florida law provides that municipal records shall at all times be open for personal inspection by any person, Section 119.01, F.S., The Public Records Law. Information and materials received by the City of Ormond Beach in connection with all Proposers' response shall be deemed to be public records subject to public inspection upon award, recommendation for award, or 30 days after bid/proposal opening, whichever occurs first. Section 119.071, F.S.

DISTRIBUTION OF BIDS AND RFP'S: The City uses the services of DemandStar (www.demandstar.com) to distribute its bids and RFP's on-line on the Internet. If you have received a copy of this RFP from any source other than DemandStar, please be aware that you may not have received the latest version of the RFP or any related addendums.

SUBMISSION OF PROPOSALS: All Proposals shall be submitted in a sealed envelope. The Request for Proposals (RFP) number, title, and opening date shall be clearly displayed on the outside of the sealed envelope. The **delivery of said Proposal** to the **Purchasing Coordinator City Hall Room 102** on or before the specified opening date and time is solely and strictly the responsibility of the Proposer. Any Proposal received by the Purchasing Coordinator City Hall Room 102 after the specified date and time will not be accepted. Proposals must be submitted on forms provided by the City. No other forms will be accepted. No Proposal may be modified after opening. No Proposal may be withdrawn after opening for a period of ninety (90) days unless otherwise specified.

EXECUTION OF RFP: Proposal must contain a manual signature of authorized representative in the space(s) provided. Proposals must be typed or printed in ink. Use of erasable ink is not permitted. All corrections made by Proposer to any Proposal entry must be initialed. The company name and Federal Employer Identification Number (F.E.I.N.) shall appear in the space(s) provided.

RFP OPENING: Proposals shall be opened at the time, date and place specified in the RFP, and the name of the Proposer shall be read aloud publicly.

RFP TABULATION: Any Proposer wishing to receive a copy of the RFP tabulation is required to enclose a stamped, self-addressed envelope with their Proposal. The RFP tabulation will be posted on DemandStar.com.

CLARIFICATION/CORRECTION OF RFP ENTRY: The City of Ormond Beach reserves the right to allow for the clarification of questionable entries and for the correction of obvious mistakes.

INTERPRETATION: Any questions concerning conditions and specifications shall be directed to the City's Purchasing Coordinator, unless otherwise specified in the RFP. Those interpretations which may affect the eventual outcome of this Proposal will be furnished in writing to all prospective Proposers. No interpretation shall be considered binding unless provided in writing by the City of Ormond Beach.

MINORITY POLICIES: The City of Ormond Beach, Florida, encourages the full participation of Disadvantaged and Women Business Enterprises (D&WBE) in the provision of goods and services.

LICENSES AND PERMITS: The Vendor/Contractor is responsible for obtaining all necessary permits and licenses to comply with all Federal, State, local laws, rules and regulations required to perform work in accordance with the specifications.

ADDITIONAL TERMS AND CONDITIONS: The City of Ormond Beach reserves the right to reject Proposals containing any additional terms or conditions not specifically requested in the original conditions and specifications.

TAXES: The City of Ormond Beach is exempt from Federal Excise Taxes and all Sales Taxes.

ASSIGNMENT: Any purchase order or contract issued pursuant to an RFP and the monies which may become due thereunder are not assignable except with the prior written approval of the City Manager or City Commission, whichever authorized the purchase order or contract.

LIABILITY: The vendor shall hold and save the City of Ormond Beach, its officers, agents, and employees harmless against claims by third parties resulting from the vendor's or supplier's breach of contract or negligence, including all attorney's fees and costs, and shall pay any and all damages, fees, and costs assessed on behalf of the City. The City expressly reserves all rights, privileges and benefits of sovereign immunity.

AWARDS: The City reserves the right, in its sole discretion, as the best interest of the City may require, to make award(s) by individual item, group of items, all or none, or a combination thereof; on a geographical basis and/or with one or more vendors or contractors; or to reject any and all Proposals or waive any minor irregularity or technicality in the Proposals received.

NON-APPROPRIATION OF FUNDS: In the event sufficient budget funds are not available for a new fiscal period, the CITY shall notify the VENDOR/CONTRACTOR of such occurrence and the contract shall terminate on the last day of the current fiscal period, without any penalty or expense to the CITY of any kind whatsoever.

OTHER AGENCIES: All Bidder(s) awarded contracts from this bid or proposal may, permit any municipality or other government agency to participate in the contract under the same prices, terms, and conditions, if agreed to by both parties.

It is understood that at no time will any city, municipality, or other agency be obligated for placing an order for any other city, municipality, or agency: nor will any city, municipality, or agency be obligated for any bills incurred by any other city, municipality, or agency. Further, it is understood that each agency will issue its own purchase orders to the awarded bidder(s).

COMPLIANCE WITH FLORIDA PUBLIC RECORDS LAW

Contractor expressly agrees that it shall comply with the public records law provided in Florida Statutes, Chapter 119, and specifically to:

(a) Keep and maintain public records required by the City to perform the contracted service.
(b) Upon request from the City Clerk, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes, or as otherwise provided by law.
(c) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the contractor does not transfer the records to the City.
(d) Upon completion of the contract transfer, at no cost to the City, all public records in possession of the contractor or keep and maintain public records required by the City to perform the service. If the contractor transfers all public records to the City upon completion of the contract, the contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the contractor keeps and maintains public records upon the completion of the contract, the contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City Clerk, in a format that is compatible with the information technology systems of the City.
(e) Failure of the Contractor to comply with Public Records Law as provided by Florida Statutes, Chapter 119, shall subject the Contractor to penalties under Chapter 119.10 and subject this Agreement to termination for cause by the City.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

CITY CLERK
22 SOUTH BEACH STREET
ORMOND BEACH, FLORIDA 32175. (386) 676-0311
CITYCLERK@ORMONDBEACH.ORG

Ref: Fla. Stat. §119.0701(2016)

THE CITY OF ORMOND BEACH RESERVES THE RIGHT TO REJECT ANY OR ALL PROPOSALS, AND TO WAIVE INFORMALITIES, AS MAY BE DEEMED TO BE IN THE BEST INTEREST OF THE CITY.

REQUEST FOR PROPOSALS

FLEMING PLAYGROUND
RFP NO. 2024-31

The City of Ormond Beach, in compliance and in accordance with the provisions of Section 287.057, Procurement of Contractual Services, Florida Statutes, is seeking proposals from companies who are qualified to design and all playground equipment components for this project. The document package necessary for participating in this RFP can be obtained on-line at www.demandstar.com, or by calling DemandStar at (206) 940-0305. If you have any difficulty obtaining the RFP documents, please contact the City's purchasing office at (386) 676-3223.

There will be a pre-submittal meeting on **June 25, 2024 at 2:00 PM** at the City Hall In Room 103, 22 South Beach Street, Ormond Beach. This meeting is not mandatory. **The deadline to submit questions is July 5, 2024 at 5:00pm.**

One (1) signed original of the complete proposal packet along with one (1) fully complete electronic file in pdf format on either a CD or thumb drive. Both versions must be submitted in a single sealed envelope to the Purchasing Coordinator City Hall Room 102, 22 South Beach Street, Ormond Beach, FL 32174, no later than **July 11, 2024 at 3:00 PM.**

THE CITY RESERVES THE RIGHT to reject any or all proposals or parts thereof, or to accept the proposal or parts thereof when considered in the best interest of the City. Any proposal received after the time and date specified will not be considered.

THE CITY OF ORMOND BEACH

By: Rob Hart
Purchasing Coordinator

STATEMENT OF PURPOSE

The City of Ormond Beach, Florida, is requesting proposals and services from companies who are qualified to design and install all playground equipment components for this project. The equipment shall meet all current playground/fitness safety standards and certifications including, but not limited to, CPSC, ASTM, DIN and IPEMA.

Background

The proposed playground will be located off of Fleming Avenue and is within Central Park 1. This new playground will replace the existing deteriorated equipment that was installed in the early 2000's. Central Park is a city-owned and operated neighborhood park which is 149 acres that is open to the public. The project is located at 601 Fleming Avenue in Ormond Beach and is a highly used facility by the surrounding community and general public.

The project area is located on the north side of the existing community gardens and south of the existing pavilion, see attached map for location and pictures. The defined playground area is approximately 46' width x 65' length maximum which encompasses this area.

Scope of Work/Layout Design

This is a turn-key project to design the new playground layout, supply materials, deliver and install new exterior commercial playground equipment, including required permitting. The selected company shall be issued a contract for services for this project.

Vendors are required to develop and provide equipment layout plan for the project area utilizing the scale of 1"=10'. Complete three-dimensional drawings or photos of equipment and plan view drawing showing the layout within the provided use zone are required. All design plans/drawings shall be shown in complimentary color families.

One design layout is required, however additional designs are optional. Each vendor can provide 3 different designs maximum for this submittal. Each design should be labeled Option 1, Option 2 and Option 3.

The general dimensions of the area are provided for planning purposes, vendors are responsible for ensuring the accuracy of these measurements and for ensuring that any equipment layout proposed will fit the actual site dimensions.

Current Conditions

See attached aerial map that shows project location and existing surrounding site elements.

Playground Equipment

The playground equipment chosen shall be durable and designed for outdoor use. This playground equipment selected shall incorporate the latest playground design philosophy and technology addressing the physical and creative needs of children. The playground equipment selected shall be appropriate for ages 5-12 and stressing the importance of durability. The equipment and area around the equipment shall be accessible to all children and meet all current ADA requirements at

a minimum, with ADA inclusive features possible within the funding amount. The playground equipment could be one large unit or multiple pieces for different play experiences.

Equipment shall meet National Playground standards as referenced in the American Society for Testing and Materials (ASTM) document F1487-17; Standard Consumer Safety Performance Specification for Playground Equipment for Public Safety. Evidence of compliance shall be submitted and stamped on equipment as required.

Construction in compliance with ASTM F2373, ADA guidelines for surfacing and ASTM F1292 for Impact Attenuation and F1951 for wheelchair accessibility.

Equipment shall meet National playground standards as referenced in the U.S. Consumer Product Safety Commission's Public Playground Safety Handbook.

All proposed equipment and surfacing shall be IPEMA certified by the Manufacturer.

The equipment shall accommodate a minimum of 30 children, with a minimum of 7 play events.

The equipment which shall be incorporated in the design, supplied, and installed could include, but not be limited to the following.

Types of Equipment to Encourage The Play Experience
Auditory, balancing, gathering/social/imaginative, manipulative, climbing, sliding and spinning
Equipment that could be include in the design:
ADA Transfer Platform with Guardrail & Hand Grips
Climber
Open slide
Swings
Play panel or interactive element
Spinner
Ladder

Types of Materials for Equipment
Primary considerations are safety, durability, longevity and low maintenance
Stainless Steel bolts, anchors and fasteners
Bridges, walkways and platforms shall be slip resistant
Two coat powder coating process 3.0-5.0 mil thickness minimum
Materials that are long lasting
No wood products for playground equipment
Shade components allowed

Borders with Accessible Border System
Supply and install playground borders around the entire perimeter of the play area and include an ADA accessible border system. Borders to be 12" height, made from recycled plastic content including galvanized stakes to secure in place.

Surfacing
Surfacing is proposed to be engineered wood fiber and shall be installed as per manufacturer installation recommendations.

Park Benches
Supply and install a total of (1) backed bench to hold a minimum of two people. The bench shall be installed inside the plastic border and shall be surface mounted or embedded. Bench shall have all stainless steel hardware and color/finish shall compliment equipment color scheme.

Site Area Clean Up
The site shall be kept clean and free of tools, trash, and debris and installation materials on a daily basis. Products may be stored on site during installation with appropriate protective measures and approval by the Cities Project Manager. If periphery areas are damaged due to implementation than site restoration will be required and restored with like materials at companies cost.

Removal of Existing Playground Equipment:
City staff will be removing the existing playground equipment prior to the start of this project. The playground company will be responsible to remove the existing mulch on the existing playground.

Project Budget:

This is a Facilities Renewal & Replacement funded project and the allocated funds are $40,000 for this project.

SCHEDULE OF PROPOSAL

June 9, 2024	Legal Advertisement
June 25, 2024 2:00 PM	Non-mandatory pre-submittal meeting City Hall Room 103, 22 South Beach Street
July 5, 2024 5:00 PM	Last day for questions
July 11, 2024 3:00 PM	Proposals Due - one (1) original of the complete proposal packet along with one (1) fully complete electronic file in pdf format on either a CD or thumb drive. Both versions must be in a single sealed envelope. Submit proposals to the Purchasing Coordinator City Hall Room 102, City Hall, 22 South Beach Street, Ormond Beach, FL 32174.
July 19, 2024 11:00 AM	Proposal Review and Rankings
August 20, 2024 7:00 PM	City Commission Award of Contract

TERM OF AGREEMENT

The contract will be for the duration of this project.

GENERAL INSTRUCTIONS

- Inquiries: Questions may arise as firms are preparing their proposals. Please direct questions in writing to:

  Rob Hart
  Purchasing Coordinator
  22 South Beach Street
  Ormond Beach, Florida 32174
  Telephone: (386) 676-3223
  e-mail: Rob.Hart@ormondbeach.org

The last day to submit questions is July 5, 2024 at 5:00 pm.

- Signature Requirements: Proposals must be signed by a duly authorized officer(s) of the proposing firm. Consortiums, joint ventures, or teams submitting proposals, although permitted and encouraged, will not be considered responsive unless it is established that all contractual responsibility rests solely with one firm or legal entity which shall not be a subsidiary or affiliate with limited resources. Each proposal shall indicate the entity responsible for execution on behalf of the proposal team.

- Proposal Delivery: The City of Ormond Beach must receive one (1) original of the complete proposal packet along with one (1) fully complete electronic file in pdf format on either a CD or thumb drive. Both versions must be in a single sealed envelope. Submit proposals to Purchasing Coordinator City Hall Room 102, City Hall, 22 South Beach Street, Ormond Beach, FL 32174, no later than **July 11, 2024 at 3:00 PM**. Proposals shall be in a sealed envelope with the RFP title and number plainly marked on the outside of the envelope or package. It is solely the responsibility of the submitter to ensure that the Proposal is delivered on or before the specified date and time. Late submittals will not be accepted.

- Addenda and Supplements to the Request for Proposals (RFP): In the event that it becomes necessary to revise any part of this RFP, or if additional information is necessary to enable the proposing firm to make an adequate interpretation of the provisions of this RFP, a supplement to the RFP will be provided to each firm that has requested a copy of this document.

- Rejection Rights: The City of Ormond Beach reserves the right, at any time, to modify, waive or otherwise vary the terms and conditions of this RFP including, but not limited to, the deadlines for submission and submission requirements. The City further reserves the right to reject any or all submittals, to cancel or withdraw this RFP at any time and to negotiate with any party prior to or after submittal of proposals. Selection is also dependent upon the negotiation of a mutually acceptable contract with the successful proposers.

- Cost of Proposal Preparation: No reimbursement will be made by the City of Ormond Beach for any costs incurred in the preparation of the proposal or presentation.

- Proposals to be in Effect: Each proposal shall state that it is valid for a period of not less than 90 days from date of receipt.

SELECTION OF COMPANY

Professional Qualifications: Any firm or individual experienced and authorized to do business in the State of Florida is invited to submit a qualifications packet. The firm must possess professional service registrations and construction licenses in accordance with applicable statutes, regulations, and rules. The firm must be able to demonstrate financial strength appropriate to the scale of projects to be managed.

Insurance Requirements: The firm shall purchase at his own expense and maintain throughout the duration of the contract the types and amounts of insurance in form and from companies satisfactory to the City and shall furnish proof of insurance prior to commencing work. The firm shall indemnify and hold harmless the City and its employees from and against all claims, damages, losses, and expenses including, but not limited to, attorneys' fees arising out of or resulting from work provided that the claim, damages, loss and expense is caused in whole or in part.

Information to be Submitted:

One (1) original of the complete proposal packet along with one (1) fully complete electronic file in pdf format on either a CD or thumb drive:

TAB 1 – General – 20 Points

1. Letter of interest and cover letter signed by an authorized officer of the firm or company. Include name(s), telephone number(s), and email(s) of the authorized contact person(s) concerning this proposal.
2. RFP response form, completed.
3. Whether or not the firm or individual is a certified Minority Business Enterprise as defined by the Florida Small and Minority Business Assistance Act of 1985.
4. Provide a copy of applicable Florida business license. Provide proof of being registered to do business in the State of Florida.
5. Copy of firm's certificate of insurance.
6. **Note:** firm or company selected will be required to provide performance and payment bonds for this project.
7. Completed Conflict, Non-Conflict of Interest Statement/Litigation Statement.
8. Completed Drug-Free Workplace Certification.
9. Completed form - Verification of Employment Status Using E-Verify System

TAB 2 – Experience – 30 Points

1. Provide a brief introduction narrative letter highlighting the qualifications of the firm including legal nature of organization, number of years in business, pertinent capabilities, and experience in contracting and managing municipal projects.

2. Provide an organizational chart of the firm to include a depiction of subcontractors, if any, proposed for use for accomplishment of the project scope of work. List all subcontractors and/or agents who shall be part of your team on this project, and state what their involvement and specific duties shall be (i.e. installer, manufacturer, etc.).

3. Provide a listing of at least 3 projects and references completed by the firm comparable in nature and costs which demonstrate the firm's ability to perform the required services as described within the RFP. If applicable list examples of projects in the State of Florida and particularly municipal projects. Include the following for each project:
    a. Name and location of the project.
    b. The nature of the firm's responsibility on the project.
    c. Project owner's representative name, address, telephone and e-mail contact information.
    d. Date project was completed or is anticipated to be completed.
    e. Firm's project manager and other key professionals involved on the project.

TAB 3– Proposed Playground Equipment and Configuration – 30 Points

1. Provide the manufacturer's name and model/name of the equipment you are proposing.
2. Vendors are required to develop and provide equipment layout plan for the project area utilizing the scale of 1"=10'. Complete three-dimensional drawings or photos of equipment and plan view drawing showing the layout including the use zones. See scope of work/layout design sections for more requirement details.
3. Does the equipment meet all the most current safety standards and certifications as required in this RFP?
4. Provide the manufacturer's warranty on all components including powder coating/paints & poured in place surfacing.
5. Provide details on the equipment materials.
6. How many people can use this equipment at a given time and how many play events?
7. Does the equipment layout allow space between the components and allow clearance for a wheel chair (ADA accessible)?
8. Provide a cut sheet of all equipment being proposed and include technical specifications, including the plastic borders and engineered wood fiber.

TAB 4 – Written Proposal & Project Schedule – 20 Points

1. Please provide a written proposal. Project is within the stated budget. Building permit fees shall be included in written proposal and signed and sealed documents as needed for Building Permit approval and include payment & performance bonds.

2. Provide a project schedule that details equipment manufacturing time and the projected timeframe for installation of all components within this RFP.

Evaluation Criteria:

The most important evaluation emphasis will be placed upon the experience and past performance of the firm and the overall qualifications of the firm. Evaluation will also be based upon a creative

equipment layout that enhances the play experience for children between the ages of 5-12 and incorporates all components listed in this RFP.

Selection Process: A designated selection committee will review and evaluate responses to this RFP for each firm and will rank the submittals based on the Evaluation Form attached as Exhibit 1. These proposers may be invited to appear for interview by City staff or be asked to further demonstrate their qualifications. The City intends to select one (1) firm for this contract. A final contract will then be submitted for approval and recommendation by the City Commission.

Project Milestones:

Contract Awarded at City Commission Meeting: August 20, 2024
Pre-Construction Meeting: Prior to NTP
Notice to Proceed: The NTP Will Be Issued When The Equipment Arrives
Project Substantially Complete (120 days):
Project Final Completion (150 days):

REGISTRATION AND INSURANCE REQUIREMENTS FOR VENDOR/CONTRACTOR WORKING ON CITY PROJECTS

Registration Requirements

VENDOR'S doing business within the City Limits must be registered with the City. Requirements for registering a business are as follows:

Copy of City Business Tax Receipt (where your business is located).
Certificate of Insurance showing General Liability and Workers' Comp (or State Workers' Comp Exemption form).
Application Fee: $25.00 For more information, contact the City's Business Tax Receipt official.

State Certified/Registered Contractors

All registered contractors must be registered with Volusia County. Volusia County Contractor Licensing, 123 W. Indiana Ave., Rm 203, Deland, Fl. 32720 (386) 736-5957 Opt. 2 –(386) 248-8158 Fax. Certified Contractors have the option of registering with Volusia County, or providing information directly to the business tax receipt official.

If you have any questions regarding the above requirements, please contact the business tax receipt official at (386) 676-3370.

Risk Management and Insurance Requirements

A. Payment and Performance Bonds

1. Except as otherwise provided herein, the Contractor shall, prior to beginning performance, deliver to the City, and the City shall record in the public records of Volusia County, Florida, the Contractor's Payment and Performance Bond in an amount equal to the full amount of the Contract.

2. **(a)** Payment and Performance Bonds shall not be required for any contract except those which are for the construction of a public building, for the prosecution and completion of a public work (as described in Section 180.06, **Florida Statutes,** as amended from time to time) or for repairs upon a public building or public work (as described in Section 180.06, **Florida Statutes**, as amended from time to time).

(b) With respect to those Contracts for which Payment and Performance Bonds are otherwise required:

i. Unless the City Manager, or designee, determines such Bond to be necessary to protect the interests of the City, no Contractor shall be required to provide a Payment and Performance Bond for any Contract which is for $25,000.00 or less.

ii. Upon the request of the contractor, good cause shown by the Contractor, and a determination that the public health, safety and welfare will be sufficiently protected, the City Commission may exempt the contractor from the requirement of providing a Payment and Performance Bond for any Contract which is for more than $25,000.00 but is less than $200,000.00.

3. The Payment and Performance Bond shall list the Contractor as Principal and be issued by a surety insurer authorized to do business in Florida as a surety and listed as an acceptable surety in the Federal Register.

4. The Payment and Performance Bond shall be executed pursuant to Section 255.05, **Florida Statutes**, and be in a form substantially similar to the form set forth in Section 255.05(3), **Florida Statutes**.

5. The Payment and Performance Bond shall specifically provide coverage for delay damages due to a default by the Contractor.

6. The Payment and Performance Bond shall not make the Contract part of the Bond agreement.

7. In lieu of the Payment and Performance Bond, the Contractor may file with the Finance Director of the City, in an amount equal to the full amount of the Contract, cash, a money order, a certified check, a cashier's check, an irrevocable letter of credit, or a security of a type listed in Part II, Chapter 625, **Florida Statutes**.

8. In the event the surety on any Payment and Performance Bond furnished by the Contractor is declared bankrupt or becomes insolvent, or its right to do business in the State of Florida is terminated, the Contractor shall, within five (5) working days thereafter, substitute another Payment and Performance Bond and surety acceptable to the City.

9. The Contractor is totally and solely responsible for keeping its surety informed as to the Base Contract Price as bid, significant changes in the Project Scope, and the overall progress and completion of the Project for the entire life of the Contract.

10. The payment and performance bond requirements stated herein above shall not be applicable to service-related contracts unless otherwise determined by the City Manager in order to protect the health, safety and welfare of the general public.

B. Contractual Provisions Relative to Risk Management

All contracts for any public works to be performed, and service-related contracts, for or on behalf of the City shall include at a minimum, the following, or substantially similar, provisions:

1. Hold Harmless and Indemnity

The Contractor agrees to assume liability for and indemnify, hold harmless, and defend the City, its commissioners, mayor, officers, employees, agents, and attorneys of, from, and against all liability and expense, including reasonable attorney's fees, in connection with any and all claims, demands, damages, actions, causes of action, and suits in equity of whatever kind or nature, including claims for personal injury, property damage, equitable relief, or loss of use, to the extent caused by the negligence, recklessness, or intentionally wrongful conduct of the Contractor, its agents, officers, contractors, subcontractors, employees, or anyone else employed or utilized by the Contractor in the performance of this Contract. The Contractor's liability hereunder shall include all attorney's fees and costs incurred by the City in the enforcement of this provision.

2. Payment on Behalf of City

The Contractor shall pay all costs of the City's legal defense, as may be selected by the City, for all claims described in the Hold Harmless paragraph.

Such payment on behalf of the City shall be in addition to any and all other legal remedies available to the City and shall not be considered to be the City's exclusive remedy.

3. Loss Control/Safety

Precaution shall be exercised at all times by the Contractor for the protection of all persons, including employees and property. The Contractor shall comply with all applicable laws, regulations and ordinances related to safety and health, shall make special efforts to detect hazardous conditions, and shall take prompt action when loss control/safety measures are reasonably necessary.

The City may order work to be stopped if conditions exist that present an immediate danger to persons or property. The Contractor acknowledges that such work stoppage will not shift responsibility for any damages from the Contractor to the City.

4. Service Bond

For Service-related contracts only, the City may require the Contractor to secure a service bond with a minimum $25,000 coverage limit for the period of the service agreement. The service bond covers dishonest acts of the contractor’s employees against the City. A copy of the bond shall be provided to the City when the agreement commences.

Service-related contracts include and are not limited to businesses providing janitorial, pest control, general repair, security, carpet cleaning, locksmith, temporary employment, painting, moving services or other contracts as determined in the discretion of the Risk Manager as necessary to minimize loss.

C. Contractor's Insurance

1. General

The Contractor, including service-related contractors, shall purchase and maintain for the entire life of the Project, including any and all approved time extensions, until its final acceptance by the City, such insurance as will protect the Contractor from claims under Workers' Compensation, disability benefit laws or other similar employee benefit laws; from claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor’s employees; from claims insured by usual or unusual injury liability coverage; from claims or injury to or destruction of tangible property and from claims insured by usual Commercial General Liability coverage. This includes loss of use resulting therefrom, any or all of which may arise out of the Contractor's operations under the Contract Documents, whether such operations be by the Contractor, by any Subcontractor, or by anyone directly or indirectly employed by any of them or for whose acts any

of them may be legally liable. The Contractor's deductibles/self-insured retentions shall be disclosed to the City and may be disapproved by the City, and may be reduced or eliminated at the sole discretion of the City. The Contractor is responsible for the amount of any deductible or self-insured retention.

2. Types of Insurance and Limits of Liability

The insurance required herein shall be written for not less than any limits of liability specified and incorporated as part of the Contract Documents or as required by law, whichever is greater, and shall include and not limited to the following:

(a) Workers' Compensation Insurance in statutory limits for the State of Florida with Coverage B - Employer's Liability limits of not less than:

$100,000 Each Accident Bodily Injury by Accident
$100,000 Each Employee Bodily Injury by Disease
$500,000 Policy Limit Bodily Injury by Disease

Certificate of Exemptions. If the contractor has a State-issued Certificate of Exemption, the contractor may provide a copy in place of the requirement for coverage. However, if the contractor subcontracts or retains any other person or entity to perform under the contract, that person or entity must provide proof of workers' compensation insurance as required by law or provide a Certificate of Exemption.

It is the intent of the City that any individual who either contracts directly with the city or performs any work on behalf of any such contractor be covered by workers' compensation insurance or have a valid exemption from said coverage.

(If applicable to the Project, the policy must include benefits under the United States Longshoremen's and Harbor Workers' Act and the Jones Act coverage--all maritime coverage.)

(b) Commercial General Liability Insurance shall be written on a coverage form as broad as Insurance Services Office (ISO) Form CG 00 01 11 85, or its successor form, including but not limited to the following coverage (any deviation shall be noted on the Certificates of Insurance):

a. Premises, Operations, Products and Completed Operations
b. Owners' & Contractors' Protective
c. Products & Completed Operation
d. Explosion, Collapse & Underground Conditions
e. Blanket Contractual Liability
f. Personal Injury Liability
g. Broad Form Property Damage Endorsement, including Completed Operations

h. Independent Contractors
i. Watercraft--Owned and Non-Owned (if applicable, endorsement must be included in General Liability policy or a separate Protection & Indemnity Policy must be written)
j. Pollution Liability (if applicable)
k. Asbestos Abatement (if applicable)
l. Fire Damage Liability

Certain coverage outlined above may not be required if they do not relate to the Project, as may be determined at the sole discretion of the City.

Commercial General Liability Coverage shall be written on an occurrence basis and the limits shall be no less and not limited to the following amounts:

Limits (not less than)

$1 Million Each Occurrence
$2 Million General Aggregate
$1 Million Aggregate Products & Completed Operations

NOTE: Commercial General Liability Coverage must be purchased on either a project basis (separate policy per contract) or an endorsement allocating an aggregate limit per location or specified project.

(c) Automobile Liability Insurance is required if an Automobile(s) is used in the performance of the contract.

ISO Symbol 1 (Any Auto), or alternatively a combination of Symbol 2 (Owned Autos), Symbol 8 (Hired Autos), and Symbol 9 (Non-Owned Autos), and limits shall be no less than:

$1 Million	Combined Single Limit for Bodily Injury and Property Damage

(d) Excess Liability

For contracts $250,000 or greater an Excess Liability Policy of at least but not limited to $1,000,000 in addition to the scheduled underlying policies for Commercial General Liability, Automobile Liability and Employers' Liability, the Contractor shall also provide an Excess Liability Policy with a maximum self-insured retention not to exceed $25,0000 per occurrence.

(e) Builder's Risk

Contractor shall purchase Builder's Risk Insurance for any contracts that are deemed to be vertical construction on an All-Risk policy, and shall also

include coverage for wind, hail, and named storm. Limits of coverage shall be at least and not limited to the value of the project.

(f) Professional Liability, Malpractice and/or Errors and Omissions

The Contractor shall purchase and maintain professional liability, malpractice, or errors or omissions insurance with minimum limits of $1,000,000 per occurrence. If a claims made form of coverage is provided, the retroactive date of coverage shall be no later than the inception date of claims made coverage, unless the prior policy was extended indefinitely to cover prior acts. Coverage shall be extended beyond the policy year either by a supplemental extended reporting period (ERP) of as great a duration as is available, and with no less coverage and with reinstated aggregate limits, or by requiring that any new policy provides a retroactive date no later than the inception date of claims made coverage.

D. Requirements for Certificates of Insurance

1. With the execution of the Contract Documents, the Contractor, including service-related contractors, shall provide certificates of such insurance acceptable to the City. These certificates and insurance policies shall contain an endorsement that the coverage under the policies will not be canceled, non-renewed or materially changed until at least thirty (30) days' prior written notice of such cancellation, non-renewal or change (except for nonpayment of premium, which shall be ten (10) days) and a copy of the cancellation endorsement signed by an authorized representative of the insurer, be given to the City. The contractor shall be required to replace any expired or canceled policies in like amount and coverage to the satisfaction of the City. The Certificate of Insurance shall be the ACORD FORM 25-S (7/90), or its successor form, and shall be made a part of the Contract Documents.

2. New certificates of insurance shall be provided to the City at least fifteen (15) days prior to coverage renewals.

3. If requested by the City, the contractor shall immediately furnish complete copies of the Contractor's insurance policies, forms and endorsements.

4. For Commercial General Liability coverage the Contractor shall, at the option of the City, provide an indication of the amount of claims payments or reserves chargeable to the aggregate amount of liability coverage. If the Commercial General Liability form of coverage includes an annual aggregate limitation on the amount of insurance provided, a separate project aggregate limit may be required by the City for the given contract.

5. If the Contractor fails to obtain and maintain for the life of the Project the insurance required hereby or to replace any such expired or canceled policy, the City may obtain and maintain such insurance with such company as it deems satisfactory. Any amounts expended by the City in payment of premiums for such insurance

shall be deducted by the City form the amount due the Contractor for the work covered by the Contract.

E. Policies of Insurance

1. Except as otherwise provided in this Exhibit, all insurance policies shall be issued by insurers licensed to do business in the State of Florida on an admitted basis or which is an eligible surplus lines insurer in the State of Florida, and any such insuring company is required to have a minimum financial rating of (A-), in the latest edition of "Best's Key Rating Guide", published by A. M. Best Co., Inc., or some similarly nationally recognized rating authority, including Standard and Poors and Demotech.

2. For Workers' Compensation coverage only, self-insurance programs are acceptable with a minimum A- rated reinsurance carrier; written confirmation is required.

3. All policies of insurance or certificates thereof referred to in this Exhibit shall be deposited with the City Clerk.

4. The City shall be named an Additional Insured on General Liability including products and completed operations and Automobile Liability policies of insurance and certificates thereof.

City of Ormond Beach
Request for Proposals (RFP)
FLEMING PLAYGROUND
(RFP No. 2024-31)
RFP RESPONSE FORM

THIS RESPONSE IS SUBMITTED TO:

Purchasing Coordinator
City of Ormond Beach
22 S. Beach Street
Ormond Beach, Florida 32174

The undersigned SUBMITTER proposes and agrees, if this Submittal is accepted, to enter into a Contract with the CITY that reflects the items of this Request for Proposal (RFP) and to provide all services, as specified or indicated in the RFP Documents, in full accordance with the terms and conditions set forth in therein.

SUBMITTER accepts all of the terms and conditions of the General Conditions. SUBMITTER will sign the Contract) and submit the Contract security (when applicable) and other documents required by the Contract Documents within ten (10) days after the date of CITY's Notice of Award.

In submitting this information, SUBMITTER represents, as more fully set forth in the Agreement, that:

SUBMITTER has examined copies of all the RFP Documents and of the following Addenda:

Addendum Date	Addendum Number
_____	_____
_____	_____
_____	_____

Receipt of all of which is hereby acknowledged.

This Submittal is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; SUBMITTER has not directly or indirectly induced or solicited any other Submitter to submit a false or sham Submittal; SUBMITTER has not solicited or induced any person, firm or a corporation to refrain from bidding; and SUBMITTER has not sought by collusion to obtain for himself any advantage over any other Bidder or over the CITY.

THIS RESPONSE IS SUBMITTED BY:

COMPANY NAME: _____

VENDOR/CONTRACTOR LICENSE NUMBER: _____

ADDRESS: _____

_____

_____

PHONE NO.: _____FAX NO.:_____

SUBMITTER'S NAME: _____
(Typed or Printed in Ink)

TITLE: _____

AUTHORIZED SIGNATURE: I, _____ hereby
(Original signature required in each document)

declare that I have read and fully understand the RFP Documents and, including the General Conditions and the Scope of Work, and that I am duly authorized to sign and submit this Submittal.

The CITY reserves the right to reject any and all Submittals, to waive informalities, and to accept any Submittal or parts thereof as the CITY, in its sole discretion, determines to be in the best interest of the CITY.

PROPOSER: PLEASE ENSURE THAT YOU HAVE SIGNED THE RFP RESPONSE FORM OF THIS REQUEST FOR PROPOSAL. OMISSION OF A SIGNATURE ON THAT PAGE MAY RESULT IN REJECTION OF YOUR PROPOSAL.

City of Ormond Beach
Request for Proposals (RFP)
FLEMING PLAYGROUND
(RFP No. 2024-31)
CITY OF ORMOND BEACH, FLORIDA

CONFLICT, NON-CONFLICT OF INTEREST STATEMENT
LITIGATION STATEMENT

1.

[ ] To the best of our knowledge, the undersigned firm has no potential conflicts of interest due to any other clients or contracts for this project.

[ ] The undersigned firm, by attachment to this form, submits information which may be a potential conflict of interest due to other clients or contracts for this project.

2.

[ ] The undersigned firm has had no litigation on any project in the last five (5) years.

[ ] The undersigned firm, by attachment to this form, submits a summary and disposition of individual cases of litigation during the past five (5) years.

_____
COMPANY NAME

_____
AUTHORIZED SIGNATURE

_____
NAME (PRINT OR TYPE)

_____
TITLE

_____
DATE

CITY OF ORMOND BEACH, FLORIDA
Request for Proposals (RFP)
FLEMING PLAYGROUND
(RFP No. 2024-31)
DRUG-FREE WORKPLACE CERTIFICATION

IDENTICAL OR "TIE" SUBMITTALS: Preference shall be given to businesses with drug-free workplace programs. Whenever two or more proposals which are equal in respect to price, quality, and service are received by the State or by any political subdivision for the procurement of commodities or contractual services, a bid received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. Established procedures for processing tie bids will be followed if none of the tied vendors have a drug-free workplace program. In order to have a drug-free workplace program, a business shall:

1) Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2) Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violation.

3) Give each employee that engages in providing the commodities or contractual services that are under bid a copy of the statement specified in subsection (1).

4) In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) calendar days after such conviction.

5) Impose sanctions on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.

6) Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

Company Name

Authorized Signature

Print Name

Title

Exhibit 1

EVALUATION FORM
Fleming Playground
RFP 2024-31

OPTION 1

Name of Firm: _____

Reviewer: _____

Date: _____

	Points
General (20 pts max.)	_____
Experience (30 pts max.)	_____
Proposed Fitness Equipment Stations and Configuration (30 pts max.)	_____
Written Proposal & Project Schedule (20 pts max.)	_____
TOTAL POINTS:	_____

Scoring Criteria:

Each reviewer above will score each design option submitted and scores will be added together. The company with the highest score will be awarded the project.

Exhibit 2

EVALUATION FORM
Fleming Playground
RFP 2024-31

OPTION 2

Name of Firm: _____

Reviewer: _____

Date: _____

	Points
General (20 pts max.)	_____
Experience (30 pts max.)	_____
Proposed Fitness Equipment Stations and Configuration (30 pts max.)	_____
Written Proposal & Project Schedule (20 pts max.)	_____
TOTAL POINTS:	_____

Scoring Criteria:

Each reviewer above will score each design option submitted and scores will be added together. The company with the highest score will be awarded the project.

Exhibit 3

EVALUATION FORM
Fleming Playground
RFP 2024-31

OPTION 3

Name of Firm: _____

Reviewer: _____

Date: _____

	Points
General (20 pts max.)	_____
Experience (30 pts max.)	_____
Proposed Fitness Equipment Stations and Configuration (30 pts max.)	_____
Written Proposal & Project Schedule (20 pts max.)	_____
TOTAL POINTS:	_____

Scoring Criteria:

Each reviewer above will score each design option submitted and scores will be added together. The company with the highest score will be awarded the project.

City of Ormond Beach Request for Proposals (RFP) Central Park 1 Playground Equipment Project (RFP No. 2024-31)

VERIFICATION OF EMPLOYMENT STATUS USING E-VERIFY SYSTEM

1. Undersigned firm warrants it **IS** currently registered with the U.S. Department of Homeland Security's E-Verify system, **and** is compliant with the requirements of Sections 448.09 and 448.095, *Florida Statutes*.

2. Undersigned firm warrants it **has not** had any contracts terminated as a result of violations of Sections 448.09 or 448.095, *Florida Statutes*, that prohibit it from contracting with a public agency.

3. Undersigned firm warrants that if it enters into an agreement with a subcontractor, an express provision shall be included in all of its subcontracts requiring subcontractors, who perform work or provide services pursuant to the contract, to use the E-Verify system to verify employment eligibility of all new employees hired by the subcontractor during the contract term.

4. Undersigned firm understands that any subcontractor must provide the contractor with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, and the contractor understands it shall maintain any such affidavits for the duration of the contract, and the contract with the subcontractor must be immediately terminated if the City has a good faith belief that the subcontractor knowingly violated Section 448.09 (1), *Florida Statutes*.

5. Undersigned firm understands that in the event the City has a good faith belief that the contractor has knowingly violated Section 448.09 (1), *Florida Statutes*, the City shall terminate the contract, and the contractor may not be awarded a public contract for a period of at least one (1) year after the date of termination. The contractor may be held liable for any additional costs incurred by the City as a result of termination of the contract.

_____
COMPANY NAME

_____
AUTHORIZED SIGNATURE

_____
NAME

_____
TITLE

_____
DATE

ADDENDUM NO. 3

July 8, 2024

TO: Prospective Bidders and Others Concerned.

SUBJECT: Addendum No. 3 to the Invitation to Bid for
Central Park 1 Playground Equipment No. 2024-31

TO ALL BIDDERS: You are requested to make all changes and/or additions contained in this Addendum to the Bidding Documents. Failure to acknowledge this Addendum in Proposal may result in rejection of bid.

QUESTIONS and ANSWERS

Question 1: Does this bid have a form 1023 for tax exempt?

Answer 1: **A copy of our State of Florida Tax Exemption is attached to this addendum. Form 1023 refers to federal income tax.**

Question 2: Is there any way to electronically bid or mail in only?

Answer 2: **One (1) signed original of the complete proposal packet along with one (1) fully complete electronic file in pdf format on either a CD or thumb drive. Both versions must be submitted in a single sealed envelope to the Purchasing Coordinator City Hall Room 102, 22 South Beach Street, Ormond Beach, FL 32174, no later than July 11, 2024 at 3:00 PM.**

The foregoing changes are hereby incorporated into the Bidding Requirements and Contract Documents for **Central Park 1 Playground Equipment No. 2024-31,** for the City of Ormond Beach.

END OF ADDENDUM No. 3

0000055 04/21/22

FLORIDA

Consumer's Certificate of Exemption

Issued Pursuant to Chapter 212, Florida Statutes

DR-14
R. 01/18

Certificate Number	Effective Date	Expiration Date	Exemption Category
85-8012740152C-7	06/30/2022	06/30/2027	MUNICIPAL GOVERNMENT

This certifies that

CITY OF ORMOND BEACH
22 S BEACH ST
ORMOND BEACH FL 32174-6386

is exempt from the payment of Florida sales and use tax on real property rented, transient rental property rented, tangible personal property purchased or rented, or services purchased.

FLORIDA

Important Information for Exempt Organizations

DR-14
R. 01/18

1. You must provide all vendors and suppliers with an exemption certificate before making tax-exempt purchases. See Rule 12A-1.038, Florida Administrative Code (F.A.C.).

2. Your *Consumer's Certificate of Exemption* is to be used solely by your organization for your organization's customary nonprofit activities.

3. Purchases made by an individual on behalf of the organization are taxable, even if the individual will be reimbursed by the organization.

4. This exemption applies only to purchases your organization makes. The sale or lease to others of tangible personal property, sleeping accommodations, or other real property is taxable. Your organization must register, and collect and remit sales and use tax on such taxable transactions. Note: Churches are exempt from this requirement except when they are the lessor of real property (Rule 12A-1.070, F.A.C.).

5. It is a criminal offense to fraudulently present this certificate to evade the payment of sales tax. Under no circumstances should this certificate be used for the personal benefit of any individual. Violators will be liable for payment of the sales tax plus a penalty of 200% of the tax, and may be subject to conviction of a third-degree felony. Any violation will require the revocation of this certificate.

6. If you have questions about your exemption certificate, please call Taxpayer Services at 850-488-6800. The mailing address is PO Box 6480, Tallahassee, FL 32314-6480.

ADDENDUM NO. 2

June 27, 2024

TO: Prospective Bidders and Others Concerned.

SUBJECT: Addendum No. 2 to the Invitation to Bid for
Central Park 1 Playground Equipment No. 2024-31

TO ALL BIDDERS: You are requested to make all changes and/or additions contained in this Addendum to the Bidding Documents. Failure to acknowledge this Addendum in Proposal may result in rejection of bid.

QUESTIONS and ANSWERS

Question 1: Will we be able to reuse the existing plastic borders?

Answer 1: No, due to its age.

Question 2: Can we get a better understanding of what it means by "spinner"?

Answer 2: A spinner is playground equipment that has moving parts in a circle rotation usually.

Question 3: Will electronic submittals be accepted?

Answer 3: No, a signed hard copy along with a pdf on a thumb drive or CD is required, see page 5 of 26 of the RFP.

Question 4: Is the site accessible by truck and trailer?

Answer 4: Yes, the site is accessible from the west end of the existing parking lot and cross over the existing sidewalk and driving across open grass area to access playground area.

Question 5: Will the site be open to the public, is orange fencing required?

Answer 5: Yes, barrier orange fencing is required during construction.

Question 6: If sod gets damaged, does the contractor need to replace it?

Answer 6: Yes, see page 8 of 26 under site area clean up on the RFP. Any damage to existing sod will need to be replaced with like materials.

Question 7: Since city employees are removing the old equipment and plastic borders, can they also remove the existing mulch?

Answer 7: Yes, it has been decided that the city will also remove the existing mulch and shall be excluded from the bid.

Question 8: Can existing mulch be reused?

Answer 8: No.

Question 9: Is an ADA ramp required? Is there a sidewalk it would attach it?

Answer 9: Yes, an ADA accessible border ramp is required, see page 7 of 26 of the RFP. No sidewalk with this scope of work.

Question 10: Are there additional funds available beyond the $40,000 budget?

Answer 10: No additional funding.

Question 11: When is the last day for questions?

Answer 11: The last day for questions is July 5th, see page 8 of 26 of the RFP.

The deadline to submit questions is July 5, 2024 at 5:00pm.

The foregoing changes are hereby incorporated into the Bidding Requirements and Contract Documents for **Central Park 1 Playground Equipment No. 2024-31,** for the City of Ormond Beach.

END OF ADDENDUM No. 2

ADDENDUM NO. 1

June 20, 2024

TO: Prospective Bidders and Others Concerned.

SUBJECT: Addendum No. 1 to the Invitation to Bid for
Central Park 1 Playground Equipment No. 2024-31

TO ALL BIDDERS: You are requested to make all changes and/or additions contained in this Addendum to the Bidding Documents. Failure to acknowledge this Addendum in Proposal may result in rejection of bid.

QUESTIONS and ANSWERS

Question 1: The picture of the existing playground has a plastic border around it. Are you reusing that border or do we need to order a new border?

Answer 1: **Refer to pages 7 & 8 of the RFP. On page 8, city staff will be removing the playground equipment & plastic border, however the playground company will be responsible removing the existing mulch. On page 7 states supply and install playground borders as part of this project.**

Question 2: Is the existing swing set staying or is it being removed?

Answer 2: **All playground equipment will be removed, see page 8.**

Question 3: Is the budget amount in the RFP correct for $40,000?

Answer 3: **Yes, correct.**

There will be a pre-submittal meeting on June 25, 2024 at 2:00 PM at the City Hall in Room 103, 22 South Beach Street, Ormond Beach. This meeting is not mandatory. The deadline to submit questions is July 5, 2024 at 5:00pm.

The foregoing changes are hereby incorporated into the Bidding Requirements and Contract Documents for **Central Park 1 Playground Equipment No. 2024-31,** for the City of Ormond Beach.

END OF ADDENDUM No. 1

RFP Evaluation Summary

Project:Central Park 1 Playground Equipment

Recommendation(s) of Award highlighted

RFP Number: 2024-31

Date & Time: July 19, 2024 - 10:00 AM

The RFP's were scored on the following criteria:

General 20 Points Max
Experience 30 Points Max
Proposed Fitness Equipment Stations and Configuration 30 Points Max
Written Proposal and Project Schedule 20 Points Max

Score Summary																				
	General 20 Points Max				Experience 30 Points Max				Proposed Fitness Equipment Stations and Configuration 30 Points Max				Writen Proposal and Project Schedule 20 Points Max				Totals				
Firm	C.C.	D.L.	S.D.	Total	C.C.	D.L.	S.D.	Total	C.C.	D.L.	S.D.	Total	C.C.	D.L.	S.D.	Total	C.C. Totals	D.L.. Totals	S.D. Totals	total points	rank by points
ARC - Option 1	18	15	20	53	29	28	30	87	22	25	10	57	17	15	18	50	86	83	78	247	4
Playworx - Option 1	18	14	10	42	0	20	0	20	23	20	25	68	20	13	15	48	61	67	50	178	6
Top Line - Option 1	18	17	20	55	30	29	30	89	25	20	20	65	10	17	15	42	83	83	85	251	3
Top Line - Option 2	18	17	20	55	30	29	30	89	25	25	15	65	10	17	10	37	83	88	75	246	5
KorKat - Option 1	18	19	20	57	30	28	20	78	30	29	25	84	17	19	15	51	95	95	80	270	2
KorKat - Option 2	18	19	20	57	30	28	20	78	29	27	25	81	17	19	20	56	94	93	85	272	1

Rob Hart	Cara Culliver	David Lisicki	Sara Dionne
Purchasing Coordinator	Landscape Architect	Contract Manager	Recreation Program Specialist

City of Ormond Beach
AGENDA ITEM

August 20, 2024 - City Commission

Number: 7.E

Section:	CONSENT AGENDA		
Item Category:	Consent - Resolution	**Res./Ord. No:**	2024-126
Strategic Goal:	Transportation & Community Development - Update airport operations, including noise abatement		
Department:	Economic Development - Airport		
Subject:	FDOT Grant - Airfield Marking and Pavement rejuvenation Project (Design)		
Summary:	This is a resolution to authorize execution of a Public Transportation Grant Agreement (PTGA) between the City and the Florida Department of Transportation (FDOT) to provide state funding for the design phase of the Airfield Marking and Pavement Rejuvenation Project at the Ormond Beach Municipal Airport. On February 8, 2024, during the annual airport safety and licensing inspection by FDOT, it was found there were inconsistencies between the existing airfield markings and the current standards for airfield markings established by the Federal Aviation Administration (FAA). As a result, staff was informed by FDOT that the airfield markings must be re-painted, added or removed as needed in order to comply with FAA standards. This project is intended to address these deficiencies prior to the next licensing inspection. As this project is not a planned capital improvement, but rather is being initiated to maintain FAA and FDOT compliance requirements noted in the airport's annual airport safety and licensing inspection conducted by FDOT in February, 2024 review of this activity is not required by the Aviation Advisory Board. The design will include the remarking and pavement rejuvenation of Runway 9/27, Runway 17/35 and Taxiways Alpha, Charlie, Echo, Foxtrot and Golf, as further described in the scope of services. This project is given a high priority due to safety considerations for aircraft operations and the City's obligation as the airport sponsor to maintain airport pavement in an acceptable operational condition and with adequate load-carrying capacity.		

Financial Impact:	The total cost of this design project is $30,000. The PTGA presented for approval herein provides state funding of 80% in the amount of $24,000. The local cost share is $6,000. Approval of this grant agreement to fund design work in the current fiscal year will require a budget amendment for the Airport Fund (108). The construction phase is included in the proposed FY2024-25 budget. Staff plans to request federal participation in the construction phase in the form of an FAA/BIL grant in FY 2025. State participation in the construction phase will also be requested in FY 2025.
Citizen Impact:	The Airfield Marking and Pavement Rejuvenation Project pertains specifically to current and planned airport operations. The improved markings and pavement conditions will serve as an operational safety enhancement for the flying public.
Recommended Action (Staff, Advisory Board and/or Other):	Staff recommends approval to execute the PTGA with FDOT for the design phase of the Airfield Marking and Pavement Rejuvenation Project.
Staff Contact:	Steven Lichliter, Airport Manager, (386) 615-7019
Attachments:	1. 24-126 FDOT Airfield Marking and Pavement Design (P24-0089G) 2. FDOT Grant Agreement 3. Project Areas 4. Existing Conditions
Approval:	Kelly McGuire, Finance Director 7/30/2024 Shawn Finley, Assistant City Manager 8/15/2024 Joyce Shanahan, City Manager 8/15/2024

RESOLUTION NO. 2024-126

A RESOLUTION AUTHORIZING THE EXECUTION OF A PUBLIC TRANSPORTATION GRANT AGREEMENT BETWEEN THE CITY AND THE FLORIDA DEPARTMENT OF TRANSPORTATION REGARDING FUNDING FOR THE DESIGN PHASE OF THE AIRFIELD MARKING AND PAVEMENT REJUVENATION PROJECT AT THE ORMOND BEACH MUNICIPAL AIRPORT; AUTHORIZING THE EXECUTION OF ALL DOCUMENTS NECESSARY AND INCIDENTAL THERETO FOR THE CITY TO ACCEPT THE GRANT AWARD; AND SETTING FORTH AN EFFECTIVE DATE.

WHEREAS, the City Commission desires to enter into a Public Transportation Grant Agreement with the Florida Department of Transportation ("FDOT") for the design phase of the Airfield Marking and Pavement Rejuvenation Project at the Ormond Beach Municipal Airport (the "Project"), and

WHEREAS, the total cost of the Project is $30,000.00, and

WHEREAS, the Florida Department of Transportation ("FDOT") has issued a Public Transportation Grant Agreement ("PTGA") to provide grant funding in the amount of $24,000.00, representing eighty percent (80%) of the Project cost, and

WHEREAS, City Manager has certified that funds in the amount of $6,000.00 to fund the City's share of the Project cost will be credited to the Airport Fund (108) through a budget amendment, and are not appropriated for any other purpose, now therefore,

BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF ORMOND BEACH, FLORIDA, THAT:

SECTION ONE. The Mayor and the City Manager are hereby authorized and directed to execute a Public Transportation Grant Agreement between the City and the Florida Department of Transportation regarding funding for the design phase of the Airfield Marking and Pavement Rejuvenation Project at the Ormond Beach Municipal Airport. A copy of said Public Transportation Grant Agreement is attached hereto and incorporated herein by reference.

SECTION TWO. This Resolution shall take effect immediately upon its adoption.

APPROVED AND AUTHENTICATED, this 20th day of August, 2024.

_____
BILL PARTINGTON
Mayor

ATTEST:

_____
SUSAN CARROLL DAUDERIS
City Clerk

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

PUBLIC TRANSPORTATION GRANT AGREEMENT

Form 725-000-01
STRATEGIC DEVELOPMENT
OGC 07/22

Financial Project Number(s): (item-segment-phase-sequence)		Fund(s):	DPTO	FLAIR Category:	088719
454708-1-94-01		Work Activity Code/Function:	215	Object Code:	751000
		Federal Number/Federal Award		Org. Code:	55052000531
		Identification Number (FAIN) – Transit only:	N/A	Vendor Number:	VF596000398020
Contract Number:		Federal Award Date:	N/A		
CFDA Number:	N/A	Agency SAM/UEI Number:			
CFDA Title:	N/A				
CSFA Number:	55.004				
CSFA Title:	Aviation Grant Program				

THIS PUBLIC TRANSPORTATION GRANT AGREEMENT ("Agreement") is entered into _____, by and between the State of Florida, Department of Transportation, ("Department"), and City of Ormond Beach, ("Agency"). The Department and the Agency are sometimes referred to in this Agreement as a "Party" and collectively as the "Parties."

NOW, THEREFORE, in consideration of the mutual benefits to be derived from joint participation on the Project, the Parties agree to the following:

1. **Authority.** The Agency, by Resolution or other form of official authorization, a copy of which is attached as **Exhibit "D", Agency Resolution** and made a part of this Agreement, has authorized its officers to execute this Agreement on its behalf. The Department has the authority pursuant to Section(s) 332.007, Florida Statutes, to enter into this Agreement.

2. **Purpose of Agreement.** The purpose of this Agreement is to provide for the Department's participation in Design of Airfield Markings and pavement rejuvenation at Ormond Beach Municipal Airport., as further described in **Exhibit "A", Project Description and Responsibilities**, attached and incorporated into this Agreement ("Project"), to provide Department financial assistance to the Agency, state the terms and conditions upon which Department funds will be provided, and to set forth the manner in which the Project will be undertaken and completed.

3. **Program Area.** For identification purposes only, this Agreement is implemented as part of the Department program area selected below (select all programs that apply):

   X **Aviation**
   __ **Seaports**
   __ **Transit**
   __ **Intermodal**
   __ **Rail Crossing Closure**
   __ **Match to Direct Federal Funding** (Aviation or Transit)
   (Note: Section 15 and Exhibit G do not apply to federally matched funding)
   __ **Other**

4. **Exhibits.** The following Exhibits are attached and incorporated into this Agreement:

   X Exhibit A: Project Description and Responsibilities
   X Exhibit B: Schedule of Financial Assistance
   __ *Exhibit B1: Deferred Reimbursement Financial Provisions
   __ *Exhibit B2: Advance Payment Financial Provisions
   __ *Exhibit B3: Alternative Advanced Pay (Transit Bus Program)
   __ *Exhibit C: Terms and Conditions of Construction
   X Exhibit D: Agency Resolution
   X Exhibit E: Program Specific Terms and Conditions
   X Exhibit F: Contract Payment Requirements
   X *Exhibit G: Audit Requirements for Awards of State Financial Assistance

__ *Exhibit H: Audit Requirements for Awards of Federal Financial Assistance
__ *Exhibit I: Certification of Disbursement of Payment to Vehicle and/or Equipment Vendor
__ *Additional Exhibit(s):

*Indicates that the Exhibit is only attached and incorporated if applicable box is selected.

5. **Time.** Unless specified otherwise, all references to "days" within this Agreement refer to calendar days.

6. **Term of Agreement.** This Agreement shall commence upon full execution by both Parties ("Effective Date") and continue through June 1, 2026. If the Agency does not complete the Project within this time period, this Agreement will expire unless an extension of the time period is requested by the Agency and granted in writing by the Department prior to the expiration of this Agreement. Expiration of this Agreement will be considered termination of the Project. The cost of any work performed prior to the Effective Date or after the expiration date of this Agreement will not be reimbursed by the Department.

   a. __ If this box is checked the following provision applies:

   Unless terminated earlier, work on the Project shall commence no later than the __ day of __, or within __ days of the issuance of the Notice to Proceed for the construction phase of the Project (if the Project involves construction), whichever date is earlier. The Department shall have the option to immediately terminate this Agreement should the Agency fail to meet the above-required dates.

7. **Amendments, Extensions, and Assignment.** This Agreement may be amended or extended upon mutual written agreement of the Parties. This Agreement shall not be renewed. This Agreement shall not be assigned, transferred, or otherwise encumbered by the Agency under any circumstances without the prior written consent of the Department.

8. **Termination or Suspension of Project.** The Department may, by written notice to the Agency, suspend any or all of the Department's obligations under this Agreement for the Agency's failure to comply with applicable law or the terms of this Agreement until such time as the event or condition resulting in such suspension has ceased or been corrected.

   a. Notwithstanding any other provision of this Agreement, if the Department intends to terminate the Agreement, the Department shall notify the Agency of such termination in writing at least thirty (30) days prior to the termination of the Agreement, with instructions to the effective date of termination or specify the stage of work at which the Agreement is to be terminated.

   b. The Parties to this Agreement may terminate this Agreement when its continuation would not produce beneficial results commensurate with the further expenditure of funds. In this event, the Parties shall agree upon the termination conditions.

   c. If the Agreement is terminated before performance is completed, the Agency shall be paid only for that work satisfactorily performed for which costs can be substantiated. Such payment, however, may not exceed the equivalent percentage of the Department's maximum financial assistance. If any portion of the Project is located on the Department's right-of-way, then all work in progress on the Department right-of-way will become the property of the Department and will be turned over promptly by the Agency.

   d. In the event the Agency fails to perform or honor the requirements and provisions of this Agreement, the Agency shall promptly refund in full to the Department within thirty (30) days of the termination of the Agreement any funds that were determined by the Department to have been expended in violation of the Agreement.

   e. The Department reserves the right to unilaterally cancel this Agreement for failure by the Agency to comply with the Public Records provisions of Chapter 119, Florida Statutes.

9. Project Cost:

a. The estimated total cost of the Project is $30,000. This amount is based upon **Exhibit "B", Schedule of Financial Assistance**. The timeline for deliverables and distribution of estimated amounts between deliverables within a grant phase, as outlined in **Exhibit "B", Schedule of Financial Assistance**, may be modified by mutual written agreement of the Parties and does not require execution of an **Amendment to the Public Transportation Grant Agreement**. The timeline for deliverables and distribution of estimated amounts between grant phases requires an amendment executed by both Parties in the same form as this Agreement.

b. The Department agrees to participate in the Project cost up to the maximum amount of $24,000 and, the Department's participation in the Project shall not exceed 80.00% of the total eligible cost of the Project, and as more fully described in **Exhibit "B'', Schedule of Financial Assistance**. The Agency agrees to bear all expenses in excess of the amount of the Department's participation and any cost overruns or deficits involved.

10. Compensation and Payment:

a. Eligible Cost. The Department shall reimburse the Agency for allowable costs incurred as described in **Exhibit "A"**, **Project Description and Responsibilities**, and as set forth in **Exhibit "B", Schedule of Financial Assistance**.

b. Deliverables. The Agency shall provide quantifiable, measurable, and verifiable units of deliverables. Each deliverable must specify the required minimum level of service to be performed and the criteria for evaluating successful completion. The Project and the quantifiable, measurable, and verifiable units of deliverables are described more fully in **Exhibit "A", Project Description and Responsibilities**. Modifications to the deliverables in **Exhibit "A", Project Description and Responsibilities** requires a formal written amendment.

c. Invoicing. Invoices shall be submitted no more often than monthly by the Agency in detail sufficient for a proper pre-audit and post-audit, based on the quantifiable, measurable, and verifiable deliverables as established in **Exhibit "A", Project Description and Responsibilities**. Deliverables and costs incurred must be received and approved by the Department prior to reimbursement. Requests for reimbursement by the Agency shall include an invoice, progress report, and supporting documentation for the deliverables being billed that are acceptable to the Department. The Agency shall use the format for the invoice and progress report that is approved by the Department.

d. Supporting Documentation. Supporting documentation must establish that the deliverables were received and accepted in writing by the Agency and must also establish that the required minimum standards or level of service to be performed based on the criteria for evaluating successful completion as specified in **Exhibit "A", Project Description and Responsibilities** has been met. All costs invoiced shall be supported by properly executed payrolls, time records, invoices, contracts, or vouchers evidencing in proper detail the nature and propriety of charges as described in **Exhibit "F", Contract Payment Requirements**.

e. Travel Expenses. The selected provision below is controlling regarding travel expenses:

X Travel expenses are NOT eligible for reimbursement under this Agreement.

__ Travel expenses ARE eligible for reimbursement under this Agreement. Bills for travel expenses specifically authorized in this Agreement shall be submitted on the Department's Contractor Travel Form No. 300-000-06 and will be paid in accordance with Section 112.061,

Florida Statutes, and the most current version of the Department's Disbursement Handbook for Employees and Managers.

f. Financial Consequences. Payment shall be made only after receipt and approval of deliverables and costs incurred unless advance payments are authorized by the Chief Financial Officer of the State of Florida under Chapters 215 and 216, Florida Statutes, or the Department's Comptroller under Section 334.044(29), Florida Statutes. If the Department determines that the performance of the Agency is unsatisfactory, the Department shall notify the Agency of the deficiency to be corrected, which correction shall be made within a time-frame to be specified by the Department. The Agency shall, within thirty (30) days after notice from the Department, provide the Department with a corrective action plan describing how the Agency will address all issues of contract non-performance, unacceptable performance, failure to meet the minimum performance levels, deliverable deficiencies, or contract non-compliance. If the corrective action plan is unacceptable to the Department, the Agency will not be reimbursed. If the deficiency is subsequently resolved, the Agency may bill the Department for the amount that was previously not reimbursed during the next billing period. If the Agency is unable to resolve the deficiency, the funds shall be forfeited at the end of the Agreement's term.

g. Invoice Processing. An Agency receiving financial assistance from the Department should be aware of the following time frames. Inspection or verification and approval of deliverables shall take no longer than 20 days from the Department's receipt of the invoice. The Department has 20 days to deliver a request for payment (voucher) to the Department of Financial Services. The 20 days are measured from the latter of the date the invoice is received or the deliverables are received, inspected or verified, and approved.

If a payment is not available within 40 days, a separate interest penalty at a rate as established pursuant to Section 55.03(1), Florida Statutes, will be due and payable, in addition to the invoice amount, to the Agency. Interest penalties of less than one (1) dollar will not be enforced unless the Agency requests payment. Invoices that have to be returned to an Agency because of Agency preparation errors will result in a delay in the payment. The invoice payment requirements do not start until a properly completed invoice is provided to the Department.

A Vendor Ombudsman has been established within the Department of Financial Services. The duties of this individual include acting as an advocate for Agency who may be experiencing problems in obtaining timely payment(s) from a state agency. The Vendor Ombudsman may be contacted at (850) 413-5516.

h. Records Retention. The Agency shall maintain an accounting system or separate accounts to ensure funds and projects are tracked separately. Records of costs incurred under the terms of this Agreement shall be maintained and made available upon request to the Department at all times during the period of this Agreement and for five years after final payment is made. Copies of these records shall be furnished to the Department upon request. Records of costs incurred include the Agency's general accounting records and the Project records, together with supporting documents and records, of the Contractor and all subcontractors performing work on the Project, and all other records of the Contractor and subcontractors considered necessary by the Department for a proper audit of costs.

i. Progress Reports. Upon request, the Agency agrees to provide progress reports to the Department in the standard format used by the Department and at intervals established by the Department. The Department will be entitled at all times to be advised, at its request, as to the status of the Project and of details thereof.

j. Submission of Other Documents. The Agency shall submit to the Department such data, reports, records, contracts, and other documents relating to the Project as the Department

may require as listed in **Exhibit "E", Program Specific Terms and Conditions** attached to and incorporated into this Agreement.

k. Offsets for Claims. If, after Project completion, any claim is made by the Department resulting from an audit or for work or services performed pursuant to this Agreement, the Department may offset such amount from payments due for work or services done under any agreement that it has with the Agency owing such amount if, upon written demand, payment of the amount is not made within 60 days to the Department. Offsetting any amount pursuant to this paragraph shall not be considered a breach of contract by the Department.

l. Final Invoice. The Agency must submit the final invoice on the Project to the Department within 120 days after the completion of the Project. Invoices submitted after the 120-day time period may not be paid.

m. Department's Performance and Payment Contingent Upon Annual Appropriation by the Legislature. The Department's performance and obligation to pay under this Agreement is contingent upon an annual appropriation by the Legislature. If the Department's funding for this Project is in multiple fiscal years, a notice of availability of funds from the Department's project manager must be received prior to costs being incurred by the Agency. See **Exhibit "B", Schedule of Financial Assistance** for funding levels by fiscal year. Project costs utilizing any fiscal year funds are not eligible for reimbursement if incurred prior to funds approval being received. The Department will notify the Agency, in writing, when funds are available.

n. Limits on Contracts Exceeding $25,000 and Term more than 1 Year. In the event this Agreement is in excess of $25,000 and has a term for a period of more than one year, the provisions of Section 339.135(6)(a), Florida Statutes, are hereby incorporated:

> "The Department, during any fiscal year, shall not expend money, incur any liability, or enter into any contract which, by its terms, involves the expenditure of money in excess of the amounts budgeted as available for expenditure during such fiscal year. Any contract, verbal or written, made in violation of this subsection is null and void, and no money may be paid on such contract. The Department shall require a statement from the comptroller of the Department that funds are available prior to entering into any such contract or other binding commitment of funds. Nothing herein contained shall prevent the making of contracts for periods exceeding 1 year, but any contract so made shall be executory only for the value of the services to be rendered or agreed to be paid for in succeeding fiscal years; and this paragraph shall be incorporated verbatim in all contracts of the Department which are for an amount in excess of $25,000 and which have a term for a period of more than 1 year."

o. Agency Obligation to Refund Department. Any Project funds made available by the Department pursuant to this Agreement that are determined by the Department to have been expended by the Agency in violation of this Agreement or any other applicable law or regulation shall be promptly refunded in full to the Department. Acceptance by the Department of any documentation or certifications, mandatory or otherwise permitted, that the Agency files shall not constitute a waiver of the Department's rights as the funding agency to verify all information at a later date by audit or investigation.

p. Non-Eligible Costs. In determining the amount of the payment, the Department will exclude all Project costs incurred by the Agency prior to the execution of this Agreement, costs incurred after the expiration of the Agreement, costs that are not provided for in **Exhibit "A"**, **Project Description and Responsibilities**, and as set forth in **Exhibit "B", Schedule of Financial Assistance**, costs agreed to be borne by the Agency or its contractors and subcontractors for

not meeting the Project commencement and final invoice time lines, and costs attributable to goods or services received under a contract or other arrangement that has not been approved in writing by the Department. Specific unallowable costs may be listed in **Exhibit "A"**, **Project Description and Responsibilities.**

11. **General Requirements.** The Agency shall complete the Project with all practical dispatch in a sound, economical, and efficient manner, and in accordance with the provisions in this Agreement and all applicable laws.

    a. **Necessary Permits Certification.** The Agency shall certify to the Department that the Agency's design consultant and/or construction contractor has secured the necessary permits.

    b. **Right-of-Way Certification.** If the Project involves construction, then the Agency shall provide to the Department certification and a copy of appropriate documentation substantiating that all required right-of-way necessary for the Project has been obtained. Certification is required prior to authorization for advertisement for or solicitation of bids for construction of the Project, even if no right-of-way is required.

    c. **Notification Requirements When Performing Construction on Department's Right-of-Way.** In the event the cost of the Project is greater than $250,000.00, and the Project involves construction on the Department's right-of-way, the Agency shall provide the Department with written notification of either its intent to:

        i. Require the construction work of the Project that is on the Department's right-of-way to be performed by a Department prequalified contractor, or

        ii. Construct the Project utilizing existing Agency employees, if the Agency can complete said Project within the time frame set forth in this Agreement.

    d. __ If this box is checked, then the Agency is permitted to utilize its own forces and the following provision applies: **Use of Agency Workforce.** In the event the Agency proceeds with any phase of the Project utilizing its own forces, the Agency will only be reimbursed for direct costs (this excludes general overhead).

    e. __ If this box is checked, then the Agency is permitted to utilize **Indirect Costs: Reimbursement for Indirect Program Expenses** (select one):

        i. __ Agency has selected to seek reimbursement from the Department for actual indirect expenses (no rate).

        ii. __ Agency has selected to apply a de minimus rate of 10% to modified total direct costs. Note: The de minimus rate is available only to entities that have never had a negotiated indirect cost rate. When selected, the de minimus rate must be used consistently for all federal awards until such time the agency chooses to negotiate a rate. A cost policy statement and de minimis certification form must be submitted to the Department for review and approval.

        iii. __ Agency has selected to apply a state or federally approved indirect cost rate. A federally approved rate agreement or indirect cost allocation plan (ICAP) must be submitted annually.

    f. **Agency Compliance with Laws, Rules, and Regulations, Guidelines, and Standards.** The Agency shall comply and require its contractors and subcontractors to comply with all terms and conditions of this Agreement and all federal, state, and local laws and regulations applicable to this Project.

g. **Claims and Requests for Additional Work.** The Agency shall have the sole responsibility for resolving claims and requests for additional work for the Project. The Agency will make best efforts to obtain the Department's input in its decisions. The Department is not obligated to reimburse for claims or requests for additional work.

12. Contracts of the Agency:

a. **Approval of Third Party Contracts.** The Department specifically reserves the right to review and approve any and all third party contracts with respect to the Project before the Agency executes or obligates itself in any manner requiring the disbursement of Department funds, including consultant and purchase of commodities contracts, or amendments thereto. If the Department chooses to review and approve third party contracts for this Project and the Agency fails to obtain such approval, that shall be sufficient cause for nonpayment by the Department. The Department specifically reserves unto itself the right to review the qualifications of any consultant or contractor and to approve or disapprove the employment of the same. If Federal Transit Administration (FTA) funds are used in the Project, the Department must exercise the right to third party contract review.

b. **Procurement of Commodities or Contractual Services.** It is understood and agreed by the Parties hereto that participation by the Department in a project with the Agency, where said project involves the purchase of commodities or contractual services where purchases or costs exceed the Threshold Amount for CATEGORY TWO per Section 287.017, Florida Statutes, is contingent on the Agency complying in full with the provisions of Section 287.057, Florida Statutes. The Agency's Authorized Official shall certify to the Department that the Agency's purchase of commodities or contractual services has been accomplished in compliance with Section 287.057, Florida Statutes. It shall be the sole responsibility of the Agency to ensure that any obligations made in accordance with this Section comply with the current threshold limits. Contracts, purchase orders, task orders, construction change orders, or any other agreement that would result in exceeding the current budget contained in **Exhibit "B", Schedule of Financial Assistance**, or that is not consistent with the Project description and scope of services contained in **Exhibit "A", Project Description and Responsibilities** must be approved by the Department prior to Agency execution. Failure to obtain such approval, and subsequent execution of an amendment to the Agreement if required, shall be sufficient cause for nonpayment by the Department, in accordance with this Agreement.

c. **Consultants' Competitive Negotiation Act.** It is understood and agreed by the Parties to this Agreement that participation by the Department in a project with the Agency, where said project involves a consultant contract for professional services, is contingent on the Agency's full compliance with provisions of Section 287.055, Florida Statutes, Consultants' Competitive Negotiation Act. In all cases, the Agency's Authorized Official shall certify to the Department that selection has been accomplished in compliance with the Consultants' Competitive Negotiation Act.

d. **Disadvantaged Business Enterprise (DBE) Policy and Obligation.** It is the policy of the Department that DBEs, as defined in 49 C.F.R. Part 26, as amended, shall have the opportunity to participate in the performance of contracts financed in whole or in part with Department funds under this Agreement. The DBE requirements of applicable federal and state laws and regulations apply to this Agreement. The Agency and its contractors agree to ensure that DBEs have the opportunity to participate in the performance of this Agreement. In this regard, all recipients and contractors shall take all necessary and reasonable steps in accordance with applicable federal and state laws and regulations to ensure that the DBEs have the opportunity to compete for and perform contracts. The Agency and its contractors and subcontractors shall not discriminate on the basis of race, color, national origin or sex in the award and performance of contracts, entered pursuant to this Agreement.

13. **Maintenance Obligations**. In the event the Project includes construction or the acquisition of commodities then the following provisions are incorporated into this Agreement:

    a. The Agency agrees to accept all future maintenance and other attendant costs occurring after completion of the Project for all improvements constructed or commodities acquired as part of the Project. The terms of this provision shall survive the termination of this Agreement.

14. **Sale, Transfer, or Disposal of Department-funded Property:**

    a. The Agency will not sell or otherwise transfer or dispose of any part of its title or other interests in real property, facilities, or equipment funded in any part by the Department under this Agreement without prior written approval by the Department.

    b. If a sale, transfer, or disposal by the Agency of all or a portion of Department-funded real property, facilities, or equipment is approved by the Department, the following provisions will apply:

        i. The Agency shall reimburse the Department a proportional amount of the proceeds of the sale of any Department-funded property.

        ii. The proportional amount shall be determined on the basis of the ratio of the Department funding of the development or acquisition of the property multiplied against the sale amount, and shall be remitted to the Department within ninety (90) days of closing of sale.

        iii. Sale of property developed or acquired with Department funds shall be at market value as determined by appraisal or public bidding process, and the contract and process for sale must be approved in advance by the Department.

        iv. If any portion of the proceeds from the sale to the Agency are non-cash considerations, reimbursement to the Department shall include a proportional amount based on the value of the non-cash considerations.

    c. The terms of provisions “a” and “b” above shall survive the termination of this Agreement.

        i. The terms shall remain in full force and effect throughout the useful life of facilities developed, equipment acquired, or Project items installed within a facility, but shall not exceed twenty (20) years from the effective date of this Agreement.

        ii. There shall be no limit on the duration of the terms with respect to real property acquired with Department funds.

15. **Single Audit.** The administration of Federal or State resources awarded through the Department to the Agency by this Agreement may be subject to audits and/or monitoring by the Department. The following requirements do not limit the authority of the Department to conduct or arrange for the conduct of additional audits or evaluations of Federal awards or State financial assistance or limit the authority of any state agency inspector general, the State of Florida Auditor General, or any other state official. The Agency shall comply with all audit and audit reporting requirements as specified below.

    Federal Funded:

    a. In addition to reviews of audits conducted in accordance with 2 CFR Part 200, Subpart F – Audit Requirements, monitoring procedures may include but not be limited to on-site visits by Department staff and/or other procedures, including reviewing any required performance and financial reports, following up, ensuring corrective action, and issuing management decisions on weaknesses found through audits when those findings pertain to Federal awards provided

through the Department by this Agreement. By entering into this Agreement, the Agency agrees to comply and cooperate fully with any monitoring procedures/processes deemed appropriate by the Department. The Agency further agrees to comply and cooperate with any inspections, reviews, investigations, or audits deemed necessary by the Department, State of Florida Chief Financial Officer (CFO), or State of Florida Auditor General.

b. The Agency, a non-Federal entity as defined by 2 CFR Part 200, Subpart F – Audit Requirements, as a subrecipient of a Federal award awarded by the Department through this Agreement, is subject to the following requirements:

i. In the event the Agency expends a total amount of Federal awards equal to or in excess of the threshold established by 2 CFR Part 200, Subpart F – Audit Requirements, the Agency must have a Federal single or program-specific audit conducted for such fiscal year in accordance with the provisions of 2 CFR Part 200, Subpart F – Audit Requirements. **Exhibit "H", Audit Requirements for Awards of Federal Financial Assistance**, to this Agreement provides the required Federal award identification information needed by the Agency to further comply with the requirements of 2 CFR Part 200, Subpart F – Audit Requirements. In determining Federal awards expended in a fiscal year, the Agency must consider all sources of Federal awards based on when the activity related to the Federal award occurs, including the Federal award provided through the Department by this Agreement. The determination of amounts of Federal awards expended should be in accordance with the guidelines established by 2 CFR Part 200, Subpart F – Audit Requirements. An audit conducted by the State of Florida Auditor General in accordance with the provisions of 2 CFR Part 200, Subpart F – Audit Requirements, will meet the requirements of this part.

ii. In connection with the audit requirements, the Agency shall fulfill the requirements relative to the auditee responsibilities as provided in 2 CFR Part 200, Subpart F – Audit Requirements.

iii. In the event the Agency expends less than the threshold established by 2 CFR Part 200, Subpart F – Audit Requirements, in Federal awards, the Agency is exempt from Federal audit requirements for that fiscal year. However, the Agency must provide a single audit exemption statement to the Department at FDOTSingleAudit@dot.state.fl.us no later than nine months after the end of the Agency's audit period for each applicable audit year. In the event the Agency expends less than the threshold established by 2 CFR Part 200, Subpart F – Audit Requirements, in Federal awards in a fiscal year and elects to have an audit conducted in accordance with the provisions of 2 CFR Part 200, Subpart F – Audit Requirements, the cost of the audit must be paid from non-Federal resources (*i.e.*, the cost of such an audit must be paid from the Agency's resources obtained from other than Federal entities).

iv. The Agency must electronically submit to the Federal Audit Clearinghouse (FAC) at https://harvester.census.gov/facweb/ the audit reporting package as required by 2 CFR Part 200, Subpart F – Audit Requirements, within the earlier of 30 calendar days after receipt of the auditor's report(s) or nine months after the end of the audit period. The FAC is the repository of record for audits required by 2 CFR Part 200, Subpart F – Audit Requirements. However, the Department requires a copy of the audit reporting package also be submitted to FDOTSingleAudit@dot.state.fl.us within the earlier of 30 calendar days after receipt of the auditor's report(s) or nine months after the end of the audit period as required by 2 CFR Part 200, Subpart F – Audit Requirements.

v. Within six months of acceptance of the audit report by the FAC, the Department will review the Agency's audit reporting package, including corrective action plans and

management letters, to the extent necessary to determine whether timely and appropriate action on all deficiencies has been taken pertaining to the Federal award provided through the Department by this Agreement. If the Agency fails to have an audit conducted in accordance with 2 CFR Part 200, Subpart F – Audit Requirements, the Department may impose additional conditions to remedy noncompliance. If the Department determines that noncompliance cannot be remedied by imposing additional conditions, the Department may take appropriate actions to enforce compliance, which actions may include but not be limited to the following:

1. Temporarily withhold cash payments pending correction of the deficiency by the Agency or more severe enforcement action by the Department;
2. Disallow (deny both use of funds and any applicable matching credit for) all or part of the cost of the activity or action not in compliance;
3. Wholly or partly suspend or terminate the Federal award;
4. Initiate suspension or debarment proceedings as authorized under 2 C.F.R. Part 180 and Federal awarding agency regulations (or in the case of the Department, recommend such a proceeding be initiated by the Federal awarding agency);
5. Withhold further Federal awards for the Project or program;
6. Take other remedies that may be legally available.

vi. As a condition of receiving this Federal award, the Agency shall permit the Department or its designee, the CFO, or State of Florida Auditor General access to the Agency's records, including financial statements, the independent auditor's working papers, and project records as necessary. Records related to unresolved audit findings, appeals, or litigation shall be retained until the action is complete or the dispute is resolved.

vii. The Department's contact information for requirements under this part is as follows:

Office of Comptroller, MS 24
605 Suwannee Street
Tallahassee, Florida 32399-0450
FDOTSingleAudit@dot.state.fl.us

State Funded:

a. In addition to reviews of audits conducted in accordance with Section 215.97, Florida Statutes, monitoring procedures to monitor the Agency's use of state financial assistance may include but not be limited to on-site visits by Department staff and/or other procedures, including reviewing any required performance and financial reports, following up, ensuring corrective action, and issuing management decisions on weaknesses found through audits when those findings pertain to state financial assistance awarded through the Department by this Agreement. By entering into this Agreement, the Agency agrees to comply and cooperate fully with any monitoring procedures/processes deemed appropriate by the Department. The Agency further agrees to comply and cooperate with any inspections, reviews, investigations, or audits deemed necessary by the Department, the Department of Financial Services (DFS), or State of Florida Auditor General.

b. The Agency, a "nonstate entity" as defined by Section 215.97, Florida Statutes, as a recipient of state financial assistance awarded by the Department through this Agreement, is subject to the following requirements:

i. In the event the Agency meets the audit threshold requirements established by Section 215.97, Florida Statutes, the Agency must have a State single or project-specific audit conducted for such fiscal year in accordance with Section 215.97, Florida Statutes; applicable rules of the Department of Financial Services; and

Chapters 10.550 (local governmental entities) or 10.650 (nonprofit and for-profit organizations), Rules of the Auditor General. **Exhibit "G", Audit Requirements for Awards of State Financial Assistance,** to this Agreement indicates state financial assistance awarded through the Department by this Agreement needed by the Agency to further comply with the requirements of Section 215.97, Florida Statutes. In determining the state financial assistance expended in a fiscal year, the Agency shall consider all sources of state financial assistance, including state financial assistance received from the Department by this Agreement, other state agencies, and other nonstate entities. State financial assistance does not include Federal direct or pass-through awards and resources received by a nonstate entity for Federal program matching requirements.

ii. In connection with the audit requirements, the Agency shall ensure that the audit complies with the requirements of Section 215.97(8), Florida Statutes. This includes submission of a financial reporting package as defined by Section 215.97(2)(e), Florida Statutes, and Chapters 10.550 (local governmental entities) or 10.650 (nonprofit and for-profit organizations), Rules of the Auditor General.

iii. In the event the Agency does not meet the audit threshold requirements established by Section 215.97, Florida Statutes, the Agency is exempt for such fiscal year from the state single audit requirements of Section 215.97, Florida Statutes. However, the Agency must provide a single audit exemption statement to the Department at FDOTSingleAudit@dot.state.fl.us no later than nine months after the end of the Agency's audit period for each applicable audit year. In the event the Agency does not meet the audit threshold requirements established by Section 215.97, Florida Statutes, in a fiscal year and elects to have an audit conducted in accordance with the provisions of Section 215.97, Florida Statutes, the cost of the audit must be paid from the Agency's resources (*i.e.*, the cost of such an audit must be paid from the Agency's resources obtained from other than State entities).

iv. In accordance with Chapters 10.550 (local governmental entities) or 10.650 (nonprofit and for-profit organizations), Rules of the Auditor General, copies of financial reporting packages required by this Agreement shall be submitted to:

Florida Department of Transportation
Office of Comptroller, MS 24
605 Suwannee Street
Tallahassee, Florida 32399-0405
FDOTSingleAudit@dot.state.fl.us

And

State of Florida Auditor General
Local Government Audits/342
111 West Madison Street, Room 401
Tallahassee, FL 32399-1450
Email: flaudgen_localgovt@aud.state.fl.us

v. Any copies of financial reporting packages, reports, or other information required to be submitted to the Department shall be submitted timely in accordance with Section 215.97, Florida Statutes, and Chapters 10.550 (local governmental entities) or 10.650 (nonprofit and for-profit organizations), Rules of the Auditor General, as applicable.

vi. The Agency, when submitting financial reporting packages to the Department for audits done in accordance with Chapters 10.550 (local governmental entities) or

10.650 (nonprofit and for-profit organizations), Rules of the Auditor General, should indicate the date the reporting package was delivered to the Agency in correspondence accompanying the reporting package.

vii. Upon receipt, and within six months, the Department will review the Agency's financial reporting package, including corrective action plans and management letters, to the extent necessary to determine whether timely and appropriate corrective action on all deficiencies has been taken pertaining to the state financial assistance provided through the Department by this Agreement. If the Agency fails to have an audit conducted consistent with Section 215.97, Florida Statutes, the Department may take appropriate corrective action to enforce compliance.

viii. As a condition of receiving state financial assistance, the Agency shall permit the Department or its designee, DFS, or the Auditor General access to the Agency's records, including financial statements, the independent auditor's working papers, and project records as necessary. Records related to unresolved audit findings, appeals, or litigation shall be retained until the action is complete or the dispute is resolved.

c. The Agency shall retain sufficient records demonstrating its compliance with the terms of this Agreement for a period of five years from the date the audit report is issued and shall allow the Department or its designee, DFS, or State of Florida Auditor General access to such records upon request. The Agency shall ensure that the audit working papers are made available to the Department or its designee, DFS, or State of Florida Auditor General upon request for a period of five years from the date the audit report is issued, unless extended in writing by the Department.

16. Notices and Approvals. Notices and approvals referenced in this Agreement must be obtained in writing from the Parties' respective Administrators or their designees.

17. Restrictions, Prohibitions, Controls and Labor Provisions:

a. Convicted Vendor List. A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid on a contract to provide any goods or services to a public entity; may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, Florida Statutes, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.

b. Discriminatory Vendor List. In accordance with Section 287.134, Florida Statutes, an entity or affiliate who has been placed on the Discriminatory Vendor List, kept by the Florida Department of Management Services, may not submit a bid on a contract to provide goods or services to a public entity; may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity.

c. Non-Responsible Contractors. An entity or affiliate who has had its Certificate of Qualification suspended, revoked, denied, or have further been determined by the Department to be a non-responsible contractor, may not submit a bid or perform work for the construction or repair of a public building or public work on a contract with the Agency.

d. Prohibition on Using Funds for Lobbying. No funds received pursuant to this Agreement may be expended for lobbying the Florida Legislature, judicial branch, or any state agency, in accordance with Section 216.347, Florida Statutes.

e. Unauthorized Aliens. The Department shall consider the employment by any contractor of unauthorized aliens a violation of Section 274A(e) of the Immigration and Nationality Act. If the contractor knowingly employs unauthorized aliens, such violation will be cause for unilateral cancellation of this Agreement.

f. Procurement of Construction Services. If the Project is procured pursuant to Chapter 255, Florida Statutes, for construction services and at the time of the competitive solicitation for the Project, 50 percent or more of the cost of the Project is to be paid from state-appropriated funds, then the Agency must comply with the requirements of Section 255.0991, Florida Statutes.

g. E-Verify. The Agency shall:

i. Utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the Agency during the term of the contract; and

ii. Expressly require any subcontractors performing work or providing services pursuant to the state contract to likewise utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the contract term.

h. Executive Order 20-44. Pursuant to Governor's Executive Order 20-44, if the Agency is required by the Internal Revenue Code to file IRS Form 990 and is named in statute with which the Department must form a sole-source, public-private agreement; or through contract or other agreement with the State, annually receives 50% or more of its budget from the State or from a combination of State and Federal funds, Recipient shall submit an Annual Report to the Department, including the most recent IRS Form 990, detailing the total compensation for each member of the Agency executive leadership team. Total compensation shall include salary, bonuses, cashed-in leave, cash equivalents, severance pay, retirement benefits, deferred compensation, real-property gifts, and any other payout. The Agency shall inform the Department of any changes in total executive compensation during the period between the filing of Annual Reports within 60 days of any change taking effect. All compensation reports shall detail the percentage of executive leadership compensation received directly from all State and/or Federal allocations to the Agency. Annual Reports shall be in the form approved by the Department and shall be submitted to the Department at fdotsingleaudit@dot.state.fl.us within 180 days following the end of each tax year of the Agency receiving Department funding.

i. Design Services and Construction Engineering and Inspection Services. If the Project is wholly or partially funded by the Department and administered by a local governmental entity, except for a seaport listed in Section 311.09, Florida Statutes, or an airport as defined in Section 332.004, Florida Statutes, the entity performing design and construction engineering and inspection services may not be the same entity.

18. Indemnification and Insurance:

a. It is specifically agreed between the Parties executing this Agreement that it is not intended by any of the provisions of any part of this Agreement to create in the public or any member thereof, a third party beneficiary under this Agreement, or to authorize anyone not a party to this Agreement to maintain a suit for personal injuries or property damage pursuant to the terms or provisions of this Agreement. The Agency guarantees the payment of all just claims for materials, supplies, tools, or labor and other just claims against the Agency or any

subcontractor, in connection with this Agreement. Additionally, to the extent permitted by law and as limited by and pursuant to the provisions of Section 768.28, Florida Statutes, the Agency shall indemnify, defend, and hold harmless the State of Florida, Department of Transportation, including the Department's officers and employees, from liabilities, damages, losses, and costs, including, but not limited to, reasonable attorney's fees, to the extent caused by the negligence, recklessness, or intentional wrongful misconduct of the Agency and persons employed or utilized by the Agency in the performance of this Agreement. Nothing contained in this paragraph is intended to nor shall it constitute a waiver of the Department's or the Agency's sovereign immunity. This indemnification shall survive the termination of this Agreement. Additionally, the Agency agrees to include the following indemnification in all contracts with contractors/subcontractors and consultants/subconsultants who perform work in connection with this Agreement:

"To the fullest extent permitted by law, the Agency's contractor/consultant shall indemnify, defend, and hold harmless the Agency and the State of Florida, Department of Transportation, including the Department's officers and employees, from liabilities, damages, losses and costs, including, but not limited to, reasonable attorney's fees, to the extent caused by the negligence, recklessness or intentional wrongful misconduct of the contractor/consultant and persons employed or utilized by the contractor/consultant in the performance of this Agreement.

This indemnification shall survive the termination of this Agreement."

b. The Agency shall provide Workers' Compensation Insurance in accordance with Florida's Workers' Compensation law for all employees. If subletting any of the work, ensure that the subcontractor(s) and subconsultant(s) have Workers' Compensation Insurance for their employees in accordance with Florida's Workers' Compensation law. If using "leased employees" or employees obtained through professional employer organizations ("PEO's"), ensure that such employees are covered by Workers' Compensation Insurance through the PEO's or other leasing entities. Ensure that any equipment rental agreements that include operators or other personnel who are employees of independent contractors, sole proprietorships, or partners are covered by insurance required under Florida's Workers' Compensation law.

c. If the Agency elects to self-perform the Project, then the Agency may self-insure. If the Agency elects to hire a contractor or consultant to perform the Project, then the Agency shall carry, or cause its contractor or consultant to carry, Commercial General Liability insurance providing continuous coverage for all work or operations performed under this Agreement. Such insurance shall be no more restrictive than that provided by the latest occurrence form edition of the standard Commercial General Liability Coverage Form (ISO Form CG 00 01) as filed for use in the State of Florida. The Agency shall cause, or cause its contractor or consultant to cause, the Department to be made an Additional Insured as to such insurance. Such coverage shall be on an "occurrence" basis and shall include Products/Completed Operations coverage. The coverage afforded to the Department as an Additional Insured shall be primary as to any other available insurance and shall not be more restrictive than the coverage afforded to the Named Insured. The limits of coverage shall not be less than $1,000,000 for each occurrence and not less than a $5,000,000 annual general aggregate, inclusive of amounts provided by an umbrella or excess policy. The limits of coverage described herein shall apply fully to the work or operations performed under the Agreement, and may not be shared with or diminished by claims unrelated to the Agreement. The policy/ies and coverage described herein may be subject to a deductible and such deductibles shall be paid by the Named Insured. No policy/ies or coverage described herein may contain or be subject to a Retention or a Self-Insured Retention unless the Agency is a state agency or subdivision of the State of Florida that elects to self-perform the Project. Prior to the execution of the Agreement, and at all renewal periods which occur prior to final acceptance of the work, the Department shall be provided with an ACORD Certificate of Liability Insurance reflecting the

Page 198 of 1476

coverage described herein. The Department shall be notified in writing within ten days of any cancellation, notice of cancellation, lapse, renewal, or proposed change to any policy or coverage described herein. The Department's approval or failure to disapprove any policy/ies, coverage, or ACORD Certificates shall not relieve or excuse any obligation to procure and maintain the insurance required herein, nor serve as a waiver of any rights or defenses the Department may have.

d. When the Agreement includes the construction of a railroad grade crossing, railroad overpass or underpass structure, or any other work or operations within the limits of the railroad right-of-way, including any encroachments thereon from work or operations in the vicinity of the railroad right-of-way, the Agency shall, or cause its contractor to, in addition to the insurance coverage required above, procure and maintain Railroad Protective Liability Coverage (ISO Form CG 00 35) where the railroad is the Named Insured and where the limits are not less than $2,000,000 combined single limit for bodily injury and/or property damage per occurrence, and with an annual aggregate limit of not less than $6,000,000. The railroad shall also be added along with the Department as an Additional Insured on the policy/ies procured pursuant to the paragraph above. Prior to the execution of the Agreement, and at all renewal periods which occur prior to final acceptance of the work, both the Department and the railroad shall be provided with an ACORD Certificate of Liability Insurance reflecting the coverage described herein. The insurance described herein shall be maintained through final acceptance of the work. Both the Department and the railroad shall be notified in writing within ten days of any cancellation, notice of cancellation, renewal, or proposed change to any policy or coverage described herein. The Department's approval or failure to disapprove any policy/ies, coverage, or ACORD Certificates shall not relieve or excuse any obligation to procure and maintain the insurance required herein, nor serve as a waiver of any rights the Department may have.

e. When the Agreement involves work on or in the vicinity of utility-owned property or facilities, the utility shall be added along with the Department as an Additional Insured on the Commercial General Liability policy/ies procured above.

19. Miscellaneous:

a. Environmental Regulations. The Agency will be solely responsible for compliance with all applicable environmental regulations and for any liability arising from non-compliance with these regulations, and will reimburse the Department for any loss incurred in connection therewith.

b. Non-Admission of Liability. In no event shall the making by the Department of any payment to the Agency constitute or be construed as a waiver by the Department of any breach of covenant or any default which may then exist on the part of the Agency and the making of such payment by the Department, while any such breach or default shall exist, shall in no way impair or prejudice any right or remedy available to the Department with respect to such breach or default.

c. Severability. If any provision of this Agreement is held invalid, the remainder of this Agreement shall not be affected. In such an instance, the remainder would then continue to conform to the terms and requirements of applicable law.

d. Agency not an agent of Department. The Agency and the Department agree that the Agency, its employees, contractors, subcontractors, consultants, and subconsultants are not agents of the Department as a result of this Agreement.

e. Bonus or Commission. By execution of the Agreement, the Agency represents that it has not paid and, also agrees not to pay, any bonus or commission for the purpose of obtaining an approval of its application for the financing hereunder.

f. Non-Contravention of State Law. Nothing in the Agreement shall require the Agency to observe or enforce compliance with any provision or perform any act or do any other thing in contravention of any applicable state law. If any of the provisions of the Agreement violate any applicable state law, the Agency will at once notify the Department in writing so that appropriate changes and modifications may be made by the Department and the Agency to the end that the Agency may proceed as soon as possible with the Project.

g. Execution of Agreement. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which shall constitute the same Agreement. A facsimile or electronic transmission of this Agreement with a signature on behalf of a party will be legal and binding on such party.

h. Federal Award Identification Number (FAIN). If the FAIN is not available prior to execution of the Agreement, the Department may unilaterally add the FAIN to the Agreement without approval of the Agency and without an amendment to the Agreement. If this occurs, an updated Agreement that includes the FAIN will be provided to the Agency and uploaded to the Department of Financial Services' Florida Accountability Contract Tracking System (FACTS).

i. Inspector General Cooperation. The Agency agrees to comply with Section 20.055(5), Florida Statutes, and to incorporate in all subcontracts the obligation to comply with Section 20.055(5), Florida Statutes.

j. Law, Forum, and Venue. This Agreement shall be governed by and construed in accordance with the laws of the State of Florida. In the event of a conflict between any portion of the contract and Florida law, the laws of Florida shall prevail. The Agency agrees to waive forum and venue and that the Department shall determine the forum and venue in which any dispute under this Agreement is decided.

IN WITNESS WHEREOF, the Parties have executed this Agreement on the day and year written above.

AGENCY City of Ormond Beach	STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION
By: _____	By: _____
Name: _____	Name: C. Jack Adkins
Title: _____	Title: Director of Transportation Development

STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION
Legal Review:

Daniel L. McDermott

EXHIBIT A

Project Description and Responsibilities

A. Project Description (description of Agency's project to provide context, description of project components funded via this Agreement (if not the entire project)): Design and bidding for remarking and pavement rejuvenation of Runway 9-27, Runway 17-35 and Taxiways Alpha, Charlie, Echo, Foxtrot and Golf.

B. Project Location (limits, city, county, map): Ormond Beach Municipal Airport/Ormond Beach, FL/Volusia

C. Project Scope (allowable costs: describe project components, improvement type/service type, approximate timeline, project schedule, project size): Airfield Pavement Markings and Pavement Rejuvenation: As required by 215.971, F.S., this scope of work includes but is not limited to consultant and design fees, survey, design of: pavement marking removal, surface preparation, pavement markings, pavement enhancement (with rejuvenators, or sealants), and safety barricades, Bid and Award Services, including all materials, equipment, labor, and incidentals required to mark the apron. The Sponsor will comply with Aviation Program Assurances.

Design Engineering Scope of Services are included in the airports request letter dated April 24, 2024.

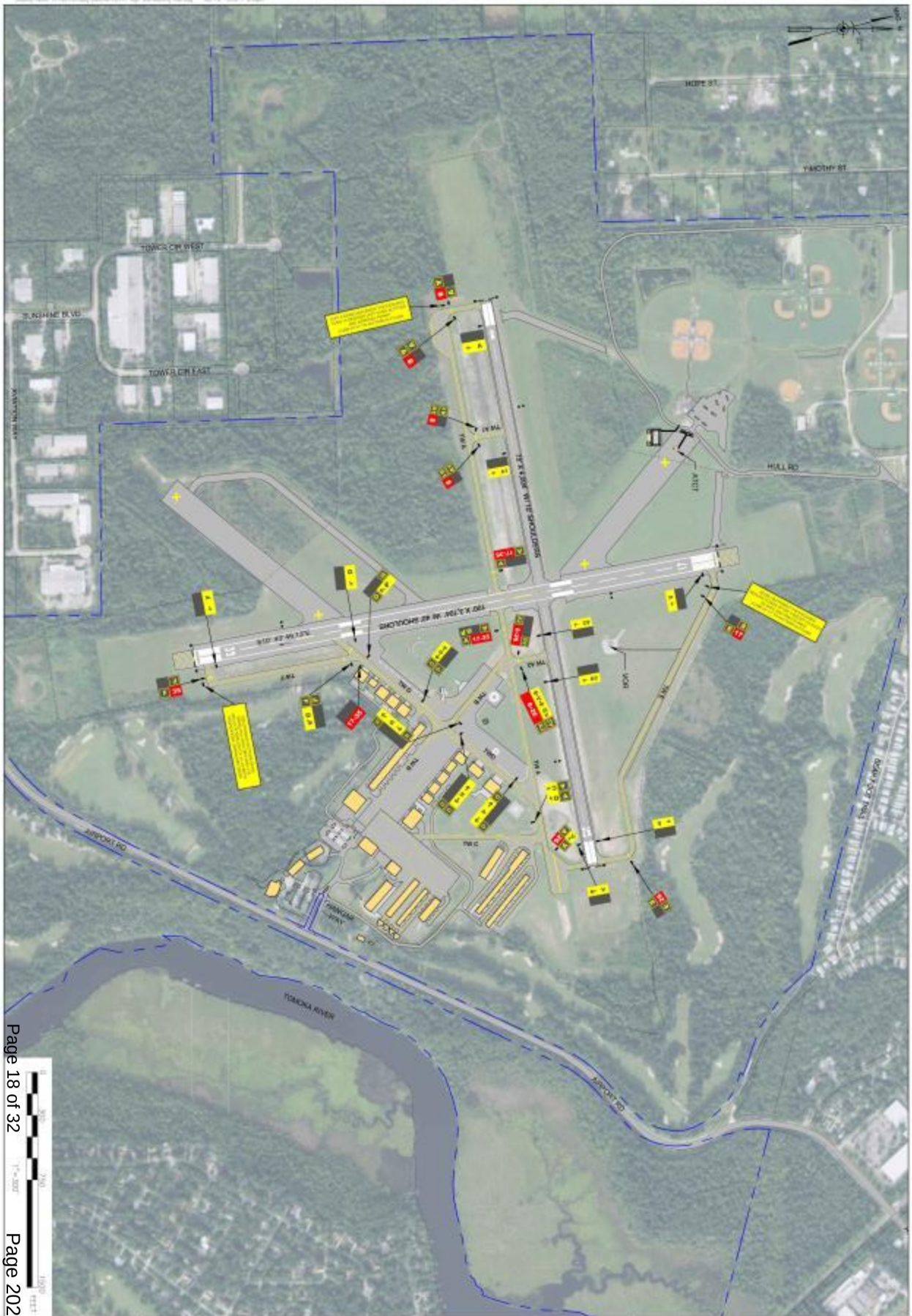
D. Deliverable(s): Final closeout documents to be uploaded into JACIP.

The project scope identifies the ultimate project deliverables. Deliverables for requisition, payment and invoice purposes will be the incremental progress made toward completion of project scope elements. Supporting documentation will be quantifiable, measurable, and verifiable, to allow for a determination of the amount of incremental progress that has been made, and provide evidence that the payment requested is commensurate with the accomplished incremental progress and costs incurred by the Agency.

E. Unallowable Costs (including but not limited to): N/A

F. Transit Operating Grant Requirements (Transit Only):

Transit Operating Grants billed as an operational subsidy will require an expenditure detail report from the Agency that matches the invoice period. The expenditure detail, along with the progress report, will be the required deliverables for Transit Operating Grants. Operating grants may be issued for a term not to exceed three years from execution. The original grant agreement will include funding for year one. Funding for years two and three will be added by amendment as long as the grantee has submitted all invoices on schedule and the project deliverables for the year have been met.



Hoyle, Tanner & Associates, Inc.	CITY OF ORMOND BEACH ORMOND BEACH MUNICIPAL AIRPORT ORMOND BEACH, FLORIDA	SHEET TITLE SIGN AND MARKING PLAN	REV NO. / DATE / DESCRIPTION / BY	A/P NO.: 3-12-0059-17-2014 PROJ. NO.: 30T161 DRAWN: AJC DESIGN: MTO CHECKED: BRB DATE: OCTOBER 2019 SHEET 14 OF 14	

EXHIBIT B

Schedule of Financial Assistance

FUNDS AWARDED TO THE AGENCY AND REQUIRED MATCHING FUNDS PURSUANT TO THIS AGREEMENT CONSIST OF THE FOLLOWING:

A. Fund Type and Fiscal Year:

Financial Management Number	Fund Type	FLAIR Category	State Fiscal Year	Object Code	CSFA/ CFDA Number	CSFA/CFDA Title or Funding Source Description	Funding Amount
454708-1-94-01	DPTO	088719	2025	751000	55.004	Aviation Grant Program	$24,000.00
454708-1-94-01	LF	088719	2025	751000	55.004	Aviation Grant Program	$6,000.00
	Total Financial Assistance						$30,000.00

B. Estimate of Project Costs by Grant Phase:

Phases*	State	Local	Federal	Totals	State %	Local %	Federal %
Land Acquisition	$0.00	$0.00	$0.00	$0.00	0.00	0.00	0.00
Planning	$0.00	$0.00	$0.00	$0.00	0.00	0.00	0.00
Environmental/Design/Construction	$24,000.00	$6,000.00	$0.00	$30,000.00	80.00	20.00	0.00
Capital Equipment/ Preventative Maintenance	$0.00	$0.00	$0.00	$0.00	0.00	0.00	0.00
Match to Direct Federal Funding	$0.00	$0.00	$0.00	$0.00	0.00	0.00	0.00
Mobility Management (Transit Only)	$0.00	$0.00	$0.00	$0.00	0.00	0.00	0.00
Totals	$24,000.00	$6,000.00	$0.00	$30,000.00			

*Shifting items between these grant phases requires execution of an Amendment to the Public Transportation Grant Agreement.

Scope Code and/or Activity Line Item (ALI) (Transit Only)	

BUDGET/COST ANALYSIS CERTIFICATION AS REQUIRED BY SECTION 216.3475, FLORIDA STATUTES:

I certify that the cost for each line item budget category (grant phase) has been evaluated and determined to be allowable, reasonable, and necessary as required by Section 216.3475, Florida Statutes. Documentation is on file evidencing the methodology used and the conclusions reached.

Joseph A. Jerkins

Department Grant Manager Name

Signature Date

EXHIBIT D

AGENCY RESOLUTION

PLEASE SEE ATTACHED

EXHIBIT E

PROGRAM SPECIFIC TERMS AND CONDITIONS - AVIATION
AVIATION PROGRAM ASSURANCES

A. General.

1. The assurances herein shall form an integral part of the Agreement between the Department and the Agency.

2. These assurances delineate the obligations of the Parties to this Agreement to ensure their commitment and compliance with specific provisions of **Exhibit "A", Project Description and Responsibilities**, and **Exhibit "B", Schedule of Financial Assistance**, as well as serving to protect public investment in public-use airports and the continued viability of the Florida Aviation System.

3. The Agency shall comply with the assurances as specified in this Agreement.

4. The terms and assurances of this Agreement shall remain in full force and effect throughout the useful life of a facility developed; equipment acquired; or Project items installed within a facility for an airport development or noise compatibility program project, but shall not exceed 20 years from the effective date of this Agreement.

5. There shall be no limit on the duration of the terms and assurances of this Agreement regarding Exclusive Rights and Airport Revenue so long as the property is used as a public airport.

6. There shall be no limit on the duration of the terms and assurances of this Agreement with respect to real property acquired with funds provided by this Agreement.

7. Subject to appropriations, the Department shall continue to comply with its financial commitment to this Project under the terms of this Agreement, until such time as the Department may determine that the Agency has failed to comply with the terms and assurances of this Agreement.

8. An Agency that has been determined by the Department to have failed to comply with either the terms of these Assurances, or the terms of the Agreement, or both, shall be notified, in writing, by the Department, identifying the specifics of the non-compliance and any corrective action by the Agency to remedy the failure.

9. Failure by the Agency to satisfactorily remedy the non-compliance shall absolve the Department's continued financial commitment to this Project and immediately require the Agency to repay the Department the full amount of funds expended by the Department on this Project.

10. Any history of failure to comply with the terms and assurances of an Agreement will jeopardize the Agency's eligibility for further state funding of airport projects by the Department.

B. Agency Compliance Certification.

1. **General Certification.** The Agency hereby certifies, with respect to this Project, it will comply, within its authority, with all applicable, current laws and rules of the State of Florida and applicable local governments, as well as Department policies, guidelines, and requirements, including but not limited to, the following (latest version of each document):

   a. Florida Statutes (F.S.)
   - Chapter 163, F.S., Intergovernmental Programs
   - Chapter 329, F.S., Aircraft: Title; Liens; Registration; Liens
   - Chapter 330, F.S., Regulation of Aircraft, Pilots, and Airports
   - Chapter 331, F.S., Aviation and Aerospace Facilities and Commerce
   - Chapter 332, F.S., Airports and Other Air Navigation Facilities
   - Chapter 333, F.S., Airport Zoning

b. Florida Administrative Code (FAC)

- Chapter 73C-41, FAC, Community Planning; Governing the Procedure for the Submittal and Review of Local Government Comprehensive Plans and Amendments
- Chapter 14-60, FAC, Airport Licensing, Registration, and Airspace Protection
- Section 62-256.300, FAC, Open Burning, Prohibitions
- Section 62-701.320(13), FAC, Solid Waste Management Facility Permit Requirements, General, Airport Safety

c. Local Government Requirements

- Airport Zoning Ordinance
- Local Comprehensive Plan

d. Department Requirements

- Eight Steps of Building a New Airport
- Florida Airport Revenue Use Guide
- Florida Aviation Project Handbook
- Guidebook for Airport Master Planning
- Airport Compatible Land Use Guidebook

2. Construction Certification. The Agency hereby certifies, with respect to a construction-related project, that all design plans and specifications will comply with applicable federal, state, local, and professional standards, as well as Federal Aviation Administration (FAA) Advisory Circulars (AC's) and FAA issued waivers thereto, including but not limited to, the following:

a. Federal Requirements

- FAA AC 70/7460-1, Obstruction Marking and Lighting
- FAA AC 150/5300-13, Airport Design
- FAA AC 150/5370-2, Operational Safety on Airports During Construction
- FAA AC 150/5370-10, Standards for Specifying Construction of Airports

b. Local Government Requirements

- Local Building Codes
- Local Zoning Codes

c. Department Requirements

- Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways (Commonly Referred to as the "Florida Green Book")
- Manual on Uniform Traffic Control Devices
- Section 14-60.007, FAC, Airfield Standards for Licensed Airports
- Standard Specifications for Construction of General Aviation Airports
- Design Guidelines & Minimum Standard Requirements for T-Hangar Projects

3. Land Acquisition Certification. The Agency hereby certifies, regarding land acquisition, that it will comply with applicable federal and/or state policies, regulations, and laws, including but not limited to the following:

a. Federal Requirements

- Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970
- National Environmental Policy of 1969
- FAA Order 5050.4, National Environmental Policy Act Implementing Instructions for Airport Projects
- FAA Order 5100.37B, Land Acquisition and Relocation Assistance for Airport Projects

b. Florida Requirements

- Chapter 73, F.S., Eminent Domain (re: Property Acquired Through Condemnation)
- Chapter 74, F.S., Proceedings Supplemental to Eminent Domain (re: Condemnation)
- Section 286.23, F.S., Public Business: Miscellaneous Provisions

C. Agency Authority.

1. **Legal Authority.** The Agency hereby certifies, with respect to this Agreement, that it has the legal authority to enter into this Agreement and commit to this Project; that a resolution, motion, or similar action has been duly adopted or passed as an official act of the airport sponsor's governing body authorizing this Agreement, including assurances contained therein, and directing and authorizing the person identified as the official representative of the governing body to act on its behalf with respect to this Agreement and to provide any additional information as may be required.

2. **Financial Authority.** The Agency hereby certifies, with respect to this Agreement, that it has sufficient funds available for that portion of the Project costs which are not paid by the U.S. Government or the State of Florida; that it has sufficient funds available to assure future operation and maintenance of items funded by this Project, which it will control; and that authority has been granted by the airport sponsor governing body to commit those funds to this Project.

D. Agency Responsibilities. The Agency hereby certifies it currently complies with or will comply with the following responsibilities:

1. **Accounting System.**

   a. The Agency shall create and maintain a separate account to document all of the financial transactions related to the airport as a distinct entity.

   b. The accounting records shall be kept by the Agency or its authorized representative in accordance with Generally Accepted Accounting Principles and in an accounting system that will facilitate an effective audit in accordance with the 2 CFR Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards and Section 215.97, F.S., Florida Single Audit Act.

   c. The Department has the right to audit and inspect all financial records of the Agency upon reasonable notice.

2. **Good Title.**

   a. The Agency holds good title, satisfactory to the Department, to the airport or site thereof, or gives assurance, satisfactory to the Department, that good title will be obtained.

   b. For noise compatibility program projects undertaken on the airport sponsor's property, the Agency holds good title, satisfactory to the Department, to that portion of the property upon which state funds will be expended, or gives assurance, satisfactory to the Department, that good title will be obtained.

3. **Preserving Rights and Powers.**

   a. The Agency shall not take or permit any action which would operate to deprive it of any of the rights and powers necessary to perform any or all of the terms and assurances of this Agreement without the written approval of the Department. Further, the Agency shall act promptly to acquire, extinguish, or modify, in a manner acceptable to the Department, any outstanding rights or claims of right of others which would interfere with such performance by the Agency.

   b. If an arrangement is made for management and operation of the airport by any entity or person other than the Agency or an employee of the Agency, the Agency shall reserve sufficient rights and authority to ensure that the airport will be operated and maintained in accordance with the terms and assurances of this Agreement.

4. **Hazard Removal and Mitigation.**

a. For airport hazards located on airport controlled property, the Agency shall clear and protect terminal airspace required for instrument and visual operations at the airport (including established minimum flight altitudes) by removing, lowering, relocating, marking, or lighting or otherwise mitigating existing airport hazards and by preventing the establishment or creation of future airport hazards.

b. For airport hazards not located on airport controlled property, the Agency shall work in conjunction with the governing public authority or private land owner of the property to clear and protect terminal airspace required for instrument and visual operations at the airport (including established minimum flight altitudes) by removing, lowering, relocating, marking, or lighting or otherwise mitigating existing airport hazards and by preventing the establishment or creation of future airport hazards. The Agency may enter into an agreement with surrounding property owners or pursue available legal remedies to remove potential hazards to air navigation.

5. Airport Compatible Land Use.

a. The Agency assures that appropriate airport zoning ordinances are in place consistent with Section 333.03, F.S., or if not in place, that it will take appropriate action necessary to ensure local government adoption of an airport zoning ordinance or execution of an interlocal agreement with another local government body having an airport zoning ordinance, consistent with the provisions of Section 333.03, F.S.

b. The Agency assures that it will disapprove or oppose any attempted alteration or creation of objects, natural or man-made, dangerous to navigable airspace or that would adversely affect the current or future levels of airport operations.

c. The Agency assures that it will disapprove or oppose any attempted change in local land use development regulations that would adversely affect the current or future levels of airport operations by creation or expansion of airport incompatible land use areas.

6. Consistency with Local Government Plans.

a. The Agency assures the Project is consistent with the currently existing and planned future land use development plans approved by the local government having jurisdictional responsibility for the area surrounding the airport.

b. The Agency assures that it has given fair consideration to the interest of local communities and has had reasonable consultation with those parties affected by the Project.

c. The Agency shall consider and take appropriate actions, if deemed warranted by the Agency, to adopt the current, approved Airport Master Plan into the local government comprehensive plan.

7. Consistency with Airport Master Plan and Airport Layout Plan.

a. The Agency assures that the project, covered by the terms and assurances of this Agreement, is consistent with the most current Airport Master Plan.

b. The Agency assures that the Project, covered by the terms and assurances of this Agreement, is consistent with the most current, approved Airport Layout Plan (ALP), which shows:

1) The boundaries of the airport and all proposed additions thereto, together with the boundaries of all offsite areas owned or controlled by the Agency for airport purposes and proposed additions thereto;
2) The location and nature of all existing and proposed airport facilities and structures (such as runways, taxiways, aprons, terminal buildings, hangars, and roads), including all proposed extensions and reductions of existing airport facilities; and
3) The location of all existing and proposed non-aviation areas on airport property and of all existing improvements thereon.

Page 28 of 47

c. The Agency assures that it will not make or permit any changes or alterations on the airport or any of its facilities that are not consistent with the Airport Master Plan and the Airport Layout Plan, as approved by the Department.

d. Original Airport Master Plans and Airport Layout Plans and each amendment, revision, or modification thereof, will be subject to the approval of the Department.

8. Airport Financial Plan.

a. The Agency assures that it will develop and maintain a cost-feasible Airport financial plan to accomplish the projects necessary to achieve the proposed airport improvements identified in the Airport Master Plan and depicted in the Airport Layout Plan, and any updates thereto. The Agency's Airport financial plan must comply with the following conditions:

1) The Airport financial plan will be a part of the Airport Master Plan.
2) The Airport financial plan will realistically assess project phasing considering availability of state and local funding and likelihood of federal funding under the FAA's priority system.
3) The Airport financial plan will not include Department funding for projects that are inconsistent with the local government comprehensive plan.

b. All Project cost estimates contained in the Airport financial plan shall be entered into and kept current in the Florida Aviation Database (FAD) Joint Automated Capital Improvement Program (JACIP) website.

9. Airport Revenue. The Agency assures that all revenue generated by the airport will be expended for capital improvement or operating costs of the airport; the local airport system; or other local facilities which are owned or operated by the owner or operator of the airport and which are directly and substantially related to the air transportation of passengers or property, or for environmental or noise mitigation purposes on or off the airport.

10. Fee and Rental Structure.

a. The Agency assures that it will maintain a fee and rental structure for facilities and services at the airport that it will make the airport as self-sustaining as possible under the circumstances existing at the particular airport.

b. If this Agreement results in a facility that will be leased or otherwise produce revenue, the Agency assures that the price charged for that facility will be based on the market value.

11. Public-Private Partnership for Aeronautical Uses.

a. If the airport owner or operator and a person or entity that owns an aircraft or an airport tenant or potential tenant agree that an aircraft hangar or tenant-specific facility, respectively, is to be constructed on airport property for aircraft storage or tenant use at the expense of the aircraft owner or tenant, the airport owner or operator may grant to the aircraft owner or tenant of the facility a lease that is subject to such terms and conditions on the facility as the airport owner or operator may impose, subject to approval by the Department.

b. The price charged for said lease will be based on market value, unless otherwise approved by the Department.

12. Economic Nondiscrimination.

a. The Agency assures that it will make the airport available as an airport for public use on reasonable terms without unjust discrimination to all types, kinds and classes of aeronautical activities, including commercial aeronautical activities offering services to the public.

1) The Agency may establish such reasonable, and not unjustly discriminatory, conditions to be met by all users of the airport as may be necessary for the safe and efficient operation of the airport.

2) The Agency may prohibit or limit any given type, kind or class of aeronautical use of the airport if such action is necessary for the safe operation of the airport or necessary to serve the civil aviation needs of the public.

b. The Agency assures that each airport Fixed-Based Operator (FBO) shall be subject to the same rates, fees, rentals, and other charges as are uniformly applicable to all other FBOs making the same or similar uses of such airport and utilizing the same or similar facilities.

13. Air and Water Quality Standards. The Agency assures that all projects involving airport location, major runway extension, or runway location will be located, designed, constructed, and operated so as to comply with applicable air and water quality standards.

14. Operations and Maintenance.

a. The Agency assures that the airport and all facilities, which are necessary to serve the aeronautical users of the airport, shall be operated at all times in a safe and serviceable condition and in accordance with the minimum standards as may be required or prescribed by applicable federal and state agencies for maintenance and operation, as well as minimum standards established by the Department for State of Florida licensing as a public-use airport.

1) The Agency assures that it will not cause or permit any activity or action thereon which would interfere with its use for airport purposes.
2) Except in emergency situations, any proposal to temporarily close the airport for non-aeronautical purposes must first be approved by the Department.
3) The Agency assures that it will have arrangements for promptly notifying airmen of any condition affecting aeronautical use of the airport.

b. Nothing contained herein shall be construed to require that the airport be operated for aeronautical use during temporary periods when adverse weather conditions interfere with safe airport operations.

15. Federal Funding Eligibility.

a. The Agency assures it will take appropriate actions to maintain federal funding eligibility for the airport and it will avoid any action that renders the airport ineligible for federal funding.

b. If the Agency becomes ineligible for federal funding of airport projects, such determination will render the Agency ineligible for state funding of airport projects.

16. Project Implementation.

a. The Agency assures that it will begin making expenditures or incurring obligations pertaining to this Project within one year after the effective date of this Agreement.

b. The Agency may request a one-year extension of this one-year time period, subject to approval by the Department District Secretary or designee.

c. Failure of the Agency to make expenditures, incur obligations or receive an approved extension may allow the Department to terminate this Agreement.

17. Exclusive Rights. The Agency assures that it will not permit any exclusive right for use of the airport by any person providing, or intending to provide, aeronautical services to the public.

18. Airfield Access.

a. The Agency assures that it will not grant or allow general easement or public access that opens onto or crosses the airport runways, taxiways, flight line, passenger facilities, or any area used for emergency

equipment, fuel, supplies, passengers, mail and freight, radar, communications, utilities, and landing systems, including but not limited to flight operations, ground services, emergency services, terminal facilities, maintenance, repair, or storage, except for those normal airport providers responsible for standard airport daily services or during special events at the airport open to the public with limited and controlled access.

b. The Agency assures that it will not grant or allow general easement or public access to any portion of the airfield from adjacent real property which is not owned, operated, or otherwise controlled by the Agency without prior Department approval.

19. Retention of Rights and Interests. The Agency will not sell, lease, encumber, or otherwise transfer or dispose of any part of its title or other interests in the real property shown as airport owned or controlled on the current airport layout plan without prior written approval by the Department. It will not sell, lease, encumber, terminate, waive, or otherwise transfer or dispose of any part of its title, rights, or other interest in existing noise easements or avigation easements on any property, airport or non-airport, without prior written approval by the Department. These assurances shall not limit the Agency's right to lease airport property for airport-compatible purposes.

20. Consultant, Contractor, Scope, and Costs.

a. The Department has the right to disapprove the Agency's employment of consultants, contractors, and subcontractors for all or any part of this Project if the specific consultants, contractors, or subcontractors have a record of poor project performance with the Department.

b. Further, the Department maintains the right to disapprove the proposed Project scope and cost of professional services.

21. Planning Projects. For all planning projects or other aviation studies, the Agency assures that it will:

a. Execute the project per the approved project narrative or with approved modifications.

b. Furnish the Department with such periodic project and work activity reports as indicated in the approved scope of services.

c. Make such project materials available for public review, unless exempt from public disclosure.

1) Information related to airport security is considered restricted information and is exempt from public dissemination per Sections 119.071(3) and 331.22 F.S.
2) No materials prepared under this Agreement shall be subject to copyright in the United States or any other country.

d. Grant the Department unrestricted authority to publish, disclose, distribute, and otherwise use any of the material prepared in connection with this Agreement.

e. If the Project involves developing an Airport Master Plan or an Airport Layout Plan, and any updates thereto, it will be consistent with provisions of the Florida Aviation System Plan, will identify reasonable future growth of the airport and the Agency will comply with the Department airport master planning guidebook, including:

1) Provide copies, in electronic and editable format, of final Project materials to the Department, including computer-aided drafting (CAD) files of the Airport Layout Plan.
2) Develop a cost-feasible financial plan, approved by the Department, to accomplish the projects described in the Airport Master Plan or depicted in the Airport Layout Plan, and any updates thereto. The cost-feasible financial plan shall realistically assess Project phasing considering availability of state and local funding and federal funding under the FAA's priority system.
3) Enter all projects contained in the cost-feasible plan in the Joint Automated Capital Improvement Program (JACIP).

Page 21 of 35

f. The Agency understands and agrees that Department approval of this Agreement or any planning material developed as part of this Agreement does not constitute or imply any assurance or commitment on the part of the Department to approve any pending or future application for state aviation funding.

g. The Agency will submit master planning draft and final deliverables for Department and, if required, FAA approval prior to submitting any invoices to the Department for payment.

22. Land Acquisition Projects. For the purchase of real property, the Agency assures that it will:

a. Laws. Acquire the land in accordance with federal and/or state laws governing such action.

b. Administration. Maintain direct control of Project administration, including:

1) Maintain responsibility for all related contract letting and administrative procedures related to the purchase of real property.
2) Secure written Department approval to execute each agreement for the purchase of real property with any third party.
3) Ensure a qualified, State-certified general appraiser provides all necessary services and documentation.
4) Furnish the Department with a projected schedule of events and a cash flow projection within 20 calendar days after completion of the review appraisal.
5) Establish a Project account for the purchase of the land.
6) Collect and disburse federal, state, and local project funds.

c. Reimbursable Funds. If funding conveyed by this Agreement is reimbursable for land purchase in accordance with Chapter 332, F.S., the Agency shall comply with the following requirements:

1) The Agency shall apply for a FAA Airport Improvement Program grant for the land purchase within 60 days of executing this Agreement.
2) If federal funds are received for the land purchase, the Agency shall notify the Department, in writing, within 14 calendar days of receiving the federal funds and is responsible for reimbursing the Department within 30 calendar days to achieve normal project federal, state, and local funding shares per Chapter 332, F.S.
3) If federal funds are not received for the land purchase, the Agency shall reimburse the Department within 30 calendar days after the reimbursable funds are due in order to achieve normal project state and local funding shares as described in Chapter 332, F.S.
4) If federal funds are not received for the land purchase and the state share of the purchase is less than or equal to normal state and local funding shares per Chapter 332, F.S., when reimbursable funds are due, no reimbursement to the Department shall be required.

d. New Airport. If this Project involves the purchase of real property for the development of a new airport, the Agency assures that it will:

1) Apply for federal and state funding to construct a paved runway, associated aircraft parking apron, and connecting taxiway within one year of the date of land purchase.
2) Complete an Airport Master Plan within two years of land purchase.
3) Complete airport construction for basic operation within 10 years of land purchase.

e. Use of Land. The Agency assures that it shall use the land for aviation purposes in accordance with the terms and assurances of this Agreement within 10 years of acquisition.

f. Disposal of Land. For the disposal of real property the Agency assures that it will comply with the following:
1) For land purchased for airport development or noise compatibility purposes, the Agency shall, when the land is no longer needed for such purposes, dispose of such land at fair market value and/or make available to the Department an amount equal to the state's proportionate share of its market value.

Page 22 of 37

2) Land will be considered to be needed for airport purposes under this assurance if:

a) It serves aeronautical purposes such as a runway protection zone or as a noise buffer.
b) Revenue from uses of such land contributes to airport financial self-sufficiency.

3) Disposition of land under Sections D.22.f.1. or D.22.f.2. of this Exhibit, above, shall be subject to retention or reservation of any interest or right therein needed to ensure such land will only be used for purposes compatible with noise levels related to airport operations.
4) Revenues from the sale of such land must be accounted for as outlined in Section D.1. of this Exhibit, and expended as outlined in Section D.9. of this Exhibit.

23. Construction Projects. The Agency assures that it will:

a. Project Certifications. Certify Project compliances, including:

1) Consultant and contractor selection comply with all applicable federal, state and local laws, rules, regulations, and policies.
2) All design plans and specifications comply with federal, state, and professional standards and applicable FAA advisory circulars, as well as the minimum standards established by the Department for State of Florida licensing as a public-use airport.
3) Completed construction complies with all applicable local building codes.
4) Completed construction complies with the Project plans and specifications with certification of that fact by the Project Engineer.

b. Design Development. For the plans, specifications, construction contract documents, and any and all other engineering, construction, and contractual documents produced by the Engineer, which are hereinafter collectively referred to as "plans", the Engineer will certify that:

1) The plans shall be developed in accordance with sound engineering and design principles, and with generally accepted professional standards.
2) The plans shall be consistent with the intent of the Project as defined in Exhibit A and Exhibit B of this Agreement.
3) The Project Engineer shall perform a review of the certification requirements listed in Section B.2. of this Exhibit, Construction Certification, and make a determination as to their applicability to this Project.
4) Development of the plans shall comply with all applicable laws, ordinances, zoning and permitting requirements, public notice requirements, and other similar regulations.

c. Inspection and Approval. The Agency assures that:

1) The Agency will provide and maintain competent technical supervision at the construction site throughout the Project to assure that the work conforms to the plans, specifications, and schedules approved by the Department, as applicable, for the Project.
2) The Agency assures that it will allow the Department to inspect the work and that it will provide any cost and progress reporting, as may be required by the Department.
3) The Agency assures that it will take the appropriate corrective action necessary, as required by the Department, for work which does not conform to the Department standards.

d. Pavement Preventive Maintenance. The Agency assures that for a project involving replacement or reconstruction of runway or taxiway pavement it has implemented an airport pavement maintenance management program and that it will use such program for the useful life of any pavement constructed, reconstructed, or repaired with state financial assistance at the airport.

24. Noise Mitigation Projects. The Agency assures that it will:

a. Government Agreements. For all noise compatibility projects that are carried out by another unit of local government or are on property owned by a unit of local government other than the Agency, the Agency shall enter into an agreement with that government body.

1) The local agreement, satisfactory to the Department, shall obligate the unit of local government to the same terms and assurances that apply to the Agency.
2) The Agency assures that it will take steps to enforce the local agreement if there is substantial non-compliance with the terms of the local agreement.

b. Private Agreements. For noise compatibility projects on privately owned property:

1) The Agency shall enter into an agreement with the owner of that property to exclude future actions against the airport.
2) The Agency assures that it will take steps to enforce such agreement if there is substantial non-compliance with the terms of the agreement.

- End of Exhibit E -

EXHIBIT F

Contract Payment Requirements
Florida Department of Financial Services, Reference Guide for State Expenditures
Cost Reimbursement Contracts

Invoices for cost reimbursement contracts must be supported by an itemized listing of expenditures by category (salary, travel, expenses, etc.). Supporting documentation shall be submitted for each amount for which reimbursement is being claimed indicating that the item has been paid. Documentation for each amount for which reimbursement is being claimed must indicate that the item has been paid. Check numbers may be provided in lieu of copies of actual checks. Each piece of documentation should clearly reflect the dates of service. Only expenditures for categories in the approved agreement budget may be reimbursed. These expenditures must be allowable (pursuant to law) and directly related to the services being provided.

Listed below are types and examples of supporting documentation for cost reimbursement agreements:

(1) Salaries: A payroll register or similar documentation should be submitted. The payroll register should show gross salary charges, fringe benefits, other deductions and net pay. If an individual for whom reimbursement is being claimed is paid by the hour, a document reflecting the hours worked times the rate of pay will be acceptable.

(2) Fringe Benefits: Fringe Benefits should be supported by invoices showing the amount paid on behalf of the employee (e.g., insurance premiums paid). If the contract specifically states that fringe benefits will be based on a specified percentage rather than the actual cost of fringe benefits, then the calculation for the fringe benefits amount must be shown.

Exception: Governmental entities are not required to provide check numbers or copies of checks for fringe benefits.

(3) Travel: Reimbursement for travel must be in accordance with Section 112.061, Florida Statutes, which includes submission of the claim on the approved State travel voucher or electronic means.

(4) Other direct costs: Reimbursement will be made based on paid invoices/receipts. If nonexpendable property is purchased using State funds, the contract should include a provision for the transfer of the property to the State when services are terminated. Documentation must be provided to show compliance with Department of Management Services Rule 60A-1.017, Florida Administrative Code, regarding the requirements for contracts which include services and that provide for the contractor to purchase tangible personal property as defined in Section 273.02, Florida Statutes, for subsequent transfer to the State.

(5) In-house charges: Charges which may be of an internal nature (e.g., postage, copies, etc.) may be reimbursed on a usage log which shows the units times the rate being charged. The rates must be reasonable.

(6) Indirect costs: If the contract specifies that indirect costs will be paid based on a specified rate, then the calculation should be shown.

Contracts between state agencies, and/or contracts between universities may submit alternative documentation to substantiate the reimbursement request that may be in the form of FLAIR reports or other detailed reports.

The Florida Department of Financial Services, online Reference Guide for State Expenditures can be found at this web address https://www.myfloridacfo.com/Division/AA/Manuals/documents/ReferenceGuideforStateExpenditures.pdf.

EXHIBIT G

AUDIT REQUIREMENTS FOR AWARDS OF STATE FINANCIAL ASSISTANCE

THE STATE RESOURCES AWARDED PURSUANT TO THIS AGREEMENT CONSIST OF THE FOLLOWING:

SUBJECT TO SECTION 215.97, FLORIDA STATUTES:~

Awarding Agency: Florida Department of Transportation
State Project Title: Aviation Grant Program
CSFA Number: 55.004
***Award Amount:** $24,000

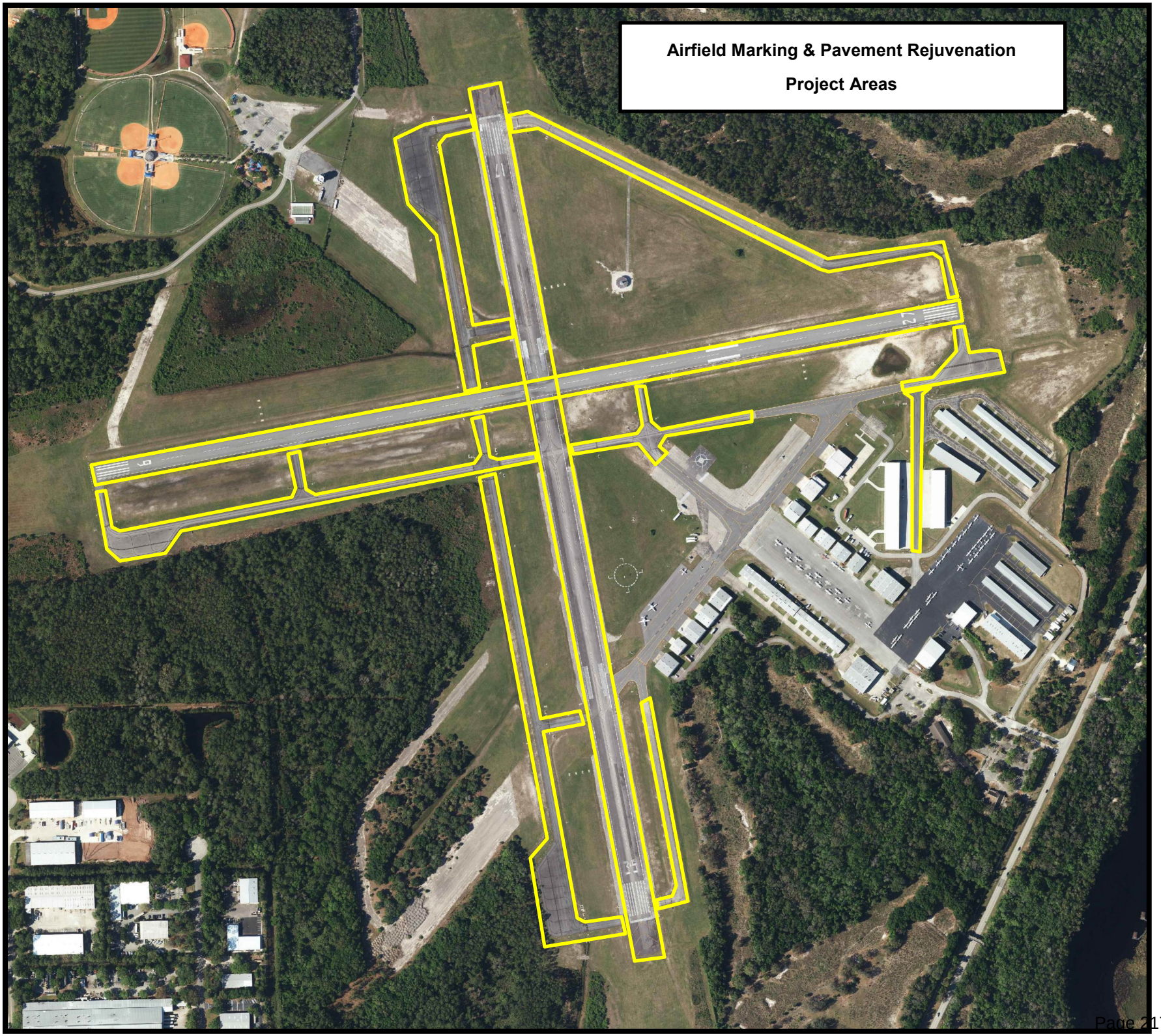
*The award amount may change with amendments

Specific project information for CSFA Number 55.004 is provided at: https://apps.fldfs.com/fsaa/searchCatalog.aspx

COMPLIANCE REQUIREMENTS APPLICABLE TO STATE RESOURCES AWARDED PURSUANT TO THIS AGREEMENT:

State Project Compliance Requirements for CSFA Number 55.004 are provided at: https://apps.fldfs.com/fsaa/searchCompliance.aspx

The State Projects Compliance Supplement is provided at: https://apps.fldfs.com/fsaa/compliance.aspx


Airfield Marking & Pavement Rejuvenation
Project Areas

Existing Conditions
Runway 17/35
Taxiways Echo, Foxtrot & Golf





- **Runway designation markings are discolored, faded and/or stained.**
- **Runway threshold markings are discolored, faded and/or stained.**
- **Taxiway hold position markings are discolored, faded and/or stained.**
- **Runway and taxiway centerlines are discolored or faded.**
- **Run-up area centerlines are discolored or faded.**

Existing Conditions
Runway 9/27
Taxiways Alpha, Charlie & Echo





- **Taxiway hold position markings are discolored, faded and/or stained.**
- **Taxiway centerlines are discolored or faded.**
- **Run-up area centerlines are discolored or faded.**

City of Ormond Beach
AGENDA ITEM

August 20, 2024 - City Commission

Number: 7.F

Section:	CONSENT AGENDA		
Item Category:	Consent - Resolution	**Res./Ord. No:**	2024-127
Strategic Goal:	Airport Capital Improvements - Safety		
Department:	Economic Development - Airport		
Subject:	Work Auth - Airfield Marking and Pavement Rejuvenation Project (Design)		
Summary:	This is a resolution to authorize execution of a Work Authorization between the City and Hoyle, Tanner & Associates, Inc. (HTA) to provide design services for the Airfield Marking and Pavement Rejuvenation Project at the Ormond Beach Municipal Airport. On February 8, 2024, during the annual airport safety and licensing inspection by FDOT, it was found there were inconsistencies between the existing airfield markings and the current standards for airfield markings established by the Federal Aviation Administration (FAA). As a result, staff was informed by FDOT that the airfield markings must be re-painted, added or removed as needed in order to comply with FAA standards. This project is intended to address these deficiencies prior to the next licensing inspection. The design will include the remarking and pavement rejuvenation of Runway 9/27, Runway 17/35 and Taxiways Alpha, Charlie, Echo, Foxtrot and Golf, as further described in the scope of services. This project is given a high priority due to safety considerations for aircraft operations and the City's obligation as the airport sponsor to maintain airport pavement in an acceptable operational condition and with adequate load-carrying capacity. Staff considers HTA to be the best qualified of the City's airport consultants to perform this design work, due to their recent experience with current FAA airfield marking design requirements employed as part of the Taxiways Bravo and Delta project that HTA successfully completed in 2023. HTA has also drafted all of the airfield marking designs included in the current Master Plan and Airport Layout Plan documents.		

Financial Impact:	The total cost of this design project is $30,000. The City is in receipt of a grant agreement from FDOT that provides state funding of 80% in the amount of $24,000. The local cost share for this project is $6,000. Approval of this work authorization to commence design work in the current fiscal year will require a budget amendment for the Airport Fund (108). The construction phase is included in the proposed FY 2024-25 budget. Staff plans to request federal participation in the construction phase of this project in the form of an FAA/BIL grant in FY 2025. State participation in the construction phase will also be requested in FY 2025.
Citizen Impact:	The Airfield Marking and Pavement Rejuvenation Project pertains specifically to current and planned airport operations. The improved markings and pavement conditions will serve as an operational safety enhancement for the flying public.
Recommended Action (Staff, Advisory Board and/or Other):	Staff recommends approval to execute the Work Authorization between the City and Hoyle, Tanner & Associates, Inc. to provide design services for the Airfield Marking and Pavement Rejuvenation Project.
Staff Contact:	Steven Lichliter, Airport Manager, (386) 615-7019
Attachments:	1. 24-127 Airfield Marking and Pavement - WA Hoyle Tanner (P24-0090G) 2. Work Authorization 3. Project Areas 4. Existing Conditions
Approval:	Kelly McGuire, Finance Director 7/30/2024 Shawn Finley, Assistant City Manager 8/9/2024 Joyce Shanahan, City Manager 8/15/2024

RESOLUTION NO. 2024-127

A RESOLUTION ACCEPTING A PROPOSAL FROM HOYLE TANNER & ASSOCIATES, INC., TO PROVIDE ENGINEERING DESIGN SERVICES REGARDING THE AIRFIELD MARKING AND PAVEMENT REJUVENATION PROJECT AT THE ORMOND BEACH MUNICIPAL AIRPORT; AUTHORIZING THE EXECUTION OF A WORK AUTHORIZATION AND PAYMENT THEREFOR; AND SETTING FORTH AN EFFECTIVE DATE.

WHEREAS, pursuant to the Continuing Contract between the City and Hoyle Tanner & Associates, Inc., ("HTA") the appropriate City staff members have negotiated with HTA to provide engineering design services regarding the Airfield Marking and Pavement Rejuvenation Project at the Ormond Beach Municipal Airport ("the Project"), as described on the attached Work Authorization and Scope of Work, at a cost not to exceed $30,000.00, and

WHEREAS, the Florida Department of Transportation ("FDOT") has issued a Public Transportation Grant Agreement ("PTGA") to provide grant funding in the amount of $24,000.00, representing eighty percent (80%) of the Project cost, and

WHEREAS, City Manager has certified that funds in the amount of $6,000.00 to fund the City's twenty percent (20%) contribution of the Project cost will be credited to the Airport Fund (108) through a budget amendment, and these funds will not be appropriated for any other purpose, now therefore,

BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF ORMOND BEACH, FLORIDA, THAT:

SECTION ONE. The proposal submitted by Hoyle Tanner & Associates, Inc., to perform the Project at a total cost not to exceed $30,000.00 is hereby accepted.

SECTION TWO. The Mayor and the City Manager are hereby authorized and directed to execute a Work Authorization with Hoyle Tanner & Associates, Inc. for the performance of the Project at the said price, and to pay the cost thereof using funds from the Florida Department of Transportation PTGA and the Municipal Airport Fund.

SECTION THREE. This Resolution shall take effect immediately upon its adoption.

APPROVED AND AUTHENTICATED this 20th day of August, 2024.

_____
BILL PARTINGTON
Mayor

ATTEST:

_____
SUSAN CARROLL DAUDERIS
City Clerk

WORK AUTHORIZATION

In accordance with and incorporating the terms of the Continuing Contract dated May 21, 2024 between the City of Ormond Beach, Florida, and Hoyle, Tanner and Associates, Inc., the following Scope of Work and Schedule of Payments are agreed to by the parties to the Agreement:

Project Titles: Airfield Marking and Pavement Rejuvenation Project Design Services

Project Descriptions: To provide design engineering services for the project; including comprehensive engineering, preliminary design and final design phases to provide a set of construction plans, contract documents and technical specifications, and bidding phase services, all as detailed in the attached Scope of Services and Fee Schedule.

Estimated Project Construction Cost: $820,079

Schedule of Payments and Fee Basis

Required Work Task	Fee Basis	Fee
Preliminary Design	Fixed Fee	$4,500.00
Final Design	Fixed Fee	$17,500.00
Bidding	Fixed Fee	$8,000.00
Total Fee Authorized:	**Not to Exceed**	**$30,000.00**

Funding Source: FDOT Grant, Airport Fund (108)

Estimated Time for Completion: 6 Months from Authorization to Proceed

AUTHORIZED:
CITY OF ORMOND BEACH

By: _____
Bill Partington
Mayor

Date: _____

By: _____
Joyce A. Shanahan
City Manager

Date: _____

ACCEPTED:
HOYLE TANNER & ASSOCIATES, INC.

By: _____
Wilbur J. Mathurin, PE
Vice President

Date: _____

Pursuant to the mandatory contract terms required by the Florida Department of Transportation Public Transportation Grant Agreement 454708-1-94-01, the City's Consultant agrees that the continuing contract shall be amended to include the following provision:
To the fullest extent permitted by law, Hoyle, Tanner & Associates, Inc. (HTA) shall indemnify, defend, and hold harmless the City of Ormond Beach and the State of Florida, Department of Transportation, including the Department's officers and employees, from liabilities, damages, losses and costs, including, but not limited to, reasonable attorney's fees, to the extent caused by the negligence, recklessness or intentional wrongful misconduct of HTA and persons employed or utilized by HTA in the performance of this Agreement. This indemnification shall survive the termination of this Agreement.

I. COMPLIANCE WITH FLORIDA PUBLIC RECORDS LAW

Contractor expressly agrees that it shall comply with the public records law provided in Florida Statutes, Chapter 119, and specifically to:

(a) Keep and maintain public records required by the City to perform the contracted service.
(b) Upon request from the City Clerk, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes, or as otherwise provided by law.
(c) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the contractor does not transfer the records to the City.
(d) Upon completion of the contract transfer, at no cost to the City, all public records in possession of the contractor or keep and maintain public records required by the City to perform the service. If the contractor transfers all public records to the City upon completion of the contract, the contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the contractor keeps and maintains public records upon the completion of the contract, the contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City Clerk, in a format that is compatible with the information technology systems of the City.
(e) Failure of the Contractor to comply with Public Records Law as provided by Florida Statutes, Chapter 119, shall subject the Contractor to penalties under Chapter 119.10 and subject this Agreement to termination for cause by the City.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

CITY CLERK
22 SOUTH BEACH STREET
ORMOND BEACH, FLORIDA 32174 (386) 676-3331
CITYCLERK@ORMONDBEACH.ORG

Ref: Fla. Stat. §119.0701(2016)

II. VERIFICATION OF EMPLOYMENT STATUS USING E-VERIFY SYSTEM

1. Section 448.09, *Florida Statutes*, makes it unlawful for any person to knowingly employ, hire, recruit, or refer, either for herself or himself, or on behalf of another, for private or public employment within the state, an alien who is not duly authorized to work in the United States. Contractor warrants that it is registered with the U.S. Department of Homeland Security's E-Verify system, and is compliant with the requirements of Sections 448.09 and 448.095, *Florida Statutes*.
2. Contractor agrees that if the contractor enters into an agreement with a subcontractor, the subcontractor must provide the contractor with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, and contractor warrants it shall maintain any such affidavits for the duration of the contract. If the City has a good faith belief that a subcontractor knowingly violated Section 448.09 (1), the City shall promptly notify the contractor and order the contractor to immediately terminate the contract with the subcontractor.
3. In the event the City has a good faith belief that the contractor has knowingly violated Section 448.09 (1), *Florida Statutes*, the City shall terminate the contract, and as provided by statute, the contractor may not be awarded a public contract for at least one (1) year after the date of termination. The contractor may also be held liable for any additional costs incurred by the City as a result of the termination of the contract.

AIRFIELD REMARKING AND PAVEMENT REJUVENATION

SCOPE OF SERVICES - DESIGN ENGINEERING

The following parties are referred to hereafter: SPONSOR (SPONSOR - City of Ormond Beach); CONSULTANT/ENGINEER (SPONSOR's CONSULTANT – Hoyle, Tanner & Associates, Inc.); FDOT (Florida Department of Transportation);

Design Engineering Services for the project include comprehensive engineering preliminary design and final design phases to provide a set of construction plans, contract documents, and technical specifications; bidding phase.

I. PROJECT DESCRIPTION

The work can generally be described as below, hereinafter called the PROJECT, and will consist of the level of effort required for the CONSULTANT's design services of the following primary project elements.

1. Airfield Remarking and Pavement Rejuvenation

   The design will include the remarking and pavement rejuvenation of Runway 9-27, Runway 17-35, Taxiways Alpha, Charlie, Echo, Foxtrot, and Golf.

II. PROJECT SERVICES

The Basic Services are identified in Section III, and are sub-divided into three (3) phases as follows:

Preliminary Design Phase
Final Design Phase
Bidding Phase

Additional Services are identified in Section IV, and include services not specifically performed in this TASK ORDER, due to circumstances that may arise and which are beyond the control of the CONSULTANT, or due to the SPONSOR wishing to contract these services directly OR perform the services in-house, or services which are not necessary to complete the intended work.

III. BASIC SERVICES

1. Preliminary Design Phase Services

a. Project Initiation/Coordination: Review record drawings, interview CITY staff, visit the site, and conduct a field analysis of the existing conditions pertinent to the PROJECT; prepare for and attend one kick-off meeting with CITY, FDOT, and others as deemed appropriate by the CITY; review scope of work and schedule; establish billing and reporting procedures; establish lines of communication, etc.

b. Define Marking Design Parameters: Review the adopted Master Plan, Airport Layout Plan, and the FAA design standards for this PROJECT and summarize the design parameters. Coordinate the results with the CITY.

c. Coordinate Project Layout & Preliminary Phasing Plans: Prepare project layout and phasing plans on base map at appropriate scale showing location of work and project construction limits and identify all pertinent existing facilities both within and immediately adjacent to construction limits as appropriate for referencing construction project layout. Include location of contractor haul routes, construction staging area, materials storage area, waste disposal area, location of barricades, flagmen, restricted areas, plus any other applicable notes to contractor concerning required phasing and staging during construction. Discuss and coordinate the plans with CITY and FDOT at the predesign conference.

2. Final Design Phase Services

a. Finalize Plans: Complete plan set to include, at minimum:

Cover Sheet (1)
Bid Schedule and Summary of Quantities (1)
Project Site Plan with General Notes (2)
Construction Phasing & Maintenance of Traffic Plan (2)
Demolition Plan (4)
Marking and Pavement Rejuvenation Plan (6)
Marking Details (2)

Estimated total for the number of drawings is 18 sheets.

b. Identify marking required per FAA standards.

c. Identify Deviations from FAA and FDOT Design Standards: Identify deviations to FAA and FDOT design standards and/or standard specifications and explain advantages and alternates to the CITY. ENGINEER will coordinate CITY approved deviations as necessary.

d. Prepare General and Special Provisions, Contract and Bid Forms, and Technical Specifications: CITY standard front-end documents; FAA Standard Specifications, all versions in place or provided at the time of execution of this Professional Services Agreement will be used as a basis in the preparation of the technical specifications for the PROJECT.

ENGINEER may make modification(s) to these standards provided the changes are approved by CITY. CITY will be responsible for approving these prior to the coordination of the 90% review to be submitted to FDOT.

e. Prepare Final ENGINEER's Opinion of Probable Construction Cost

f. Conduct a 30% Plan Review with CITY.

Submit an electronic set of 30% plans to the CITY for review. A 30% review meeting will be conducted with the CITY.

g. Conduct a 60% Plan Review with CITY.

Submit an electronic set of 60% plans, construction contract documents and Engineer's Opinion of Probable Cost to the CITY for review. A 60% review meeting will be conducted with the CITY.

h. Conduct a 90% Plan Review with CITY.

Submit an electronic set of 90% plans, construction contract documents and Engineer's Opinion of Probable Cost to the CITY and FDOT for approval. A 90% review meeting will be conducted with the CITY. Respond to 90% CITY and FDOT written review comments. It is understood that once the CITY and FDOT comments have been satisfactorily addressed, the 90% documents will be revised to incorporate these comments in the 100% documents and will become the Issue For Bid set.

i. Submit 100% Documents

Submit an electronic set of 100% complete plans and specifications for the CITY to distribute to the FDOT and others.

3. Bidding Phase Services

a. Bidding Assistance: Assist the CITY in advertising and obtaining bids for the prime contract for construction, materials, equipment and services. The CITY will issue bidding and contract documents to all prospective bidders via an electronic medium of their choice.

b. Conduct Prebid Conference: Prepare for, attend, and conduct one prebid conference in conjunction with CITY staff to outline the project and answer questions from interested contractors. The CITY will prepare the minutes of the prebid conference and distribute them to the list of attendees and future plan holders within the bid period.

c. Respond to Bidder's Inquiries: Prepare addenda as appropriate to interpret, clarify or expand the Bidding Documents within the bid period and, upon

approval by the CITY. Provide responses to bidders questions, modify the plans and specifications and coordinate with the CITY for dissemination to plan holders.

d. Evaluate Bids and Recommend Award: Prepare bid tabulation summary and assist the CITY in evaluating bids or proposals and in assembling contracts for construction, materials, equipment, and services. Provide written recommendations to the CITY for the award of construction contract to the lowest responsible bidder.

e. Prepare Construction Contract: Assist the CITY in preparation of the contract with the successful bidder; coordinate review with the CITY's legal counsel.

IV. ADDITIONAL SERVICES

When required by the SPONSOR in circumstances beyond CONSULTANT's control, CONSULTANT shall furnish or obtain from others, as circumstances may require additional services of the types listed in paragraphs below. These services are not included as part of Basic or Special Services provided under this TASK ORDER. CONSULTANT shall not provide any such Additional Services without written approval from the SPONSOR.

1. Design Phase Services: The following design services are NOT to be performed by the CONSULTANT under this AGREEMENT.

   a. Development of Regional Impacts (DRI), or Environmental Assessments (EA), or Environmental Impact Statements (EIS).

   b. Ecological Services pertaining to the actual relocation of an endangered, threatened, or otherwise protected biological species determined to be impacted by the PROJECT.

   c. Major changes made by the CITY after the 90% Design Review Meeting. Any changes made by the CITY after the 100% final plans are submitted, or during Bidding.

2. Bidding Phase Services: The following bidding services are NOT to be performed by the CONSULTANT under this AGREEMENT.

   a. Services required by any revisions to the design documents during bidding which are made by the SPONSOR or any other agency other than the CONSULTANT.

   b. Services required for any value engineering effort requested by the SPONSOR or other agency after bids are received during any bid letting.

   c. Services resulting from re-bidding should the SPONSOR decide to reject all

bids, or for any other reasons.

V. BASIC ASSUMPTIONS

The following is a list of assumptions which forms the basis of CONSULTANT's cost proposal for providing the services for the PROJECT outlined herein. It must be noted that any change to these basic assumptions constitutes a change in the PROJECT scope and may constitute a revision to the fee proposal and corresponding contract addendum.

1. In the absence of other known standards identified herein, all contract documents (front end, technical specifications, and construction drawings) will be developed utilizing CONSULTANT'S selected format, which for state and federally funded projects is based on FAA/FDOT standards.

2. All construction drawings will be 36" x 24" and will be created in AutoCAD 2018, and Civil 3D versions or later.

3. Specifications, reports, letters/memorandums, spreadsheets, etc. shall be created in Microsoft Office 365 or later.

4. CONSULTANT's Project Manager and/or Project Engineer, as necessary, will attend a maximum of the number of meetings identified below during the course of design, bidding, and award phases. These meetings will be held at the airport or SPONSOR Offices, as necessary, and include:

(1) Kickoff Meeting / Pre-design Conference
(1) 30% Design Review Meeting
(1) 60% Design Review Meeting
(1) 90% Design Review Meeting
(1) Pre-bid Meeting, as required
(1) Bid Opening

5. All data collection efforts requiring CONSULTANT to be within the safety area of the runways or taxiways will be performed during daylight hours with the appropriate runways and taxiways on a safety men working alert pull-back basis unless otherwise directed by the SPONSOR or FAA.

6. All as-built drawings necessary for the development of the base plans for the PROJECT will be compiled by the SPONSOR for incorporation and consideration by the CONSULTANT during the design.

7. The work shall be completed in accordance with the schedule provided during PROJECT initiation but will not be less than six (6) months from the date of the SPONSOR's Notice to Proceed to the CONSULTANT. Failure of the SPONSOR, FAA and/or FDOT or other agency to meet the deliverable dates for provision of review comments may be justification for obtaining schedule and cost extensions.

8. CONSULTANT will transmit design stage review submissions to the SPONSOR

and each submission shall be limited to 3 sets (1 set equals the construction plans for 30%, 60%, and contract documents, drawings, and technical specifications for 90% and 100% plans). CONSULTANT will provide draft letters to the SPONSOR for SPONSOR's transmission of these submissions from the SPONSOR to FAA and FDOT. Drawings will be blacklines .

9. All permits required as a result of the PROJECT other than those mentioned herein shall be obtained by either the SPONSOR or the successful contractor as appropriate prior to the beginning of the construction of the PROJECT.

VI. SPONSOR'S RESPONSIBILITIES

SPONSOR shall do the following in a timely manner so as not to delay the services of CONSULTANT:

1. Designate a person to act as SPONSOR's representative with respect to the services to be rendered under this Agreement. Such person shall have complete authority to transmit instructions, receive information, interpret and define SPONSOR's policies and decisions with respect to the CONSULTANT's services for the PROJECT.

2. Assist CONSULTANT by placing at CONSULTANT's disposal all available information pertinent to the PROJECT including previous reports and any other data relative to design or construction of the PROJECT.

3. Furnish to CONSULTANT, as required for the performance of CONSULTANT's Basic Services, the following:

a. the data prepared by or service of others, including without limitation borings, probings and subsurface explorations, laboratory tests and inspections of pavement samples, materials, and equipment;

b. copy of pertinent utility information;

c. property, boundary, easement, right-of-way, topographic, and utility surveys;

d. other pertinent documents.

4. Furnish to CONSULTANT, all results, reports, data, and studies, generated by other consultants retained by the SPONSOR in association with this project, and as specified under “Additional Services”.

PROFESSIONAL SERVICES COMPENSATION
FOR
AIRFIELD REMARKING AND PAVEMENT REJUVENATION
FDOT FM No. FM 454708-1-94-01
ORMOND BEACH MUNICIPAL AIRPORT
ORMOND BEACH, FLORIDA

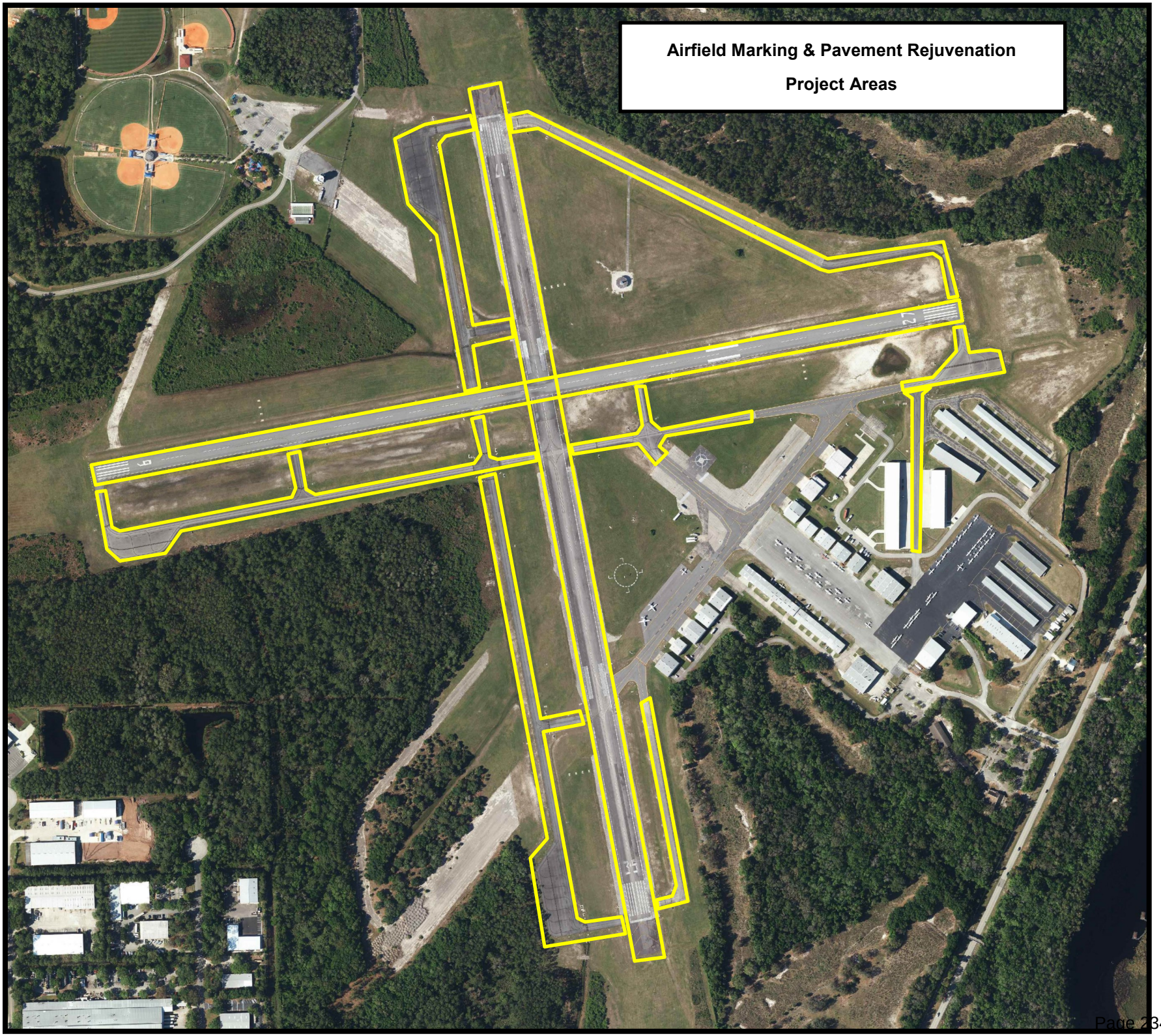
Service Description	Compensation	Method
I. Basic Services		
Preliminary Design	$4,500	Lump Sum
Final Design	$17,500	Lump Sum
Bidding	$8,000	Lump Sum
TOTAL All Services	$30,000	Lump Sum

Lump sum fees are fixed and complete, inclusive of all labor, expenses, overhead, general and administrative costs of doing business, and profit.

Airfield Marking and Rejuvenation at Ormond Beach Municipal Airport Design Engineering

Manhours, Overhead, Profit, and Expenses Analysis

Title	*Preliminary Design*	*Final Design*	*Bidding*	*Topographic Survey*	*Geotechnical Investigation*	*Total Hours*	*Hourly Rate*	*Extended Costs ($)*
Principal	2	4	2			8	$260.00	$2,080
Project Manager	2	18	4			24	$185.00	$4,440
Project Engineer	24	72	32			128	$135.00	$17,280
Staff Engineer		24	16			40	$124.00	$4,960
						0		$0
						0		$0
Total Hours per Phase		118	54	0	0	200		
SubTotal Labor	**4,130.00**	**17,066.00**	**7,564.00**	**0.00**	**0.00**			**28,760.00**
Per Diem								0.00
Travel	$370	$434	$436					1,240.00
Printing								$0
SubConsultants								$0
Fixed Fee, 10%,SubConsultants				$0	$0			$0
Other, Misc.,Postage,Photos,Fees								$0
SubTotal Subconsultants and Expenses	**370.00**	**434.00**	**436.00**	**0.00**	**0.00**			**1,240.00**
Total Fees	**$4,500**	**$17,500**	**$8,000**	**$0**	**$0**			
Total								**$30,000**


Airfield Marking & Pavement Rejuvenation
Project Areas

Existing Conditions
Runway 17/35
Taxiways Echo, Foxtrot & Golf





- **Runway designation markings are discolored, faded and/or stained.**
- **Runway threshold markings are discolored, faded and/or stained.**
- **Taxiway hold position markings are discolored, faded and/or stained.**
- **Runway and taxiway centerlines are discolored or faded.**
- **Run-up area centerlines are discolored or faded.**



Existing Conditions
Runway 9/27
Taxiways Alpha, Charlie & Echo



- **Taxiway hold position markings are discolored, faded and/or stained.**
- **Taxiway centerlines are discolored or faded.**
- **Run-up area centerlines are discolored or faded.**

City of Ormond Beach
AGENDA ITEM

August 20, 2024 - City Commission

Number: 7.G

Section:	CONSENT AGENDA		
Item Category:	Consent - Resolution	**Res./Ord. No:**	2024-128
Strategic Goal:	Transportation & Community Development - Other		
Department:	Public Works - Engineering		
Subject:	Work Authorization - North Halifax Drive Safety Study		
Summary:	This is a request to execute a work authorization with Burgess & Niple, Inc, for professional services for a safety study along the North Halifax Drive Corridor. Police and Engineering staff continuously monitor traffic trends throughout the City. In the past year there has been a recent uptick in requests for traffic calming and speed evaluations at various intersections along the North Halifax Dr corridor. With the recent award of the professional services continuing contracts, staff has contacted Burgess & Niple to perform a holistic evaluation of the entire North Halifax Drive corridor. The proposed evaluation will examine pedestrian safety throughout the corridor, analyze behavior at multiple intersections, corridor speed behavior, turning movements at the major intersections, evaluation of warrants for additional 4-way stops, and no passing zone analysis. At the conclusion of the analysis, Burgess & Niple will develop appropriate solutions addressing concerns identified.		
Financial Impact:	Funds in the amount of $45,331.74 are available in the Fund 308 Transportation for this project and will require a budget amendment.		
Citizen Impact:	This project will evaluate the current corridor, identify safety concerns and make recommendations to address the safety concerns. This will improve the safety of the traveling public and nearby residents.		

Recommended Action (Staff, Advisory Board and/or Other):	Staff recommends award of the work authorization for engineering services to Burgess & Niple, Inc., for the not-to-exceed amount of $45,331.74.
Staff Contact:	Alex Schumann, City Engineer, (386) 676-3302
Attachments:	1. 24-128 N Halifax Safety Study-Burgess & Niple (P24-0127G) 2. Burgess & Niple Work Authorization
Approval:	Kelly McGuire, Finance Director 7/30/2024 Shawn Finley, Assistant City Manager 8/9/2024 Joyce Shanahan, City Manager 8/14/2024

RESOLUTION NO. 2024-128

A RESOLUTION ACCEPTING A PROPOSAL FROM BURGESS & NIPLE, INC. TO PERFORM A SAFETY STUDY ALONG THE NORTH HALIFAX DRIVE CORRIDOR; AUTHORIZING THE EXECUTION OF A WORK AUTHORIZATION THERETO; AND SETTING FORTH AN EFFECTIVE DATE.

WHEREAS, the City solicited a proposal from Burgess & Niple, Inc. an engineering firm under continuing contract with the City, to perform a safety study along the North Halifax Drive corridor ("the Project") in accordance with the provisions of Section 2-300(c) of the *Code of Ordinances*, and

WHEREAS, the appropriate City staff have reviewed the proposal received and determined that the proposal submitted by Burgess & Niple, Inc. to provide professional engineering services for the aforedescribed project at a cost not to exceed $45,331.74 is in the best overall interest of the City, and recommends that the said proposal (a copy being attached to the Work Authorization which is attached hereto and incorporated herein by reference) be accepted, and

WHEREAS, the City Commission concurs in the said determination and recommendation, and

WHEREAS, the City Manager has certified that the money for the payment of the Project has been deposited to the credit of the Transportation Fund (308) and has not been appropriated for any other purpose, now therefore,

BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF ORMOND BEACH, FLORIDA, THAT:

SECTION ONE. The proposal submitted by Burgess & Niple, Inc. to provide professional engineering services to perform a safety study of the North Halifax Drive corridor at a cost not to exceed $45,331.74 is hereby accepted.

SECTION TWO. The Mayor and the City Manager are hereby authorized and directed to execute a Work Authorization between the City and Burgess & Niple, Inc. to provide professional engineering services for the Project at the said price, and to pay the cost therefor from the Transportation Fund.

SECTION THREE. This Resolution shall take effect immediately upon its adoption.

APPROVED AND AUTHENTICATED this 20th day of August, 2024.

_____
BILL PARTINGTON
Mayor

ATTEST:

_____
SUSAN CARROLL DAUDERIS
City Clerk

WORK AUTHORIZATION

In accordance with and incorporating the terms of the Continuing Contract dated May 21, 2024 between the City of Ormond Beach, Florida, and Burgess & Niple, Inc., the following Scope of Work and Schedule of Payments are agreed to by the parties to the Agreement:

Project Title: North Halifax Drive Corridor Study

Project Description: To perform a study of the North Halifax Drive corridor to develop feasible and appropriate alternatives and solutions to address safety concerns in the corridor, as detailed in the attached proposal and fee schedule.

Estimated Project Construction Cost: N/A

Schedule of Payments and Fee Basis

Required Work Task	Fee Basis	Fee
Pedestrian Count Data Collection	Fixed Fee	$2,299.32
Vehicle Spot Speed Data	Fixed Fee	$950.34
8-Hour Turning Movement Counts	Fixed Fee	$6,415.44
Intersection Analysis & Field Review	Fixed Fee	$3,322.38
No Passing Zone Analysis	Fixed Fee	$4,521.48
Crash Data Review	Fixed Fee	$3,443.40
Field Inventory	Fixed Fee	$3,199.58
Safety Field Review	Fixed Fee	$5,679.68
Improvement Recommendations	Fixed Fee	$4,840.28
Report Preparation	Fixed Fee	$7,784.84
Subconsultant/Adams Traffic	Fixed Fee	$2,875.00
Total Fee Authorized:	**Not to Exceed**	**$45,331.74**

Funding Source: Transportation Fund (308)

Estimated Time for Completion: 120 Days from Authorization to Proceed

AUTHORIZED:
CITY OF ORMOND BEACH

By: _____
Bill Partington
Mayor

Date: _____

By: _____
Joyce A. Shanahan
City Manager

Date: _____

ACCEPTED:
BURGESS & NIPLE, INC.

By: _____
Scott D. Perfater, P.E.
Executive Vice President

Date: _____

I. COMPLIANCE WITH FLORIDA PUBLIC RECORDS LAW

Contractor expressly agrees that it shall comply with the public records law provided in Florida Statutes, Chapter 119, and specifically to:

(a) Keep and maintain public records required by the City to perform the contracted service.
(b) Upon request from the City Clerk, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes, or as otherwise provided by law.
(c) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the contractor does not transfer the records to the City.
(d) Upon completion of the contract transfer, at no cost to the City, all public records in possession of the contractor or keep and maintain public records required by the City to perform the service. If the contractor transfers all public records to the City upon completion of the contract, the contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the contractor keeps and maintains public records upon the completion of the contract, the contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City Clerk, in a format that is compatible with the information technology systems of the City.
(e) Failure of the Contractor to comply with Public Records Law as provided by Florida Statutes, Chapter 119, shall subject the Contractor to penalties under Chapter 119.10 and subject this Agreement to termination for cause by the City.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

CITY CLERK
22 SOUTH BEACH STREET
ORMOND BEACH, FLORIDA 32174 (386) 676-3331
CITYCLERK@ORMONDBEACH.ORG

Ref: Fla. Stat. §119.0701(2016)

II. VERIFICATION OF EMPLOYMENT STATUS USING E-VERIFY SYSTEM

1. Section 448.09, *Florida Statutes*, makes it unlawful for any person to knowingly employ, hire, recruit, or refer, either for herself or himself, or on behalf of another, for private or public employment within the state, an alien who is not duly authorized to work in the United States. Contractor warrants that it is registered with the U.S. Department of Homeland Security's E-Verify system, and is compliant with the requirements of Sections 448.09 and 448.095, *Florida Statutes*.
2. Contractor agrees that if the contractor enters into an agreement with a subcontractor, the subcontractor must provide the contractor with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, and contractor warrants it shall maintain any such affidavits for the duration of the contract. If the City has a good faith belief that a subcontractor knowingly violated Section 448.09 (1), the City shall promptly notify the contractor and order the contractor to immediately terminate the contract with the subcontractor.
3. In the event the City has a good faith belief that the contractor has knowingly violated Section 448.09 (1), *Florida Statutes*, the City shall terminate the contract, and as provided by statute, the contractor may not be awarded a public contract for at least one (1) year after the date of termination. The contractor may also be held liable for any additional costs incurred by the City as a result of the termination of the contract.

BURGESS & NIPLE

1800 Pembrook Drive | Suite 265 | Orlando, FL 32810 | 407.401.8527

Mr. Shawn Finley, PE
Public Works Director
City of Ormond Beach
501 N. Orchard Street
Ormond Beach, FL 32174

Re: Halifax Drive Corridor Study
Professional Services Fee Proposal

July 1, 2024

Dear Mr. Finley:

Burgess & Niple, Inc. (B&N) is pleased to submit this lump sum fee proposal for professional services for a safety study along the North Halifax Drive corridor. We have enclosed a scope of services and proposed fee for this lump sum contract assigned under the authority of our existing continuing services contract with the City.

SCOPE OF SERVICES

Based on the information provided by the City to date, B&N will perform the following tasks:

1. Collect 8-hour manually-collected pedestrian counts (7 AM to 9 AM, 11 AM to 1 PM, 2PM to 6 PM) between SR 40 (Granada Blvd) and the southern entrance to the Unitarian Universalist Congregation noting specific locations where pedestrians cross Halifax Drive.

2. Collect speed data at 5 locations to identify local speeds. Locations include: 100 feet north of Oceanside Country Club entrance, between Treasure Lane and Hilldale Ave, 150 feet north of Country Club Dr, between Ocean Terrace and Ray Mar Dr, and 100 feet south of Elcot Dr. This task to be performed by Adams Traffic.

3. Collect 8-hour turning movement counts (7 AM to 9 AM, 11 AM to 1 PM, 2PM to 6 PM) at Halifax Dr and Amsden Rd, Ocean Terrace, and Standish Drive.

4. Perform an Intersection Analysis at the intersections of Halifax Dr and Amsden Rd, Ocean Terrace, and Standish Drive to determine if these locations warrant a four-way stop or additional safety improvements.

5. Perform a no-passing zone analysis along North Halifax Drive corridor from SR 40 to John Anderson Drive.

6. Collect crash data and provide a crash analysis along North Halifax Drive from SR 40 to John Anderson Dr.

7. Prepare a condition diagram of the corridor with the latest aerial images.

8. Perform a safety field review to identify safety concerns and propose countermeasures.

9. Develop and analyze feasible and appropriate alternatives which address solutions to the safety concerns of the corridor.

ITEMS TO BE PROVIDED BY CLIENT

1. Copies of any available record construction or improvement plans for the project. Copies of any previous studies performed along the corridor.

PAYMENT FOR PROFESSIONAL SERVICES

The proposed lump sum fee for the professional engineering services described above is $45,331.74. See Attachment 1 for a task-oriented fee proposal breakdown. If the City is in agreement with the terms indicated herein, please indicate below by signing and returning one fully executed copy to us for our records.

If there are any questions regarding the enclosed material or if we can provide additional information to assist the City with its review, please contact us.

BURGESS & NIPLE, INC.

_____
Scott D. Perfater, PE
Executive Vice President

SDP
Attachment
Copy: File

CITY OF ORMOND BEACH, FLORIDA

_____
Mr. Shawn Finley, PE
Public Works Director

_____
Date

ATTACHMENT 1 – FEE PROPOSAL

Study Types and Tasks	Chief Engineer 2	Project Manager 2	Senior Engineer 1	Engineer 2	Engineer 1	Chief Designer	Engineering Intern	Staff Hour by Activity	Cost Per Unit	Comments
Billing Hourly Rate	$346.10	$263.30	$257.72	$211.97	$174.50	$212.80	$134.34			
Task 1 - Pedestrian Count Data Collection		1		2			12	15	**$2,299.32**	Includes time to develop aerial plan sheet for documentation and travel time
Task 2 - Vehicle Spot Speed Data			1	2			2	5	**$950.34**	Field work to be done by Adams Traffic. Work to be incorporated into full Corridor safety report.
Task 3 - 8-Hr Turning Movement Count - 3 locs			3				42	45	**$6,415.44**	1 Loc = 15 hrs (11 hrs field + 3 hrs travel/set up + 1 hr office)
Task 4 - Intersection analysis and field review		1	2	12				15	**$3,322.38**	2 hrs travel time plus 1 hr per intersection * 3 intersections for each peak + 8 hrs office report = 15 hrs
Task 5 - No Passing Zone Analysis		2	1	8	4		10	25	**$4,521.48**	Analsyis of MUTS criteria for low speed road. Development of recommended modifications
Task 6 - Crash Data and Review		1	1	2	2		16	22	**$3,443.40**	Around 70 crashes
Task 7 - Field Inventory (condition diagram)					3	5	12	20	**$3,199.58**	2 miles corridor
Task 8 - Safety Field Review		2	2	12	12			28	**$5,679.68**	2 people x (8 hrs field + 2 hrs travel) + 8 hrs office
Task 9 - Improvement Recommendations	2	1	1	6	4	4	6	24	**$4,840.28**	
Task 10 - Preparation and Submittal of Report		4		12	24			40	**$7,784.84**	
								224	**$42,456.74**	
								B&N Subtotal	**$42,456.74**	
								Adams Traffic Subtotal	**$2,875.00**	
								Grand Total:	**$45,331.74**	

Study Types and Tasks - Adams Traffic	Staff Hour by Activity	Cost Per Unit	Comments
Billing Hourly Rate			
Task 2 - Vehicle Spot Speed Data			
24-hr Speed Counts at 5 locations along corridor	36	**$2,875.00**	$575 per location

Adams Traffic Subtotal: affic Subtotal: $2,875.00

City of Ormond Beach
AGENDA ITEM

August 20, 2024 - City Commission

Number: 7.H

Section:	CONSENT AGENDA		
Item Category:	Consent - Resolution	**Res./Ord. No:**	2024-129
Strategic Goal:	Quality of Life - Other		
Department:	Public Works - Engineering		
Subject:	Work Auth - OBSC Stormwater Retention Pond Expansion (Design)		
Summary:	This is a request for approval of a work authorization for engineering services to Upham Inc., to perform topographic surveying, preliminary design and final design for the stormwater retention pond expansion within the Ormond Beach Sports Complex (OBSC). This work will consist of relocating the existing 12" water main and 4" force main, and excavation of an additional storm water treatment areas adjacent to Kiwanis fields, the T-ball fields, and around Wendelstadt fields to Doug Thomas Way.		
Financial Impact:	This project was included in the 2023 – 2024 Capital Improvement Plan. Funds are available from the 107-Stormwater Fund.		
Citizen Impact:	Increasing the water retention area will increase the playability of the Kiwanis field by preventing ongoing cancelations due to flooding.		
Recommended Action (Staff, Advisory Board and/or Other):	Staff recommends approval of the work authorization to Upham Inc. in the amount of $62,880 for design services required for the OBSC stormwater retention pond expansion.		
Staff Contact:	Alex Schumann, City Engineer, (386) 676-3302		
Attachments:	1. 24-129 OBSC Drainage design-Upham (P24-0130G) 2. Upham Work Authorization		
Approval:	Kelly McGuire, Finance Director 7/30/2024 Shawn Finley, Assistant City Manager 8/9/2024 Joyce Shanahan, City Manager 8/14/2024		

RESOLUTION NO. 2024-129

A RESOLUTION ACCEPTING A PROPOSAL FROM UPHAM, INC. TO PROVIDE PROFESSIONAL ENGINEERING SERVICES FOR THE ORMOND BEACH SPORTS COMPLEX ACCESS AND DRAINAGE PROJECT; AUTHORIZING THE EXECUTION OF A WORK AUTHORIZATION THERETO; AND SETTING FORTH AN EFFECTIVE DATE.

WHEREAS, the City solicited a proposal from Upham, Inc., an engineering firm under continuing contract with the City, to provide professional engineering services for design of the Ormond Beach Sports Complex access and drainage project ("the Project") in accordance with the provisions of Section 2-300(c) of the *Code of Ordinances*, and

WHEREAS, the appropriate City staff have reviewed the proposal received and determined that the proposal submitted by Upham, Inc. to provide professional engineering services for the aforedescribed project at a cost not to exceed $62,880.00 is in the best overall interest of the City, and recommends that the said proposal (a copy being attached to the Work Authorization which is attached hereto and incorporated herein by reference) be accepted, and

WHEREAS, the City Commission concurs in the said determination and recommendation, and

WHEREAS, the City Manager has certified that the money for the payment of the Project has been deposited to the credit of the Stormwater Fund (107) and has not been appropriated for any other purpose, now therefore,

BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF ORMOND BEACH, FLORIDA, THAT:

SECTION ONE. The proposal submitted by Upham, Inc. to provide professional engineering services for design of the Ormond Beach Sports Complex access and drainage project at a cost not to exceed $62,880.00 is hereby accepted.

SECTION TWO. The Mayor and the City Manager are hereby authorized and directed to execute a Work Authorization between the City and Upham, Inc. to provide professional engineering services for the Project at the said price, and to pay the cost therefor from the Stormwater Fund.

SECTION THREE. This Resolution shall take effect immediately upon its adoption.

APPROVED AND AUTHENTICATED this 20th day of August, 2024.

_____
BILL PARTINGTON
Mayor

ATTEST:

_____
SUSAN CARROLL DAUDERIS
City Clerk

WORK AUTHORIZATION

In accordance with and incorporating the terms of the Continuing Contract dated May 21, 2024 between the City of Ormond Beach, Florida, and Upham, Inc., the following Scope of Work and Schedule of Payments are agreed to by the parties to the Agreement:

Project Title: OBSC Stormwater Pond Expansion - Design

Project Description: Professional engineering services for a topographic survey, preliminary design, final design, and bidding services to expand the stormwater retention pond from the Wendelstedt fields to the Kiwanis field, including the relocation of the existing 12" water main and 4" force main, as detailed in the attached proposal and fee schedule.

Estimated Project Construction Cost: $485,000

Schedule of Payments and Fee Basis

Required Work Task	Fee Basis	Fee
Topographic Survey	Fixed Fee	$19,760.00
Preliminary Design	Fixed Fee	$10,560.00
Final Design	Fixed Fee	$28,160.00
Bidding Assistance	Fixed Fee	$4,400.00
Total Fee Authorized:	**Not to Exceed**	**$62,880.00**

Funding Source: Stormwater Fund (107)

Estimated Time for Completion: Seven Months from Authorization to Proceed

AUTHORIZED:
CITY OF ORMOND BEACH

By: _____
Bill Partington
Mayor

Date: _____

By: _____
Joyce A. Shanahan
City Manager

Date: _____

ACCEPTED:
UPHAM, INC.

By: _____
Roger W. Strcula, P.E., CPESC
President

Date: _____

I. COMPLIANCE WITH FLORIDA PUBLIC RECORDS LAW

Contractor expressly agrees that it shall comply with the public records law provided in Florida Statutes, Chapter 119, and specifically to:

(a) Keep and maintain public records required by the City to perform the contracted service.
(b) Upon request from the City Clerk, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes, or as otherwise provided by law.
(c) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the contractor does not transfer the records to the City.
(d) Upon completion of the contract transfer, at no cost to the City, all public records in possession of the contractor or keep and maintain public records required by the City to perform the service. If the contractor transfers all public records to the City upon completion of the contract, the contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the contractor keeps and maintains public records upon the completion of the contract, the contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City Clerk, in a format that is compatible with the information technology systems of the City.
(e) Failure of the Contractor to comply with Public Records Law as provided by Florida Statutes, Chapter 119, shall subject the Contractor to penalties under Chapter 119.10 and subject this Agreement to termination for cause by the City.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

CITY CLERK
22 SOUTH BEACH STREET
ORMOND BEACH, FLORIDA 32174 (386) 676-3331
CITYCLERK@ORMONDBEACH.ORG

Ref: Fla. Stat. §119.0701(2016)

II. VERIFICATION OF EMPLOYMENT STATUS USING E-VERIFY SYSTEM

1. Section 448.09, *Florida Statutes*, makes it unlawful for any person to knowingly employ, hire, recruit, or refer, either for herself or himself, or on behalf of another, for private or public employment within the state, an alien who is not duly authorized to work in the United States. Contractor warrants that it is registered with the U.S. Department of Homeland Security's E-Verify system, and is compliant with the requirements of Sections 448.09 and 448.095, *Florida Statutes*.
2. Contractor agrees that if the contractor enters into an agreement with a subcontractor, the subcontractor must provide the contractor with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, and contractor warrants it shall maintain any such affidavits for the duration of the contract. If the City has a good faith belief that a subcontractor knowingly violated Section 448.09 (1), the City shall promptly notify the contractor and order the contractor to immediately terminate the contract with the subcontractor.
3. In the event the City has a good faith belief that the contractor has knowingly violated Section 448.09 (1), *Florida Statutes*, the City shall terminate the contract, and as provided by statute, the contractor may not be awarded a public contract for at least one (1) year after the date of termination. The contractor may also be held liable for any additional costs incurred by the City as a result of the termination of the contract.

UPHAM INC
CIVIL ENGINEERING·SURVEYING·LANDSCAPE ARCHITECTURE

July 15, 2024

Mr. Alex Schumann, PE, Deputy City Engineer
Mr. Lane Carter, Project Manager
Engineering Division
City of Ormond Beach
22 South Beach Street
Ormond Beach, FL 32174

Re: Fee Agreement for Professional Surveying and Engineering Services
Sports Complex Stormwater Pond Expansion – 11.7± Acres

Mr. Schumann and Mr. Carter:

Upham, Inc. (ENGINEER) hereby provides its fee agreement for professional surveying and engineering services per its master services contract with the City of Ormond Beach (CITY) to perform the topographic surveying, preliminary design and final design and construction documents for the stormwater pond expansion and parking area for the maintenance building as illustrated on Exhibit C. The specific scope of services to be performed are as follows:

Topographic Survey: ENGINEER will perform a topographic survey within the approximate limits per Exhibit C to establish horizontal and vertical control in state plane coordinates and 1988 NAVD datum. Survey and locate the existing visible improvements for the pavement, curb, driveways, street lights, street signs, pine and hardwood trees 12-inches and greater at diameter breast height, power poles and visible utility features (storm structures, water valves and fire hydrants), storm structure inverts and pipe sizes, elevations at approximate 75-foot grid including any visible high or low points, edge of pavement / curb. Locate existing pond top of bank, toe of slope, water level elevations and drainage swales. All survey field work will be performed utilizing a combination of GPS receivers and robotic total station equipment. Survey horizontal and vertical reference points will be set throughout the route survey for construction staking purposes.

ENGINEER will prepare topographic survey drawing of surveyed information at a horizontal scale no greater than 1-inch equals 50 feet indicating all existing information, descriptions of features, ground elevations of hard and soft features, inverts, horizontal and vertical survey control. The survey drawing will be prepared in Autodesk AEC Suite 2022 or later DWG format in state plane coordinates.

CITY will be responsible to contact SUNSHINE 811 for the delineation of buried franchise utilities and the horizonal location of any of its utilities. Survey crew will locate the delineated utilities.

Preliminary Design Plan: ENGINEER will review the surveyed information and visit the site to better understand the existing conditions for purposes of the preliminary design plan with CITY representative. ENGINEER will perform aerial photographs of the project area with its sUAV to document the existing conditions and utilize for design purposes. ENGINEER will schedule and meet with CITY representative to discuss the limits of the pond expansion including any drainage improvements before determining the preliminary design plan.

Upon completion of the meeting, ENGINEER will develop the preliminary stormwater pond expansion plan to include the pond configuration, general grading, general location of drives and parking to maintenance buildings, storm pipe conveyances and preliminary probable cost estimate. The preliminary plan will be submitted to the CITY in Adobe digital file for review and comment. ENGINEER will incorporate CITY comments into the final design and construction drawings.

Final Design, Construction Documents and Specifications Manual: ENGINEER will develop the final design and construction drawings for the pond expansion, drainage swales, piping, earthwork grading and pavement surfaces. It is anticipated the set of construction drawings will consist of 14 sheets to include but not limited to the following sheets:

- Cover Sheet
- Quantities and Notes
- Erosion and Sediment Control Plan
- SWPPP Specifications
- Clearing and Grubbing Plan
- Overall Plan
- Grading and Drainage Plan
- Pond Section
- Pavement Grading Plan
- Notes and Details

The design will consider the existing site constraints, existing drainage features, existing facilities to remain, pond bottom design based on geotechnical report, potential utility conflicts and instructions from CITY representative.

ENGINEER will develop and provide the construction drawings at the 60% and 90% stage to the CITY for review and comment. An engineering probable cost estimate for the proposed improvements will be submitted with the 90% construction drawings stage. Review submittals will be provided in an Adobe digital file to the CITY for review and comment. ENGINEER will schedule and attend plan review meeting with CITY representative at the 60% and 90% review stages to discuss the design and construction documents and incorporate any review comments into the construction documents.

CITY will provide its standard specifications and front-end template in MSWord for ENGINEER to develop the project specification manual and applicable technical specifications and description of work for each work item and summary of payment items. The project specifications manual will be prepared in accordance with the City master format. CITY will provide the project bid number, bid advertisement date and bid due date for ENGINEER to incorporate into the construction documents. ENGINEER will prepare the project specification manual and provide and Adobe digital file at 90% stage to the CITY for review and comment.

ENGINEER will perform its final quality assurance / quality control review at the 100% stage of the preparation of the construction documents for consistency between the construction drawings and project specifications manual. Incorporate any final comments by the CITY representative. Upon completion of the construction documents, ENGINEER will provide the CITY the Adobe digital files of the construction documents for bidding purposes. The CITY will be responsible to advertise and bid the project.

The project will not be reviewed by the Site Plan Review Committee other than CITY Engineering or Public Works representatives. Because the pond is being expanded for stormwater retention purposes, a permit will not be submitted to St. Johns River Water Management District. ENGINEER will prepare the NPDES application for the CITY to execute for compliance with the Florida Department of Environmental Protection requirements for land disturbance.

Bidding Assistance: ENGINEER will provide assistance to CITY for bidding the project to include coordination with CITY for advertisement of project, attend prebid meeting, respond to RFIs, review bids received and tabulate bids to compare between bidders and make recommendation of award. Construction administration services are not included under this fee agreement. It is anticipated the project will be advertised to bid by the CITY in its 2025 FY budget.

The estimated time to complete the project and deliver the construction documents to the CITY will be seven months from authorization to proceed. ENGINEER's standard rates are indicated on Exhibit A. The matrix for the fee structure is itemized on Exhibit B for each task of professional services described as follows:

Topographic Survey	$19,760.00
Preliminary Design Plan	$10,560.00
Final Design, Construction Documents and Bid Specifications Manual	$28,160.00
Bidding Assistance	$4,400.00
Total Lump Sum Fee	$62,880.00

The work can commence within two weeks upon receipt of the Work Authorization. Monthly invoices will be submitted to the CITY with the description of services performed and percentage of completion in accordance with the master services contract.

Thank you for this opportunity.

Sincerely,

Roger W. Strcula, PE, CPESC
President

Encl: Exhibit A – Upham Standard Rates Schedule
Exhibit B – Itemized Staff Hours per Task
Exhibit C - Approximate Limits of Work

EXHIBIT "A"
UPHAM, INC. 2024 STANDARD RATES SCHEDULE

STANDARD HOURLY RATES FOR
ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE

Principal Engineer	$300.00/hr	Registered Landscape Architect	$140.00/hr
Expert Witness PE / PSM (4 Hour Minimum)	$400.00/hr	Inspector	$80.00/hr
Professional Engineer II	$230.00/hr	sUAV Remote Pilot	$95.00/hr
Project Manager / Professional Engineer I	$180.00/hr	Development Manager	$120.00/hr
Civil Engineer II	$140.00/hr	CAD Survey / Engineer Design Technician II	$114.00/hr
Civil Engineer I / Surveyor I	$120.00/hr	CAD Survey / Engineer Technician I	$84.00/hr
Professional Surveyor and Mapper	$150.00/hr	Clerical / Administrative	$60.00/hr
Survey Manager	$135.00/hr	Boundary Survey (Platted Subdivision)	$900 (min.)
Survey Crew (3 Man)	$240.00/hr	Affidavit	$300.00
Survey Crew (2 Man)	$190.00/hr	Elevation Certificate (Known BFE)	$900.00
Surveyor II / Survey Crew (1 Man)	$130.00/hr	Elevation Certificate (Determine BFE)	$1,500.00 (min.)

Size	Color Plot	Bond Plot	Vellum Plot	Mylar Plot	Bond Print
8½ x 11	$0.35	$0.25	$4.00	----	$0.25
8½ x 14	$0.35	$0.25	$4.00	----	$0.25
11 x 17	$0.75	$0.50	$7.00	$9.00	$0.35
12 x 18	$1.50	$1.25	$12.00	$14.00	$1.40
18 x 24	$1.75	$1.25	$14.00	$16.00	$1.75
24 x 36	$20.00	$13.00	$18.00	$24.00	$2.25
30 x 42	$26.25	$16.50	$23.00	$28.00	$3.50
34 x 44	$36.00	$22.00	$30.00	$36.00	$3.50
36 x 48	$37.00	$23.00	$31.00	$37.00	$4.50
36 x LF	$10.00/LF	$6.50/LF	$9.00/LF	$12.00/LF	$1.50/LF

MISCELLANEOUS

Mileage ..... IRS Rate
Postage ..... Actual Cost
Long Distance Phone ..... Actual Cost
Outside Print Reproduction ..... Actual Cost + 5%

Concrete Monuments ..... $40.00 each
Individual Survey Prints:
24 x 36 ..... $12.00 each
8 ½ x 11 or 11 x 17 ..... $5.00 each

Exhibit B
Itemized Staff Hours per Task

Topographic Survey		
2-Person Survey Crew	60 hr @ $190	$11,400.00
Professional Survey and Mapper	4 hr @ $150	$600.00
Survey Manager	16 hr @ $135	$2,160.00
Surveying CAD Technician II	48 hr @ $114	$5,472.00
Survey Supplies and Material		$128.00
Subtotal		$19,760.00
Preliminary Design		
Principal Engineer	4 hr @ $300	$1,200.00
Professional Engineer II	12 hr @ $230	$2,760.00
Civil Engineer I	16 hr @ $120	$1,920.00
Engineering CAD Designer Technician II	40 hr @ $114	$4,560.00
Engineering Supplies and Material		$120.00
Subtotal		$10,560.00
Final Design, Construction Drawings and Bid Specifications Manual		
Principal Engineer	20 hr @ $300	$6,000.00
Professional Engineer II	36 hr @ $230	$8,280.00
Civil Engineer I	40 hr @ $120	$4,800.00
Engineering CAD Designer Technician II	64 hr @ $114	$7,296.00
Administrative	24 hr @ $60	$1,440.00
Engineering Supplies and Material		$344.00
Subtotal		$28,160.00
Bidding Assistance		
Professional Engineer II	8 hr @ $230	$1,840.00
Civil Engineer I1	16 hr @ $120	$1,920.00
Engineering CAD Designer Technician II	5 hr @ $114	$570.00
Engineering Supplies and Material		$70.00
Subtotal		$4,400.00
Total Lump Sum Fee		$62,880.00

Exhibit C
Approximate Limits of Work



City of Ormond Beach
AGENDA ITEM

August 20, 2024 - City Commission

Number: 7.I

Section:	CONSENT AGENDA		
Item Category:	Consent - Resolution	**Res./Ord. No:**	2024-131
Strategic Goal:	Transportation & Community Development - Other		
Department:	Planning & Building		
Subject:	Interlocal Agreement with Volusia County, Transportation Impact Fees Collection		
Summary:	This is a request to enter into an interlocal agreement with Volusia County to maintain the existing method of the collection of Volusia County thoroughfare road impact fees. On June 25, 2024, Governor DeSantis signed House Bill 479, Alternative Mobility Funding Systems and Impact Fees. House Bill 479 requires: 1. The creation and execution of an interlocal agreement between a county and its cities, or 2. Establishment of a process for the city to collect the required County thoroughfare road impact fees and provide payment to the County. The purpose of the interlocal agreement is to allow Volusia County to collect required thoroughfare road impact fees as is currently done. The Ormond Beach Building Department requires a thoroughfare road impact fees payment receipt or written documentation from Volsua County stating that no thoroughfare road impact fees are required prior to issuing a Certificate of Completion or Occupancy. The interlocal agreement does not: 1. Create or modify the existing thoroughfare road impact fees of Volusia County, or 2. Create or modify the local road impact fee of Ormond Beach. The interlocal agreement is solely to allow Volusia County to collect thoroughfare road impact fees as allowed under House Bill 479.		

Financial Impact:	There is no financial impact. If approved, Volusia County would continue to collect thoroughfare road impact fees as is the current standard.
Citizen Impact:	No citizen impact is anticipated as a result of the proposed interlocal agreement. The interlocal agreement is needed based upon the adoption of House Bill 479.
Recommended Action (Staff, Advisory Board and/or Other):	Staff recommends approval of the interlocal agreement to allow Volusia County to collect thoroughfare road impact fees, as is the standards today, based upon the adoption of House Bill 479.
Staff Contact:	Steven Spraker, Planning Director, (386) 676-3341
Attachments:	1. 24-131 ILA with VC impact fees (P24-0136G) 2. Transportation Impact Fee ILA 2024.8.8CLEAN 3. HB 479-Ormond Beach-Shanahan
Approval:	Kelly McGuire, Finance Director 7/30/2024 Shawn Finley, Assistant City Manager 8/9/2024 Joyce Shanahan, City Manager 8/14/2024

RESOLUTION NO. 2024-131

A RESOLUTION AUTHORIZING AND DIRECTING THE EXECUTION OF AN INTERLOCAL AGREEMENT BETWEEN THE COUNTY OF VOLUSIA AND THE CITY OF ORMOND BEACH REGARDING TRANSPORTATION IMPACT COORDINATION; AND SETTING FORTH AN EFFECTIVE DATE.

WHEREAS, on June 25, 2024, Florida Governor Ron DeSantis signed House Bill 479, Alternative Mobility Funding Systems and Impact Fees, which requires: (1) the creation and execution of an interlocal agreement between a county and its cities coordinating the mitigation of transportation capacity impacts, or (2) establishment of a process for the city to collect the required county thoroughfare road impact fees and provide payment to the county, and

WHEREAS, the County of Volusia ("County") and City of Ormond Beach ("City") desire to enter into an Interlocal Agreement ("Agreement") in order to comply with House Bill 479 and secure local control over the transportation capacity impact fee collection process within the community (a copy of said Agreement is attached hereto and incorporated herein by reference), and

WHEREAS, the Agreement does not create or modify the existing thoroughfare road impact fees of Volusia County; does not create or modify the local road impact fees of the City of Ormond Beach; and is proposed solely to allow the County to continue the existing system of the collection and enforcement of thoroughfare road impact fees, as more particularly described in the attached Agreement, and

WHEREAS, the Florida Interlocal Cooperation Act of 1969, *Section 163.01, Florida Statutes,* authorizes any public agency of the State of Florida to exercise jointly with any other public agency, any power, privilege, or authority which said agencies share in common and which each may exercise separately, now therefore,

BE IT RESOLVED BY THE PEOPLE OF THE CITY OF ORMOND BEACH, FLORIDA, THAT:

SECTION ONE. The City Commission hereby authorizes and directs the Mayor, the City Manager, and the City Attorney, or their designees, to execute an Interlocal Agreement with the County of Volusia regarding the collection of thoroughfare road impact fees, as more particularly described in the attached Agreement.

SECTION TWO. This Resolution shall take effect immediately upon its adoption.

APPROVED AND AUTHENTICATED this 20th day of August, 2024.

_____
BILL PARTINGTON
Mayor

ATTEST:

_____
SUSAN CARROLL DAUDERIS
City Clerk

INTERLOCAL AGREEMENT

REGARDING TRANSPORTATION IMPACT COORDINATION

BETWEEN THE COUNTY OF VOLUSIA (“COUNTY”)

AND

CITY OF ORMOND BEACH (“CITY”)

THIS INTERLOCAL AGREEMENT REGARDING TRANSPORTATION IMPACT COORDINATION (hereinafter “Agreement”) is made and entered into this ___ day of _____, 2024, by and between the City of Ormond Beach, a municipal corporation (hereinafter referred to as the “City”) and the County of Volusia (hereinafter referred to as the “County”) (Individually, “Party” and collectively, “Parties.”).

WITNESSETH

WHEREAS Volusia County established a county-wide transportation thoroughfare road impact fee pursuant to its home rule authority, establishing common law regarding the creation and imposition of impact fees, and section 163.31801, Fla. Stat.; and

WHEREAS, the county-wide thoroughfare road system consists of all state roadways and any roadway that designated and shown on the Thoroughfare Road Map (Figure 2-1) contained in the Transportation Element of the Comprehensive Plan, connects municipalities and regions of the County and is an important component for the County and the Cities; and

WHEREAS, the County and Cities have coordinated on the imposition and collection of thoroughfare road impact fees; and

WHEREAS, currently Volusia County collects the thoroughfare road impact fees for developments in municipal areas that impact the County thoroughfare road system; and

WHEREAS, Section 70-75 (b) of the Code of Ordinances, County of Volusia, requires that no county or municipal certificate of occupancy, local business tax receipt, or use permit, or any activity requiring payment of an impact fee shall be issued unless and until the thoroughfare road impact fee (“impact fee”) has been paid;

WHEREAS, CS/HB 479 (2024) creates a new paragraph j in section 163.3180(5), Fla. Stat., that require the entity issuing the building permit to collect the impact fees; and

WHEREAS, new subparagraph 163.3180(5)(j)(4) provides that the new paragraph j does not apply to a county or municipality that has entered into an existing interlocal agreement as of October 1, 2024, to coordinate the mitigation of transportation impacts; and

WHEREAS, the purpose of this interlocal agreement is to continue the existing system of the collection and enforcement of county wide transportation impact fees as well as to not modify the existing system for transportation concurrency for County thoroughfare roads;

SECTION 1. The above recitals are hereby incorporated in this Agreement as adopted findings of fact and intent.

SECTION 2. IMPOSITION AND COLLECTION OF THOROUGHFARE ROAD IMPACT FEES

a. Pursuant to section 163.3180(5)(j)(4), Fla. Stat., the County thoroughfare road impact fees are imposed County wide, including in the incorporated areas of the City, as provided in Chapter 70, Article III, of the Code of Ordinances, County of Volusia.
b. Pursuant to section 70-76(a) of the Code of Ordinance, County of Volusia, the person applying for the issuance of a building permit shall make an application, verified by City staff, to the County for an impact fee statement. The County shall issue an impact fee statement to the applicant for a building permit. Such impact fee statement sets forth the amount of the impact fee due.
c. County shall provide the City with appropriate contact information for personnel who will administrate the collection of impact fees.
d. City and County agree that payment and collection of impact fees shall:

    [X] be in the same manner as provided in Section 70-76 of the Code of Ordinances, County of Volusia. Fee payers shall pay the thoroughfare road impact fees to the County of Volusia. Pursuant to Section 70-77 of the Code of Ordinances, County of Volusia, the County shall collect and retain the actual costs of administering the impact fee program, which is in addition to the impact fee; or

    [ ] be collected by the City, as the entity issuing building permits, prior to the issuance of a certificate of occupancy, or the occupancy of the building. The City retains their portion of the actual costs of administering the impact fee program, which is in addition to the impact fee. Thoroughfare Road Impact Fees collected by the City shall be transferred to the County every month on the 15th of each month together with documentation on that each building or structure has paid the required impact fee.

e. County shall use the collected Impact Fees in the same manner as provided in Sections 70-75, 70-76, and 70-77 of the Code of Ordinances, County of Volusia.

SECTION 3. NONPAYMENT OF IMPACT FEES

a. County and City agree that in the event of non-payment of impact fees by the fee payer the City shall not issue a certificate of occupancy or approve occupancy of the building for which impact fees are due.
b. If the fee payer has not paid the impact fees, the County may use the process provided in section 70-76 for collection of the impact fee.

SECTION 4. REFUND

a. Nothing in this agreement alters the right of a fee payer to request refunds pursuant to section 70-78 of the Code of Ordinances, County of Volusia.

SECTION 5. TRANSPORTATION CONCURRENCY AND PROPORTIONATE FAIR SHARE; IMPACT FEE CREDITS

a. Nothing in this agreement modifies, waives, or alters the method for transportation concurrency calculation or imposition or modifies the calculation, methodology, or imposition of proportionate share agreements pursuant to Chapter 70, Article I of the Code of Ordinances, County of Volusia or section 163.3180(5), Fla. Stat.
b. Impact fee credits generated from transportation concurrency contributions, from proportionate fair share agreements pursuant to Chapter 70, Article I and Section 163.3180(5), or from right-of-way and for completed and accepted non-site related improvements may be used pursuant to section 70-75 and 70-79, of the Code of Ordinances, County of Volusia.
c. Impact fee credits may be transferred pursuant to section 70-75(c)(3)(e) of the Code of Ordinances, County of Volusia.

SECTION 6. ADMINISTRATIVE REVIEW; INDEPENDENT CALCULATION

a. Nothing in this agreement modifies or prevents the right of any fee payer to administrative review or hearing of any decisions regarding impact fees under Section 70-81 and 70-82 of the Code of Ordinances, County of Volusia.
b. Nothing in this agreement modifies or prevents the right of any fee payer to determine their thoroughfare road impact by providing independent traffic documentation pursuant to the provisions of Section 70-75(c)(1) of the Code of Ordinances, County of Volusia.

SECTION 7. RIGHT-OF-WAY USE PERMITS; RIGHT-OF-WAY PERMITS. Nothing in this agreement modifies, waives, alters, or transfers County jurisdiction over the County Road System or City jurisdiction over the Municipal Road System or the ability to issue right-of-way permits or use permits for improvements to roads.

SECTION 8. TERM AND EFFECTIVE DATE. The Term of this Agreement shall commence on September 30, 2024 when filed with the Clerk of the Court for Volusia County Circuit Court, in accordance with Section 163.01(11), Fla. Stat., and shall continue until terminated by either party.

SECTION 9. TERMINATION. The City or County may terminate this Agreement at any time upon providing 90 days written notice of termination to the other Party.

SECTION 10. DISPUTE RESOLUTION.

a. The City and County agree to resolve any dispute related to the interpretation or performance of this Agreement in the manner described in this section. Either Party may initiate the dispute resolution process by providing written notice to the other

party. Initiation of the dispute resolution process shall operate as a state of the action which is the subject of the dispute.

b. Notwithstanding the foregoing, in the event that either party determines in its sole discretion and good faith that it is necessary to file a lawsuit or other formal challenge in order to meet a jurisdictional time deadline, to obtain a temporary injunction, or otherwise preserve a legal or equitable right related to this Agreement, such lawsuit or challenge may be filed, but upon filing any other act necessary to preserve the legal or equitable right or to obtain the temporary injunction, the Parties shall thereafter promptly file a joint motion with the reviewing court or administrative law judge requesting that the case be abated in order to afford the Parties an opportunity to pursue the dispute resolution procedures set forth herein. If the abatement is granted, the Parties shall revert to and pursue the dispute resolution procedures set forth herein.
c. Within ten (10) days of the abatement order, the allegedly aggrieved Party shall then effect the transmittal of a notice of conflict, in the from of a certified letter, to all governmental bodies involved in the dispute at issue. Upon receipt of the notice, which shall specify the areas of disagreement, the Parties agree to conduct a conflict assessment meeting at a reasonable time and place, as mutually agreed upon, within thirty (30) days of receipt of the notice of conflict.
d. If discussions between the Parties at the conflict resolution meeting fail to resolve the dispute, within forty (40) days of the receipt of the notice described in subparagraph “a”, above, the Parties shall conduct mediation in the presence of a neutral third party mediator. If the Parties are unable to agree upon a mediator, the County shall request appointment of a mediator by the Chief Judge of the Circuit Cour in and for Volusia County, Florida. The mediation contemplated by this section is intended to be an informal and non-adversarial process with the objective of helping the Parties reach a mutually acceptable and voluntary agreement. The decision-making shall rest solely with the Parties. The mediator shall assist the Parties in identifying issues fostering joint problem-solving and exploring settlement alternatives.
e. If the parties are unable to reach a mediated settlement, within fifty (50) days of receipt of the initial notice of conflict, the Parties shall hold a joint intergovernmental meeting. If the joint intergovernmental meeting does not successfully resolve the issues identified in the notice of conflict, the entities participating in the dispute resolution procedures described herein may avail themselves of any otherwise available rights, including the suspension of abatement of existing actions.
f. The Parties agree this dispute resolution procedure is intended to satisfy the requirements of Sections 163.01(5)(p) and Chapter 163, Fla. Stat., and the above referenced timelines may be extended by the written request of the parties.

SECTION 11. NOTICE. All notices, consents, approvals, waivers, and elections that either Party requests or gives under this Amended Agreement shall be in writing and shall be provided by certified mail, return receipt requested, or by hand delivery for which a receipt

is obtained. Notices shall be mailed or delivered to the addresses as set forth below or as either Party may otherwise designate in writing.

If to the County:	County of Volusia Attn: County Manager Copy to: County Attorney 123 West Indiana Avenue DeLand, Florida 32720
If to the City:	City of Ormond Beach Attn: City Manager Copy to: City Attorney 22 S. Beach Street Ormond Beach, FL 32174

SECTION 12. SOLE BENEFIT. This Agreement is solely for the benefit of the City and County, and no right or cause of action shall accrue upon or by reason hereof, to or for the benefit of any third party. Nothing in this Agreement, either expressed or implied, is intended or shall be construed to confer upon or give any person, corporation or governmental entity other than the Parties any right, remedy, or claim under or by reason of this Agreement or any provisions or conditions hereof, and all of the provisions, representations, covenants, and conditions herein contained shall inure to the sole benefit of and shall be binding upon the Parties and their respective representatives, successors, and assigns.

SECTION 13. AUTHORITY. The City and County each represent and warrant to the other its respective authority to enter into this Agreement and acknowledge the validity and enforceability of this Agreement. The City and County hereby represent, warrant, and covenant this Agreement constitutes a legal, valid, and binding contract enforceable by the Parties in accordance with its terms, and that the enforceability hereof is not subject to any impairment by the applicability of any public policy or police powers.

SECTION 14. ENFORCEMENT. This Agreement shall be enforceable by the Parties hereto by whatever remedies are available in law or equity, including but not limited to injunctive relief and specific performance. Failure to insist upon strict compliance with any of the terms, covenants, or conditions hereof shall not be deemed as a waiver (or continuing waiver) of such terms covenants, or conditions; nor shall any waiver or relinquishment of any right or power hereunder be deemed to be a wavier or relinquishment of such right or power at any other time.

SECTION 15. DEFENSE. If this Agreement or any portion hereof is challenged by any judicial, administrative, or appellate proceeding (each Party hereby agreeing with the other not to initiate or acquiesce to such challenge or not to appeal any decision invalidating any portion of this Agreement), the Parties collectively and individually agree,

at their individual sole cost and expense, to defend in good faith its validity through to a final judicial determination, unless both Parties mutually agree in writing not to defend such challenge or not to appeal any decision invalidating any portion of this Agreement.

SECTION 16. AMENDMENTS. Amendments to this Agreement may be offered by either Party at any time. Proposed amendments shall be in writing and must be approved by a majority of the governing bodies of each Party. No amendment shall be effective until approved by the governing bodies of the City and the County.

SECTION 17. NO WAIVER OF SOVEREIGN IMMUNITY. Both the City and County expressly retain all rights, benefits and immunities of sovereign immunity in accordance with Section 768.28, Fla. Stat. Notwithstanding anything set forth in any section of this Agreement to the contrary, nothing in this Agreement shall be deemed as a waiver of immunity or limits of liability beyond any statutory limited waiver of immunity or limits of liability which may have been or may be adopted by the Florida Legislature, and the cap on the amount and liability of the County or City for damages, regardless of the number or nature of claims in tort, equity, or contract, shall not exceed the dollar amount set by the legislature for tort. Nothing in this Agreement shall inure to the benefit of any third party for the purpose of allowing any claim against the City or County, which would otherwise be barred under the doctrine of sovereign immunity or by operation of law.

IN WITNESS WHEREOF, each of the undersigned has executed this Agreement on behalf of the respective party set forth below, pursuant to the authority granted to each of the undersigned in the resolution by which each party approved and adopted this Agreement.

ATTEST:

George Recktenwald
County Manager

COUNTY OF VOLUSIA

Jeffrey S. Brower
County Chair

Approved by:

County Attorney's Office

ATTEST:

Joyce A. Shanahan
City Manager

CITY OF ORMOND BEACH

Bill Partington
Mayor

Approved by:

City Attorney's Office

July 15, 2024

Ms. Joyce Shanahan
City Manager
Ormond Beach, Florida
22 South Beach Street
Ormond Beach, FL 32174

George Recktenwald
County Manager
Volusia County, Florida
123 W. Indiana Ave., DeLand, Florida 32720

RE: House Bill 479 - Alternative Mobility Funding Systems

Ms. Joyce Shanahan,

Governor DeSantis signed House Bill 479, Alternative Mobility Funding Systems and Impact Fees, on June 25. The new law takes effect on October 1. 2024. The bill provides that if a county and/or a municipality charge developers of a new development or redevelopment a fee for transportation capacity impacts, the county and/or municipality must, by October 1, 2025:

(1) Create and execute an interlocal agreement to coordinate the mitigation of transportation capacity impacts
(2) Establish a process to collect and distribute the collected revenue

The bill does not eliminate county transportation impact fees; however, it does encourage coordination between counties and municipalities regarding transportation impacts. If there is no interlocal agreement, the developer receives a ten percent reduction in the impact fees and proportionate fare share agreements. In addition, the entity that issues the building permit must collect the transportation impact fees and distribute the proceeds to the relevant county or municipality within 60 days of payment receipt. The above requirements do not apply to counties or municipalities that enter into an interlocal agreement by October 1, 2024.

Volusia County's thoroughfare road impact fees are only based on County roads and State arterial roads within an impact fee zone. Transportation concurrency contributions and proportionate fair share agreements for developments within municipalities still generate thoroughfare road impact fee credits for qualifying contributions. The attached interlocal agreement secures the status quo existing system that exists between Volusia County and most of the municipalities regarding the calculation and collection of county-wide thoroughfare road impact fees. It also confirms that the preferred option for developers to pay impact fees is directly to the County, rather than being collected by a municipality and remitted to the County.

We strongly encourage each municipality to consider adopting the interlocal agreement in order to comply with House Bill 479 and secure local control over the transportation capacity impact fee collection process within our community. Please feel free to contact me at 386.736.5920 or grecktenwald@volusia.org if you have any questions.

Thank you,

George Recktenwald
County Manager
Volusia County, Florida

cc: Mr. Randy Hayes, Ms. Ann-Margret Emery, and Mr. J. Scott McKee

City of Ormond Beach
AGENDA ITEM

August 20, 2024 - City Commission

Number: 7.J

Section:	CONSENT AGENDA		
Item Category:	Consent - Resolution	**Res./Ord. No:**	2024-132
Strategic Goal:	Governance - Other		
Department:	Information Technology		
Subject:	RFP Award - Telecommunication System Upgrade and Improvements		
Summary:	The City currently utilizes an AT&T Central Exchange, Centrex, (AT&T) system installed over 30 years ago; the last major upgrade was the addition of voicemail 23 years ago. The system has since been discontinued and is dependent on equipment no longer manufactured. As this system has reached the end of its technological lifespan, limited technical support is available from AT&T. As a result of damage caused by Hurricane Ian, the Public Works facility suffered a major service interruption of the phone system that lasted nearly 3 months, during which phone calls were required to be rerouted. Similar challenges affected the phone system serving Finance and Utility Billing, where the ability to accept payments over the phone was impacted for 26 days, requiring all payments to be made in person or online. The prolonged delays in making repairs were directly attributed to the difficulty in procuring necessary parts and trained technicians to repair the outdated system. On September 20, 2023, staff solicited proposals for the replacement and upgrade of the Telecommunication System, network and Wi-Fi communication. Focused on implementation of an effective integrated system that is fully expandable. The proposal includes the removal of the antiquated phone system and installation of a new system at every City facility. The improved technology will dramatically enhance the phones, network and Wi-Fi communication capabilities. The City received 5 proposals in which the committee selected the top 2 vendors to present and demo their product. After the presentation and demo, the committee selected Empire/Fortinet Solution as the best fit based on the following considerations: • Existing knowledge of your environment		

	• Empire's proximity to the City • The Fortinet System's included scalability to 2000 extensions • Lower Total Cost of Ownership (3 year) price point $1.58M vs $2.65M. • Fortinet is easier and less expensive to maintain post installation • Fortinet was originally developed from the ground up with Cybersecurity in mind. Fortinet has extended this fabric across their product line, including their voice UC platform.
Financial Impact:	This project is included in the FY 2023-2024 budget in Fund 301 - Capital Improvement Fund and will be financed. A Request for Proposal for the financing has been issued and is presented to the City Commission for award as a separate item o this agenda.
Citizen Impact:	A reliable and consistently operating phone system is required for reliable citizen interactions in the City.
Recommended Action (Staff, Advisory Board and/or Other):	Staff recommends approval of Empire Computing proposal RFP 2024-07 $1,585,301.04 for the replacement of the telephone, network and Wi-Fi equipment as a City-wide solution.
Staff Contact:	Chuck Osteen, Information Technology Manager, (386) 615-7031
Attachments:	1. 24- 132 Telecommunications Upgrade-Empire (P24-0105G) 2. Empire Agreement w-exhibits 3. City of Ormond Beach UC Recommendation Final Draft 4. RFP 2024-07 Telecommunication System Upgrades and Improvements (9) 5. City of Ormond Beach Voice RFP_ 6. R2 RFP 2024-07 Reviewer Score Sheet 7. RFP 2024-07 final Empire-R2 evaluation
Approval:	Kelly McGuire, Finance Director 8/14/2024 Shawn Finley, Assistant City Manager 8/14/2024 Joyce Shanahan, City Manager 8/14/2024

REDACTIONS DUE TO 119.0725

RESOLUTION NO. 2024-132

A RESOLUTION ACCEPTING THE PROPOSAL OF EMPIRE COMPUTING AND CONSULTING, INC. REGARDING THE TELECOMMUNICATION SYSTEM UPGRADES & IMPROVEMENTS PROJECT; AUTHORIZING THE EXECUTION OF AN AGREEMENT AND PAYMENT THEREFOR; REJECTING ALL OTHER PROPOSALS; AND SETTING FORTH AN EFFECTIVE DATE.

WHEREAS, the City solicited proposals for telecommunication system upgrades and improvements (the Project) (City RFP No. 2024-07), in accordance with Section 2-300, *Code of Ordinances*, and

WHEREAS, the City's evaluation committee reviewed the five (5) proposals received and determined that the proposal submitted by Empire Computing and Consulting, Inc. to provide telecommunication system upgrades and improvements in the amount of $1,585,301.04 is the lowest responsible and responsive proposal (a copy of said proposal being attached hereto and incorporated herein by reference), and

WHEREAS, the City Manager has certified that funds in the amount of $1,585,301.04 will be made available through financing and will be appropriated to the Capital Improvement Fund (301) and will not be appropriated for any other purpose, and

WHEREAS, based on the foregoing the City's professional staff recommends that the City Commission accept the proposal of Empire Computing and Consulting, Inc. and execute an Agreement for the Project (a copy of said Agreement being attached hereto and incorporated herein by reference), now therefore,

BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF ORMOND BEACH, FLORIDA, THAT:

SECTION ONE. The proposal of Empire Computing and Consulting, Inc. to provide telecommunication system upgrades and improvements for the City is hereby accepted.

SECTION TWO. All other proposals relative to the aforedescribed Project shall be deemed rejected upon the execution of an agreement with Empire Computing and Consulting, Inc.

SECTION THREE The Mayor and the City Manager are hereby authorized and directed to execute an Agreement between the City and Empire Computing and Consulting, Inc. for the Project and to pay the cost thereof from the General Capital Improvement Fund.

SECTION FOUR. This Resolution shall take effect immediately upon its adoption.

APPROVED AND AUTHENTICATED this 20th day of August, 2024.

Bill Partington

BILL PARTINGTON
Mayor

ATTEST:

SUSAN CARROLL DAUDERIS
City Clerk

Purchase and Implementation Contract
RFP2024-07

This Professional Services Agreement award for the City of Ormond Beach RFP 2024-07 is made and entered into by and between City of Ormond Beach, ("City"), of 22 S. Beach Street, Ormond Beach, Florida 32174, and Empire Computing & Consulting, ("Empire/Contractor") of 120 N. Frederick Avenue, Daytona Beach, Florida 32114.

Whereas the City will be the owner of Fortinet voice and network infrastructure hardware as specified in Attachment A (signed infrastructure design sheets) for which City desires Empire to perform certain Services (procure and implementation of Attachment A); and

Whereas Empire desires to perform such Services on the terms and conditions set forth in this Agreement; and

Now, therefore, in consideration of the mutual promises set forth herein, the parties agree as follows:

DEFINITIONS. For purposes of this Agreement, the following definitions shall apply:

(a) Equipment and Design comprises the "Fortinet Voice and Infrastructure" which shall mean the network hardware, identified by model and serial numbers, and the computer software and pricing listed on Attachment A attached hereto and made a part hereof.

(b) "Services" shall mean the implementation, installation, deployment, training, integration ongoing assistance and future servicing of Fortinet Voice and Infrastructure hardware in accordance with the Completion Timeline attached hereto as Attachment B, and as specifically defined in Description of Services.

DESCRIPTION OF SERVICES. Empire will provide to City of Ormond Beach the following services (collectively, the "Services"):

(a) During the term hereof, Empire shall perform Services**,** which shall be subject to City's written acceptance, and shall be performed by Empire's employees, acceptable to the City, who are skilled in the Operation and Maintenance of the Fortinet system.

(b) The Services and, whenever possible, the remedial maintenance portions of the Services shall be performed during the times that the City's network is not scheduled for Operation. To the extent any Maintenance is required to be performed during the times that the City's network is scheduled for Operation, Empire shall provide oral and written notification to the IT team of the City and will work closely with the IT team to determine best efforts to reduce disruption of Operation.

(c) During the term hereof City shall provide Empire with sufficient work-space to perform Services.

PAYMENT. Payment shall be made to Empire Computing & Consulting, Inc., 120 N. Frederick Avenue, Daytona Beach, Florida 32114.

City agrees to pay Empire as follows:
City agrees to make payment to Empire for all hardware (Fortinet, UPS's, Servers, etc.) within five (5) business days of delivery to City and signed receipt by City as received. Implementation (non-

hardware) to be made in equal payments of $116,272.28 at 30%, 60% and 90% complete as shown by milestones on Attachment B Time and the remaining contract fee of $38,757.42 at completion of employee training as detailed in Attachment B, Project punch list and City sign-off of project completion.

Empire understands the City's payment terms to be five (5) business days upon receipt of approved invoice and can be made with ACH payments as is standard payment practice in place currently between the two parties.

In addition to any other right or remedy provided by law, if City fails to pay for the Services when due, Empire has the option to treat such failure to pay as a material breach of this Agreement, and may cancel this Agreement and/or seek legal remedies.

TERM. This Agreement will become effective on the date it is fully executed by the parties. It will remain in effect for the duration of the project, estimated to be completed October 31, 2025, and will terminate automatically upon completion by Empire of the Services and warranties required by this Agreement.

TERMINATION. Either party may terminate this Agreement with thirty (30) days written notice to the other.

In the event of any termination/cancellation of this Agreement, Empire may:

(a) Declare all amounts owed to it on products and services already completed to be immediately due and payable;

(b) Enter City's premises and repossess all supplies, spare parts and other items supplied Empire hereunder for which payment has not been received by Empire; and

(c) Cease performance of all Services hereunder without liability to City.

CONFIDENTIALITY. Empire, and its employees, agents, or representatives will not at any time or in any manner, either directly or indirectly, use for the personal benefit of Empire, or divulge, disclose, or communicate in any manner, any information that is proprietary to City. Empire and its employees, agents, and representatives will protect such information and treat it as strictly confidential. This provision will continue to be effective after the termination of this Agreement.

WARRANTY. Empire shall provide its services and meet its obligations under this Agreement in a timely and workmanlike manner, using knowledge and recommendations for performing the services which meet generally acceptable standards in Empire's community and region, and will provide a standard of care equal to, or superior to, care used by service providers similar to Empire on similar projects.

Empire warrants that the Services, including equipment and installation, shall be of good quality and workmanship and in accordance with acceptable procedures for the Fortinet System, and that the Fortinet hardware will meet the specifications therefor. All Fortinet servicing includes one year Fortinet Premium Support as defined in Empire's proposal and in the FortiCare Technical Support and RMA Services attached hereto as Attachment A incorporated herein by reference. All hardware purchased by City shall have a one (1) year warranty as provided in the Fortinent Warranty Terms attached hereto as Attachment A incorporated herein by reference. Fortinet will offer a ninety (90) day LAG extension (LAG is an internal term that permits a special circumstances extension to allow

for installation or other delays a customer may experience) of the warranty period(s) to begin at receipt of Fortinet hardware by City. The warranty period(s) will begin once the equipment is plugged in and connected to the network. All warranties will commence when equipment is fully operational.

DEFAULT. The occurrence of any of the following shall constitute a material default under this Agreement:

(a) The failure to make a required payment when due.

(b) The insolvency or bankruptcy of either party.

(c) The subjection of any of either party's property to any levy, seizure, general assignment for the benefit of creditors, application or sale for or by any creditor or government agency.

(d) The failure to make available or deliver the Services in the time and manner provided for in this Agreement.

REMEDIES. In addition to any and all other rights a party may have available according to law, if a party defaults by failing to substantially perform any provision, term or condition of this Agreement (including without limitation the failure to make a monetary payment when due), the other party may terminate the Agreement by providing written notice to the defaulting party. This notice shall describe with sufficient detail the nature of the default. The party receiving such notice shall have 30 days from the effective date of such notice to cure the default(s). Unless waived by a party providing notice, the failure to cure the default(s) within such time-period shall result in the automatic termination of this Agreement.

FORCE MAJEURE. If performance of this Agreement or any obligation under this Agreement is prevented, restricted, or interfered with by causes beyond either party's reasonable control ("Force Majeure"), and if the party unable to carry out its obligations gives the other party prompt written notice of such event, then the obligations of the party invoking this provision shall be suspended to the extent necessary by such event. The term Force Majeure shall include, without limitation, acts of God, plague, epidemic, pandemic, outbreaks of infectious disease or any other public health crisis, including quarantine or other employee restrictions, fire, explosion, vandalism, storm or other similar occurrence, orders or acts of military or civil authority, or by national emergencies, insurrections, riots, or wars, or strikes, lock-outs, work stoppages, or supplier failures. The excused party shall use reasonable efforts under the circumstances to avoid or remove such causes of non-performance and shall proceed to perform with reasonable dispatch whenever such causes are removed or ceased. An act or omission shall be deemed within the reasonable control of a party if committed, omitted, or caused by such party, or its employees, officers, agents, or affiliates.

GOVERNING LAW AND VENUE. The terms and conditions of this Agreement shall be construed and enforced under the laws of the State of Florida. Any action or proceeding, either at law or in equity, regarding this Agreement shall be brought in the circuit court, Seventh Judicial Circuit in and for Volusia County, Florida. Venue in any other jurisdiction or forum, whether it be any other circuit, state or federal venue, is hereby expressly waived.

ENTIRE AGREEMENT. This Agreement contains the entire agreement of the parties, and there are no other promises or conditions in any other agreement whether oral or written concerning the subject matter of this Agreement. This Agreement supersedes any prior written or oral agreements between the parties.

SEVERABILITY. If any provision of this Agreement will be held to be invalid or unenforceable for any reason, the remaining provisions will continue to be valid and enforceable. If a court finds that any provision of this Agreement is invalid or unenforceable, but that by limiting such provision it would become valid and enforceable, then such provision will be deemed to be written, construed, and enforced as so limited.

AMENDMENT. This Agreement may only be modified or amended in writing, if the writing is signed by the party obligated under the amendment.

NOTICE. Any notice or communication required or permitted under this Agreement shall be sufficiently given if delivered in person or by certified mail, return receipt requested, to the address set forth in the opening paragraph or to such other address as one party may have furnished to the other in writing.

WAIVER OF CONTRACTUAL RIGHT. The failure of either party to enforce any provision of this Agreement shall not be construed as a waiver or limitation of that party's right to subsequently enforce and compel strict compliance with every provision of this Agreement.

ASSIGNMENT. Empire shall not assign, convey or transfer all or any part of this Agreement, or all or any part of Empire's interest herein, or all or any part of any interest in Empire, without the prior written consent of the City, which consent shall not be unreasonably withheld.

SOVEREIGN IMMUNITY. The City expressly retains and reserves all rights, privileges, immunities, and benefits of sovereign immunity. This provision shall be construed broadly in favor of the City.

CONFLICTING PROVISIONS. In the event of any conflict between the provisions of this Agreement and any exhibits, the provision most favorable to the City shall control and shall be given full force and effect.

INDEMNIFICATION. The City, its agents, employees, and officials, both elected and appointed, shall be indemnified and held harmless by Empire from any and all liabilities, claims, and causes of action which may arise out of the willful, negligent, or unlawful acts or omissions of the Empire or its subcontractors in the performance of this Agreement, unless such claims are a result of the City's sole negligence, as determined by the final decision maker of such claim.

DUTY TO DEFEND. Empire shall defend all suits and administrative actions, including all appellate proceedings, brought against the City, its agents, employees, and officials, both elected and appointed and shall pay all attorneys' fees and costs associated with the City's legal defense, as may be selected by the City, arising from all claims and causes of action described in "Indemnification" above. Such payment on behalf of the City shall be in addition to any and all other legal or equitable remedies available to the City and shall not be considered to be the City's exclusive remedy.

INSURANCE. Empire shall purchase and maintain for the entire life of this Agreement, including any and all approved time extensions, until its final acceptance by the City, such insurance as will protect Empire from claims under Workers' Compensation, disability benefit laws or other similar employee benefit laws; from claims for damages because of bodily injury, occupational sickness or

disease, or death of Empire's employees; from claims insured by usual or unusual injury liability coverage; from claims or injury to or destruction of tangible property and from claims insured by usual Commercial General Liability coverage. This includes loss of use resulting therefrom, any or all of which may arise out of the Empire's operations under this Agreement, whether such operations be by Empire, or by any Subcontractor, or by anyone directly or indirectly employed by any of them or for whose acts any of them may be legally liable. Empire's deductibles/self-insured retentions shall be disclosed to the City and may be disapproved by the City, and may be reduced or eliminated at the sole discretion of the City. Empire is responsible for the amount of any deductible or self-insured retention.

TYPES OF INSURANCE AND LIMITS OF LIABILITY. The insurance required herein shall be written for not less than the limits of liability specified herein or as required by law, whichever is greater, and shall include the following:

(a) Workers' Compensation Insurance in statutory limits for the State of Florida with Coverage B - Employer's Liability limits of not less than:

$100,000 Each Accident Bodily Injury by Accident
$100,000 Each Employee Bodily Injury by Disease
$500,000 Policy Limit Bodily Injury by Disease

Certificate of Exemptions. If the contractor has a State-issued Certificate of Exemption, the contractor may provide a copy in place of the requirement for coverage. However, if the contractor subcontracts or retains any other person or entity to perform under the contract, that person or entity must provide proof of workers' compensation insurance as required by law or provide a Certificate of Exemption.

It is the intent of the City that any individual who either contracts directly with the city or performs any work on behalf of any such contractor be covered by workers' compensation insurance or have a valid exemption from said coverage.

(If applicable to the Project, the policy must include benefits under the United States Longshoremen's and Harbor Workers' Act and the Jones Act coverage--all maritime coverage.)

(b) Commercial General Liability Insurance shall be written on a coverage form as broad as Insurance Services Office (ISO) Form CG 00 01 11 85, or its successor form, including but not limited to the following coverage (any deviation shall be noted on the Certificates of Insurance):

a. Premises, Operations, Products and Completed Operations
b. Owners' & Contractors' Protective
c. Products & Completed Operation
d. Explosion, Collapse & Underground Conditions
e. Blanket Contractual Liability
f. Personal Injury Liability
g. Broad Form Property Damage Endorsement, including Completed Operations

h. Independent Contractors
i. Watercraft--Owned and Non-Owned (if applicable, endorsement must be included in General Liability policy or a separate Protection & Indemnity Policy must be written)
j. Pollution Liability (if applicable)
k. Asbestos Abatement (if applicable)
l. Fire Damage Liability

Certain coverage outlined above may not be required if they do not relate to the Project, as may be determined at the sole discretion of the City.

Commercial General Liability Coverage shall be written on an occurrence basis and the limits shall be no less and not limited to the following amounts:

Limits (not less than)

$1 Million Each Occurrence
$2 Million General Aggregate
$1 Million Aggregate Products & Completed Operations

NOTE: Commercial General Liability Coverage must be purchased on either a project basis (separate policy per contract) or an endorsement allocating an aggregate limit per location or specified project.

(c) Automobile Liability Insurance is required if an Automobile(s) is used in the performance of the contract.

ISO Symbol 1 (Any Auto), or alternatively a combination of Symbol 2 (Owned Autos), Symbol 8 (Hired Autos), and Symbol 9 (Non-Owned Autos), and limits shall be no less than:

$1 Million	Combined Single Limit for Bodily Injury and Property Damage

(d) Excess Liability

For contracts $250,000 or greater an Excess Liability Policy of at least but not limited to $1,000,000 in addition to the scheduled underlying policies for Commercial General Liability, Automobile Liability and Employers' Liability, the Contractor shall also provide an Excess Liability Policy with a maximum self-insured retention not to exceed $25,0000 per occurrence.

(e) Builder's Risk **Not Applicable**

Contractor shall purchase Builder's Risk Insurance for any contracts that are deemed to be vertical construction on an All-Risk policy, and shall also include coverage for wind, hail, and named storm. Limits of coverage shall be at least and not limited to the value of

the project.

(f) Professional Liability, Malpractice and/or Errors and Omissions **Not Applicable**

The Contractor shall purchase and maintain professional liability, malpractice, or errors or omissions insurance with minimum limits of $1,000,000 per occurrence. If a claims made form of coverage is provided, the retroactive date of coverage shall be no later than the inception date of claims made coverage, unless the prior policy was extended indefinitely to cover prior acts. Coverage shall be extended beyond the policy year either by a supplemental extended reporting period (ERP) of as great a duration as is available, and with no less coverage and with reinstated aggregate limits, or by requiring that any new policy provides a retroactive date no later than the inception date of claims made coverage.

ENFORCEMENT OF COSTS. If any legal action or other proceeding is brought for the enforcement of this Agreement, or because of an alleged dispute, breach, default, or misrepresentation in connection with any provision of this Agreement, the successful or prevailing party or parties shall be entitled to recover reasonable attorneys' fees, court costs, and all expenses even if not taxable court costs (including, without limitation, all such fees, costs and expenses incident to arbitration, appellate, bankruptcy, and post-judgment proceedings), incurred in that action or proceeding or any appeal, in addition to any other relief to which the party or parties may be entitled. Attorneys' fees include legal assistant fees, expert witness fees, investigative fees, administrative costs, and all other charges billed by the attorney for the prevailing party.

COMPLIANCE WITH LAWS. Empire shall comply with all applicable federal, state and local laws and regulations.

COMPLIANCE WITH FLORIDA PUBLIC RECORDS LAW. Empire expressly agrees that it shall comply with the public records law provided in Florida Statutes, Chapter 119, and specifically to:

(a) Keep and maintain public records required by the City to perform the contracted service.
(b) Upon request from the City Clerk, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes, or as otherwise provided by law.
(c) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if Empire does not transfer the records to the City.
(d) Upon completion of the contract, transfer at no cost, to the City all public records in possession of Empire or keep and maintain public records required by the City to perform the service. If Empire transfers all public records to the City upon completion of the contract, Empire shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If Empire keeps and maintains public records upon the completion of the contract, Empire shall meet all

applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City Clerk, in a format that is compatible with the information technology systems of the City.
(e) Failure of Empire to comply with Public Records Law as provided by Florida Statutes, Chapter 119, shall subject Empire to penalties under Chapter 119.10 and subject this Agreement to termination for cause by the City.

IF EMPIRE HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO EMPIRE'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

CITY CLERK
22 SOUTH BEACH STREET
ORMOND BEACH, FLORIDA 32175. (386)677-0311
CITYCLERK@ORMONDBEACH.ORG

Ref: Fla. Stat. §119.0701(2016)

LIMITATION OF REMEDY AND LIABILITY. Empire and City expressly waive any claim for consequential damages against the other including but not limited to, a waiver of claims for diminished bonding capacity, loss of financing, loss of business reputation, lost profits on other projects or other lost opportunity damage claims.

Empire expressly agrees that any claim (tort, contract, claim in equity, or otherwise) by Empire for damages against City shall not exceed the total amount of the contract price, less any amounts actually paid to the Empire by City.

WAIVER OF RIGHT TO JURY TRIAL. THE PARTIES HEREBY KNOWINGLY, VOLUNTARILY AND INTENTIONALLY WAIVE ANY RIGHT WHICH ANY PARTY MAY HAVE TO TRIAL BY JURY IN RESPECT OF ANY PROCEEDING, LITIGATION OR COUNTERCLAIM BASED ON, OR ARISING OUT OF, UNDER OR IN CONNECTION WITH THIS AGREEMENT OR ANY COURSE OF CONDUCT, COURSE OF DEALING, STATEMENTS (WHETHER VERBAL OR WRITTEN) OR ACTIONS OF ANY PARTY. IF THE SUBJECT MATTER OF ANY LAWSUIT IS ONE IN WHICH THE WAIVER OF JURY TRIAL IS PROHIBITED, NO PARTY TO THIS AGREEMENT SHALL PRESENT AS A NON-COMPULSORY COUNTERCLAIM IN ANY SUCH LAWSUIT ANY CLAIM BASED ON, OR ARISING OUT OF, UNDER OR IN CONNECTION WITH THIS AGREEMENT. FURTHERMORE, NO PARTY TO THIS AGREEMENT SHALL SEEK TO CONSOLIDATE ANY SUCH ACTION IN WHICH A JURY TRIAL CANNOT BE WAIVED.

VERIFICATION OF EMPLOYMENT STATUS USING E-VERIFY SYSTEM

(a) Section 448.09, *Florida Statutes*, makes it unlawful for any person to knowingly employ, hire, recruit, or refer, either for herself or himself, or on behalf of another, for private or

public employment within the state, an alien who is not duly authorized to work in the United States. Empire warrants that it is registered with the U.S. Department of Homeland Security's E-Verify system, and is compliant with the requirements of Sections 448.09 and 448.095, *Florida Statutes*.

(b) Empire agrees that if Empire enters into an agreement with a subcontractor, the subcontractor must provide Empire with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, and Empire warrants it shall maintain any such affidavits for the duration of the contract. If the City has a good faith belief that a subcontractor knowingly violated Section 448.09 (1), the City shall promptly notify Empire and order Empire to immediately terminate the contract with the subcontractor.

(c) In the event the City has a good faith belief that Empire has knowingly violated Section 448.09 (1), *Florida Statutes*, the City shall terminate the contract, and as provided by statute, Empire may not be awarded a public contract for at least one (1) year after the date of termination. Empire may also be held liable for any additional costs incurred by the City as a result of the termination of the contract.

NO CONFLICT OF INTEREST. Empire warrants and agrees that neither it, nor any of its employees, agents, officers, directors, shareholders and independent contractors are, or will become, under contract with or accept compensation from any individual, business, corporation or governmental entity that has the possibility of an adverse interest to those of the City. Empire and its officers, directors, shareholders, employers, agents and subcontractors, agree not to provide any services or assistance to any entity directly or indirectly relating to the services provided to the City and to immediately notify the City Manager and City Attorney of any contact with any entity that has, or potentially has, a conflict of interest with the City. This provision shall be interpreted as broadly as possible to prevent any potential or actual conflict of interest presently or in the future by Empire.

EFFECTIVE DATE. This Agreement shall become effective upon the date last signed by the parties hereto.

IN WITNESS WHEREOF, the undersigned parties have caused this Agreement to be signed on the dates indicated hereinbelow.

DATED this 28 day of August, 2024.

Witnesses:

Print Name: Taylor Cochert

Print Name: Ashley Clements

CITY OF ORMOND BEACH

By: Bill Partington
BILL PARTINGTON
Mayor

By: Joyce Shanahan
JOYCE SHANAHAN
City Manager

DATED this 15th day of August, 2024.

Witnesses:

Print Name: Brandon Myers

Print Name: Michael Ford

EMPIRE COMPUTING & CONSULTING, INC.

By:

Print Name: DAVID CAMPOS JR

Title: President/CEO

Attest: Gloria Burke

Print Name: Gloria Burke

Title: Director, NBD

ATTACHMENT "A"

Project Costs Summary

Pricing Detail

Configuration Diagrams

Fortinent Warranty Terms

FortiCare Technical Support and RMA Services

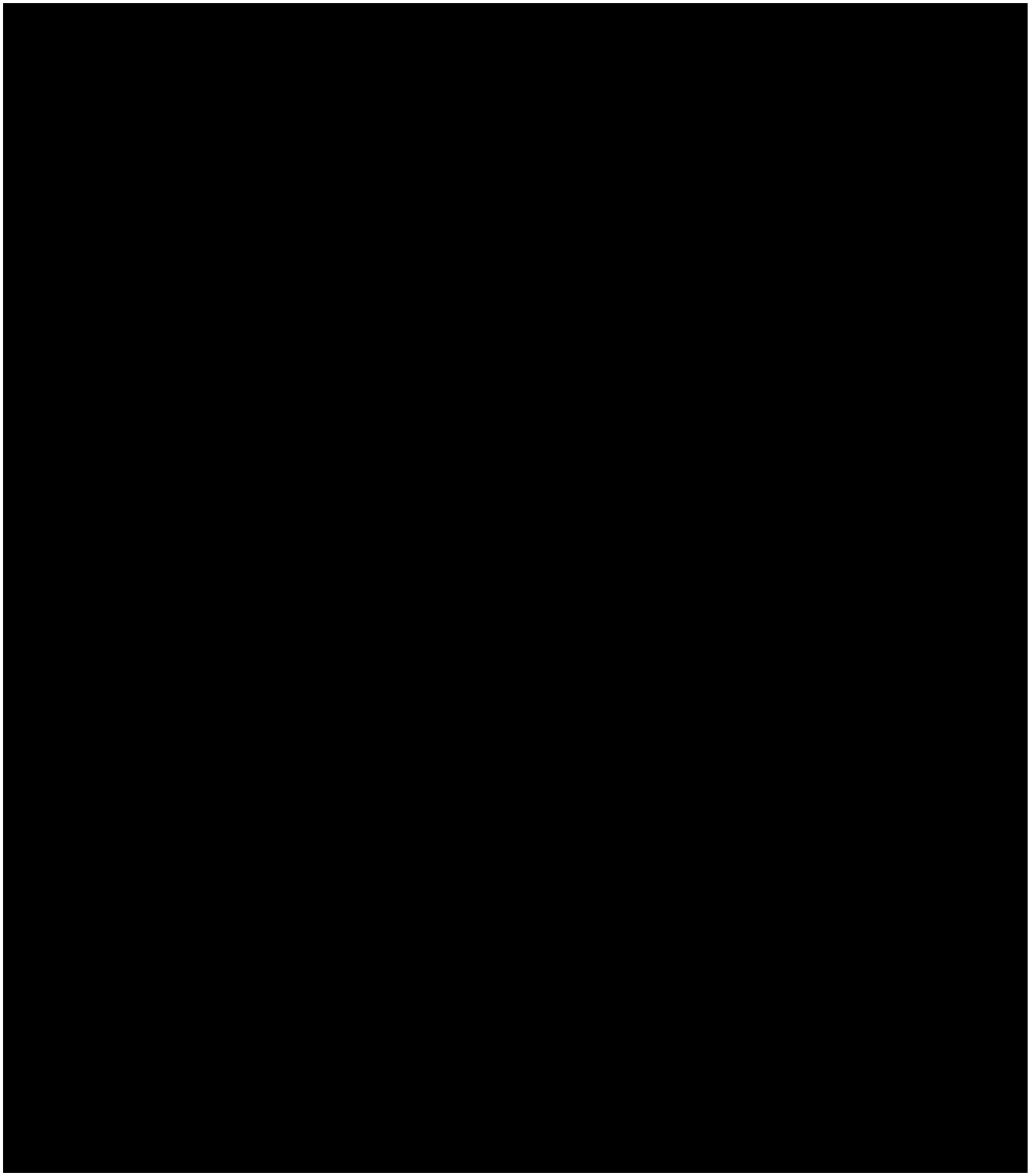
Attachment A

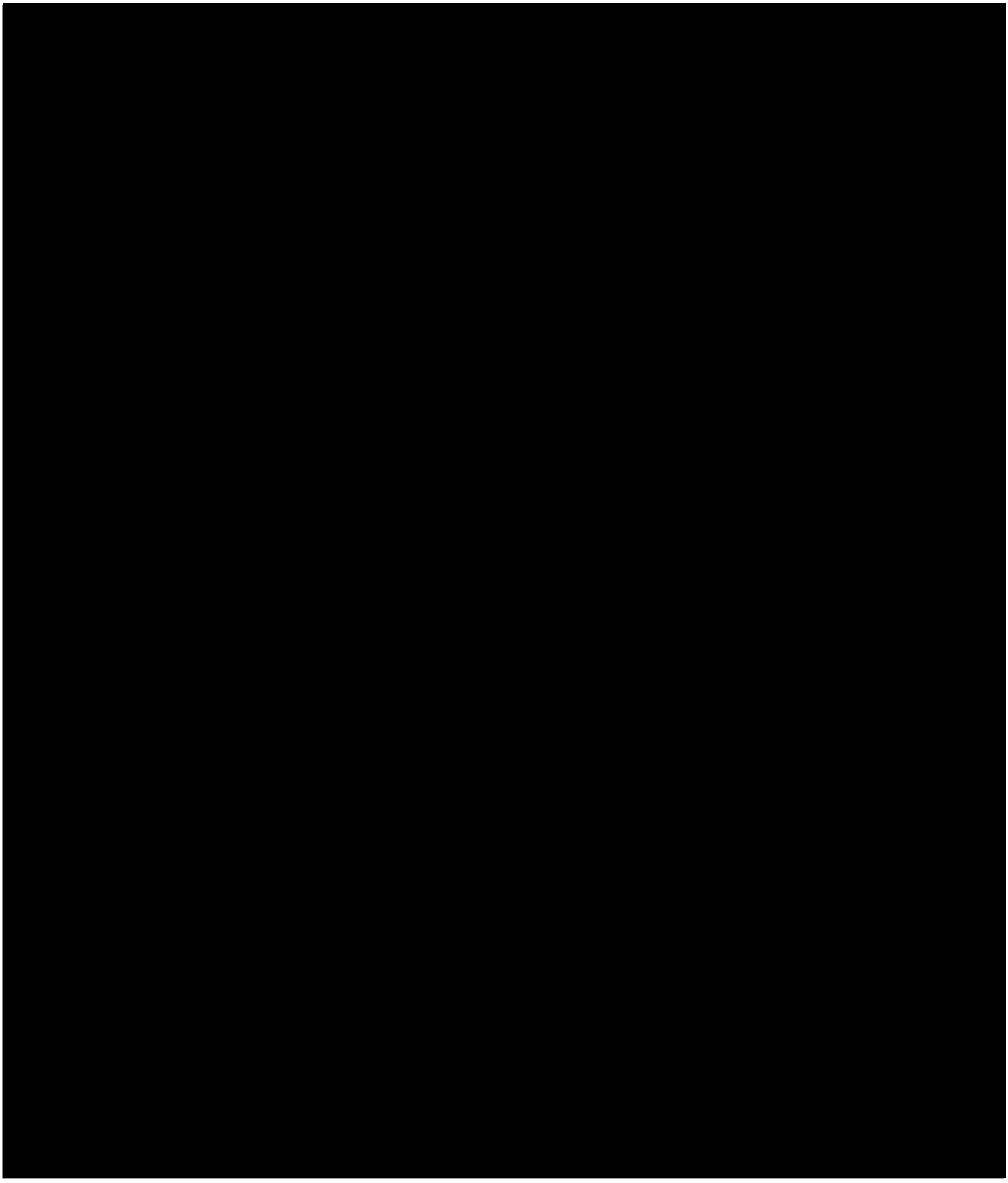


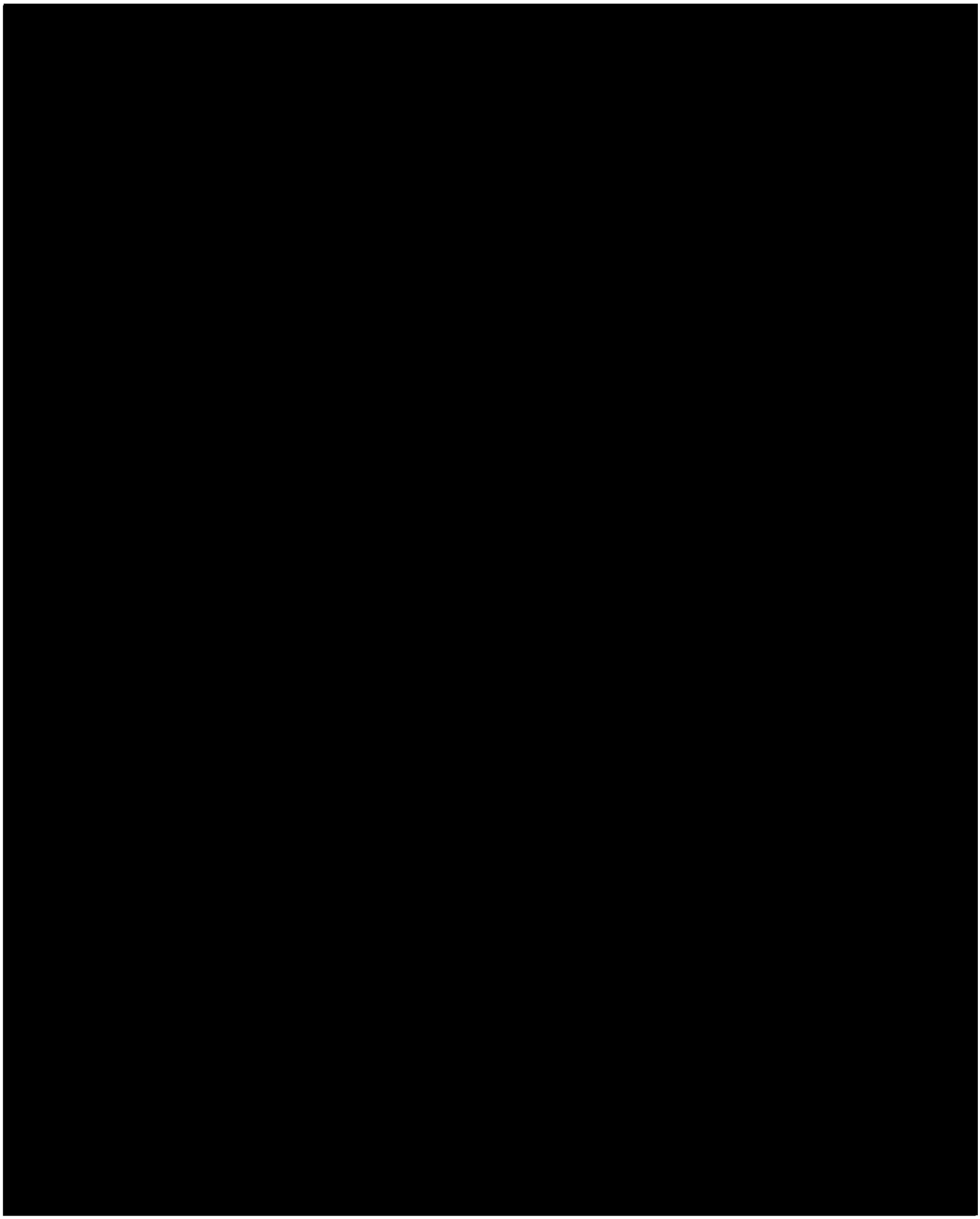


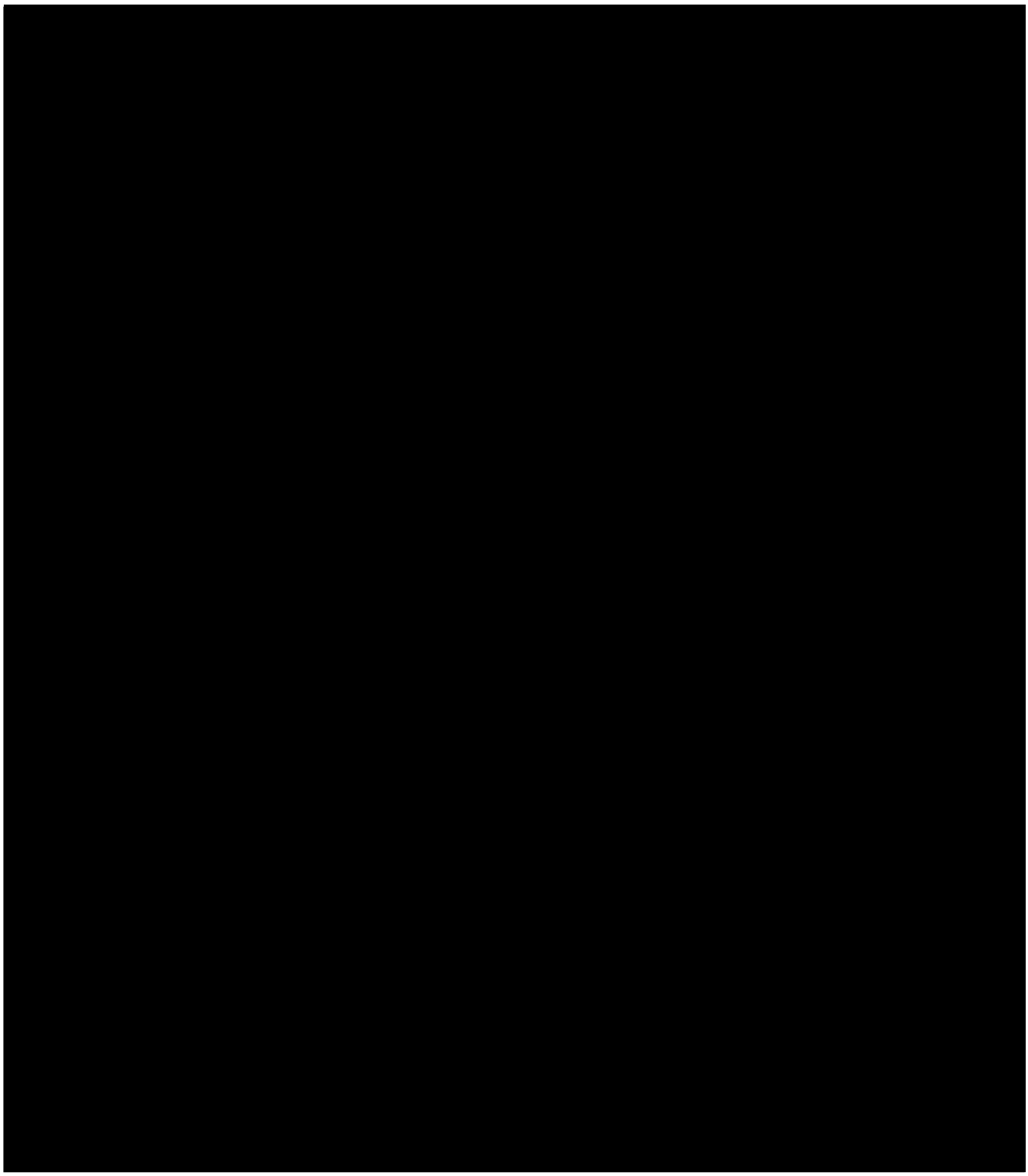


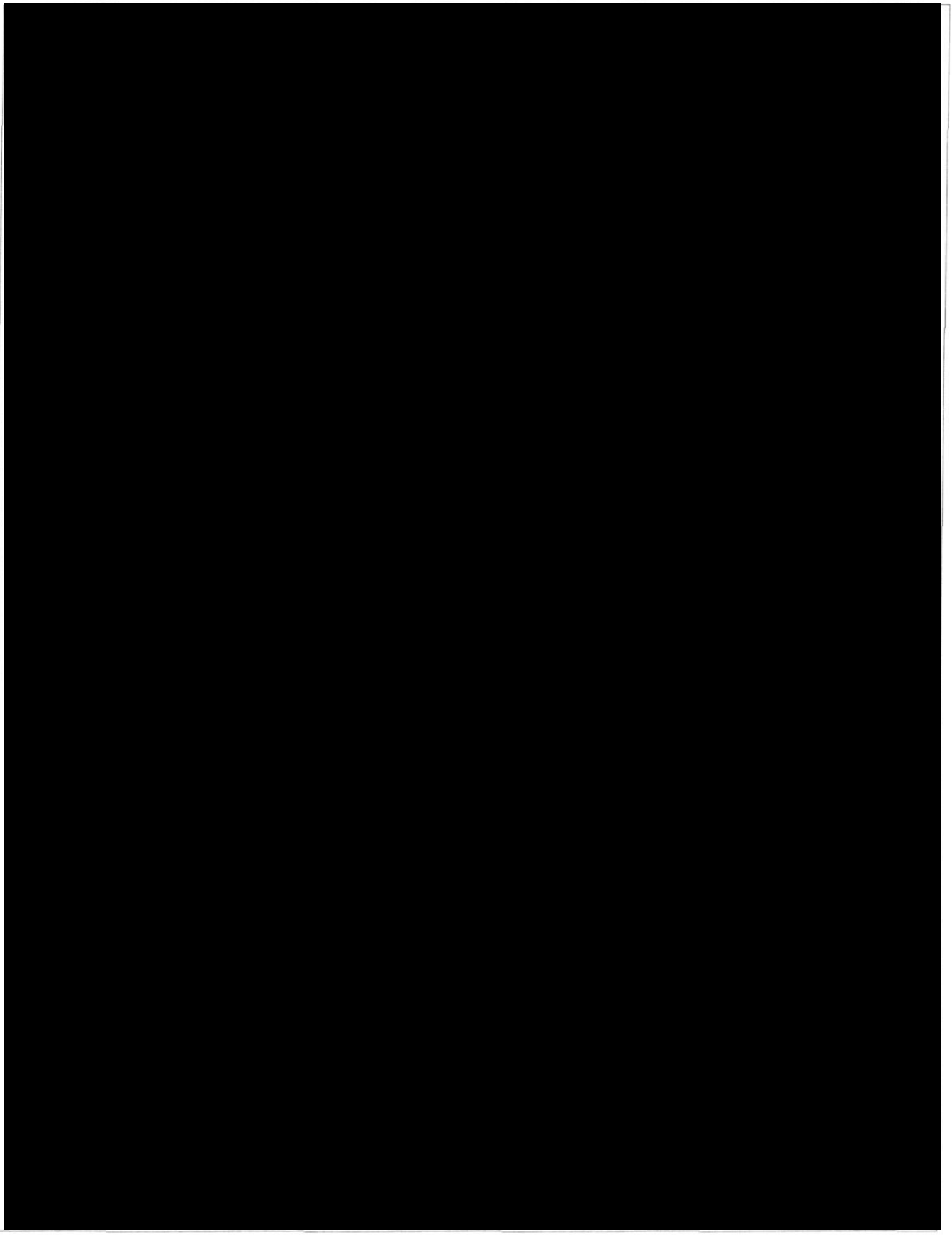




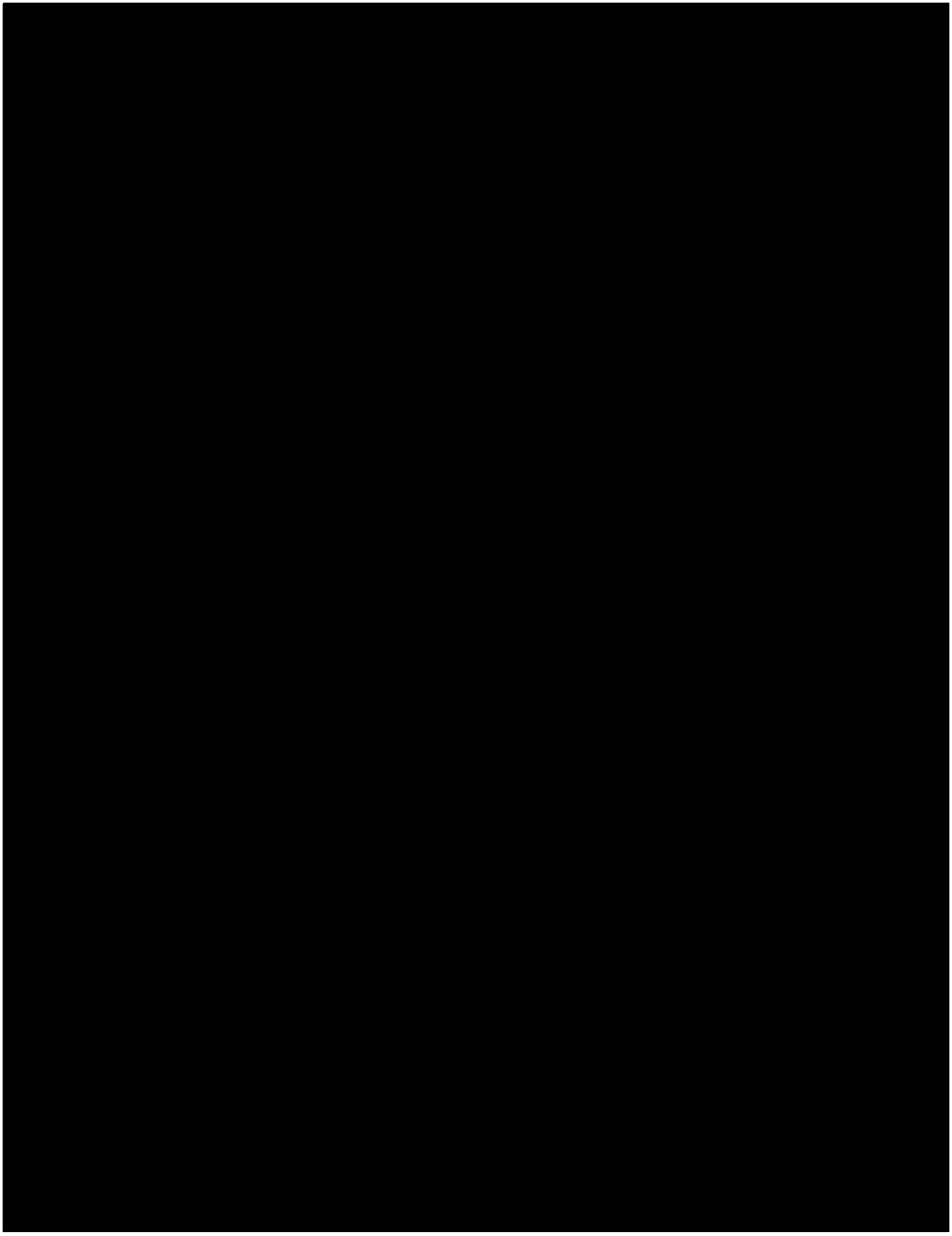


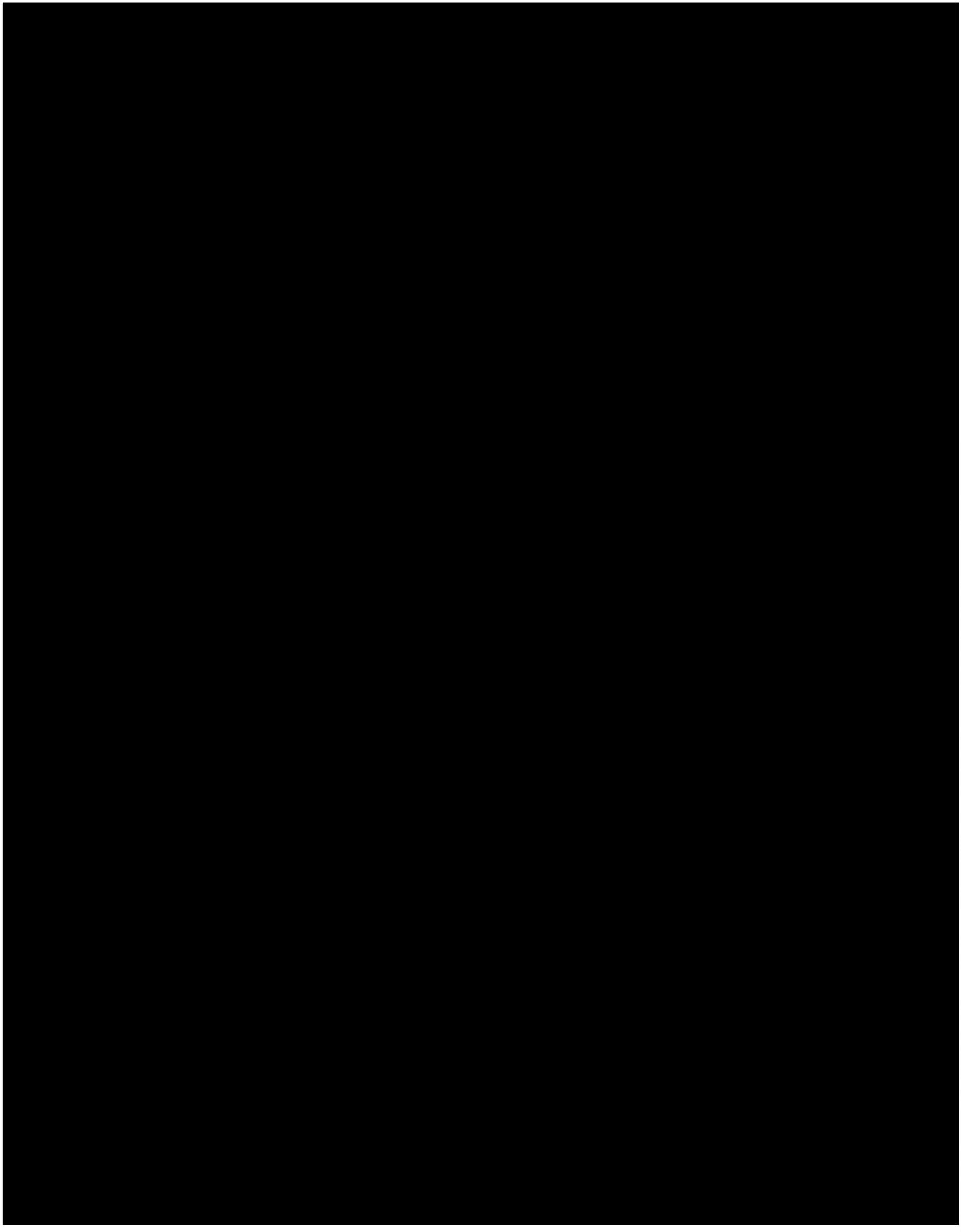


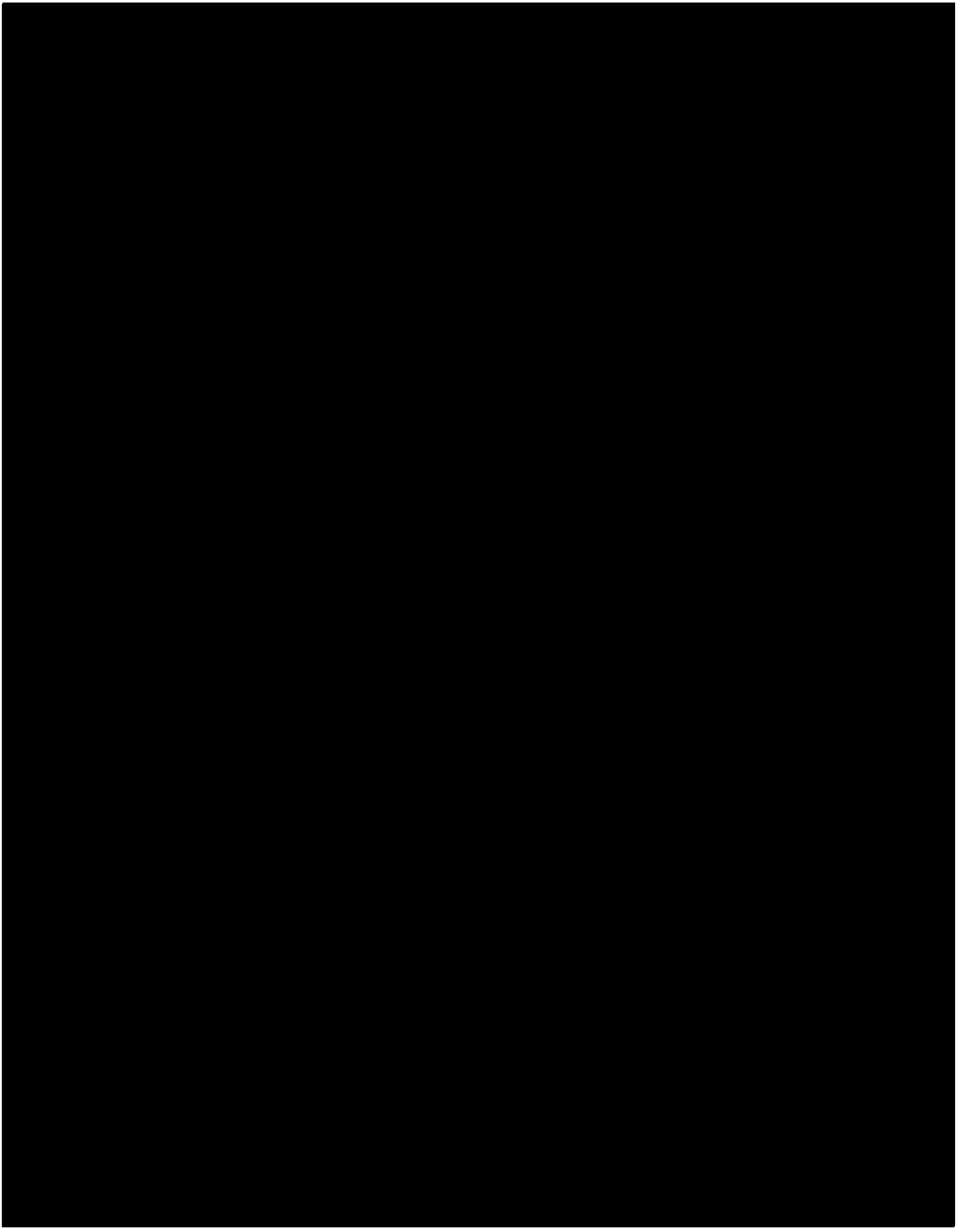


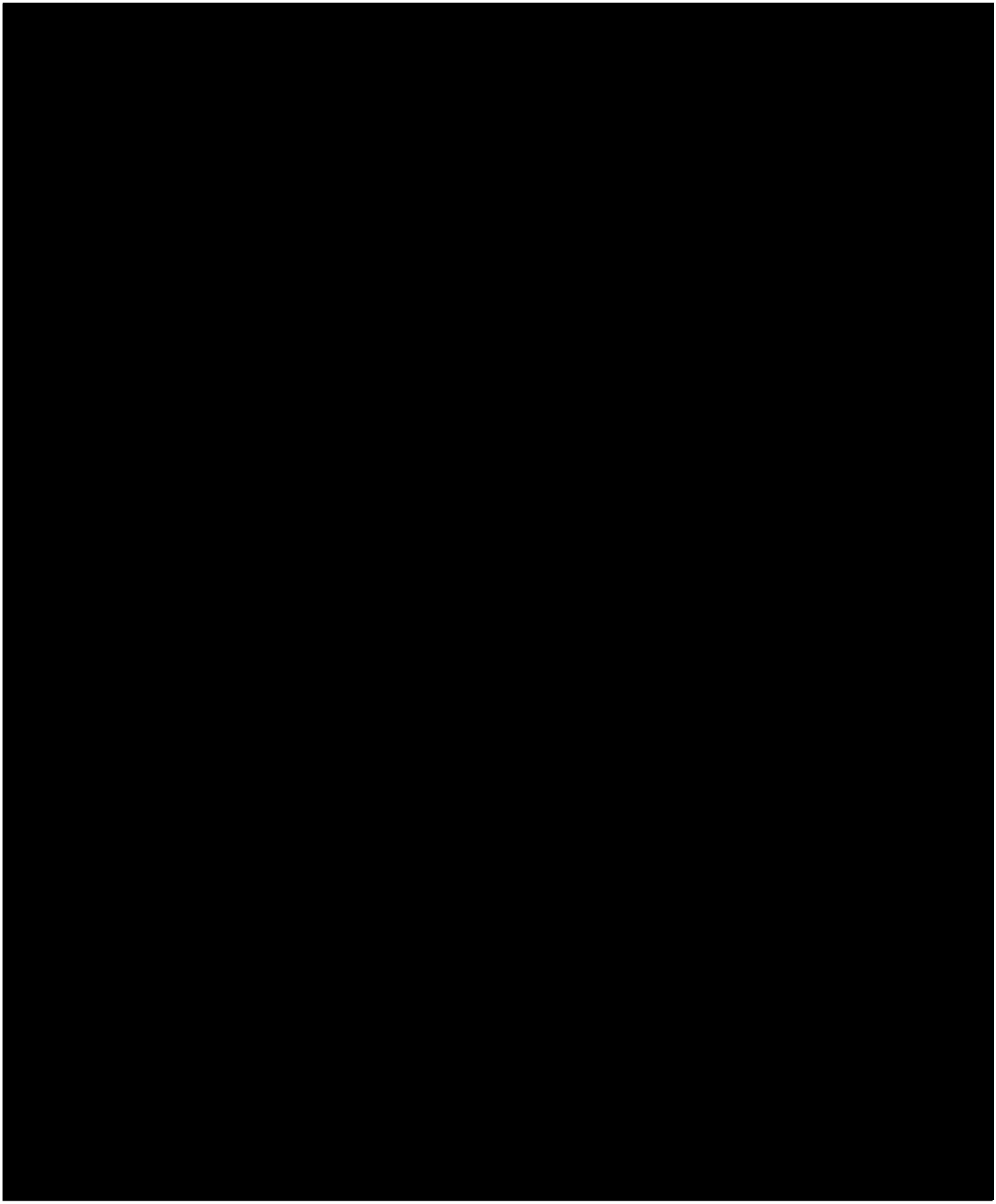


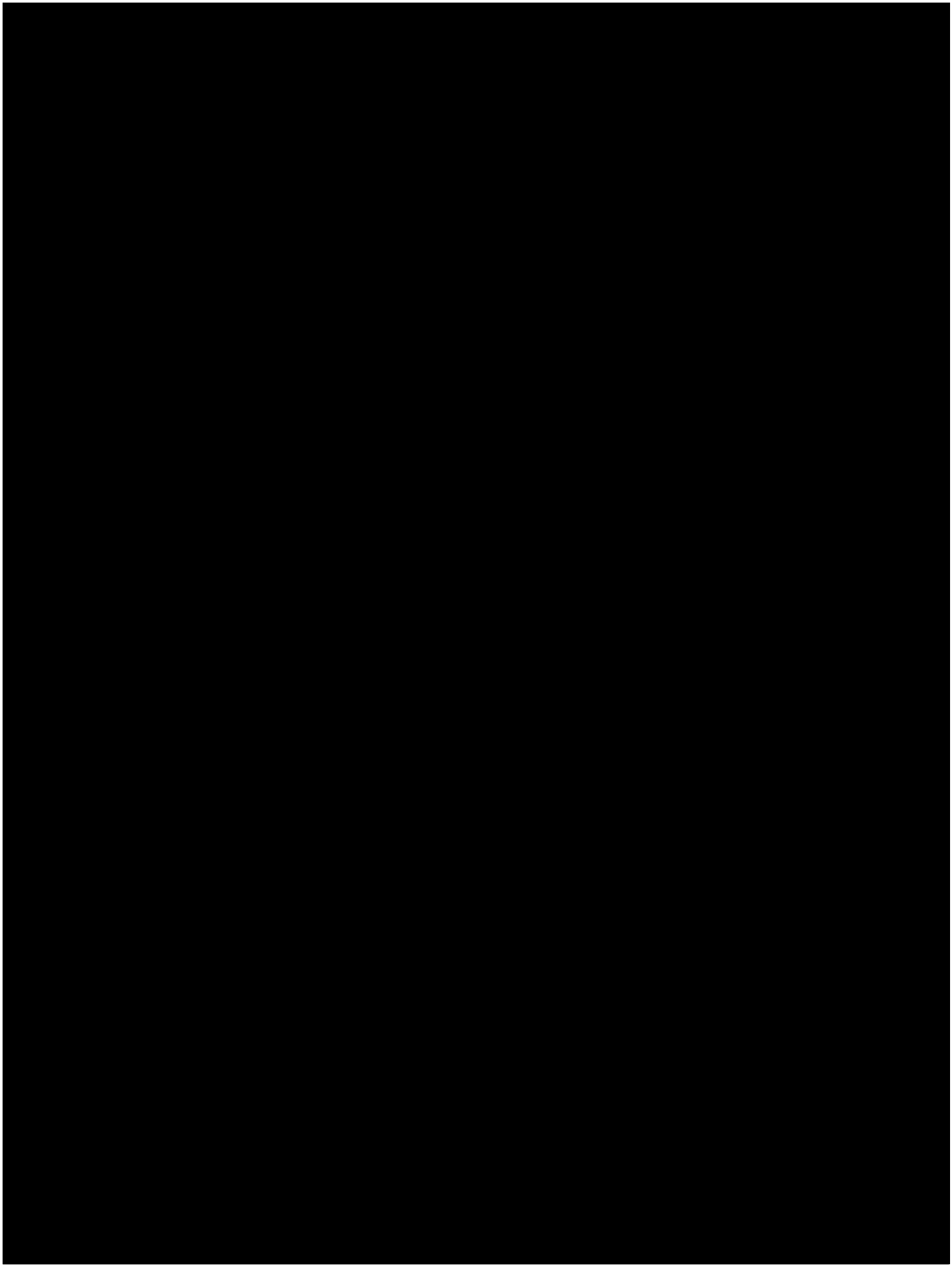


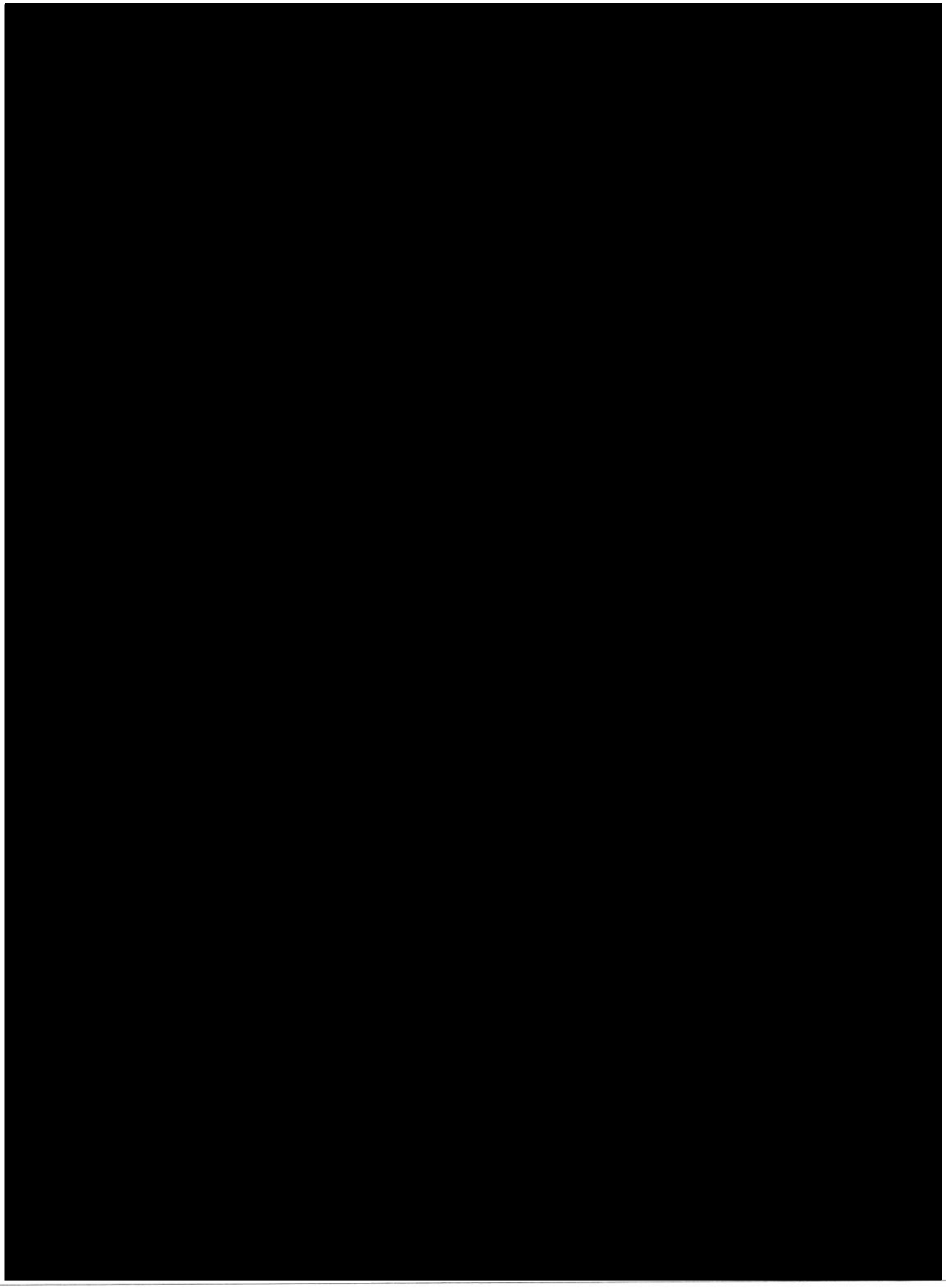


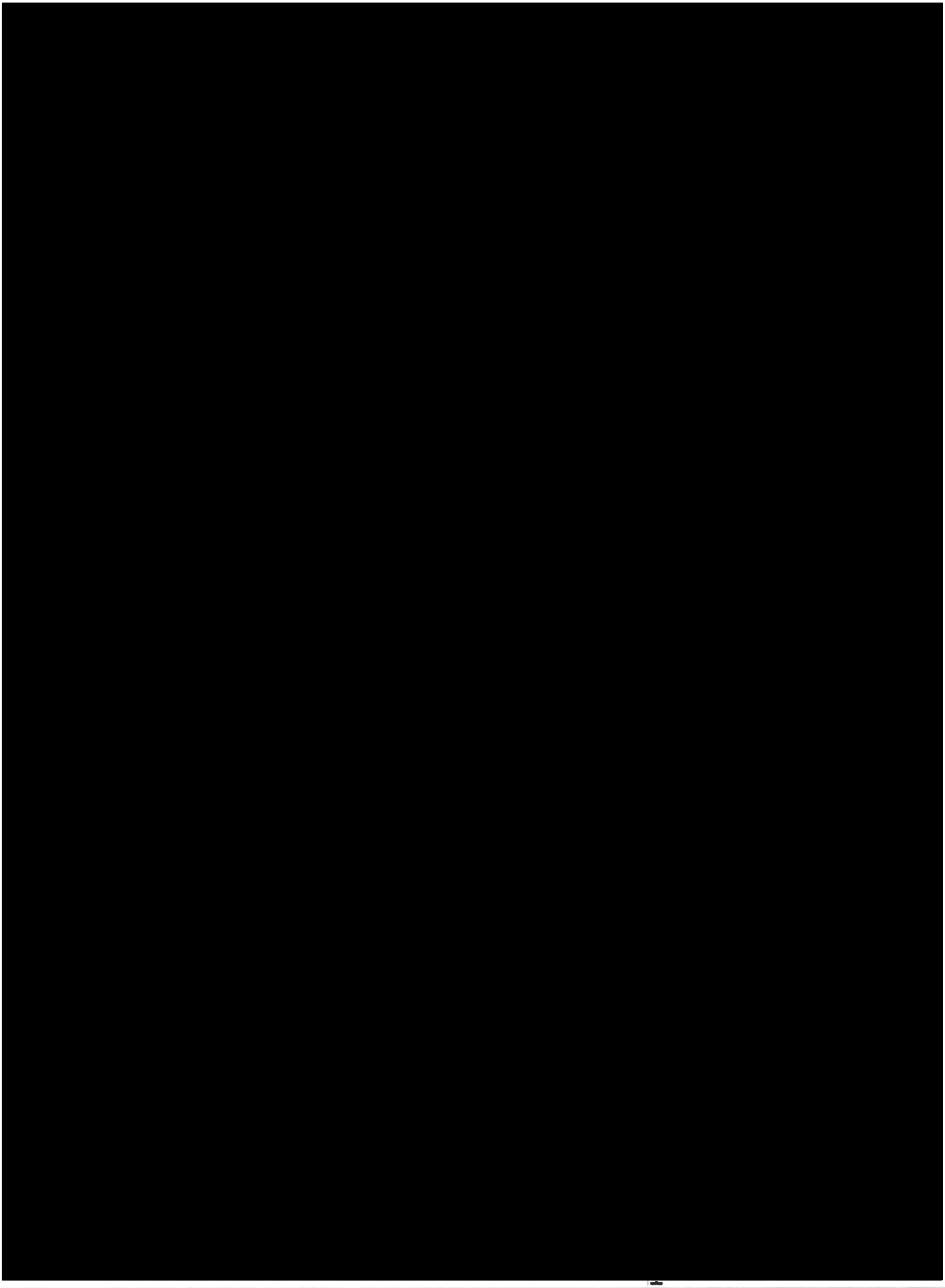


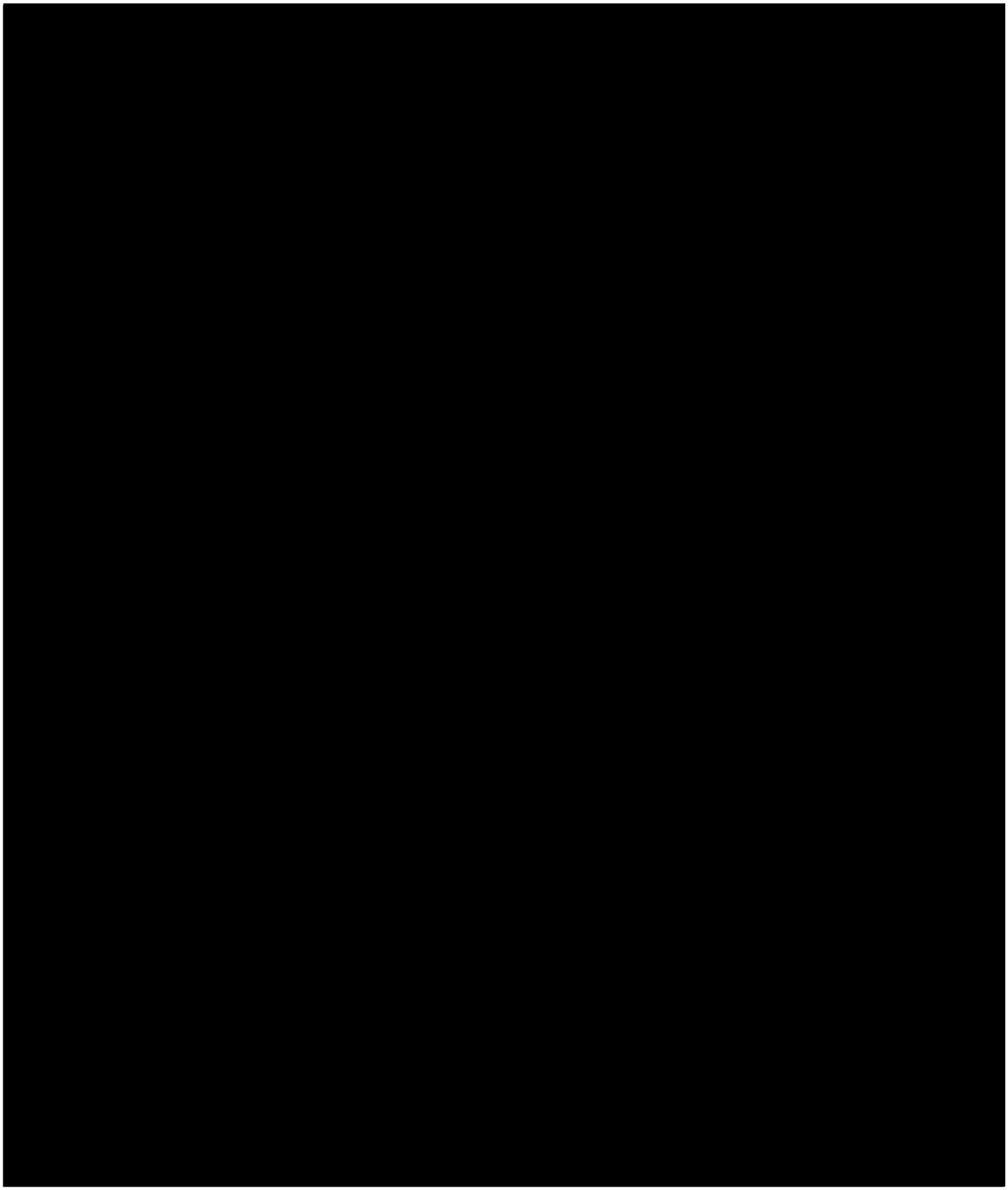


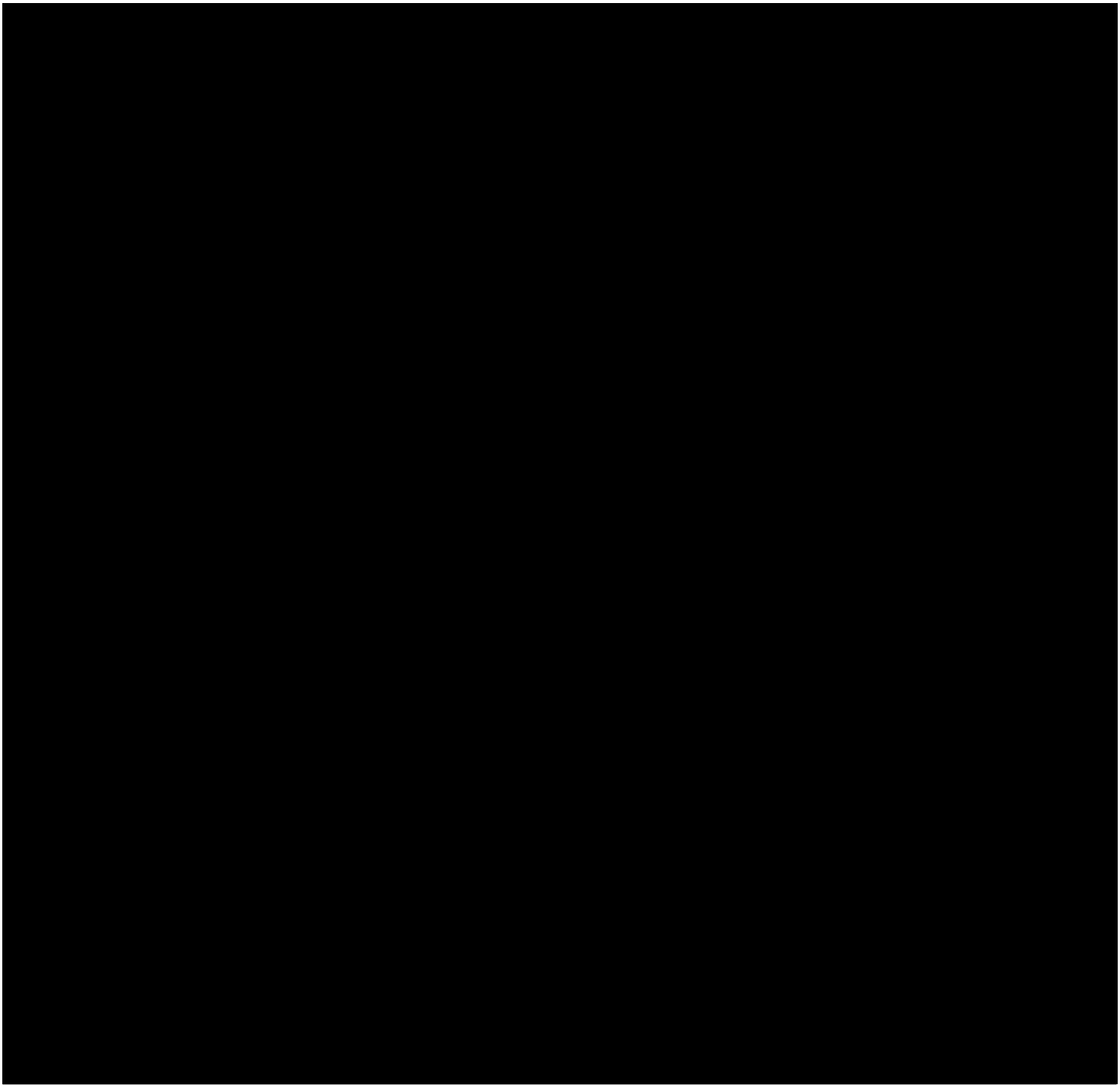


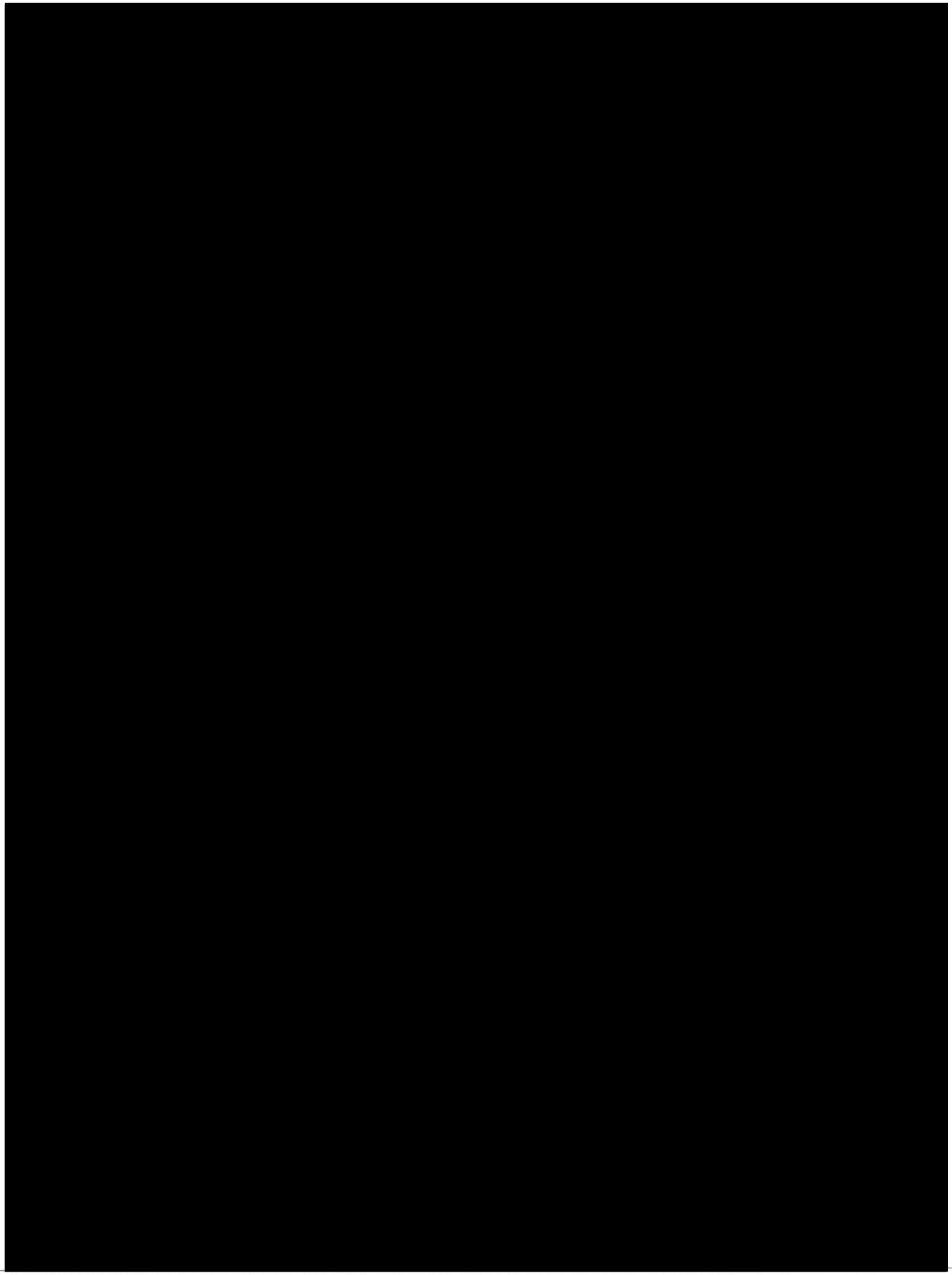


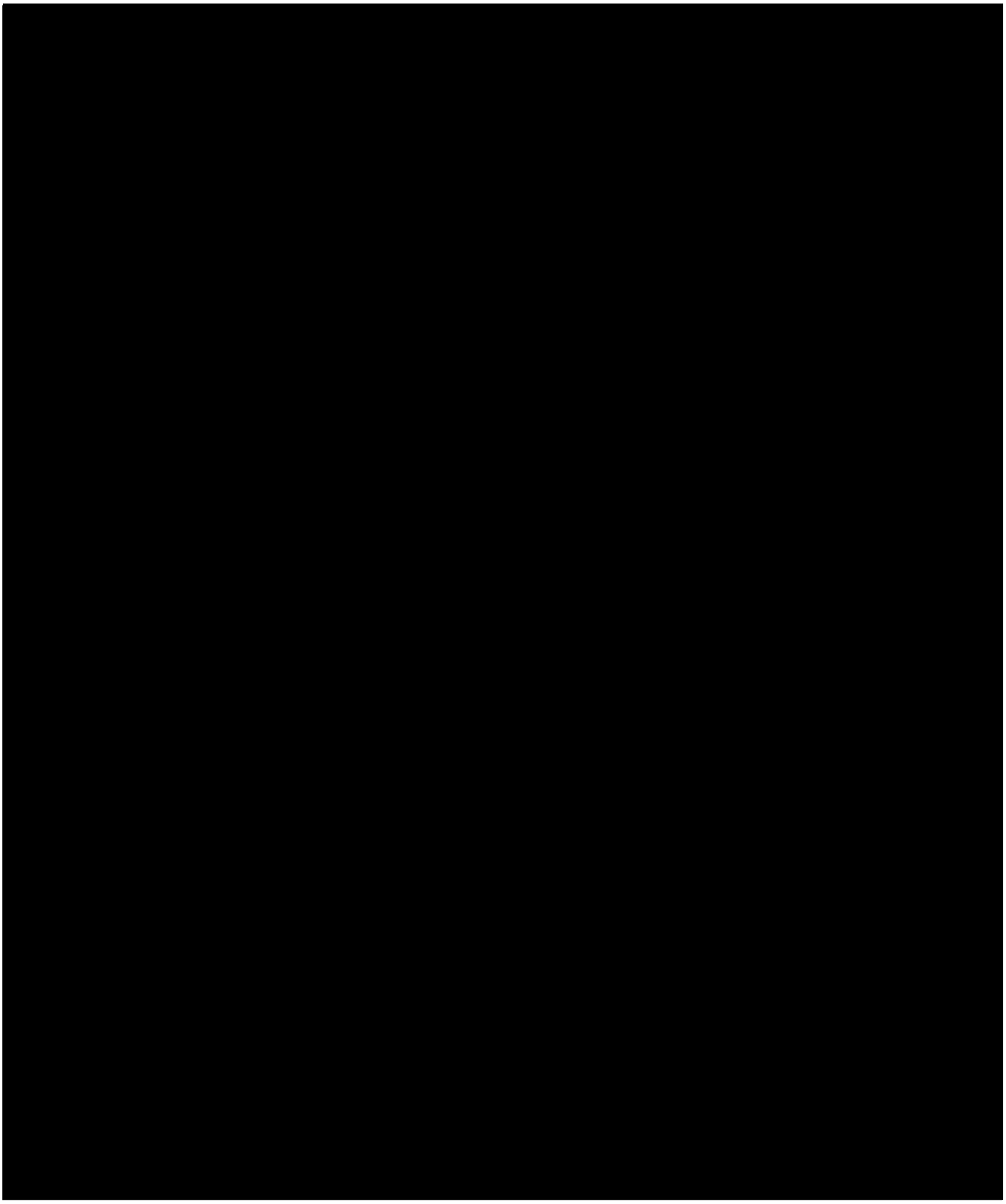


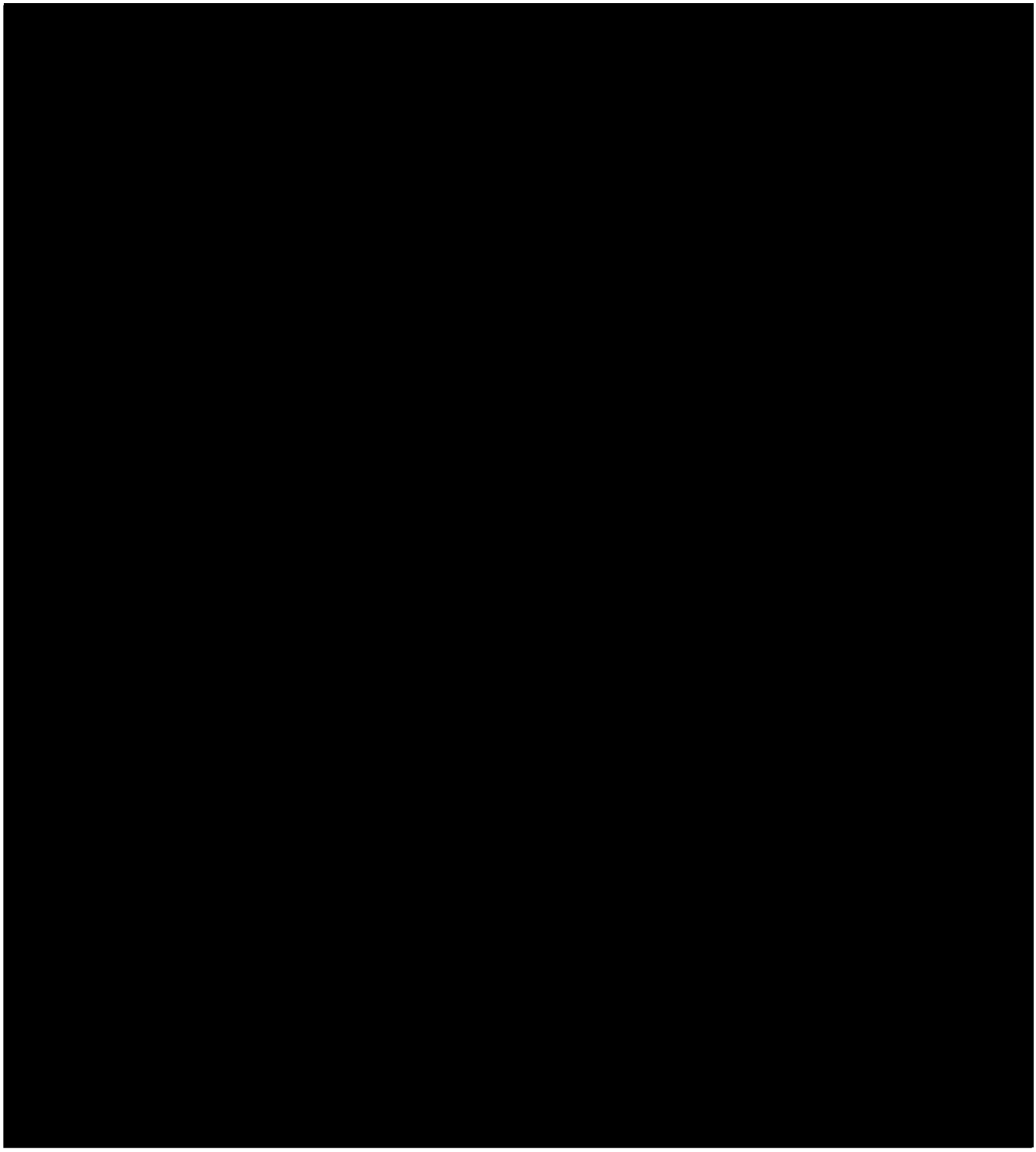


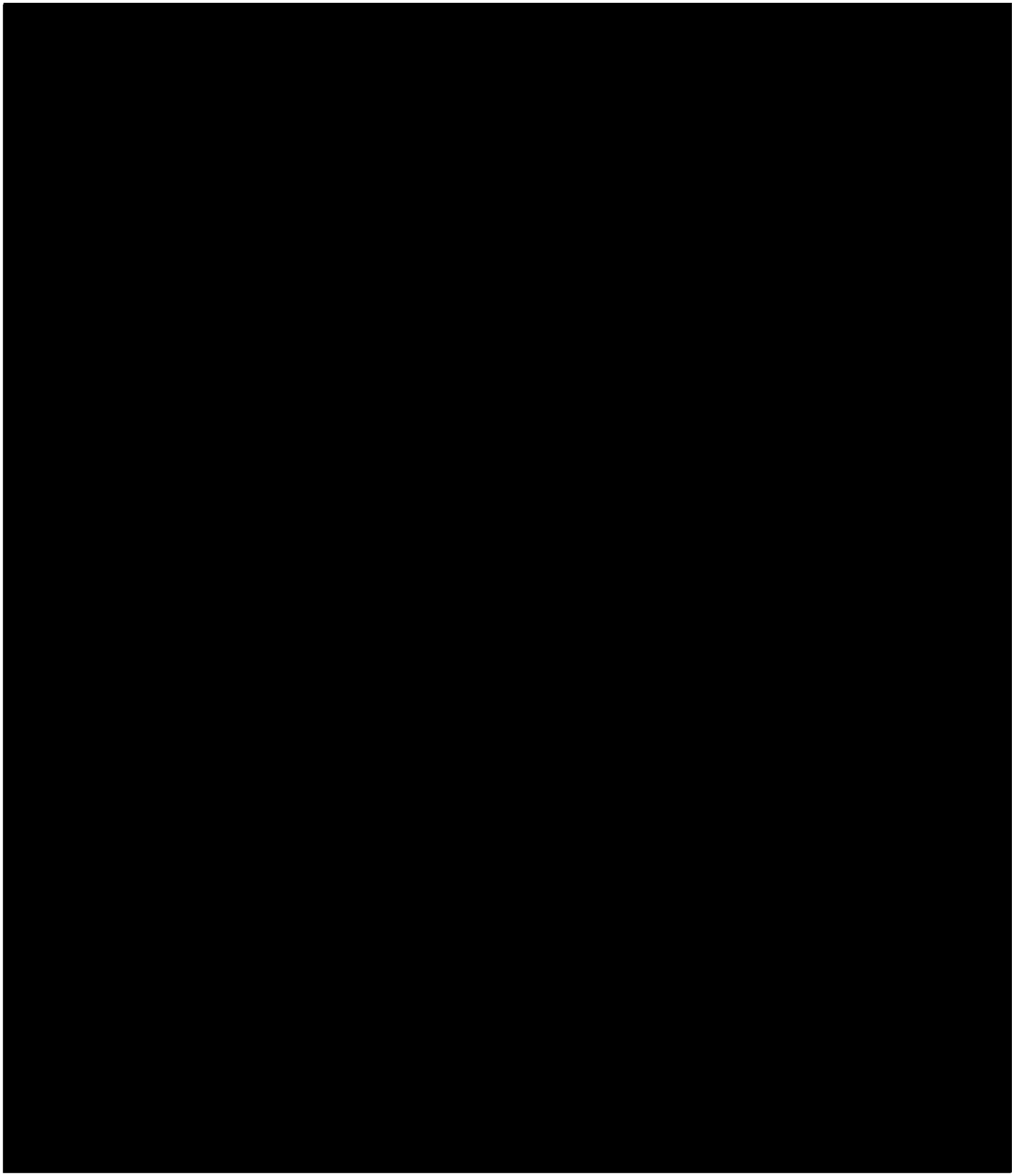


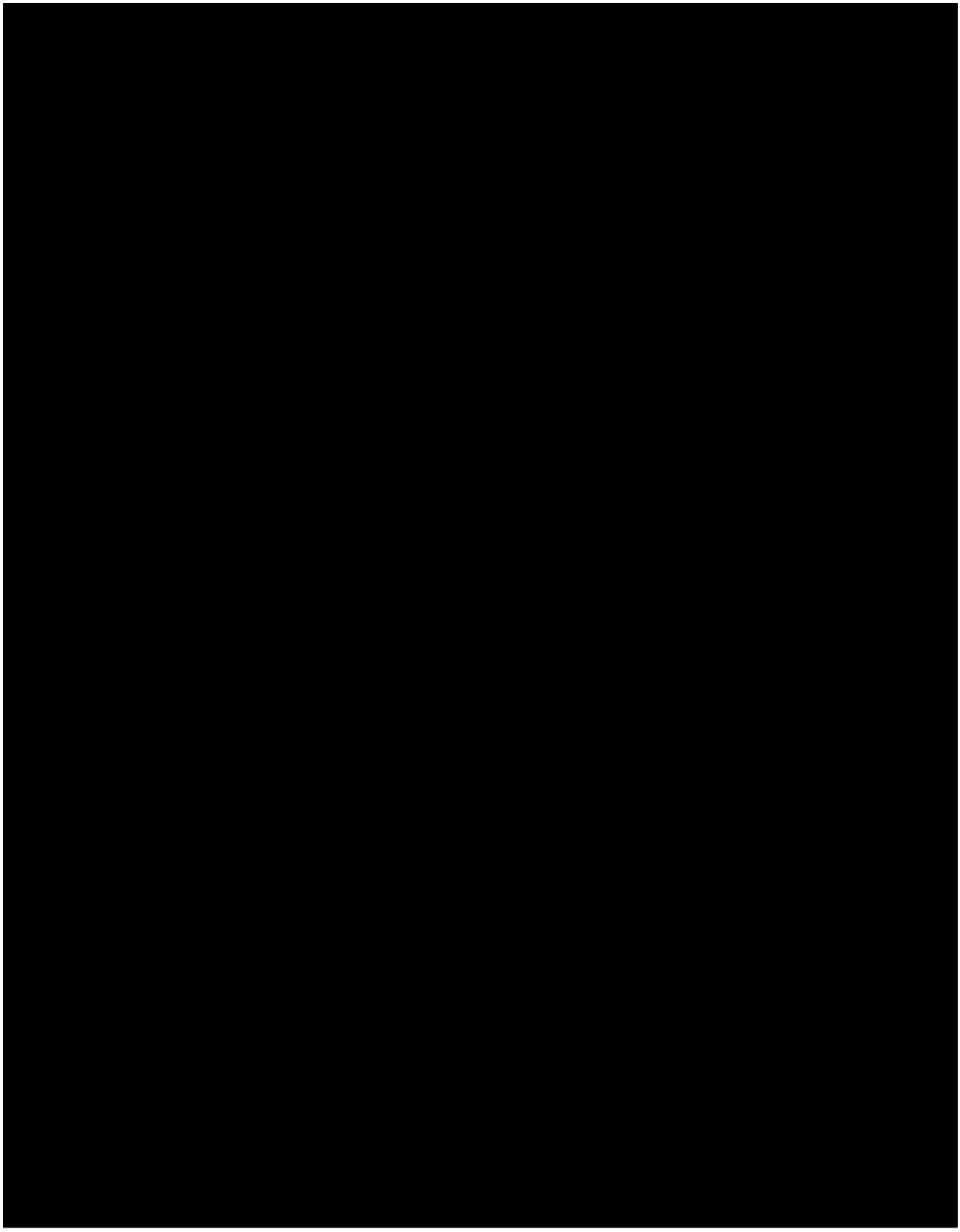












SERVICE BRIEF

FortiCare Technical Support and RMA Services

Device-Level Technical Support

Introduction

Organizations depend on Fortinet solutions to provide critical services. If any issues arise, they need to be addressed quickly to help ensure security and business continuity.

Adequate Support Is Key to Smooth Operations

Extended downtime due to choosing inadequate support can be costly for businesses of all sizes. Organizations need to be sure the support is readily available—when they need it—to provide committed service levels to their internal users or external customers.

In addition to the right support level, the right return merchandise authorization (RMA) replacement contract should be in place to meet the committed service levels, even if the organization has a high availability (HA) architecture. Replacing the failed device in the HA architecture should be swift to maintain the desired level of redundancy.

Technical Support and RMA Overview

We provide FortiCare technical support and RMA services on a per-device basis for 24×7 support and timely issue resolution. FortiCare support services are available across the entire Fortinet Security Fabric, enabling a single source for support and troubleshooting. Flexible support options help organizations maximize uptime, security, and performance according to the unique needs of each business.

Technical support is delivered through our Global Technical Assistance Centers. Each geographical region has a Center of Expertise that is supplemented by regional support centers. This enables us to provide regional and local language support. Foundational FortiCare device-level support includes:

- Global toll-free numbers that are available 24×7, depending on the service option
- Web chat for quick answers
- A support portal for ticket creation or to manage assets and life cycles
- Access to software updates and next-business-day RMA service is available, depending on the service option

Feature Highlights: Technical Support

Flexible support options help organizations maximize uptime, security, and performance according to the individual needs of each business. Fortinet offers three different per-device support options to meet customer needs: FortiCare Essential, FortiCare Premium, and FortiCare Elite. Organizations have the flexibility to buy different levels of service for different devices based on their needs.

	Per-Device Service Options		
FortiCare Included Features	**FortiCare ESSENTIAL**	**FortiCare PREMIUM**	**FortiCare ELITE**
RMA	Return and replace only	Advanced replacement	Advanced replacement
Add-on RMA eligible?	NO	YES	YES
Web Support	✓	✓	✓
Telephone Support	–	✓	✓
Firmware Updates	✓	✓	✓
On-line support tools	✓	✓	✓
Asset Management Portal	✓	✓	✓
Response Time (Critical Issue)	Next business day	1 hour	15 minutes
Response Time (Non-Critical Issue)	Next business day	Next business day	2 business hours
Extended End-of-Engineering-Support (E-EoES) for Long-Term Supported Firmware (LTS) releases – 18 months*	–	–	✓
Device Insights and Monitoring Portal (FortiCare Elite Portal*)	–	–	✓

*Available for FortiGate only.

FortiCare Essential is the base-level service targeted toward devices that require a limited amount of support and can tolerate next-business-day, web-only response for critical as well as non-critical issues. This service is only offered to FortiGate models 9x and below and to low-end FortiWifi devices. RMA is on a return-and-replace basis at this service level.

FortiCare Premium is targeted toward devices that require 24×7×365 with one-hour response for critical issues and the next-business-day response for non-critical issues. Standard next-business-day RMA services are included at this service level. Fortinet will ship a replacement device (Advanced Replacement) the next business day, before we receive the faulty device from the customer.

FortiCare Elite offers enhanced service-level agreements (SLAs) and accelerated issue resolution. Single-touch ticket handling by the expert technical team streamlines resolution. FortiCare Elite services are available for FortiGate, FortiGate VM, FortiWiFi, FortiManager, FortiAnalyzer, FortiAP, and FortiSwitch appliances. This option also provides access to an intuitive portal with a single unified view of device and security health. Standard next-business-day RMA services are included at this service level. Fortinet will ship a replacement device (Advanced Replacement) the next business day, before we receive the faulty device from the customer.



Figure 1: FortiCare Elite Portal dashboard

The **FortiCare Elite Portal** provides a single unified view of device and security health. The dashboard is customizable, or customers can use the default views. In addition to alerting about device and security health, the portal also provides remediation recommendations. And since this is cloud-based, it is easy to scale.

In addition, FortiCare offers a subscription-based Best Practice Service (BPS) for specific products to guide customers on planning, deployment, improvement, upgrade, and migration.

Feature Highlights: Priority RMA Services

Standard next-business-day RMA services are included with both Premium and Elite per-device support contracts. Priority RMA (PRMA) add-on options are available across the product family for expedited replacement of defective hardware. Priority RMA options cover weekends and holidays.

Only return-and-replace RMA is included with Essential per-device support contract. Essential customers are not eligible for Priority RMA add-on options.

Priority RMA Options

- **Next Calendar Day delivery.** If the exchange is confirmed, a replacement part will be delivered by courier service and arrive the next calendar day in accordance with the applicable country cutoff time.
- **Four-hour courier.** A replacement part will be delivered on-site by a courier service.
- **Four-hour courier with on-site engineer.** A replacement part will be delivered on-site by a courier service. An engineer will arrive separately, rack and cable the appliance, and leave with the defective part if requested.

Secure RMA

The Secure RMA service is designed for customers with strict requirements for protection of data within their physical environment. In general, Fortinet products store configuration information on solid-state media that are not field-replaceable. As a result, it is not possible to remove these items without invalidating the warranty. For maximum security, the Secure RMA service allows for the nonreturn of the defective hardware and therefore the protection of data within the customer's premises.

Please see the service availability page for the latest country-level availability. For your location-specific RMA availability, please contact your channel partner or your Fortinet account manager.

Self-Service Resources

For expedited answers, Fortinet maintains ample self-service resources to get you the answers you need, fast. All the answers to your questions are now in one place. The Fortinet community is a knowledge-sharing hub for customers, partners, Fortinet experts, and colleagues. The community is a place to collaborate, share insights and experiences, and get answers to questions.

FortiCare Technical Support and Priority RMA help maximize uptime, security, and performance.

More Information

To learn about Fortinet's support and service offers, please visit https://www.fortinet.com/support or get in touch with your partner or your Fortinet account manager.

If you are a new customer, please visit our welcome page https://www.fortinet.com/welcome to learn about getting started resources.

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February 25, 2024 4:17 PM
2126701-A-0-EN

ATTACHMENT "A"

Product License Agreement / EULA and Warranty Terms

Product License Agreement

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From: Josh Baker <bjosh@fortinet.com>
Sent: Tuesday, August 13, 2024 10:37:43 AM
To: chuck.osteen@ormondbeach.org <chuck.osteen@ormondbeach.org>
Cc: Gloria Burke <gloriab@empirecomputing.com>; Alan Keen <akeen@fortinet.com>
Subject: Ormond Beach - Fortinet Hardware and Support Lag Request

[External Email-Use Caution] - OB/IT Helpdesk

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Good morning Chuck,

Thank you for your patience. Per our discussion, we have enable a 90 day Lag Extension that will begin once the orders are place. This will support the implementation timeline for Infrastructure and voice. Please let me know if you have any questions.

Lag Approval ID: **LAG-018366**

Thank you!

Josh Baker
SLED – Florida
E: bjosh@fortinet.com
M: 904.607.0047

FORTINET

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Below are some of the top Fortinet Public Sector solutions:

- **FortiGate (Next-Gen Firewall/SDWAN)** – Gartner leader in Firewall and Secure SDWAN
- **Next-Gen Endpoint Security (EDR)** – FortiEDR the best endpoint protection with detection and remediation
- **Fortinet Switch/Access Points** – Recognized by Gartner for 4th year in a row as a Visionary
- **FortiNAC (Network Access Control)** – Zero-trust network access solution
- **Fortinet UCaaS/Unified Communications** – Cloud or On-prem Simplified Unified Communications

Fortinet Education Hub: https://www.fortinet.com/resources-ampaign/education
Fortinet Government Hub: https://www.fortinet.com/resources-campaign/government

K-12 Solutions:
https://www.fortinet.com/solutions/industries/education/k12

Higher Education Solutions:
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ATTACHMENT "A"

SERVICE BRIEF

FortiCare Technical Support and RMA Services

Device-Level Technical Support

Introduction

Organizations depend on Fortinet solutions to provide critical services. If any issues arise, they need to be addressed quickly to help ensure security and business continuity.

Adequate Support Is Key to Smooth Operations

Extended downtime due to choosing inadequate support can be costly for businesses of all sizes. Organizations need to be sure the support is readily available—when they need it—to provide committed service levels to their internal users or external customers.

In addition to the right support level, the right return merchandise authorization (RMA) replacement contract should be in place to meet the committed service levels, even if the organization has a high availability (HA) architecture. Replacing the failed device in the HA architecture should be swift to maintain the desired level of redundancy.

Technical Support and RMA Overview

We provide FortiCare technical support and RMA services on a per-device basis for 24×7 support and timely issue resolution. FortiCare support services are available across the entire Fortinet Security Fabric, enabling a single source for support and troubleshooting. Flexible support options help organizations maximize uptime, security, and performance according to the unique needs of each business.

Technical support is delivered through our Global Technical Assistance Centers. Each geographical region has a Center of Expertise that is supplemented by regional support centers. This enables us to provide regional and local language support. Foundational FortiCare device-level support includes:

- Global toll-free numbers that are available 24×7, depending on the service option
- Web chat for quick answers
- A support portal for ticket creation or to manage assets and life cycles
- Access to software updates and next-business-day RMA service is available, depending on the service option

Feature Highlights: Technical Support

Flexible support options help organizations maximize uptime, security, and performance according to the individual needs of each business. Fortinet offers three different per-device support options to meet customer needs: FortiCare Essential, FortiCare Premium, and FortiCare Elite. Organizations have the flexibility to buy different levels of service for different devices based on their needs.

	Per-Device Service Options		
FortiCare Included Features	**FortiCare ESSENTIAL**	**FortiCare PREMIUM**	**FortiCare ELITE**
RMA	Return and replace only	Advanced replacement	Advanced replacement
Add-on RMA eligible?	NO	YES	YES
Web Support	✔	✔	✔
Telephone Support	–	✔	✔
Firmware Updates	✔	✔	✔
On-line support tools	✔	✔	✔
Asset Management Portal	✔	✔	✔
Response Time (Critical Issue)	Next business day	1 hour	15 minutes
Response Time (Non-Critical Issue)	Next business day	Next business day	2 business hours
Extended End-of-Engineering-Support (E-EoES) for Long-Term Supported Firmware (LTS) releases – 18 months*	–	–	✔
Device Insights and Monitoring Portal (FortiCare Elite Portal*)	–	–	✔

*Available for FortiGate only.

FortiCare Essential is the base-level service targeted toward devices that require a limited amount of support and can tolerate next-business-day, web-only response for critical as well as non-critical issues. This service is only offered to FortiGate models 9x and below and to low-end FortiWifi devices. RMA is on a return-and-replace basis at this service level.

FortiCare Premium is targeted toward devices that require 24×7×365 with one-hour response for critical issues and the next-business-day response for non-critical issues. Standard next-business-day RMA services are included at this service level. Fortinet will ship a replacement device (Advanced Replacement) the next business day, before we receive the faulty device from the customer.

FortiCare Elite offers enhanced service-level agreements (SLAs) and accelerated issue resolution. Single-touch ticket handling by the expert technical team streamlines resolution. FortiCare Elite services are available for FortiGate, FortiGate VM, FortiWiFi, FortiManager, FortiAnalyzer, FortiAP, and FortiSwitch appliances. This option also provides access to an intuitive portal with a single unified view of device and security health. Standard next-business-day RMA services are included at this service level. Fortinet will ship a replacement device (Advanced Replacement) the next business day, before we receive the faulty device from the customer.



Figure 1: FortiCare Elite Portal dashboard

The **FortiCare Elite Portal** provides a single unified view of device and security health. The dashboard is customizable, or customers can use the default views. In addition to alerting about device and security health, the portal also provides remediation recommendations. And since this is cloud-based, it is easy to scale.

In addition, FortiCare offers a subscription-based Best Practice Service (BPS) for specific products to guide customers on planning, deployment, improvement, upgrade, and migration.

Feature Highlights: Priority RMA Services

Standard next-business-day RMA services are included with both Premium and Elite per-device support contracts. Priority RMA (PRMA) add-on options are available across the product family for expedited replacement of defective hardware. Priority RMA options cover weekends and holidays.

Only return-and-replace RMA is included with Essential per-device support contract. Essential customers are not eligible for Priority RMA add-on options.

Priority RMA Options

- **Next Calendar Day delivery.** If the exchange is confirmed, a replacement part will be delivered by courier service and arrive the next calendar day in accordance with the applicable country cutoff time.
- **Four-hour courier.** A replacement part will be delivered on-site by a courier service.
- **Four-hour courier with on-site engineer.** A replacement part will be delivered on-site by a courier service. An engineer will arrive separately, rack and cable the appliance, and leave with the defective part if requested.

Secure RMA

The Secure RMA service is designed for customers with strict requirements for protection of data within their physical environment. In general, Fortinet products store configuration information on solid-state media that are not field-replaceable. As a result, it is not possible to remove these items without invalidating the warranty. For maximum security, the Secure RMA service allows for the nonreturn of the defective hardware and therefore the protection of data within the customer's premises.

Please see the service availability page for the latest country-level availability. For your location-specific RMA availability, please contact your channel partner or your Fortinet account manager.

Self-Service Resources

For expedited answers, Fortinet maintains ample self-service resources to get you the answers you need, fast. All the answers to your questions are now in one place. The Fortinet community is a knowledge-sharing hub for customers, partners, Fortinet experts, and colleagues. The community is a place to collaborate, share insights and experiences, and get answers to questions.

FortiCare Technical Support and Priority RMA help maximize uptime, security, and performance.

More Information

To learn about Fortinet's support and service offers, please visit https://www.fortinet.com/support or get in touch with your partner or your Fortinet account manager.

If you are a new customer, please visit our welcome page https://www.fortinet.com/welcome to learn about getting started resources.

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ATTACHMENT "B"

Completion Timeline

Training and Support Plan

Attachment B

Fortinet Voice RFP Completion Timeline

- Begin Department meetings for Voice configuration
- City Hall, Water, PD and Hardened Data Center (HDC) infrastructure installed (wiring, racks, UPS, switches and wireless) and cutover to the new equipment.
- Servers installed and configured and brought on-line

30% estimated completion February 28, 2025

- Phone programming completed and tested with Fortinet Professional Services
- 4 Fire stations, Waste Water, Fleet, Public Works completed.
- New firewalls installed.

60% estimated completion June 30, 2025

- Remaining sites completed Legal, Nova Rec, Airport, casements, SONC, PAC, etc.
- Phones rolled out and voice cutover. Training* of phone users completed with department cutover. Departments will be rolled out in a determined order. Troubleshooting will be completed post-rollout and possibly concurrent with next department rollout.
- IT Training on new phone system complete
- IT Training on Fortinet Hardware (may be ongoing)*

90% estimated completion September 30, 2025

- Troubleshooting, punch list and on-site general support for 2 weeks post final department voice rollout and cutover.

100% estimated completion October 31, 2025

*Training and Ongoing Support Definitions

- Knowledge transfer will take place throughout the project between the Empire and Fortinet personnel and the City of Ormond Beach IT staff and will focus on concepts and configuration required for a base-level understanding of the engagement.
- Engagement Kickoff Meeting (upon Notice of Award) with City
  - Review Explanation of Services document with IT Team and Consultants
  - Understand network topology and requirements and the plan for implementation
  - Question and answer
- End user training of the phone system features by Empire team members will occur just prior to the department cutover from existing to new system. Additional training for call center/high volume users will be made in groups of employees. Awareness tools such as videos (like below) and handouts will be made available prior to department system rollout.
- https://www.youtube.com/watch?v=zlw76iX_yoQ
- Empire and Fortinet are working on providing IT training that will focus on the software included in the implementation (Fortianalyzer/Fortimanager). Once Fortinet confirms the training method, Empire will notify the IT team.
- As the project progresses into the 10% phase, Empire will meet with the IT team on any areas where the City Staff still require additional training. Per the terms of the RFP, Empire will have an Engineer available for the 10% phase of the project AND for all departmental voice rollout.
- Fortinet Premium Advanced Replacement is offered on all Fortinet Hardware on Attachment A. Includes web support, telephone support firmware updates, and 1 hour response time on critical issues.
- Continuing engineering services to the City's IT staff can be remedied through Empire's Professional Services contract currently in place with the City. Empire offers 8x5 next business day support for engineering services.

Unified Communications (UC) Analysis & Recommendation

Prepared by

January 2024



Why Unified Communications (UC)?

Traditional phone systems lack the capabilities and flexibility to support modern communications and trends of increasing teleworkers.

According to a 2021 survey from McKinsey & Company, 63% of employees want to work either fully remote or in a hybrid mode which almost doubles the number before the pandemic.

Many organizations are looking for an integrated solution that can support these new changes while ensuring employees stay secure and productive when working remotely.

A reliable UC solution simplifies business communications with integrated voice, conferencing, and more.

A unified platform also provides:

- *A single vendor for simplified management and broader visibility*
- *Secure and reliable communications and collaboration across branch offices, distributed teams, and remote employees*
- *Enhanced user experience and employee productivity*
- *Quality, flexibility, and reliability for seamless business continuity*

City of Ormond Beach is in a Win/Win situation with the short-listed Manufacturers and Vendors:

Cisco/R2

Fortinet/Empire

Both Solutions clearly meet and/or exceed the City's requirements

- The Fortinet solution includes up to 2,000 extensions at no added cost other than handsets.
- The Cisco solution includes 20% growth however Cisco performs a license true-up during annual renewals, including support.
- Empire, representing Fortinet, is a local company (incumbent).
- R2 representing Cisco, is Boca Raton-based and would require travel time to support the City.

City of Ormond Beach is in a Win/Win situation with the short-listed Manufacturers and vendors…

Per Gartner (Independent Analyst)

- **Fortinet** is top ranked in SDWAN and Firewall/Network Security.
- **Cisco** ranks higher than Fortinet in Unified Communications

Empire has a long-standing relationship and understanding of City of Ormond Beach's infrastructure/environment

R2 would have a learning curve which could potentially delay the project or incur additional scope creep/installation costs

As demonstrated during the vendors interviews:

- ***Empire*** *had onsite representation from Fortinet. It appears Fortinet is very interested in winning the business and supporting the Empire team. It should be noted that the Fortinet team is also local.*
- ***R2*** *has a strong background in Cisco and deploying Cisco however, our sense is Cisco would only show up for very large opportunities.*

OEM/Vendor Comparison Matrix

	Empire / Fortinet	R2 / Cisco
Ease of Administration	Yes	No
Vendor Proximity to City	Yes	No
Voice Scalability	Yes	Limited
Gartner (Analyst) Ratings	Yes	Yes
Meet/Exceed requirements	Yes	Yes
Installation Services	Low Risk	Medium Risk
Phone w/Camera	Yes* (end of Q2)	Yes
Manufacturer Commitment	Yes	Limited
3-Year Total Cost of Ownership	**$1,580,497.56**	**$2,658,474.13**
Support/License Renewals For both years 4 and 5	$250,000.00	$450,000.00

City of Ormond Beach Recommendation:

Since only one Manufacturer (OEM) and Vendor solution can be awarded, we believe that the Empire/Fortinet Solution best fits the City of Ormond Beach based on the following consideration:

- ***Existing knowledge of your environment***
- ***Empire's proximity to the City***
- ***The Fortinet System's included scalability to 2000 extensions***
- ***Lower Total Cost of Ownership (3 year) price point $1.58M vs $2.65M.***
- ***Fortinet is easier and less expensive to maintain post installation***
- ***Fortinet was originally developed from the ground up with Cyber Security in mind. Fortinet has extended this fabric across their product line, including their voice UC platform***

Empire/Fortinet Customer References

- **Alamance County, NC** migrated from their previous service which was comprised of 780 AT&T-Centrex phone lines to the ***FortiVoice*** Solution
- **Cabarrus County Schools** located in the northeastern suburbs of Charlotte, North Carolina, the Cabarrus County Schools (CCS) serve more than 32,000 students at 40 different schools, employing 2,200 teachers.
- **Farmington Municipal Schools**, it is the best-connected of times and the worst-connected. The K-12 school district in northern New Mexico has 18 schools that serve more than 10,000 students.
- For further due-diligence and reference check, Empire is expected *to provide* "local" references (New Smyrna Beach, etc.)

City of Ormond Beach

22 South Beach Street
Ormond Beach, Florida 32174
Telephone (386) 676-3223
Fax (386) 676-3374

REQUEST FOR PROPOSALS

PROPOSER ACKNOWLEDGEMENT FORM

THIS PAGE MUST BE COMPLETED AND RETURNED WITH YOUR PROPOSAL

RFP 2024-07 Telecommunication System Upgrades & Improvements
RFP DUE DATE & TIME: **Tuesday, October 24, 2023 at 2:00 PM**
RFP OPENING LOCATION: **City Hall Training Room at Ormond Beach City Hall**
PRE-PROPOSAL MEETING: **Thursday, October 12, 2023 at 3:00 PM, City Hall Training Room**

Proposals Received After The Above Date And Time Will Not Be Accepted.

PROPOSER/FIRM NAME: _____

PROPOSER'S MAILING ADDRESS:

_____

_____

CITY-STATE-ZIP: _____

F.E.I.N.: _____

PHONE NUMBER: _____

EMAIL: _____

If returning as a "No Proposal", please state reason (s):

_____

_____

THIS PAGE <u>MUST</u> BE COMPLETED AND RETURNED WITH YOUR PROPOSAL

RFP RESPONSE FORM

The undersigned SUBMITTER agrees, if this Proposal is accepted, to enter into a Contract with the CITY that reflects the items of this Request for Proposals (RFP) and to provide all services, as specified or indicated in the RFP Documents, in full accordance with the terms and conditions set forth therein.

SUBMITTER has examined all of the RFP Documents and of the following Addenda, receipt of which is hereby acknowledged.:

Addendum Date	Addendum Number
_____	_____
_____	_____
_____	_____

This Submittal is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; SUBMITTER has not directly or indirectly induced or solicited any other Submitter to submit a false or sham Submittal; SUBMITTER has not solicited or induced any person, firm or a corporation to refrain from bidding; and SUBMITTER has not sought by collusion to obtain for himself any advantage over any other Bidder or over the CITY.

<u>THIS RESPONSE IS SUBMITTED BY</u>:

FIRM NAME: _____

FIRM'S PROFESSIONAL LICENSE NUMBER: _____

SUBMITTER'S NAME: _____
(Typed or Printed)

TITLE: _____

AUTHORIZED SIGNATURE: I, _____
_____ hereby declare that I have read and fully understand the RFP Documents, including the General Conditions and the Scope of Work, and that I am duly authorized to sign and submit this Proposal.

The CITY reserves the right to reject any and all Submittals, to waive informalities, and to accept any Submittal or parts thereof as the CITY, in its sole discretion, determines to be in the best interest of the CITY.

OMISSION OF A SIGNATURE ON THIS PAGE
MAY RESULT IN REJECTION OF YOUR PROPOSAL.

GENERAL CONDITIONS

PUBLIC ENTITY CRIMES: A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a Bid or Proposal on a contract to provide any goods or services to a public entity, may not submit a Bid or Proposal on a contract with a public entity for the construction or repair of a public building or public work, may not submit Bids or Proposals on leases or real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.

DISCRIMINATION: Pursuant to Section 287.134(2)(a), Florida Statutes, an entity or affiliate who has been placed on the discriminatory vendor list may not submit a bid or proposal on a contract to provide any goods or services to a public entity, may not submit a bid or proposal on a contract with a public entity for the construction or repair of a public building or public work, may not submit bid or proposal on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity.

NON-CONFIDENTIALITY OF BIDS AND/OR PROPOSALS/PUBLIC RECORDS: The City of Ormond Beach cannot and does not warrant the confidentiality of any information submitted in response to this solicitation. Florida law provides that municipal records shall at all times be open for personal inspection by any person, Section 119.01, F.S., The Public Records Law. Information and materials received by the City of Ormond Beach in connection with all Proposers' response shall be deemed to be public records subject to public inspection upon award, recommendation for award, or 30 days after bid/proposal opening, whichever occurs first. Section 119.071, F.S.

DISTRIBUTION OF BIDS AND RFP/RFQ: The City uses the services of DemandStar (www.demandstar.com) to distribute its bids and RFP/RFQ's on-line on the Internet. If you have received a copy of this RFP from any source other than DemandStar, please be aware that you may not have received the latest version of the RFP or any related addendums.

SUBMISSION OF PROPOSALS: All Proposals shall be submitted in a sealed envelope. The Request for Proposals (RFP) number, title, and opening date shall be clearly displayed on the outside of the sealed envelope. The delivery of said Proposal to the Purchasing Office on or before the specified opening date and time is solely and strictly the responsibility of the Proposer. Any Proposal received by the Purchasing Office after the specified date and time will not be accepted. Proposals must be submitted on forms provided by the City. No other forms will be accepted. No Proposal may be modified after opening. No Proposal may be withdrawn after opening for a period of ninety (90) days unless otherwise specified.

EXECUTION OF RFP: Proposal must contain a manual signature of authorized representative in the space(s) provided. Proposals must be typed or printed in ink. Use of erasable ink is not permitted. All corrections made by Proposer to any Proposal entry must be initialed. The company name and Federal Employer Identification Number (F.E.I.N.) shall appear in the space(s) provided.

RFP OPENING: Proposals shall be opened at the time, date and place specified in the RFP, and the name of the Proposer shall be read aloud publicly. No discussion of the submittals will occur.

RFP TABULATION: Any Proposer wishing to receive a copy of the RFP tabulation is required to enclose a stamped, self-addressed envelope with their Proposal. The RFP tabulation will be posted on DemandStar.com.

CLARIFICATION/CORRECTION OF RFP ENTRY: The City of Ormond Beach reserves the right to allow for the clarification of questionable entries and for the correction of obvious mistakes.

INTERPRETATION: Any questions concerning conditions and specifications shall be directed to the City's Purchasing Coordinator. Those interpretations which may affect the eventual outcome of this Proposal will be furnished in writing to all prospective Proposers. No interpretation shall be considered binding unless provided in writing by the City of Ormond Beach.

MINORITY POLICIES: The City of Ormond Beach, Florida, encourages the full participation of Disadvantaged and Women Business Enterprises (D&WBE) in the provision of goods and services.

ADDITIONAL TERMS AND CONDITIONS: The City of Ormond Beach reserves the right to reject Proposals containing any additional terms or conditions not specifically requested in the original conditions and specifications.

TAXES: The City of Ormond Beach is exempt from Federal Excise Taxes and all sales taxes.

ASSIGNMENT: Any purchase order or contract issued pursuant to an RFP and the monies which may become due thereunder are not assignable except with the prior written approval of the City Manager or City Commission, whichever authorized the purchase order or contract.

LIABILITY: The vendor shall hold and save the City of Ormond Beach, its officers, agents, and employees harmless against claims by third parties resulting from the vendor's or supplier's breach of contract or negligence, including all attorney's fees and costs, and shall pay any and all damages, fees, and costs assessed on behalf of the City. The City expressly reserves all rights, privileges and benefits of sovereign immunity.

AWARDS: The City reserves the right, in its sole discretion, as the best interest of the City may require, to make award(s) by individual item, group of items, all or none, or a combination thereof; on a geographical basis and/or with one or more vendors or contractors; or to reject any and all Proposals or waive any minor irregularity or technicality in the Proposals received.

OTHER AGENCIES: All Bidder(s) awarded contracts from this bid or proposal may, permit any municipality or other government agency to participate in the contract under the same prices, terms, and conditions, if agreed to by both parties.

It is understood that at no time will any city, municipality, or other agency be obligated for placing an order for any other city, municipality, or agency: nor will any city, municipality, or agency be obligated for any bills incurred by any other city, municipality, or agency. Further, it is understood that each agency will issue its own purchase orders to the awarded bidder(s).

COMPLIANCE WITH FLORIDA PUBLIC RECORDS LAW:

Contractor expressly agrees that it shall comply with the public records law provided in Florida Statutes, Chapter 119, and specifically to:

(a) Keep and maintain public records required by the City to perform the contracted service.
(b) Upon request from the City Clerk, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes, or as otherwise provided by law.
(c) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the contractor does not transfer the records to the City.
(d) Upon completion of the contract, transfer at no cost, to the City all public records in possession of the contractor or keep and maintain public records required by the

City to perform the service. If the contractor transfers all public records to the City upon completion of the contract, the contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the contractor keeps and maintains public records upon the completion of the contract, the contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City Clerk, in a format that is compatible with the information technology systems of the City.
(e) Failure of the Contractor to comply with Public Records Law as provided by Florida Statutes, Chapter 119, shall subject the Contractor to penalties under Chapter 119.10 and subject this Agreement to termination for cause by the City.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

CITY CLERK
22 SOUTH BEACH STREET
ORMOND BEACH, FLORIDA 32174
(386)676-0311
CITYCLERK@ORMONDBEACH.ORG
or online at
https://www.ormondbeach.org/prr

Ref: Fla. Stat. §119.0701(2016)

THE CITY OF ORMOND BEACH RESERVES THE RIGHT TO REJECT ANY OR ALL PROPOSALS, AND TO WAIVE INFORMALITIES, AS MAY BE DEEMED TO BE IN THE BEST INTEREST OF THE CITY.

TERMS AND CONDITIONS

A. The City of Ormond Beach reserves the right without prejudice to reject any or all proposals, to request clarification of information submitted, and to request additional information of one or more proposers.

B. The City reserves the right to award the contract to the next most qualified firm if the successful firm fails to execute a contract within two weeks after the award of the contract by the City Commission.

C. In accordance with federal, State, and local regulations, the firm shall not discriminate under the contract against any person.

D. The firm shall not assign or transfer any interest in the contract without prior approval of the City Commission.

E. The City reserves the right to terminate the contract at any time due to the vendor's default under terms of agreement.

F. Submission of a proposal indicates acceptance by the firm of the conditions contained in this Request for Proposals unless clearly and specifically noted in the proposal submitted and confirmed in the contract between the City of Ormond Beach and the firm selected.

G. Submittals should include a copy of firm's insurance certificate, Conflict, Non-Conflict of Interest Statement/Litigation Statement, Drug Free Workplace Certificate and E-Verify Statement.

STATEMENT OF PURPOSE

The City of Ormond Beach, Florida, is requesting proposals and intends to select a qualified firm or individuals to provide a turnkey replacement of the Central telephone exchange system (Centrex) with a ***turnkey*** state-of-the-art Voice over Internet Protocol (VoIP) system, and a data solution that will fulfill its needs in the future and enhance the community experience today.

Overview

The City of Ormond Beach wishes to replace its aging Centrex communications technology platform with a new system at its multiple locations. While this requirement is driven in part by the age and lack of growth of the current system, the City also wishes to use this opportunity to evaluate new technology that will increase productivity and enhance service quality. The City of Ormond Beach is looking for a complete platform replacement, a ***turnkey*** state-of-the-art Voice over Internet Protocol (VoIP) system, and a data solution that will fulfill its needs in the future and enhance the community experience today.

Preference will be given to those organizations that have a record of experience in providing these type of services to local government, including but not limited to:

- equipment, services, Network Switches, Wireless Access Points (WAPs) in all locations, and
- replacements/installation, of cabling, enclosed racks with locks where necessary, and

- uninterrupted power supply (UPS) replacement, including all license maintenance and installation services.



The City of Ormond Beach is seeking proposals for installing a new telecommunications platform and procuring new data networking equipment from qualified respondents (Vendor). The City's IT staff is accustomed to managing and maintaining its infrastructure and systems. They intend to be as autonomous and self-sufficient as possible and will consequently want to be very involved in the VoIP system implementation to gain familiarity. It is anticipated that they will manage and maintain the system while relying on the Vendor for staff augmentation, major additions, new features and capabilities, the introduction of new technologies, and updates as they are available, rather than a "fully managed" solution. Additional enhancement/s requirements and gains in business functions included.

The first goal of the RFP is the design and implementation of a complete infrastructure upgrade. The project spans 23 sites within the City of Ormond Beach. The City of Ormond Beach Network infrastructure has not been updated significantly since 2005 resulting in most network devices becoming end-of-life or outdated and has become largely obsolete. The upgrade to the local-area network (LAN) should improve operational efficiency, improve on cyber security posture and provide disaster recovery/ internet connectivity redundancy. Our expected end goal is to significantly improved infrastructure with simplified management and serviceability. Most of the City's offices are connected by City-owned fiber. The Airport, Fire Station 94, Athletic Fields, and the Nova Community Center utilize Point to Point wireless connectivity (See attachment "A" Network Topology).

In addition, replace the existing routers, network core switches, and edge switches with enterprise-grade, "Tier 1" manufacturer network equipment having:

1. Optimal for converged network environments, allowing voice, data, and wireless traffic delivered across a single network.
2. 10gig connectivity between sites with City fiber at the location.
3. Layer 3 and Layer 2 switching with VLAN and Quality of Service (QoS) and PoE capability throughout.
4. Managed switches.
5. Encryption capabilities.
6. Security, mobility, IoT, remote access and cloud.

7. Software Defined deployment.
8. Stackable switches.
9. Role based access and controls.

Using Attachment, A (City of Ormond Beach – Network Topology) and Attachment B (City of Ormond Beach Switch Port and Access Point Counts) as a reference, the bidder shall design and propose a fault-tolerant network which will provide failover in the event of a fiber cut. The proposed solution shall also include security and management delivered from a single console with AI and machine learning. Integration to existing Fortigate Firewalls or propose replacement of Firewalls to gain beneficial use of proposed manufacturers' AI and machine learning.

The second goal of this Request for Proposal (RFP) is to replace the existing telephone system with a modern Voice over IP (VoIP) telecommunications platform:

1. Provide Session Initiated Protocol (SIP) feature-functionality to support the new VoIP platform.
2. Reduce overall telephony support and administration costs.
3. Enhanced Business Continuity capabilities to support City operations, including Police, Fire, Utilities and Public Works, Leisure Services, and EOC during events and emergencies.
4. Mitigate operational risks associated with a seriously aging/max capacity voice infrastructure.
5. Provide a "Hybrid" VoIP platform that will provide voice redundancy by designing a phone system to remain operational in the event of a disaster and be flexible enough to provide future applications such as:
    - Hybrid is defined as having an on-premise solution combined with cloud-based technology with Redundant Call Control physically located on-premise and in a remote data center in a private environment
    - Backup power sources and servers
    - Teams and servers spread across multiple locations
    - Backup routing strategies with multiple SIP trunks
    - Video Integration
    - Enhanced mobility options with Bring Your Own Device (BYOD)
    - Interoperability with Push-To-Talk Radio Systems
    - Call Center
    - Unified Messaging
    - Unified Communications
    - Open Architecture for future non-identified applications
6. Ability to record live phone calls for the Police Department
7. Integration to existing IVR Selectron (Tyler) used for Utility payment

The third goal is to replace the City's existing Wi-Fi network with a high-performance Wi-Fi communication system to support various services, applications, and technologies at the City Hall and throughout all its municipal buildings. This will be a turnkey project to be owned by the City.

The in-building Wi-Fi solution must be implemented with state-of-the-art yet proven technology and sourced from the same manufacturer as the network switches and VoIP solution. It must be flexible enough to accommodate the rapid evolution of wireless technologies and business applications without a major overhaul or upgrade. The solution proposed must provide access for devices to the following networks:

1. Telephony "Vo-Fi" (Voice over IP over Wi-Fi); wireless handset device authenticated by certificate
2. Internet access, authenticated by logon to the RADIUS server
3. City network access, authenticated by either VPN or Zero Trust Network Access
4. PKI certificate
5. Multi-Factor Authentication (MFA) / Two-Factor Authentication (2FA)
6. Remediation network, based on NAC failure
7. Public Access
8. Future Card access controls
9. Future IP Cameras
10. Future RFID over Wi-Fi

SCHEDULE OF PROPOSAL

September 24, 2023	Advertisement
October 12, 2023 at 3:00 PM	Non-mandatory pre-proposal meeting City Hall Training Room, 22 South Beach Street
October 24, 2023, 2:00 PM	Proposals Due - one (1) signed original of the complete proposal packet along with one (1) fully complete electronic file in pdf format on either a CD or thumb drive. Both versions must be in the sealed envelope. Submit proposals to the Purchasing Coordinator, Room 102, City Hall, 22 South Beach Street, Ormond Beach, FL 32174.
November 8 - 16, 2023	Proposal Rankings- Short Listing
November 27- December 8	Vendor Demonstrations
January 16, 2024	City Commission Approval of contracts.

INFORMATION TO BE SUBMITTED:

Submit one (1) signed original of the complete proposal packet along with one (1) complete electronic copy in pdf format on either a CD or thumb drive which must include the following:

1. One unbound copy which includes the following information:

a. Letter of interest.
b. Proposer Acknowledgement form & RFP Response form (2 Pages), completed.
c. Overview description of the firm and its ability to provide the services and equipment being applied for.
d. Provide three of references where similar work of similar size and nature is currently in process or recently completed for this engagement and contact information for each.
e. Whether or not the firm or individual is a certified Minority Business Enterprise as defined by the Florida Small and Minority Business Assistance Act of 1985.
f. Copy of firm's certificate of insurance.
g. Completed Conflict, Non-Conflict of Interest Statement/Litigation Statement.
h. Completed Drug-Free Workplace Certification
i. Verification of employment status using E-Verify Form

2. The Proposal should also address the following topics

Voice Infrastructure

The City of Ormond Beach has Centrex service at the following locations that will be replaced in this project. Please reference "TABLE A" below.

VOIP Compatible Network

Vendor can make the following assumptions in order to configure their proposed solution:

1. The City of Ormond Beach's current preference is to run the VoIP network on a converged backplane with the telephone connected to a Power over Ethernet LAN switch through the wall jack and the computer connected to the telephone. This is contingent on the ability of the telephones to provide an IP address, separate VLAN, and different QoS prioritizations to voice and data. If you cannot support this requirement, please explain your workaround solution below.

2. QoS is not currently deployed in the LAN, but all network equipment is intended to be capable of supporting QoS when needed.

For the purposes of this RFP, the bidder can assume:

A. 1 x Category 5 or better data drop per office/cubicle

B. Connectivity to remote using either VoIP desk phones or softphones

C. UPS/PDU's shall be provided by the bidder and designed with redundancy

D. 2 post or wall-mounted racks in IDFs, telephone closets and smaller branches

E. Power, cooling, patch panels, and MDF to IDF interconnectivity, as required

“TABLE A” below includes the quantity and type of phones the City of Ormond Beach requests for the bidder to provide pricing. Pricing shall include all associated services, including design, installation, and end-user training.

TABLE A Location	Standard Multi-Line	Wireless	Executive Assistant Multi Linew / Exp Module	Weather-proof for Outside (SIP)	Analog Adapter ATA	Conference Phone
Airport 725 Hull Rd.	3	0	0	0	0	0
Athletics Field 700 Hull Rd.	1	0	0	0	0	0
Baily River Bridge Cassen Park	1	0	0	0	0	0
Casements 25 Riverside Sr.	6	0	0	0	0	0
City Hall 22 S. Beach St.	8	0	4	0	1	2
City Hall - Building Dept 22 S. Beach St.	4	0	0	0	0	0
City Hall - Engineering Dept. 22 S. Beach St.	8	1	0	0	0	0
City Hall - Finance Dept. 22 S. Beach St.	17	0	0	0	0	1
City Hall - GIS Dept. 22 S. Beach St.	3	0	0	0	0	0
City Hall - HR Dept. 22 S. Beach St.	4	0	0	0	0	0
City Hall - Inspectors Office 22 S Beach St.	6	0	0	0	0	0
City Hall - IT Dept. 22 S. Beach St.	5	0	0	0	0	1

TABLE A Location	Standard Multi-Line	Wireless	Executive Assistant Multi Linew/Exp Module	Weather-proof for Outside (SIP)	Analog Adapter ATA	Conference Phone
City Hall - Planning Dept. 22 S. Beach St.	11	0	0	0	0	1
City Legal Dept. 173 S. Beach St.	0	0	6	0	0	1
Community Events/Senior Ctr 351 N. Andrews	2	0	0	0	0	0
EDC 601 Division St.	2	0	0	0	0	0
Fire Admin - Station 91 364 S. Atlantic	6	1	0	1	0	1
Fire Station 92 189 S. Nova Rd	12	1	0	1	0	1
Fire Station 93 300 Wilmette Ave	5	1	0	1	0	0
Fire Station 94 2301 Airport Rd.	3	1	0	1	0	0
HDC 550 N. Orchard	1	0	0	0	7	0
Leisure Services 399 North US1	7	0	3	0	0	1
Nova Community Center 440 N. Nova Rd.	5	0	0	0	0	0
Ormond Memorial Art Museum 78 E. Granada	1	0	0	0	0	0
Police Department 170 W. Granada	61	1	0	0	1	2

TABLE A Location	Standard Multi-Line	Wireless	Executive Assistant Multi Linew/Exp Module	Weather-proof for Outside (SIP)	Analog Adapter ATA	Conference Phone
Police Athletic League 194 Central Ave.	3	0	0	0	0	0
Public Works 501 N. Orchard	14	1	3	0	0	2
Public Works - Fleet 500 N. Orchard	4	5	0	0	0	0
So. Ormond Neighborhood Ctr 176 Division Ave	3	0	0	0	0	0
Waste Reclaim 550 N. Orchard	8	0	0	0	0	0
Wastewater Collection 501 N. Orchard	1	0	0	0	0	0
Water Treatment Plant 298 Tomoka Ave	7	0	0	0	0	0
TOTAL	222	12	16	4	9	13

Additionally, include Call center features/functionality for the Planning and Finance (Utility Billing) departments. The total number of agents is 15 and 4 supervisors with reporting and monitoring capabilities.

Turnkey Pricing

Pricing must be provided for each element in this section, and any proposal that does not provide pricing in the base price or optional price section may be considered non-responsive. If Vendors require any further information or discovery in order to respond, it is important that they provide all questions as early as possible in the RFP process to allow the City's internal department to research and reply. Pricing should be turnkey with an option to lease, including discovery, design, implementation, integration, testing, training, hardware, shipping, and handling charges (if applicable), sales tax, trip charges (if applicable), software, maintenance, support, and any other cost associated with the quoted system. Any responses along the lines of "Further information is required to provide firm pricing", or "Various methodologies exist to meet Customer requirements; pricing can be provided upon further discovery" may be considered non-responsive.

Business Continuity

The following are the City of Ormond Beach's minimum requirements for the resiliency of the quoted system to provide enhanced business continuity. Explain below how the system provides this level of reliability at the turnkey price.

No Single Point of Failure (99.99% availability) for core applications – Any element in your design that would cause the failure of a significant portion of the system should be made redundant. If redundancy is not available for this element, then the element should be duplicated or made highly available by adding hot-swappable redundant power supplies, RAID hard drives, etc. In addition, software upgrades should be able to be loaded to the system while in operation with no, or momentary downtime to implement the software patch. It is acceptable for ancillary systems such as reporting, call recording, and call recording systems to be unavailable while a cold spare is provisioned, or a server is rebuilt/recovered. However, the Call Centers should be able to continue answering calls, queuing calls, providing announcements, and accruing statistics even if the primary server fails.

Mirrored Redundancy for Call Processing – Hot standby failover to a synchronized secondary processor that has a synched database copy and awareness of all calls in progress. Active calls should not be dropped, and phones should failover to the secondary server immediately when idle without rebooting the phone. When the primary server is brought back into service, phones should not require a reboot to recover to the primary processor.

Geographic redundancy is required for the proposed solution, where servers are located at the City's Data Center and at the Remote Data Center facility. In the case of a failure of the fiber to City's Primary Data Center, or other hardware failure at City's Primary Data Center, all VoIP, Voice Mail, and ACD functionality should failover to servers in the Remote Data Center facility. The Remote Data Center will have its own trunk (SIP) connection to the public switched telephone network (PSTN). Please explain how this functionality would work, any

WAN requirements or considerations, how long a failover would take, and how the system would recover to normal operation upon recovery of the primary location.
Installation and Decommissioning of network equipment: Security should be considered throughout the entire lifecycle of the network device. Standards should include security policies for network devices, specific configuration examples, and a security template for removing unnecessary services and factory default configuration settings not needed for the intended application for the devices. Load proper code version/operating system (OS), and version should be standardized if at all possible. Properly document devices for future reference and keep a good list of active inventory. Update all network diagrams. Make backup copies of the network equipment. Diligence should be taken when decommissioning equipment. Archive configuration for future reference if any issues or questions come up after the replacement of decommissioned equipment. Remove all configurations from device – make sure all copies of the configuration have been removed from NVRAM and all flash memory. Remove decommissioned devices and return them to IT for proper disposal. All returned items should be placed in a box with a proper inventory list on the box. Clean up as you go, and all wiring should be well-ordered and labeled for future servicing and troubleshooting.

Integrated Messaging:

The City of Ormond Beach requires voice mail integrated to email messaging, and it defines Integrated Messaging in this section. The City's present voicemail system today must be replaced as part of this project. Vendor is asked to provide an all-new integrated messaging voicemail solution to meet these requirements, balancing the need for the lowest total cost against the potential for improved integration and supportability. Please state whether the voicemail solution being quoted is compliant with its base pricing or whether it is an extra cost add-in, and briefly discuss how this functionality is provided. Provide pricing for required integrated messaging voice mail.

- Voicemail messages appear in user's Email Inbox with voicemail to text on their computer, Outlook Web Access, smartphones (iPhones, Android, etc. ActiveSync), tablets (iPads, Microsoft Surface, etc.)
- Email Inbox, SmartPhone/Tablet Inbox, and Voicemail Mailbox remain in sync as messages are played and deleted
- Voicemail messages that are listened to from the computer or SmartPhone/Tablet will turn off the Message Waiting Indicator on the phone system
- Messages that are deleted from the computer or SmartPhone/Tablet are deleted from the voicemail store and moved to the deleted items folder
- Messages that are deleted through the telephone user interface of the voicemail are deleted from the email and SmartPhone/Tablet inbox
- Messages can be saved to personal folders or document management system by dragging and dropping from Outlook (does not require a user to "Save As" a message for retention)

Enhanced 911 (E911):

The following functionality, generally referred to as E911 compliance, is required by Customer in the turnkey pricing. Please state your compliance and briefly describe how your solution could meet the following requirements, as well as your overall E911 strategy and abilities.

Send station-specific location information to the public-safety answering point (PSAP).
Notify internal extensions through on-display, email, or other real-time means when a user dials 911 and what extension has placed that call. This allows internal first aid staff to respond to emergencies immediately.

Provide specific Emergency Location Identification (ELIN) or Automatic Location Identification (ALI) information to the PSAP to allow for correct identification of the callers' location.

Automatically update the user's location when they log in to a different phone with their same extension or move their phone to a different area of the building or to a different office.
Assign a temporary Dialed Number Identification Service (DNIS) number to any extension that does not have a Direct Inward Dialed (DID) number to allow the PSAP to call the station back in an emergency.

Session Initiation Protocol (SIP) Trunking:

The City of Ormond Beach will be using new SIP concurrent call paths (CCP's or trunks) for PSTN access, to be provisioned over new dedicated data lines terminating at the City Data Center and at the Remote Data Center facility. Provide pricing for SIP trunking, including any session border control (SBC) and associated equipment to terminate SIP at both locations.

Automated Attendant (AA):

The City of Ormond Beach requires automated attendant functionality to answer approximately thirteen department main number(s). For the purposes of this RFP, Automated Attendant (AA) will refer to announcement trees and dialed-input options that do not require integration with customer databases or CRM. The proposed system should have the ability to provide reports on Automated Attendant traffic, including which options are chosen, where callers hang up, and where callers are transferred to departments. Explain below how automated attendant is provided by the system at the turnkey price.

Interactive Voice Response (IVR):

The City utilizes Selectron IVR for Utility Billing. Describe how the solution will integrate with this IVR for call transfers between the two systems. Today, connectivity is with 6 analog lines. The City would prefer to transition this connectivity to Session Initiated Protocol (SIP). Note any experience you may have with Tyler Selectron as it relates to IVR and database integration.

Multiple Line Appearances:

The City's departments generally have line appearances of the department's main line on multiple sets, often 3 to 4, so that multiple people can answer the department line. The City is interested in how this functionality would be provided in Vendor's solution.

- Describe whether secondary (rollover) lines would be needed at stations so that one call could be placed on hold and a second call answered.
- Describe how to transfer a call, with and without first talking to the called party, and how to transfer directly to voice mail.
- Describe whether the department line rings at all stations or can be set to ring at just selected stations and whether the department line rings (or not) if that station is off-hook (to avoid interfering with a call-in progress).
- Describe whether the main department line has a distinct message waiting indicator (MWI) that is separate from that of a private line at that station.

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- Describe whether the main department line has a distinct message waiting indicator (MWI) that is separate from that of a private line at that station.

Music on Hold:

Please describe how your system will provide separate music on hold at these locations, including the interface. The City of Ormond Beach desires music on hold (MoH) at all locations. In order to minimize traffic on the WAN in a VoIP implementation, the system should be able to provide music on hold from the PSTN gateway at each location. Please describe if the system provides the ability to play standard .wav or .mp3 files as music on hold from a file saved on the gateway. Please describe if the system can provide multicast music on hold that would stream one audio connection to each location (not one audio connection for every call on hold). Please describe if the system can be configured to stream music on hold as G.711 while the rest of the VoIP traffic between locations is G.729. Please indicate if conference calls that are put on hold while adding parties, are able to speak with each other and not hear music on hold. This application should be included in the base pricing.

Recent Calls Display:

The City is interested in an easy display of recent calls at an extension with Caller ID so that the user can easily scroll back through recent calls to see the Caller ID information, date/time, and call duration.

On-Demand Call Recording:

The City is interested in having the system provide ad-hoc "on demand" call recording for up to twenty (20) selected users (e.g., Police Department). Please describe how you would provide this functionality, whether desktop software will need to be deployed, how the application is controlled, whether calls will be recorded from the beginning of the call even if recording is activated in the middle of the call, and how an outside caller would be notified that the call is being recorded. In order to meet recording notification laws, will the system play a greeting such as "Recording" or beep on the line every 30 seconds to indicate that the call is being recorded? Provide optional pricing for On-Demand Call Recording.

Call Detail Recording (CDR):

The City of Ormond Beach does not presently use a Call Accounting System, also known as a call detail recording (CDR) system. The City is interested in CDR as an option in the proposed solution. This CDR / call accounting system should be a single system that accepts call-detail information for all incoming and outgoing public switched telephone network (PSTN) calls from all quoted systems. In addition, it should have a customizable dashboard, pre-defined reports, a custom report designer, and an on-demand traffic analysis tool to address reporting needs and allow department Directors to make informed decisions for their organization. Please describe your CDR / call accounting software package below. Provide optional pricing for the proposed CDR system.

VoIP Encryption for Secure Communications:

Will the proposed telephone system have the ability to encrypt the conversation between telephones and between telephones and PSTN gateways?

System should provide reports for inbound/outbound/internal phone calls per employee (station) and department, traffic reports for telco trunk groups and station hunt groups, and peak busy hour usage reports with grade of service and recommended trunking. The system should have an easy-to-use capability of searching for dialed numbers.

Software should have the capacity to provide accurate charge-back billing to individual departments. Reports for individual departments must roll up to a consolidated system-wide report. The Vendor is responsible for fully programming the Call Accounting system and ensuring that it is loaded with appropriate rate tables, reports, and alarms. Please describe procedures and pricing for rate table updates. Provide optional pricing for the proposed annual subscription cost for this capability.

Please describe whether the package will provide alarms and notifications for suspected toll fraud activity (hacking). Will the software provide exception reports for long calls, expensive calls, or restricted calls?

The City of Ormond Beach would like to implement VLAN segmentation and quality of service (QoS) in conjunction with this project and will rely on the Vendor for recommendations for separating VoIP traffic from data traffic, as well as creating VLANs for other types of data devices, and configuring trunking on access layer ports. It is expected that the VLAN segmentation will be accomplished by simple static routes within each location on the Layer 3 core switch and that QoS will be implemented on all switches and routers. City has an existing Active Directory (AD) server for DHCP that assigns dynamic IP addresses to computers at all sites. Please comment on your solution's ability to meet this requirement.

NON-COMPLIANCE

Please explain any features that were responded to as Optional, Partial, or Non-Compliant Also, describe workarounds and optional pricing. Lastly, provide an explanation for any partial or non-compliance with features requested.

Recommended Optional Upgrades

In answering this type of Request for Proposal (RFP), it is recommended that Vendors provide pricing on the minimum cost alternatives that allow for full compliance with the RFP. However, we would be interested to know what options or upgrades you would recommend to your base configuration. Please name, define, describe, and price each upgrade that you would recommend in your hardware, software, or feature functionality.

Phone System

Specific Requirements

Architecture

The City of Ormond Beach would prefer that all locations be part of a single telephone system with a single database image. Multiple systems with databases that are coordinated by a centralized system administration software that emulates single system functionality are not compliant with this definition. Please state whether your base pricing includes this architecture.

Servers: Vendor will supply all servers (including servers to host required virtual servers if recommended) and Operating System software (including Windows or VMware, HyperV if required) for ALL applications proposed in their solution. As noted elsewhere, the City of Ormond Beach may decide to host servers in their Virtual Compute environment and/or provide Windows OS before the final contract negotiation.

Telephone Specifications for The City of Ormond Beach

All telephones should be GigE, meaning that they can supply a switched Ethernet port to an attached computer at Gigabit Ethernet speeds.

The PC Attendant Console should provide receptionist/operator functionality with an on-screen busy lamp field that shows the status of telephones across any networked locations. The phone system should automatically re-direct any operator calls to a backup reception position (described below) if the PC Console were to lock-up, fail, or require rebooting.

Staff (Standard) telephone requirement is for a multiline set capable of supporting at least four (4) extension appearances. The following features, accessible via fixed or soft feature keys, are required: internal and PSTN dial-tone, hold, transfer, message waiting indicator, ad-hoc five-party conference call, system speed dial access, personal speed dial access, and forward to voice mail. LCD display, two-way speakerphone, and the ability to independently mute speakerphone, headset, and handset calls are required for this set. Integration should include Point to point video conferencing between employees.

Telephones with minimum of 4 Busy Lamp Field (BLF) should match the specification for Standard (Staff) phones and have at least four (4) extension appearances.

Executive telephone requirement is for a Full Duplex speakerphone capable of supporting Busy Lamp Field appearance for other telephones, intercom to their assistant, and one-touch speed dials for 3 numbers (minimum 6 button phone required). All other features of the Standard telephone need to be supported as well.

Executive Assistant (Secretary) telephones shall include all features of the standard telephone and also be equipped with the ability to monitor at least 3 Executives. Secretary should be able to tell if an Executive is busy on any of their extension appearances. Call Coverage Keys should ring or delay ring along with the Executive's telephone. Secretary phone should have a 2-way intercom button to their Executive. This phone should be able to support 8-line appearances, or two lines for the users and two lines for each Executive.

The basic (or courtesy) telephone requirement is for a single or multi-line phone that would be placed in very low usage areas such as an intern desks, waiting areas, warehouse, lunchroom, etc. The following features, accessible via fixed or soft feature keys, are required: internal and PSTN dial-tone, hold, transfer, system speed dial access, park pickup, and access to the corporate directory.

Key Expansion Module – A module that can be attached to any proposed station and offer a minimum of 12 additional busy lamp appearances.
Standard Analog Line is for a standard loop start phone line, either 24V or 48V, with a minimum 3000-foot reach over standard 24g twisted pair copper cabling.

Telephone-related Items

Provide a brief description and picture for each telephone being proposed below. When quoting VoIP telephones, specify data speeds available/quoted (10/100/1000), optional snap-in interfaces available, and power requirements (or which PoE class) for each phone. Please note if any of the phones require a wall mount kit and include optional pricing.

Provide a screenshot and brief description of the PC softphone. Will calls to a softphone be able to ring simultaneously on an attached (USB) headset/handset as well as at the PC? Will computers that do not have multimedia speakers be able to 'ring'?

The quoted phones should allow users to navigate a telephone directory from the display of their phone. Where will this directory be retrieved from? Please describe how the directory is accessed.

If a color display option is available (and not already included in your proposal), include the incremental cost to upgrade all telephones to color.

The City of Ormond Beach is interested in cordless telephones (Wi-Fi and/or DECT) that would allow their personnel to move around their buildings. A cordless telephone will allow selected staff to answer calls to their shared phone while away from their station and provide basic call transfer and rudimentary multi-line functionality. What solution would you recommend for this requirement? Please provide pricing.

Do headsets require an external amplifier to provide adequate sound quality and volume? Do the telephones quoted have a "headset" mode where the handset does not need to be removed from the cradle, or is a handset lifter required? Does the phone have a separate headset jack, or does it connect in line with the handset?

Features

Departmental "must answer" line. This is a button that appears on a group of telephones to be answered by anybody in a department. This button should include a Message Waiting Indicator for voicemails to this extension in addition to the user's voicemail. Callers would access this line either by direct dial, operator transfer, or zero out of voicemail. It should have multiline attributes so multiple calls can be ringing into the group simultaneously. The calling number and calling name (if available from the trunk or if available from the internal directory) should show on the display of the phones. Please describe how this is accomplished and any drawbacks.

The City of Ormond Beach also requires the following features, which should be supported in the quoted solution:
Ring groups, hunt groups, simultaneous ring groups, pick-up groups, directed call pick-up, directed hold pick-up, directed call park (park+extension to park, unpark+extension to retrieve), and personal speed dial lists.

Please advise if any of these features need to be further defined in order to answer this question. Please respond with your compliance with these features, any required

workarounds, and any limitations to the number of phones in a pickup group, ring group, or shared extension.

System Architecture

Provide a brief description and discussion of the recommended system architecture. Describe the connection and communication between its integral parts. Include a Visio diagram to illustrate the quoted architecture (not a generic drawing). Also, include a standard data rack elevation showing all Data Center equipment, including servers, cabinets, switches, and routers.

The proposed solution must be able to provide traffic reports and report historic trunk utilization by trunk group or for specific lines in the base system being quoted. The system should provide a peak busy usage report that shows the maximum number of lines used during specified periods. Please include samples of these reports in the appendix and your softcopy.

The proposed solution should be 911 compatible, as defined in the following, which shall not be interpreted as reducing any of the requirements for E911.

- Route calls over appropriate local PSTN connections that are identified by the telco central office with the correct address at the Public Service Answering Point, even if that route is different from the standard Least Cost Routing (LCR) route for that station and location
- Route 911 calls over 1 MB analog lines (2) used as failover trunks in the event all other trunks fail
- Allow a 911 call to be made from any station, even if that station is restricted to extension dialing
- For stations in Branches that do not have local PSTN connections, calls over the WAN/VoIP infrastructure should correctly send a default location (i.e., Branch address) for that station to the PSAP that will differ from the rest of the stations that connect over those PSTN connections
- The operator or system administrator and or Security should be notified when a 911 call is made from the phone system

Software

What underlying operating system is used for the applications that form the telecommunications platform (i.e., Windows Server, VXWorks, Linux, Unix, etc.)? List the operating system for each server being proposed.

The Vendor is responsible for providing the Operating System (OS) for all servers required.

Please describe how the underlying OS has been "bolstered" to prevent the exploitation of OS security flaws. Unneeded applications should be uninstalled, removed, or disabled from the OS. This is particularly relevant to Windows operating systems. Which Firewall ports does your application use, keep open, or listen to?

The City of Ormond Beach prefers to implement a new software release after it has been generally available (GA) for at least 3 months. The software can then be considered stable, and there should have been an x.1 type software release to resolve any software bugs.

Please make a note if you are recommending the installation of any software that does not meet these criteria and your justification for doing so. When is the next release due?

Voice over IP

Specific Requirements & Network Readiness Assessment Scope of Work

VoIP Quality and Performance Expectations

It is expected that a Voice over IP installation will be reliable and provide high-quality voice. We define the following as our minimum acceptable performance for VoIP telephone systems, which shall not be interpreted as reducing any of the requirements for reliability.

- Provide 99.99% uptime of all applications during regular office hours
- Provide 99.9% total uptime, including after-hours system maintenance
- Telephone calls will be free of echo, choppiness, sound artifacts, poor sound quality, and dropped calls

VoIP Specifications

What is the manufacturer's recommended best practice for CODEC choice, sampling rate, packet size, jitter buffer, etc.? What bandwidth, including overhead and QoS, will each recommended CODEC require? What VoIP CODECs are supported on the platform, i.e., G.711, G.729A, G.729B, G.722, H.323, SIP, etc. (list all applicable)?

What is the highest common denominator Codec across all applications being quoted? Will calls require transcoding between applications (voicemail, call recording, etc.)?

Which CODECs are supported natively by the telephones? Will telephones auto-negotiate CODEC over the LAN/WAN when connections between offices without the need for an intermediary translation or transcoding? If not, how is transcoding provided?

Does the system provide an option of running SIP for a telephone's call setup? Does the Vendor propose using SIP or proprietary signaling for call setup? How are advanced features supported if using SIP telephones? If Vendor recommends deploying SIP telephones, how are call setup and teardown encrypted and secured?

Does the system support SIP trunks, SIP-compliant gateways, or SIP telephones from other 3rd party manufacturers? Which manufacturers and telephone companies have been certified

with the system? Describe any capabilities or limitations regarding the SIP implementation above or beyond the generic SIP feature set.

When a call is re-routed from the WAN/MAN to PSTN due to Call Admission Control, QoS monitoring bypass, or Call Shuffle to PSTN - what, if any, loss of features will be experienced? For instance, will a caller that is forwarding to voicemail when the call is re-directed over PSTN arrive at the correct user's mailbox and personal greeting?

Does the system support both IP hardphones and IP softphones being located behind a NAT device? Are IP-to-IP direct calls supported for NAT-translated IP hardphones and IP softphones? What is required to support SIP-based phones through NAT traversal?

Encryption

Will the proposed telephone system have the ability to encrypt the conversation between telephones and between telephones and PSTN gateways? If so, what features, if any would be lost?

VOICE MAIL PLATFORM

Specific Requirements

It is imperative that any new voicemail platform be easy to use, easy to change greetings on and require users to only press one (1) button for single-digit prompting to access commonly used features. The voicemail platform should allow the recording and saving of multiple greetings per user and allow easy selection of which saved greeting to use.

The system shall provide voicemail to email and voicemail to text.

Short listed vendors are requested to set up two guest mailboxes on a demo system with integration to the PBX you are quoting so that we can test the user **interface. Please provide a phone number and login information prior to the presentation date.** Please provide a copy of the voicemail quick reference guide on the following page and in the soft-copy of your proposal.

Voice Messaging System Description

Describe your voice messaging product offering. Include a brief overview of the hardware, software, architecture, and components of the equipment proposed to meet RFP requirements.

Is the voicemail built by the manufacturer of the VoIP telephony Company? If not, please provide information regarding the OEM company, its history, and its relationship with the VoIP telephony manufacturer.

The Vendor is required to provide, install and maintain the computer platform, operating system (OS), and software for the voicemail. Please provide the specifications of the platform you will be providing.
What operating system does the voice mail system use? Vendor will be responsible for installing and maintaining the voicemail's Operating Software – including security fixes and updates. How will this be accomplished?

What physical connection will be established from the voicemail to the phone system? If additional voice ports are required in the future, how is the hardware/software added? Explain how the system scales beyond the number of proposed ports.

Are voice messages stored in an industry-standard format? How many Megabytes of disk space are required for each hour of voice storage?

When a backup is performed, what is backed up? – programming, greetings, messages? Do back-ups happen automatically, and can they be directed to a Network Attached Storage (NAS) hard drive?

What, if any, limits are there to greeting, message, or announcement length? What will voicemail do if an individual mailbox is full? What will the remote caller hear? How will the user be notified, and what options will the user have?

Voice Mail Security and Administration

Please describe the system administration interface for the voicemail. Can the voicemail be administered through the same interface as the VoIP telephony system? Does it require separate sessions? Is system administration done through a standard web-enabled Graphic User Interface (GUI)? If so, which browsers does the administrative application support? If not, can the application be loaded on multiple desktops?

Users should be required to enter a password to access their voice mailbox. What is the minimum and maximum password length? Can it be different for different classes of users? Will the voicemail system prevent the use of trivial passwords such as sequential digits, repeating digits, and re-use of the extension number (i.e., 1234, 1111, 4567)?

Does the system track failed password entries in a single session and disconnect the caller? Does the system track failed password entries across multiple sessions and automatically lock the mailbox? Does the system create a log and alarms (SNMP, email, pager) based on failed log-on attempts?

Describe voicemail port, disk utilization, and user status reports available. Include a sample of these reports in the appendix.

Unified Communications AND COMPUTER TELEPHONE INTEGRATION (CTI)

Many telephone system manufacturers are beginning to group together applications that empower on-site and remote workers through a new paradigm referred to as Unified

Communications. This umbrella term may include Integrated Messaging, Find Me/Follow Me, Instant Messaging, MS Teams, Text to Speech access to emails, Speech Recognition access to system features, Computer Telephone Integration, etc.

Integrated Messaging

Please provide a general description of your Integrated Messaging offering, including where its messages are queued and stored, physical connection to the phone system and Email Server (Exchange), logical connection to the Email Client (Outlook), server and desktop requirements, and architecture.

Does the system install an Email Client add-in to allow for message playback and management without having to open a 3rd party media player such as Windows Media Player? Does the user have the choice to play the message through their telephone or through their PC speakers while still controlling the call through their Email Client? Provide a screenshot of the software used to control Integrated Messaging.

Briefly describe any advanced capabilities for text-to-speech playback of emails over a telephone interface, speech-to-text, voice control, and Calendar/Task integration. Describe what upgrades are required to add these advanced features to the system you are quoting.

Unified Communications and Collaboration

Please describe any Unified Communications functionality available with the proposed solution. Please summarize the components and software required to add **desktop MS Teams**, Instant Messaging, Collaboration, desktop video, and buddy lists through the telephone system's native application or your recommended alternate. Vendor should state what, if any, Unified Communications functionality is provided in the base platform specifically. If possible, provide budgetary numbers for the application on a per-user basis.

Describe whether the proposed system would allow for online collaboration, screen sharing, whiteboarding, presentations, etc. (similar to WebEx or LiveMeeting). Although this functionality is not required at present, provide a general overview of how this functionality can be provided in the future.

Some phone systems include a built-in conference bridge at no additional cost. These conference bridges tend to leverage existing telephony infrastructure and provide a "meet me" number that can be provided to callers to automatically bridge calls into a conference call. Some Manufacturers allow the use of passcodes, scheduled and reserved meetings, and meeting invitations, while other Manufacturers simply add each incoming caller to the bridge without the requirement for a passcode. Please describe any functionality that the quoted system will provide for this type of Meet Me Conference Bridge.

Computer Telephone Integration

Click to Dial –Will the proposed solution allow a user to dial a phone number from Outlook clients and have the call complete on their VoIP deskphone? Will employees be able to place calls by pressing the dial button from the Contacts or the Global Address List? Is there any additional software or licensing required? If so, please describe which application provides

this functionality and include this application in your base price for all employees. Provide optional pricing.

Does the proposed solution provide the ability to highlight a phone number on a web browser page and have the call dialed by the phone system? Describe how this feature works, what components are required for this functionality, whether this functionality is included in the proposal as priced, and optional budgetary pricing if not included. Provide optional pricing.

Briefly describe and price any other relevant CTI applications that could improve employee efficiency.

Mobility Applications (Find Me/Follow Me)

Extend to Cell Phone: Describe any functionality that the system has to ring a call to a person's cell phone and desk phone simultaneously. If the call is answered on the cell phone, how do you get the call back to the desk phone? If the call is answered on the desk phone, how do you extend the call to the cell phone? Will the user see the inbound caller's Caller ID or the VoIP telephony system's Caller ID on the display of their cell phone? Provide optional pricing.

Describe and provide optional pricing for any other Mobility applications or abilities that the system can provide in order for an employee to manage where the phone system can expect to find them. Provide optional pricing.

System Administration REQUIREMENTS

Specific Requirements

The City of Ormond Beach desires a system administration tool capable of supporting all offices within the enterprise from a single intuitive user interface. Ideally, this program will allow management of the phone system, voicemail, ACD, etc., from a single unified interface. Please describe all the functions and applications the administration tools can support and include screenshots for each application.

The system should maintain a change log of programming changes and which administrator made the change.

System Administration Questions

Describe the database which contains user programming information for the phone system, voicemail, and other major system components.

Generally, describe how the programming database might be integrated with The City of Ormond Beach's current Active Directory, Email, and HR databases.

How is Security provided to prevent unauthorized access to the administration application? Is there any limit to the number of administrative users that can be given access passwords? Can different administrators be given individualized permission levels? Can some administrative

users be defined with "view-only" permissions? How many administrative levels can be defined?

System Monitoring and Diagnostics

What diagnostic tools, logs, and reports are available to aid in isolating faults? Are the system's diagnostic tools SNMP-compliant?

Describe the system alarms and alarm notifications available from each sub-system. Will the system call home to the maintenance company; call the Client's designated phone numbers; send out pages to pagers; send emails, etc.?

Does the proposed system have the ability to monitor VoIP Quality of Service? Does this application simply monitor for underlying network issues (latency, jitter, packet loss) through the use of some kind of probe or error logs? Or does it monitor actual phone calls through data provided by the telephones? If data is provided by the telephones, can it be monitored in real-time, or are the statistics sent at the end of a call? Can this data be exposed in a simple network management protocol (SNMP) management information base (MIB) for easy access with traditional network management system applications? Please provide a brief description with screenshot and include a full brochure in the appendix.

Software Upgrades and Patching

The manufacturer must provide software updates to address security flaws in the OS and applications at no additional cost (other than labor to implement) during the warranty and maintenance period.

How does your company provide future software releases? Will the system need to reboot, or can these upgrades take place in an online environment? Briefly describe the process for installing a software update and reverting to a previous software load if required. Specify for each major component proposed.

Is it possible to perform a software upgrade on a standby/redundant server and then force a failover to minimize downtime during a software upgrade? Is this functionality included in the base price? Can the standby location stay on the old software level in case you need to revert to the previous software level?

Implementation Requirements

Specific Requirements

The entire "Implementation Requirements" section reflects the requirements of the City of Ormond Beach. Vendors should ensure their proposal meets this section's required scope of work.

Installation

When addressing the installation strategy please address the outline below. The plans and charts do not need to be created at this time.

Responsibility - The selected Vendor is solely responsible for the complete turnkey engineering of the new telecommunications system and all interconnecting facilities.
Initial Work **-** Vendor will perform needs analysis, station reviews, cutsheet database discovery, and original program initializations.
Telco Coordination – The City of Ormond Beach will coordinate the ordering of all local and long-distance communications facilities as deemed necessary. Or, coordinate with Telco Service Providers for any required changes in Telco Service. Vendor will work as the City of Ormond Beach to assist with Telco scheduling.
Installation - Vendor will be responsible for the placement and installation of all servers, gateways, telephones, switches, routers, and all other supplied hardware.
Interconnection **-** Vendor will be responsible for interconnection of all newly supplied equipment, including patch cords, patching, cross-connecting, plugging, telco terminations, specialty wire harnesses, Amphenol tails, toning of analog cable, any required analog station patch panels or termination blocks, and any additional cables or wires required to connect the new telephone system to the City of Ormond Beach house cable.
Software Version - Vendor will implement the most recent and stable version of all supplied software. If the manufacturer releases a software update to fix flaws, bugs, or Security during the installation timeframe, the Vendor will update the City of Ormond Beach system at the earliest reasonable opportunity during a scheduled maintenance window. This maintenance window will be scheduled after hours for service-impacting upgrades to an operational and partially deployed system at no extra cost to the Customer.

Project Plan - A master project schedule and a work responsibility matrix must be created, identifying the tasks the Vendor will perform and the tasks the City of Ormond Beach is expected to perform to successfully implement the new system.

System Support -

Vendors must furnish all space, power, and environmental requirements for the proposed system equipment:

Space – Provide the physical dimensions of all equipment that will not be rack mounted.
Power – All power requirements, including any special conditioning or grounding requirements.
Heat – The Vendor must provide heat dissipation for the proposed switch room and the recommended safe temperature operating range for the proposed system.
Rack elevation - showing the number of U and recommended stacking of the equipment that is being proposed at City Hall/Data Center and at each location.

Training

Requirements

The successful Vendor is required to include end-user training on The City of Ormond Beach premises, with classes grouped by phone type or job classification.

- Training class sizes will not exceed more than 15 station users at a time.
- Each user should have access to a live telephone instrument during training.

- Classes should not exceed 60 minutes (45 minutes preferred)
- All users will require training on the new telephone system and voicemail
- ACD agents and supervisors should receive additional ACD-specific training
- Operators will require training on the new attendant console(s). Training should occur away from the reception area prior to cutover. On the morning of the 1st day of service, Vendor should provide personnel to assist the receptionist, as required, for a minimum of 2 hours.
- Up to Four (4) users will require complete system administration training on all new systems implemented.
- Two to three (2-3) weeks after the initial training, Vendor should conduct 2 sessions at The City of Ormond Beach for Power Users showing how to use all advanced functionality.

Training Materials - Vendor will provide a training program and soft-copy training materials for designated The City of Ormond Beach personnel who will train future employees. In addition, specify what computer-based training materials are available and whether they are included in the base price.
Quick Reference Guide - Vendor will prepare a 1–2-page handout that shows how to use the most commonly used features of the phone system and voicemail.
Desk-side Training –Please plan for 1 full day or 2 half days of trainer time starting the first day of service for walk-around and desk-side training at large locations and 1 hour of desk-side training for small locations.

User Acceptance Testing

The City of Ormond Beach and the **awarded Vendor** will create a User Acceptance Test (UAT) plan that confirms the operation and resilience of all applications to the requirements specified in the RFP.
Vendor will test all installed equipment to manufacturer and vendor-supplied test plans and correct all defects prior to UAT.
Vendor shall have a lead technician and adequate support staff on-site for UAT system testing at least 1-2 weeks prior to going live with the telephony cutover.

Cutover Coverage

For the cutover, Vendor shall provide at least one on-site Lead Engineer to provide programming and at least two on-site trained technicians to provide floating trouble resolution for two and a half (2 ½) 8-hour days beginning with the first day in service; after that, at least one trained technician shall continue to provide on-site trouble resolution until all reasonable punch-list items are resolved.
For the cutover, Vendor shall provide at least one on-site Project Manager beginning with the first day in service to provide trouble ticket prioritization, desk-side training, and overall coordination, continuing on-site until all reasonable punch-list items are resolved.
After reasonable punch list items are resolved, additional issues will be moved to an exception list that Vendor will track with an action plan, responsible person, and deadline for completion. Vendor will provide daily updates on the remaining exception list items.

System Acceptance

System acceptance will be defined as follows:

- All equipment delivered and installed.
- All training completed
- All installation issues resolved to the City of Ormond Beach's satisfaction.
- All advanced features and software are installed and tested but not necessarily deployed.
- Documentation representing the system "As-Builts" is delivered and reviewed with the City of Ormond Beach.
- The City of Ormond Beach may agree to system acceptance with an acceptable exception list.

The City of Ormond Beach expects that they will move from installation support to warranty/maintenance support only upon execution of a Delivery and Acceptance agreement. Please define if Vendor has a different requirement for the beginning of the warranty/maintenance period.

Warranty, Maintenance, and Customer Support

Specific Requirements

All hardware, software, and installation labor provided by the Vendor or Manufacturer should be covered by 1-year parts and labor replacement warranty or a first-year maintenance plan, including on-site support if required.

As most of the critical components of the system being quoted will be redundant and/or resilient, The City of Ormond Beach will only require 8x5xNBD support in order to minimize ongoing yearly expenses. This means that service and support will be provided at no additional cost during business hours, Monday to Friday Eastern Standard Time, and that any replacement equipment will be delivered by the next business day.

Please provide an option to upgrade to 24 hours X 7 days X 4-hour Service Level Agreement on the core Telephone System hardware and software, including:

- All Call Processors, Core Telephony servers, and applications
- Voicemail servers and applications

If the City of Ormond Beach signs up for 8x5 support, we would be interested in any option that provides after-hours Emergency support on a Time and Materials basis.
Please describe the City of Ormond Beach's ability to receive immediate service or advanced replacement from 5 pm to 8 am on an 8x5 plan by paying the price differential on the labor hours or an expedite fee for 24x7x4 type on-site service.
We understand that our call for service would have a lower priority than a maintenance customer that actually paid for 24x7x4 service. However, what service level agreements would Vendor be able to provide for T&M-based, after-hours support in the case of an emergency?

Telephones do not require a maintenance contract; The City of Ormond Beach will maintain spares and purchase replacement telephones as required. However, please provide an optional price for 8x5xNBD maintenance of the telephones.

Vendors are instructed to bid on the maintenance costs for ALL equipment.

Warranty Questions

What is the manufacturer's standard warranty period on hardware, software, and other equipment without the purchase of additional maintenance or Warranty?

Which of the maintenance options available (Vendor vs. Manufacturer, and which service level) has been included in the base pricing for 1st-year Warranty and 2nd-year Maintenance support? Why?

Is post-installation warranty/maintenance support available from the manufacturer? Please describe briefly the options available.

Is post-installation warranty/maintenance support available from the installing Vendor? Please describe briefly the options available.

Is hybrid maintenance available where the Vendor provides Tier 1 support, help desk, advanced replacement, and escalation, but the manufacturer provides hardware replacement, Tier 2+ support, and resolution of software issues?

All maintenance during the warranty period and under any maintenance agreements shall be performed by Manufacturer certified personnel that are full-time employees of a manufacturer-certified Vendor.

Please describe your ability to provide routine system monitoring to ensure the continued operation of all system components. Will the Vendor implement software or hardware that will "phone home" proactively to inform the Vendor that there is an alarm in The City of Ormond Beach infrastructure? Will the Vendor automatically notify the Customer if there is a fault detected in the system? How (phone, pager, email, escalation trees), and how often during the incident response will the service provider provide updates to the Customer?

Describe any portals or reports where the City of Ormond Beach can view past and current service calls and moves/adds/changes with detailed resolution notes.

Emergency service will be defined by the warranty/maintenance contracts to include resolving problems which interfere with the normal operation of the business and include the failure of >10% of stations, >25% of trunks, any core telephony server, an attendant console, or a substantial sub-system of the Telephony system. Emergency service shall consist of remote diagnostics within 30 minutes of the origination of the service ticket. Service Provider will

provide a four-hour on-site response time for emergency services. Service Provider should update the City of Ormond Beach with a completion notification for emergency services immediately upon resolution of the problem.

Response time for minor system problems should be 24 hours. Service Provider should complete routine requests for additions, deletions, and feature changes within 48 hours of the request. The Service Provider will respond with a confirmation of completion for routine service requests within 48 hours of fulfilling the request.

Wi-Fi for the City of Ormond Beach

The City is seeking a high-performance Wi-Fi communication system to support various services, applications, and technologies at the City Hall and throughout all its municipal buildings. This will be a turnkey project to be owned by the City. The in-building Wi-Fi solution must be implemented with state-of-the-art yet proven technology. It must be flexible enough to accommodate the rapid evolution of wireless technologies and business applications without a major overhaul or upgrade. The solution proposed must provide access for devices to the following networks:

- Telephony "Vo-Fi" (Voice over IP over Wi-Fi); wireless handset device authenticated by certificate
- Internet access, authenticated by logon to RADIUS server
- City network access, authenticated by either
- PKI certificate
- RSA token
- Remediation network, based on NAC failure
- No access (no authentication)
- Public Access
- Future Card access
- Future IP Cameras
- Future RFID over Wi-Fi

The Vendor must provide a clear and concise plan on how the Wi-Fi system will be implemented and subsequently expanded to support additional wireless services. The successful Vendor will be required to conduct a site survey and measurements to address signal path and strength, noise, and signal latency throughout the buildings. The successful Vendor will also provide the maximum data rate expectations, antennae locations, potential interference, and identification of possible trouble spots. Signal coverage maps shall be provided to the City.

The phases of this project include the following:

- Presentation of system solution and implementation strategy.
- Pre-installation wireless survey to confirm types and quantities of APs.
- Provision of detailed implementation and test plans.
- Review and agreement with the City.
- System installation and configuration of a turnkey system.
- System testing.
- Acceptance testing.

- Project sign-off.
- Submission of documentation

The services provided by the successful proponent will include the following:

Project management, including the following:

- Planning
- Tracking & reporting progress
- Managing changes and coordinating with City staff
- The City will designate a team of project and technical contacts

Installation, connection, and integration of wireless controllers and any other wired equipment provided:

- Primary components to be installed in the IT Building computer room at City Hall Complex
- Backup components (for fault tolerance) are to be installed at the Second Data Center facility
- Configuration of newly installed (wired) network and communications components will be performed by Vendor selected for this project in whole. This will include DNS, DHCP, Active Directory, firewalls, routers, switches, and Radius authentication servers.
- Installation of Wireless Access Points and any other radio equipment provided at City Hall complex and throughout all municipal buildings.
- Integration of all wireless equipment will be performed and documented by the successful Vendor's staff. This will include wireless access points, wireless controllers, and any additional equipment provided by the bidder.
- Testing and Documentation.
- Design documents, conceptual system diagrams, initial hardware configuration, as-builts, floor plans showing AP locations, warranty paperwork, software licenses, training manuals, and acceptance test plans.
- Training on the newly installed system for City staff.

Technology & Design

The original equipment manufacturer(s) of all active components for the proposed solution must be identified. The proposed system must provide 95% complete coverage inside all buildings, as described in the attached reports. The City requires the following coverage features:

- Next generation coverage (2.4, 5 GHz & 6 GHz)
- Three levels of coverage density ("regular," "better," and "best")
- Ability to support at least 16 Network Names (SSIDs) per channel
- Strong RSSI for demanding Wi-Fi applications (-85dBm or better)

The City requires that the Wi-Fi system be flexible and scalable to allow, without performance degradation of the existing system, the following:

- Addition of electronics to service new technologies (e.g., RFID)
- Support for new radio standards (beyond 802.11 a/b/g/n)

- Support for new encryption and authentication standards

The City requires that the Wi-Fi system have high-availability features. This means that:

- The failure of a single Access Point will not affect the ability of other Access Points to continue operation; neighboring Access Points should boost their power levels accordingly
- The failure of a single wireless system controller does result in the failure of the entire wireless system. This may be accomplished in at least two ways:
  - Access Points are able to operate independently, continue to authenticate users, and provide secure services to clients; or
  - Redundant wireless system controllers are required (one at City Hall and one at City location TBD)

The City requires that the WLAN system be capable of performing the following without administrator intervention:

- "Rouge Access Point" detection & remediation
- "Denial Of Service" detection & remediation
- RF interference detection & remediation
- Intrusion detection & prevention
- Supporting creation of "mesh" Access Points
- Client location tracking
- Client roaming, without disconnection for wireless handsets

The City requires that the Wi-Fi system be manageable from a single point. All tools required for managing the Wi-Fi system and producing reports must be included in the proposal. The City requires that the Wi-Fi system management tools be capable of performing the following functions, at a minimum:

- Upgrading firmware on Access Points
- Creating and enforcing system-wide access policies
- Capping bandwidth by policy or client
- "Blacklisting clients by MAC
- Configuration, enabling & disabling of Access Points
- Real-time reporting:
  - Summary wireless system status
  - Inventory of Access Points and their current status
  - Clients connected to the system; Access Points they are currently associated with
  - Clients connected to the system; logical network they are connected to
  - Clients connected to the system; physical location
  - Clients connected to the system; authentication method used
- Historical reports:
  - Usage statistics by Access Point
  - Usage statistics by Client
  - Interference statistics
  - Security statistics
  - Security events, forensic auditing

The City requires that wireless handsets include the following capabilities:

- The ability to load Enterprise PKI certificates
- The ability to present certificates for authentication to the network
- Battery life must support eight (8) hours of "talk time" or more
- Battery life must support 120 hours "standby time" or more
- Batteries and chargers must be included
- Holsters must be included
- Roaming without disconnection during calls
- Any additional equipment required to integrate with the proposed VoIP system must be included

All equipment (including handsets) must support the following standards/capabilities:

- SIP (handsets only)
- 802.11ax
- 802.11a ("preferred" on handsets)
- 802.11b
- 802.11g
- 802.11n
- 802.1
- 1e Quality of Service (QoS)
- WMM Wireless Multimedia Extensions
- WMM Powersave
- 802.11h Dynamic Frequency Selection and Transmit Power Control
- 802.11i Security, including AES
- 802.1X with dynamic VLAN policies
- WPA2-Enterprise certification
- 802.11r Roaming
- preferred: 3X3
- MIMO
- preferred: Polycom/SpectraLink VIEW Certification, SpectraLink Voice Priority
- preferred: Wi-Fi Certified Voice-Enterprise

GENERAL INSTRUCTIONS

- Inquiries: Technical questions may arise as firms are preparing their proposals. The City will accept written inquiries regarding this RFP until seven (7) working days prior to the RFP due date. Questions received after that time will not be responded to. Answers to questions that warrant attention of all the potential proposers will be distributed in the form of an addendum. Please direct written inquiries to:

  Rob Hart
  Purchasing Coordinator
  22 South Beach Street
  Ormond Beach, Florida 32174
  Telephone: (386) 676-3223 e-mail: rob.hart@ormondbeach.org

  The last day to submit questions is October 18, 2023 at 5:00pm.

- Signature Requirements: Proposals must be signed by a duly authorized officer(s) of the proposing firm. Consortiums, joint ventures, or teams submitting proposals, although permitted and encouraged, will not be considered responsive unless it is established that all contractual responsibility rests solely with one firm or legal entity which shall not be a subsidiary or affiliate with limited resources. Each proposal shall indicate the entity responsible for execution on behalf of the proposal team.

- Proposal Delivery: Submit one (1) unbound original of the complete proposal packet along with one (1) fully complete electronic file in pdf format on either a CD or thumb drive, no later than October 24, 2023, 2:00 PM. Submit proposals to the Purchasing Coordinator, Room 102, City Hall, 22 South Beach Street, Ormond Beach, FL 32174. Proposals shall be in a sealed envelope with the RFP title and number plainly marked on the outside of the delivery envelope or package. It is the sole responsibility of the submitter to ensure that the Proposal is delivered on or before the specified date and time. Late submittals will not be accepted.

- Addenda and Supplements to the Request for Proposals (RFP): In the event that it becomes necessary to revise any part of this RFP, or if additional information is necessary to enable the proposing firm to make an adequate interpretation of the provisions of this RFP, a supplement to the RFP will be provided to each firm that has requested a copy of this document.

- Rejection Rights: The City of Ormond Beach reserves the right, at any time, to modify, waive or otherwise vary the terms and conditions of this RFP including, but not limited to, the deadlines for submission and submission requirements. The City further reserves the right to reject any or all submittals, to cancel or withdraw this RFP at any time and to negotiate with any party prior to or after submittal of proposals. Selection

is also dependent upon the negotiation of a mutually acceptable contract with the successful proposers.

- Cost of Proposal Preparation: No reimbursement will be made by the City of Ormond Beach for any costs incurred in the preparation of the proposal or presentation.

- Proposals to be in Effect: Each proposal shall state that it is valid for a period of not less than 90 days from date of receipt.

SELECTION OF FIRM

Evaluation Criteria: Evaluation Criteria: The City will evaluate prospective candidates based upon the experience and past performance of the firm. Evaluation will also be based upon the abilities and accomplishments of the individuals to be assigned to the project and relevant project experience.

Scoring Parameters:
Experience & Past Performance (15 points)
Financial ability (5 points)
Management & Service Level Plans (10 points)
Organizational Structure (15 points)
Equipment and Infrastructure (25 Points)
Transition Plan (10 Points)
Price (20 points)

Experience & Past Performance: Firm's projects of the same or similar type, size, scope, cost, and complexity. Number of years and/or projects that reflect this experience. Ability to remain on schedule, cooperation with City/ County, timely coordination, minimum number of deficiencies and/or complaints, commitment to excellence in workmanship and professionalism. Nature and scope of the past performance and/or contract issues to include method of resolution.

Financial ability: Ability to provide such services to include copies of most recent financial statements or balance sheets that clearly show assets, liabilities, credit lines, debt, or, if available, the most recent audit.

Management & Service Level Plans: Plans for the oversight of all services and the coordination with the City to include resolution of customer concerns and to provide service in a timely fashion, including emergencies and after-hours responses.

Organizational structure: Firms structure with number and qualifications of key staff, Project Manager, and staff's expertise and dispatching capabilities. Include resumes of the

Project Manager, lead network engineer, lead programmer, technical supervisor, and other key staff. Supporting Engineers should be within 120 miles of the City of Ormond Beach.

Equipment and infrastructure: Equipment and supporting infrastructure available to service a contract of this size in addition to the Vendor's current accounts and the maintenance schedule for its equipment.

Transition Plan: A plan outline indicating the company's approach to transition of services and training

Price proposal: base price plus any combinations of alternates the City of Ormond Beach chooses.

A designated selection committee will review and evaluate responses to this RFP for each firm that submits and will rank the proposals based on the evaluation criteria. The Committee shall designate no less than three of the most qualified proposers based on rankings to be considered for the contract. These proposers may be invited to appear for interview by City staff or be asked to further demonstrate their qualifications. Final contract will then be negotiated and submitted to the City Manager for approval and recommendation to the City Commission.

TERM OF AGREEMENT

The contract shall be for the duration of this project.

Insurance Requirements: The Consultant shall purchase at his own expense and maintain throughout the duration of the contract the types and amounts of insurance in form and from companies satisfactory to the City and shall furnish proof of insurance prior to commencing work.
The Consultant shall indemnify and hold harmless the City and its employees from and against all claims, damages, losses, and expenses including, but not limited to, attorneys' fees arising out of or resulting from work provided that the claim, damages, loss and expense is caused in whole or in part.

The City reserves the following rights:

- Modify, extend, or cancel this RFP at any time to obtain additional proposals or for any other reason the City determines to be in its best interest;

- Issue a new RFP with terms and conditions that are the same, similar or substantially different as those set forth in this or a previous RFP in order to obtain additional proposals or for any other reason the City determines to be in its best interest;

- Conduct pre-award discussion and/or pre-award negotiations with any or all responsive and responsible proposer(s) who submit proposals determined to be reasonably acceptable of being selected for award; and, conduct personal interviews or require presentations of any or all proposer(s) prior to selection.

- Request that proposer(s) furnish additional information as the City may reasonably require.

- Accept or reject qualifications or proposals in part or whole, and/or waive any defect or deficiency in any proposal, if in the City's sole judgment, the defect or deficiency is not material in response to this RFP;

- Limit and/or determine the actual contract services to be included in a contract.

- Engage outside experts to assist staff in evaluating the merits and viability of each proposer.

- Obtain information for use in evaluating submittals from any source.

- Verify the information received in the proposal. If a proposer knowingly and willfully submits false information or data, the City of Ormond Beach reserves the right to reject that proposal. If it is determined that an Agreement was awarded as a result of false statements or other data submitted in response to this RFP, the City of Ormond Beach reserves the right to terminate the Agreement.

The City shall be the sole judge of the proposer's Proposals.

Risk Management and Insurance Requirements

A. Contractor's Insurance

1. General

The Contractor, including service-related contractors, shall purchase and maintain for the entire life of the Project, including any and all approved time extensions, until its final acceptance by the City, such insurance as will protect the Contractor from claims under Workers' Compensation, disability benefit laws or other similar employee benefit laws; from claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees; from claims insured by usual or unusual injury liability coverage; from claims or injury to or destruction of tangible property and from claims insured by usual Commercial General Liability coverage. This includes loss of use resulting therefrom, any or all of which may arise out of the Contractor's operations under the Contract Documents, whether such operations be by the Contractor, by any Subcontractor, or by anyone directly or indirectly employed by any of them or for whose acts any of them may be legally liable. The Contractor's deductibles/self-insured retentions shall be disclosed to the City and may be disapproved by the City, and may be reduced or eliminated at the sole discretion of the City. The Contractor is responsible for the amount of any deductible or self-insured retention.

2. Types of Insurance and Limits of Liability

The insurance required herein shall be written for not less than any limits of liability specified and incorporated as part of the Contract Documents or as required by law, whichever is greater, and shall include and not limited to the following:

(a) Workers' Compensation Insurance in statutory limits for the State of Florida with Coverage B - Employer's Liability limits of not less than:

$100,000 Each Accident Bodily Injury by Accident
$100,000 Each Employee Bodily Injury by Disease
$500,000 Policy Limit Bodily Injury by Disease

Certificate of Exemptions. If the contractor has a State-issued Certificate of Exemption, the contractor may provide a copy in place of the requirement for coverage. However, if the contractor subcontracts or retains any other person or entity to perform under the contract, that person or entity must provide proof of workers' compensation insurance as required by law or provide a Certificate of Exemption.

It is the intent of the City that any individual who either contracts directly with the city or performs any work on behalf of any such

contractor be covered by workers' compensation insurance or have a valid exemption from said coverage.

(If applicable to the Project, the policy must include benefits under the United States Longshoremen's and Harbor Workers' Act and the Jones Act coverage--all maritime coverage.)

(b) Commercial General Liability Insurance shall be written on a coverage form as broad as Insurance Services Office (ISO) Form CG 00 01 11 85, or its successor form, including but not limited to the following coverage (any deviation shall be noted on the Certificates of Insurance):

a. Premises, Operations, Products and Completed Operations
b. Owners' & Contractors' Protective
c. Products & Completed Operation
d. Explosion, Collapse & Underground Conditions
e. Blanket Contractual Liability
f. Personal Injury Liability
g. Broad Form Property Damage Endorsement, including Completed Operations
h. Independent Contractors
i. Watercraft--Owned and Non-Owned (if applicable, endorsement must be included in General Liability policy or a separate Protection & Indemnity Policy must be written)
j. Pollution Liability (if applicable)
k. Asbestos Abatement (if applicable)
l. Fire Damage Liability

Certain coverage outlined above may not be required if they do not relate to the Project, as may be determined at the sole discretion of the City.

Commercial General Liability Coverage shall be written on an occurrence basis and the limits shall be no less and not limited to the following amounts:

Limits (not less than)

$1 Million Each Occurrence
$2 Million General Aggregate
$1 Million Aggregate Products & Completed Operations

NOTE: Commercial General Liability Coverage must be purchased on either a project basis (separate policy per contract) or an endorsement allocating an aggregate limit per location or specified project.

(c) Automobile Liability Insurance is required if an Automobile(s) is used in the performance of the contract. ISO Symbol 1 (Any Auto), or alternatively a combination of Symbol 2 (Owned Autos), Symbol 8 (Hired Autos), and Symbol 9 (Non-Owned Autos), and limits shall be no less than:

$1 Million	Combined Single Limit for Bodily Injury and Property Damage

(d) Excess Liability

For contracts $250,000 or greater an Excess Liability Policy of at least but not limited to $1,000,000 in addition to the scheduled underlying policies for Commercial General Liability, Automobile Liability and Employers' Liability, the Contractor shall also provide an Excess Liability Policy with a maximum self-insured retention not to exceed $25,0000 per occurrence.

(e) Builder’s Risk

Contractor shall purchase Builder’s Risk Insurance for any contracts that are deemed to be vertical construction on an All-Risk policy, and shall also include coverage for wind, hail, and named storm. Limits of coverage shall be at least and not limited to the value of the project.

(f) Professional Liability, Malpractice and/or Errors and Omissions

The Contractor shall purchase and maintain professional liability, malpractice, or errors or omissions insurance with minimum limits of $1,000,000 per occurrence. If a claims made form of coverage is provided, the retroactive date of coverage shall be no later than the inception date of claims made coverage, unless the prior policy was extended indefinitely to cover prior acts. Coverage shall be extended beyond the policy year either by a supplemental extended reporting period (ERP) of as great a duration as is available, and with no less coverage and with reinstated aggregate limits, or by requiring that any new policy provides a retroactive date no later than the inception date of claims made coverage.

B. Requirements for Certificates of Insurance

1. With the execution of the Contract Documents, the Contractor, including service related contractors, shall provide certificates of such insurance acceptable to the City. These certificates and insurance policies shall contain an endorsement that the coverage under the policies will not be

canceled, non-renewed or materially changed until at least thirty (30) days' prior written notice of such cancellation, non-renewal or change (except for nonpayment of premium, which shall be ten (10) days) and a copy of the cancellation endorsement signed by an authorized representative of the insurer, be given to the City. The contractor shall be required to replace any expired or canceled policies in like amount and coverage to the satisfaction of the City. The Certificate of Insurance shall be the ACORD FORM 25-S (7/90), or its successor form, and shall be made a part of the Contract Documents.

2. New certificates of insurance shall be provided to the City at least fifteen (15) days prior to coverage renewals.

3. If requested by the City, the contractor shall immediately furnish complete copies of the Contractor's insurance policies, forms and endorsements.

4. For Commercial General Liability coverage, the Contractor shall, at the option of the City, provide an indication of the amount of claims payments or reserves chargeable to the aggregate amount of liability coverage. If the Commercial General Liability form of coverage includes an annual aggregate limitation on the amount of insurance provided, a separate project aggregate limit may be required by the City for the given contract.

5. If the Contractor fails to obtain and maintain for the life of the Project the insurance required hereby or to replace any such expired or canceled policy, the City may obtain and maintain such insurance with such company as it deems satisfactory. Any amounts expended by the City in payment of premiums for such insurance shall be deducted by the City form the amount due the Contractor for the work covered by the Contract.

C. Policies of Insurance

1. Except as otherwise provided in this Exhibit, all insurance policies shall be issued by insurers licensed to do business in the State of Florida on an admitted basis or which is an eligible surplus lines insurer in the State of Florida, and any such insuring company is required to have a minimum financial rating of (A-), in the latest edition of "Best's Key Rating Guide", published by A. M. Best Co., Inc., or some similarly nationally recognized rating authority, including Standard and Poors and Demotech.

2. For Workers' Compensation coverage only, self-insurance programs are acceptable with a minimum A- rated reinsurance carrier; written confirmation is required.

3. All policies of insurance or certificates thereof referred to in this Exhibit shall be deposited with the City Clerk.

4. The City shall be named an Additional Insured on General Liability including products and completed operations and Automobile Liability policies of insurance and certificates thereof.

VERIFICATION OF EMPLOYMENT STATUS USING E-VERIFY SYSTEM

1. Undersigned firm warrants it **IS** currently registered with the U.S. Department of Homeland Security's E-Verify system, **and** is compliant with the requirements of Sections 448.09 and 448.095, *Florida Statutes*.

2. Undersigned firm warrants it **has not** had any contracts terminated as a result of violations of Sections 448.09 or 448.095, *Florida Statutes*, that prohibit it from contracting with a public agency.

3. Undersigned firm warrants that if it enters into an agreement with a subcontractor, an express provision shall be included in all of its subcontracts requiring subcontractors, who perform work or provide services pursuant to the contract, to use the E-Verify system to verify employment eligibility of all new employees hired by the subcontractor during the contract term.

4. Undersigned firm understands that any subcontractor must provide the contractor with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, and the contractor understands it shall maintain any such affidavits for the duration of the contract, and the contract with the subcontractor must be immediately terminated if the City has a good faith belief that the subcontractor knowingly violated Section 448.09 (1), *Florida Statutes*.

5. Undersigned firm understands that in the event the City has a good faith belief that the contractor has knowingly violated Section 448.09 (1), *Florida Statutes*, the City shall terminate the contract, and the contractor may not be awarded a public contract for a period of at least one (1) year after the date of termination. The contractor may be held liable for any additional costs incurred by the City as a result of termination of the contract.

_____
COMPANY NAME

_____
AUTHORIZED SIGNATURE

_____
NAME

_____
TITLE

_____
DATE

THIS PAGE MUST BE COMPLETED AND RETURNED WITH YOUR PROPOSAL

City of Ormond Beach

CONFLICT, NON-CONFLICT OF INTEREST STATEMENT LITIGATION STATEMENT

1.

[ ] To the best of our knowledge, the undersigned firm has no potential conflicts of interest due to any other clients or contracts for this project.

[ ] The undersigned firm, by attachment to this form, submits information which may be a potential conflict of interest due to other clients or contracts for this project.

2.

[ ] The undersigned firm has had no litigation on any project in the last five (5) years.

[ ] The undersigned firm, by attachment to this form, submits a summary and disposition of individual cases of litigation during the past five (5) years.

_____

COMPANY NAME

_____

AUTHORIZED SIGNATURE

_____

SIGNER'S NAME (PRINT OR TYPE)

_____

TITLE

_____

DATE

THIS PAGE MUST BE COMPLETED AND RETURNED WITH YOUR PROPOSAL

City of Ormond Beach
DRUG-FREE WORKPLACE CERTIFICATION

IDENTICAL OR "TIE" PROPOSALS: Preference shall be given to businesses with drug-free workplace programs. Whenever two or more proposals which are equal in respect to price, quality, and service are received by the State or by any political subdivision for the procurement of commodities or contractual services, a proposal received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. Established procedures for processing tie proposals will be followed if none of the tied vendors have a drug-free workplace program. In order to have a drug-free workplace program, a business shall:

Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violation.

Give each employee that engages in providing the commodities or contractual services that are under proposal a copy of the statement specified in subsection (1).

In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under proposal, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) calendar days after such conviction.

Impose sanctions on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.

Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

_____

Name

_____

Signature

_____

Title



RFP-2024-07-0-2024
Telecommunication System Upgrades & Improvements

Empire Computing & Consulting, Inc.
120 N. Frederick Avenue, Daytona Beach, FL 32114

November 6, 2023

City of Ormond Beach

22 S. Beach Street

Ormond Beach, FL 32114

RE: RFP-2024-07-0-2024

Selection Committee,

Thank you for the opportunity to present design and pricing for the proposed VoIP system and required infrastructure as outlined on the referenced RFP.

Empire will be offering Fortinet's Fortivoice Unified Communications, a secure, all-inclusive business communications solution that enables organizations of all sizes to communicate via integrated voice, conference without complicated licenses and add-on subscriptions. Over the following pages, we will show how the infrastructure upgrades the City is seeking will flow seamlessly into the hybrid voice product in design.

Empire Computing & Consulting has been a provider of services to the City of Ormond since 2006, most recently completing the physical security upgrade at the Police Department in 2022. Our engineering team has held the As Needed IT Services contract for 3 terms running and has built a familiarity with the network fabric as well as built working relationships with the SCADA team. Our Sr. Vice President of Engineering has deployed both on-premise PBX and cloud based systems for companies across the State of Florida over the past 25 years. In conjunction with the Professional Service team from Fortinet, who will deploy and initiate the system, we are prepared to take on the challenge of managing the timeline and work involved in this significant refresh.

We look forward to the opportunity to present to the selection committee should we make the shortlist. In the interim, should you have any questions, please do not hesitate to reach out to us!

Sincerely,

David A. Campos, Jr.

CEO President.

1

City of Ormond Beach
22 South Beach Street
Ormond Beach, Florida 32174
Telephone (386) 676-3223
Fax (386) 676-3374

REQUEST FOR PROPOSALS

PROPOSER ACKNOWLEDGEMENT FORM

THIS PAGE MUST BE COMPLETED AND RETURNED WITH YOUR PROPOSAL

RFP 2024-07 Telecommunication System Upgrades & Improvements
RFP DUE DATE & TIME: **Tuesday, October 24, 2023 at 2:00 PM**
RFP OPENING LOCATION: **City Hall Training Room at Ormond Beach City Hall**
PRE-PROPOSAL MEETING: Thursday, October 12, 2023 at 2:00 PM, City Hall **Training Room**

Proposals Received After The Above Date And Time Will Not Be Accepted.

PROPOSER/FIRM NAME: Empire Computing & Consulting, Inc.

PROPOSER'S MAILING ADDRESS:
120 N. Frederick Avenue

CITY-STATE-ZIP: Daytona Beach FL 32114

F.E.I.N.: 59-3284389

PHONE NUMBER: 386-253-6506

EMAIL: gloriab@empirecomptuing.com

If returning as a "No Proposal", please state reason (s):

THIS PAGE MUST BE COMPLETED AND RETURNED WITH YOUR PROPOSAL

RFP RESPONSE FORM

The undersigned SUBMITTER agrees, if this Proposal is accepted, to enter into a Contract with the CITY that reflects the items of this Request for Proposals (RFP) and to provide all services, as specified or indicated in the RFP Documents, in full accordance with the terms and conditions set forth therein.

SUBMITTER has examined all of the RFP Documents and of the following Addenda, receipt of which is hereby acknowledged.:

Addendum Date	Addendum Number	
09/29/23	1	10/25/23 Add 4
10/10/23	2	10/31/23 Add 5
10/17/23	3	

This Submittal is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; SUBMITTER has not directly or indirectly induced or solicited any other Submitter to submit a false or sham Submittal; SUBMITTER has not solicited or induced any person, firm or a corporation to refrain from bidding; and SUBMITTER has not sought by collusion to obtain for himself any advantage over any other Bidder or over the CITY.

3

3

THIS RESPONSE IS SUBMITTED BY:

FIRM NAME: Empire Computing & Consulting, Inc.

FIRM'S PROFESSIONAL LICENSE NUMBER: _____

SUBMITTER's s, Jr. DAVID A CAMPOS JR
(Typed or Printed)

TITLE: President/CEO

AUTHORIZED SIGNATURE: I, _____
_____ hereby declare that I have read and fully understand the RFP Documents, including the General Conditions and the Scope of Work, and that I am duly authorized to sign and submit this Proposal.

EMPIRE
Computing & Consulting
120 N. Frederick Avenue Daytona Beach FL 32114

VERIFICATION OF EMPLOYMENT STATUS USING E-VERIFY SYSTEM

1. Undersigned firm warrants it **IS** currently registered with the U.S. Department of Homeland Security's E-Verify system, **and** is compliant with the requirements of Sections 448.09 and 448.095, *Florida Statutes*.

2. Undersigned firm warrants it **has not** had any contracts terminated as a result of violations of Sections 448.09 or 448.095, *Florida Statutes*, that prohibit it from contracting with a public agency.

3. Undersigned firm warrants that if it enters into an agreement with a subcontractor, an express provision shall be included in all of its subcontracts requiring subcontractors, who perform work or provide services pursuant to the contract, to use the E-Verify system to verify employment eligibility of all new employees hired by the subcontractor during the contract term.

4. Undersigned firm understands that any subcontractor must provide the contractor with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, and the contractor understands it shall maintain any such affidavits for the duration of the contract, and the contract with the subcontractor must be immediately terminated if the City has a good faith belief that the subcontractor knowingly violated Section 448.09 (1), *Florida Statutes*.

5. Undersigned firm understands that in the event the City has a good faith belief that the contractor has knowingly violated Section 448.09 (1), *Florida Statutes*, the City shall terminate the contract, and the contractor may not be awarded a public contract for a period of at least one (1) year after the date of termination. The contractor may be held liable for any additional costs incurred by the City as a result of termination of the contract.

Empire Computing + Consulting
COMPANY NAME

AUTHORIZED SIGNATURE

DAVID A Campos JR
NAME

President / CEO
TITLE

11/6/23
DATE

THIS PAGE MUST BE COMPLETED AND RETURNED WITH YOUR PROPOSAL

City of Ormond Beach

CONFLICT, NON-CONFLICT OF INTEREST STATEMENT LITIGATION STATEMENT

1.

[✓] To the best of our knowledge, the undersigned firm has no potential conflicts of interest due to any other clients or contracts for this project.

[✓] The undersigned firm, by attachment to this form, submits information which may be a potential conflict of interest due to other clients or contracts for this project.

2.

[✓] The undersigned firm has had no litigation on any project in the last five (5) years.

[✓] The undersigned firm, by attachment to this form, submits a summary and disposition of individual cases of litigation during the past five (5) years.

Empire Computing & Consulting, Inc.
COMPANY NAME

AUTHORIZED SIGNATURE

David A. Campos, Jr.
SIGNER'S NAME (PRINT OR TYPE)

President/CEO
TITLE

November 6, 2023
DATE

THIS PAGE MUST BE COMPLETED AND RETURNED WITH YOUR PROPOSAL

5

5

EMPIRE
Computing & Consulting
120 N. Frederick Avenue Daytona Beach FL 32114

City of Ormond Beach
DRUG-FREE WORKPLACE CERTIFICATION

IDENTICAL OR "TIE" PROPOSALS: Preference shall be given to businesses with drug-free workplace programs. Whenever two or more proposals which are equal in respect to price, quality, and service are received by the State or by any political subdivision for the procurement of commodities or contractual services, a proposal received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. Established procedures for processing tie proposals will be followed if none of the tied vendors have a drug-free workplace program. In order to have a drug-free workplace program, a business shall:

Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violation.

Give each employee that engages in providing the commodities or contractual services that are under proposal a copy of the statement specified in subsection (1).

In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under proposal, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) calendar days after such conviction.

Impose sanctions on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.

Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

David A. Campos, Jr.
Name

Signature

President/CEO
Title

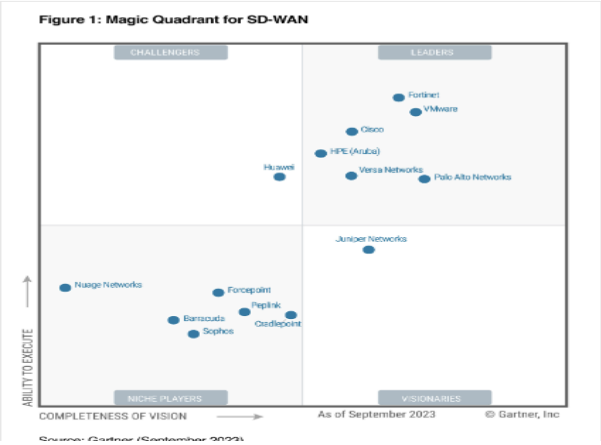
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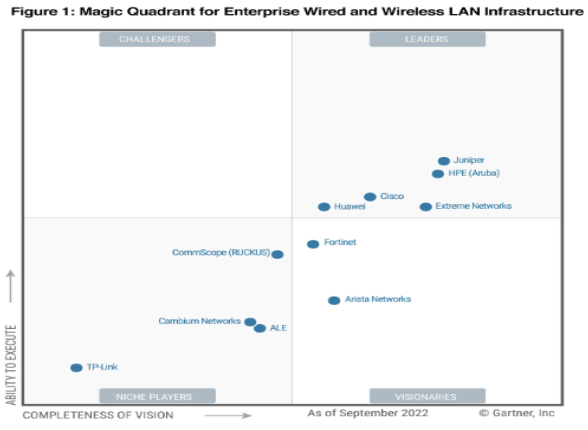
Contents of our Presentation

Empire Computing & Consulting has chosen to partner with Fortinet as our selection of manufacturer for both voice and infrastructure relative to Voice, Switching and Wireless for the purposes of this RFP.

Fortinet offers enterprise-grade phone systems, combining the all-inclusive FortiVoice system and HD-audio FortiFone. This solution helps organizations keep up with changing communication needs due to evolving infrastructure, remote/hybrid work, and BYOD. single platform with integrated calling, conferencing, chat, fax, and mobile support empowers organizations to connect teams and streamline modern communications without increasing resources and costs.

Fortinet has been chosen a leader by Gartner Magic Quadrant for 2023 in the SD-WAN and Network Firewalls fields and an Visionary in the Wired and Wireless LAN infrastructure. .





Empire's design focuses on reliability. In the proposed network design, it is provided by use of the Three-Tier Architecture model. With the FortiGate firewalls acting as the core, the optical switches acting as the distribution layer, and the per-site switches acting as the access layer, along with every device having a minimum one connection to two different devices (partial mesh), the design ensures that no single point of failure exists. Because of the Ring topology design of the City's fiber cabling, the proposed design utilizes four main network core locations (City Hall, Water Plant, Police Department, and Hardened Data Center), with the rest of the sites down stream of any one of those four. With redundancy at every significant portion of the City's network, the design is hardened against any one single point of failure.

Reliability from the perspective of power outage is provided by the allocation of a Vertiv UPS in every network rack for the city. These UPSs will supply up to one hour of runtime in the event of a power failure at any of the City's sites. This should ensure ample time for generators to power on, or for power to be restored to normal condition.

The proposed system includes redundant virtual machines for all included servers (FortiVoice, FortiManager and RADIUS). The voice system will have its redundant server hosted in the cloud to provide on-prem and off-prem failover. Call Centers will continue to function via a cloud hosted SIP service in the event of a failure in the on-prem server. In that event, all call traffic would resort to the address of the off-prem server, which would take over as the main SIP connection for the City's voice network. A failover should result in minimal downtime while

the HA service switches the remote server to the master. Once normal operation is restored for the on-prem solution, the master server would be reinitiated as the local, and the remote server being deprecated to the slave.

The following pages will further detail the design and the plan for implementation along with costs for your review.

FortiVoice Appliance & VM: Core Features

Features built into all FortiVoice models
No license required to activate features

SIP/PRI/PSTN trunks
T1/E1/R2 signaling

SIP/analog extensions
Remote extensions
External IP extensions

Direct inward dialing (DID)
Caller ID modification
Rule-based dial plan

Individual / Group voicemail
Voicemail to e-mail
Music on hold – files
Music on hold – live stream

Ring groups
Auto Attendants
Multilocation: office peers
Emergency call notification

Personal/system speed dials
Automatic hotline (direct call)
Scheduled call handling
Dial-by-name directory
User privileges

Call conference/bridge
Call hold/transfer/park/pickup
Call forward
Paging to selected phones

Intercom
Follow-me
User privileges
Personal blacklist

Line/extension appearance
SIP forking / "Twinning"

SIP over TLS/SRTP
Password policy enforcement
802.1Q VLAN support
Call detail record logging
Real-time call status monitoring
Remote management
Calendar based schedule
Multilingual

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FortiVoice Appliance & VM: Enhanced Features

Features built into FVE-100 / FVE-VM-100 and up
No license required to activate features

Call queue
Call recording
Call barge
Hot desking

Click-to-dial
Reminder/Wakeup call
High availability (HA)
NAS support

Fax over SIP/PRI/PSTN
Fax to e-mail
Fax archive/remote storage
Automatic fax detection

Embedded basic SBC
Auto-provisioning
Local trunk survivability (SRST)
Call detail records (SMDR)

LDAP / AD authentication
Email alert for system events
Network traffic capture
Remote logging
SNMP

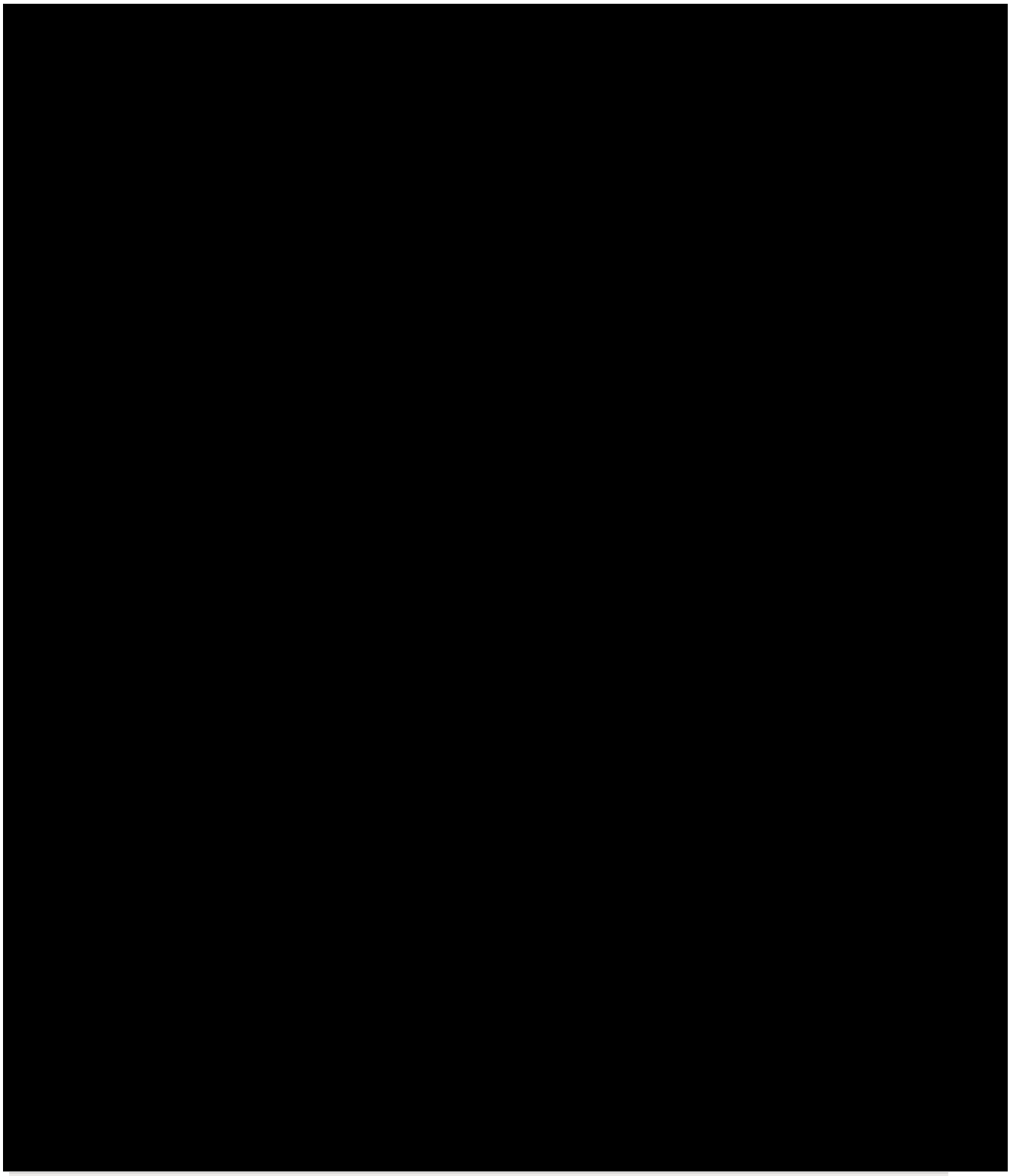
InformaCast Integration
E911 integration

Single Sign On
Web management interface
Web user portal
Web directory lookup
Web Operator Console
Multilocation_ office peers

Role-based management
Central Management
Multilingual

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EMPIRE Computing & Consulting
120 N. Frederick Avenue Daytona Beach FL 32114



EMPIRE
Computing & Consulting
120 N. Frederick Avenue Daytona Beach FL 32114

Voice and Infrastructure Detailed Explaination

Please find below a format for providing answers to the RFP questions as posed on pages 21-35

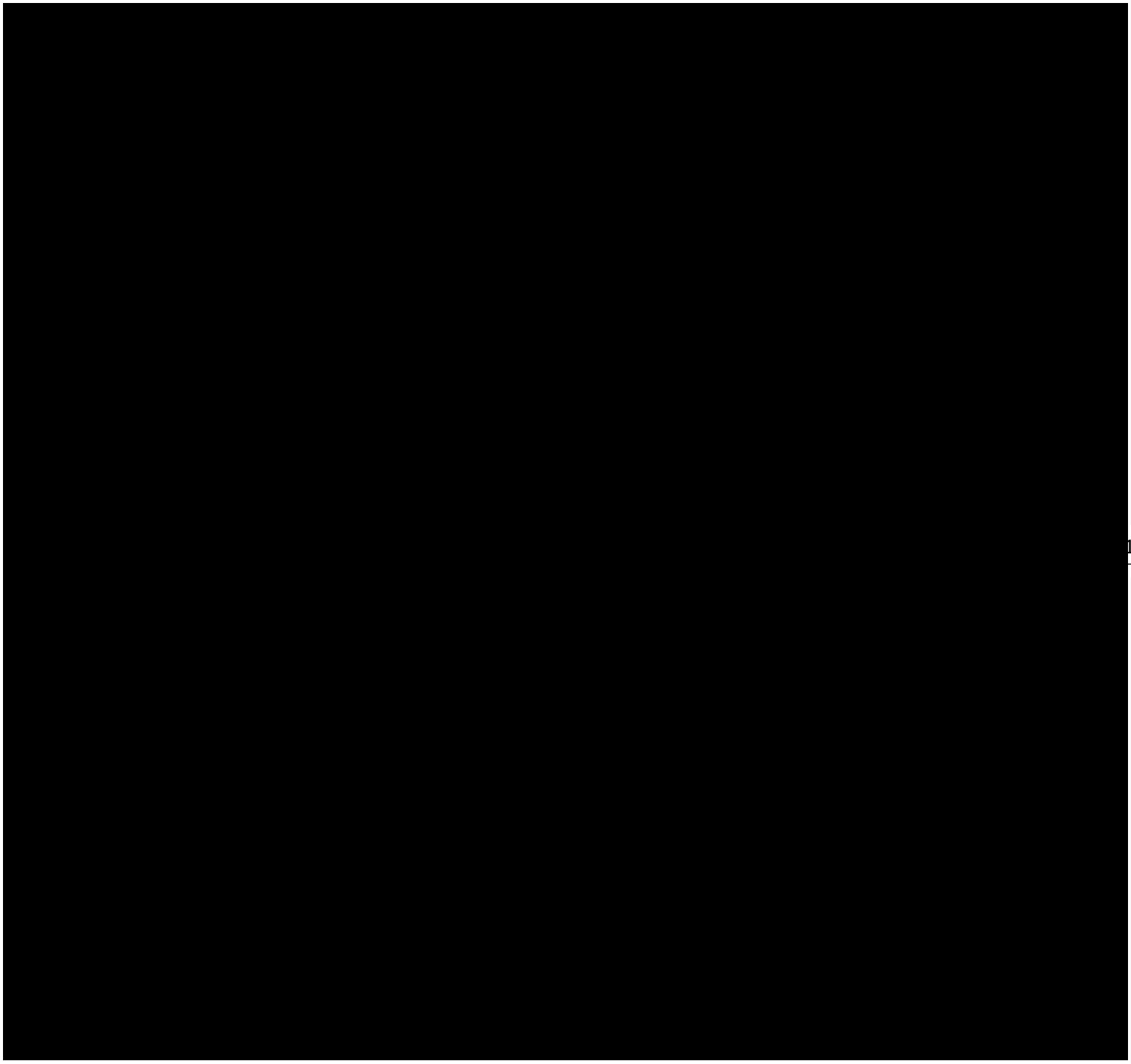
City's Request for Additional Information/Question	Compliant	Detailed Answer
Page 21: Architecture - Please state whether your base pricing includes a telephone system with a single database image.	Yes	Fortinet VM200 FortiVoice provides a centralized management platform that allows administrators to easily configure, monitor, and maintain the entire phone system from a single interface. This centralized management approach simplifies the administration process and reduces the time and effort required to manage multiple phone lines and extensions. Remote sites are part of the main system and can be backed up with LSG (Local Survivability Gateway). In a traditional phone system architecture, if the connection to the central server is lost due to network issues, all phone services become unavailable. However, with FortiVoice's local survivability gateway, each site or branch office equipped with a FortiVoice unit acts as an independent phone system. This means that even if the connection to the central server is disrupted, each site can still make internal calls and access essential features like voicemail and auto-attendants. The local survivability gateway feature also ensures that external calls can still be made by utilizing alternative routes such as PSTN (Public Switched Telephone Network) or SIP (Session Initiation Protocol) trunks. This redundancy helps maintain business continuity and minimizes the impact of network failures on communication.
Page 22: All telephones should be GigE, meaning that they can supply a switched Ethernet port to an attached computer at Gigabit Ethernet speeds.	Yes	
Page 22: The PC Attendant Console should provide receptionist/operator functionality with an on-screen busy lamp field that shows the status of telephones across any networked locations.The phone system should automatically re-direct any operator calls to a backup reception position (described below) if the PC Console were to lock-up, fail, or require rebooting	Yes	The FortiVoice Operator console is a web-based interface that allows administrators and Operator to manage and monitor Incoming calls. The console also provides real-time reporting and analytics capabilities, allowing operators to track and analyze call traffic and performance
Page 22: Telephone Requirements	Yes	Staff Phones - Compliant with some restriction: the ad-hoc conference call is limited to three-party, Video calls requires cameras not implemented on any of our phones portfolio. Key Expansion Module - No external modules are present in the FortiVoice portfolio due to the fact that every phones except the 280 has LCD screen with multiple page for speed dial keys. The alternative is the phone 580 that embed a module with also multiple pages
Page 23: Telephone Related Items Provide a brief description and picture for each telephone being proposed below. When quoting VoIP telephones, specify data speeds available/quoted (10/100/1000), optional snap-in interfaces available, and power requirements (or which PoE class) for each phone.		https://www.fortinet.com/content/dam/fortinet/assets/data-sheets/FortiFone_IP_Series.pdf
Page 23: The quoted phones should allow users to navigate a telephone directory from the display of their phone. Where will this directory be retrieved from? Please describe how the directory is accessed..		The telephone directory will be accessed using a quick key and arrows functions on the phone. Please see attached phone quick guide.
Page 23: If a color display option is available (and not already included in your proposal), include the incremental cost to upgrade all telephones to color.	Yes	All Fortiphones have color display. Conference phones, weatherproof phones and wireless phones will be provided by Yealink and another manufacturer and color screens may not apply. Please see attachment for additional information.

City's Request for Additional Information/Question	Compliant	Detailed Answer
Page 23: Do headsets require an external amplifier to provide adequate sound quality and volume? Do the telephones quoted have a "headset" mode where the handset does not need to be removed from the cradle, or is a handset lifter required? Does the phone have a separate headset jack, or		**No external amplifier is needed, all phones have headset mode, no lifter needed, phones embed a separate headset connection**
Page 23 FEATURES Deparmental MUST ANSWER line	**Yes**	**All features (ring groups, hunt groups, simultaneous ring groups, pick up groups, call park and personal speed dial lists) supported**
Page 24: System Architecture		**See attached Visio diagram quoted architecture; standard data rack elevation showing all data center equipment servers (cabinets, switches and routers)**
Page 24: 911 Compatible**/route 911 calls over 1MB analog lines (2) as failover trunks in the event all other trunks fail/allow 911 calls to be made from any station, even if that station is restricted to extension dialing**	**Yes**	**See Attachment A for additional information on FortiVoice E911 solution. FortiVoice supports E911 services. E911 DIDs will be provided via the SIP proxy. Locational information is linked to the DID at the SIP trunk level. FortiVoice supports emergency zones which allow for groups of endpoints to be linked to a E911 DID. If any DID from that emergency zone calls 911 the locational information will be transferred to the PSAP. FortiVoice also support dynamic IP subnet routing which allows a handset to automatically link to an emergency zone**
Page 24: Software What underlying operating system is used for the applications that form the telecommunications platform (i.e., Windows Server, VXWorks, Linux, Unix, etc.)? List the operating system for each server being proposed		**Fortivoice operate on FortiOS which is a proprietory OS based on linux. No underlying OS is necessary.**
Page 24: Please describe how the underlying OS has been "bolstered" to prevent the exploitation of OS security flaws. Unneeded applications should be uninstalled, removed, or disabled from the OS. This is particularly relevant to Windows operating systems. Which Firewall ports does your application use, keep open, or listen to?		**FortiOS being proprietory nothing can be installed or modified. Firewall needs to alllow the SIP and RTP traffic like any other voice system.**
Page 25: Voice Over IP Provide 99.99% uptime of all applications during regular office hours. Provide 99.9% total uptime, including after-hours system maintenance Telephone calls will be free of echo, choppiness, sound artifacts, poor sound quality, and dropped calls	**Yes**	
Page 25: VoIP Specifications What is the manufacturer's recommended best practice for CODEC choice, sampling rate, packet size, jitter buffer, etc.? What bandwidth, including overhead and QoS, will each recommended CODEC require? What VoIP CODECs are supported on the platform, i.e., G.711, G.729A, G.729B, G.722, H.323, SIP, etc. (list all applicable)?		**In VoIP technology, the choice of codec can significantly impact the quality of voice communications. The most commonly used codecs are: 1. G.711: This is a widely used codec that provides high-quality audio, but it requires a relatively high bandwidth of approximately 64-80 kbps per channel. 2. G.729: This is a more efficient codec that provides good audio quality while using less bandwidth, typically around 24-32 kbps per channel. Regarding the average bandwidth for a voice communication, it depends on various factors such as the codec used, the number of participants, and the desired audio quality. However, as a rough estimate, a voice communication using G.711 codec with one participant would require around 64-80 kbps of bandwidth, while a communication with multiple participants using G.729**
Page 25: What is the highest common denominator Codec across all applications being quoted? Will calls require transcoding between applications (voicemail, call recording, etc.)?		**No transcoding required.**
Page 25: Which CODECs are supported natively by the telephones? Will telephones auto-negotiate CODEC over the LAN/WAN when connections between offices without the need for an intermediary translation or transcoding? If not, how is transcoding provided?		**FortiVoice and Fortiphone will auto negotiate the codec used with the other party for the communication.**
Page 25: Does the system provide an option of running SIP for a telephone's call setup? Does the Vendor propose using SIP or proprietary signaling for call setup? How are advanced features supported if using SIP telephones? If Vendor recommends deploying SIP telephones, how are call setup and teardown encrypted and secured?	**Yes**	**FortiVoice is an entirely SIP based solution and supports SIP trunks, SIP compliant gateways or SIP telephones from 3rd party manufacturers.**
Page 26: When a call is re-routed from the WAN/MAN to PSTN due to Call Admission Control, QoS monitoring bypass, or Call Shuffle to PSTN - what, if any, loss of features will be experienced? For instance, will a caller that is forwarding to voicemail when the call is redirected over PSTN arrive at the		**No loss of feature will occur.**

Page 26: Does the system support both IP hardphones and IP softphones being located behind a NATdevice? Are IP-to-IP direct calls supported for NAT-translated IP hardphones and IP softphones? What is required to support SIP-based phones through NAT traversal?	**Yes**	**No additional requirement**
Page 26: **Encryption.** Will the proposed telephone system have the ability to encrypt the conversation between telephones and between telephones and PSTN gateways? If so, what features, if any would be lost?	**Yes**	**FortiVoice does have the ability to encrypt the conversation between telephones and between telephones and PSTN gateways. No loss of feature will occur.**
Page 26: **Voice Mail Platform It is imperative that any new voicemail platform be easy to use, easy to change greetings on and require users to only press one (1) button for single-digit prompting to access commonly used features. The voicemail platform should allow the recording and saving of multiple greetings per user and allow easy selection of which**	**Yes**	
Page 26: The system shall provide voicemail to email and voicemail to text.	**Yes**	
Page 26: Proof of Concept prior to shortlist presentation	**Yes**	**Available to accommodate short list acceptance.**
Page 26: Describe your voice messaging product offering. Include a brief overview of the hardware, software, architecture, and components of the equipment proposed to meet RFP requirements. Is the voicemail built by the manufacturer of the VoIP telephony Company?		**Voicemail is not a separate system, it is a native part of the FortiVoice, no additional management or server is needed, it's a transparent process for the end user or administrator. Once the user is created the Voicemail is already active. General Voicemail can also be created for. Group, Call Center, Operator or Auto Attendant**
The Vendor is required to provide, install and maintain the computer platform, operating system and software for the voicemail. Please provide the specifciations of the platform.		**Please see scope of work for Professional Services.**
Page 27: Are voice messages stored in an industry-standard format? How many Megabytes of disk space are required for each hour of voice storage?		**Wav is the standard format for voice message in Fortivoice. Regarding the storage need: One hour of voice storage in VOIP would require approximately 576 MB of disk space Storage. Assuming a moderate-quality audio with a sampling rate of 48 kHz, bitrate of 160 kbps, and a compression algorithm like OPUS (which is commonly used in VOIP applications), we can estimate the disk space required for**
		File Size = Bitrate x Sampling Rate x Recording Time (in seconds) / 8 **Since there are 3600 seconds in an hour, we can substitute this value into the formula above:** **File Size = 160 kbps x 48 kHz x 3600 s / 8**
Page 27: When a backup is performed, what is backed up? – programming, greetings, messages? Do back-ups happen automatically, and can they be directed to a Network Attached Storage(NAS) hard drive?		**The backup includes everything but Voice messages on voicemail inboxes. This task can be performed automatically based on scheduled and backup can be stored on the system or external storage such as a NAS.**
Page 27: What, if any, limits are there to greeting, message, or announcement length? What will voicemail do if an individual mailbox is full? What will the remote caller hear? How will the user be notified, and what options will the user have?		Message can be deleted automatically after a certain period of time defined by the administrator to avoid the full mailbox problem to occur. Calls can be redirected to the operator by pressing zero. When a voicemail is full the caller will be notified with a prompt.
Page 27: **Voice Mail Security and Administration: Describe the administration interface for the voicemail**		N/A with this system.
Page 27: Can it be different for different classes of users?	**Yes**	Yes, Fortivoice allow multiple classes of user called Privilege profiles
Page 27: Will the voicemail system prevent the use of trivial passwords such as sequential digits, repeating digits, and re-use of the extension number (i.e., 1234, 1111, 4567)?		No
Page 27: Does the system track failed password entries in a single session and disconnect the caller?	**Yes**	Yes, after 3 unsucceful attempt the system will be locked up for a certain amount of time.
Page 27: Does the system track failed password entries across multiple sessions and automatically lock the mailbox?		No, only one continuous session.
Page 27: Does the system create a log and alarms (SNMP, email, pager) based on failed log-on attempts?	**Yes**	
Page 27: Describe voicemail port, disk utilization, and user status reports available. Include a sample of these reports in the appendix.		Not Available
Page 27/28: **Unified Communications** Does the system install an Email Client add-in to allow for message playback and management without having to open a 3rd party media player such as Windows Media Player?	**No**	No Exchange integration at the moment. This will be coming in the next year timeframe.
Page 28: Briefly describe any advanced capabilities for tex-to-speech playback of emails over a telephone interface, speech-to-text control and Calendar/task integration. Describe what upgrades would be required.		No Test to Speech or Speech to text at the moment. Unified Communication features are coming in phases starting in Q1 of next year. If the customer has purchased the Unified Communications license, they will get the features when they are released.

Page 28: Some phone systems include a built-in conference bridge at no additional cost. These conference bridges tend to leverage existing telephony infrastructure and provide a "meet me" number that can be provided to callers to automatically bridge calls into a conference call. Some Manufacturers allow the use of passcodes, scheduled and reserved meetings, and meeting invitations, while other Manufacturers simply add each incoming caller to the bridge without the requirement for a passcode. Please describe any functionality that the quoted system will provide for this type of Meet Me Conference Bridge		Voice Conference bridges are available natively in the Fortivoice , the number of Bridges and their capacity vary based on the size of the system Conferences can be static or dynamic and be created by administrator or users with certain privilege.
Page 28: Computer Telephone Integration Click to Dial –Will the proposed solution allow a user to dial a phone number from Outlook clients and have the call complete on their VoIP	**No**	Only from chrome browser.
Page 29: Will employees be able to place calls by pressing the dial button from the Contacts or the Global Address List?	**Yes**	**No additional pricing --**
Page 29: Does the proposed solution provide the ability to highlight a phone number on a web browser page and have the call dialed by the phone system? Describe how this feature works, what components are required for this functionality, whether this functionality is included in the proposal as priced, and optional budgetary pricing if not included. Provide optional pricing. Briefly describe and price any other relevant CTI applications that could improve employee efficiency		Only from Chome browser. A free Chrome extension is required and can be from under Chome ext directory and installed.
Page 29: **Mobility Applications Extend to Cell Phone**: Describe any functionality that the system has to ring a call to a person's cell phone and desk phone simultaneously. If the call is answered on the cell phone, how do you get the call back to the desk phone? If the call is answered on the desk phone, how do you extend the call to the cell phone? Will the user see the inbound caller's Caller ID or the VoIP telephony system's Caller ID on the display of their cell phone? Provide optional pricing		FortiVoice provides this capability using the Twinning feature, which allows the pairing of Deskphone and any other phones (Cellphone, smartphone home phone or other internal extension). The Fortivoice will ring both phones simultaneously and if the cellphone is answered first a speed dial key can be programmed to switch the conversation from one device to the other. This functionally can be activated or deactivated by code, schedule or speed dial key on the deskphone. **No additional pricing**
Page 29: **System Administration Requirements** The City of Ormond Beach desires a system administration tool capable of supporting all offices within the enterprise from a single intuitive user interface. Ideally, this program will allow management of the phone system, voicemail, ACD, etc., from a single unified interface. Please describe all the functions and applications the administration tools can support and include screenshots for each	**Yes**	Fortivoice has a single management interface that is used for any configuration task needed.
Page 29: Describe the database which contains user programming information for the phone system, voicemail, and other major system components.		Internal database inherent to the VM2000 system.
Page 29: Generally, describe how the programming database might be integrated with The City of Ormond Beach's current Active Directory, Email, and HR databases.		FortiVoice is a comprehensive business phone system developed by Fortinet. It offers various features and functionalities to enhance communication within an organization. One of the key capabilities of FortiVoice is its ability to integrate with Active Directory, which is a directory service provided by Microsoft for managing network resources. Active Directory integration allows FortiVoice to synchronize user information and authentication with the Active Directory domain controller. This integration provides several benefits, including centralized user management, simplified user provisioning, and enhanced security. When FortiVoice is integrated with Active Directory, it can perform the 1. **User Authentication**: FortiVoice can utilize the Active Directory credentials for user authentication. This means that users can log in to their FortiVoice accounts using their Active Directory username and password, eliminating the need for separate login credentials. 2. **User Synchronization**: FortiVoice can synchronize user information from Active Directory, such as names, email addresses, phone numbers, and department details. This synchronization ensures that the user data in FortiVoice remains up-to-date and consistent with the Active Directory database. 3. **User Provisioning**: With Active Directory integration, administrators can provision new users in FortiVoice directly from the Active Directory console. This simplifies the process of adding new users to the phone system by leveraging the existing user management infrastructure of Active Directory. 4. **Group Management**: FortiVoice can also synchronize groups or organizational units (OUs) from Active Directory. This allows administrators to assign specific permissions or call routing rules based on Active Directory group membership. 5. **Single Sign-On (SSO)**: By integrating with Active Directory, FortiVoice can enable single sign-on functionality. Users who have already authenticated with their Active Directory credentials can seamlessly access FortiVoice without needing to enter their login details again.

City's Request for Additional Information/Question	Compliant	Detailed Answer
Page 29: How is Security provided to prevent unauthorized access to the administration application? Is there any limit to the number of administrative users that can be given access		Blocked IP, system lock. NO limit to the number of administrative users and different users can be given individualized permission levels. View only permissions also available.
Page 30: **System Monitoring and Diagnostics** What diagnostic tools, logs, and reports are available to aid in isolating faults? Are the system's diagnostic tools SNMP-compliant?		Logs, syslogs, SNMP compliant.
Page 30: Describe the system alarms and alarm notifications available from each sub-system. Will the system call home to the maintenance company; call the Client's designated phone numbers; send out pages to pagers; send emails, etc.?		Alerts based on logs can be sent over emails only.
Page 30: Does the proposed system have the ability to monitor VoIP Quality of Service?		No -- this is more at the carrier level and network management for QoS.
Page 30: Does this application simply monitor for underlying network issues (latency, jitter, packet loss) through the use of some kind of probe or error logs? Or does it monitor actual phone calls through data provided by the telephones?		Logs will report any anomaly when it comes to failure and packet capture can be generated from the GUI to analyze problem at SIP and RTP level
Page 30: **Software Upgrades and Patching** How does your company provide future software releases?		If a Forticare contract is active (maintenance) firmware updates are included.
Page 30: Is it possible to perform a software upgrade on a standby/redundant server and then force a failover to minimize downtime during a software upgrade? Is this functionality included in the base price?		Yes, by having HA (High Availability) active. This would require a secondary system.
Page 30: Can the standby location stay on the old software level in case you need to revert to the previous software level?		Not recommended, but with a solid backup the upgrade and downgrade process is really reliable



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FORTINET PROFESSIONAL SERVICES & EMPIRE ENGINEERING

FortiVoice (FVE) system will be configured with HA with on prem VM server and the secondary VM server housed in AWS.

Once the FVE system has been configured, phones will be deployed to end users desks. Once the end users feel comfortable with the new phone system, time will be scheduled for the final cutover and DID number porting.

This system will consist of:

2[redacted]

Engagement Kickoff Meeting

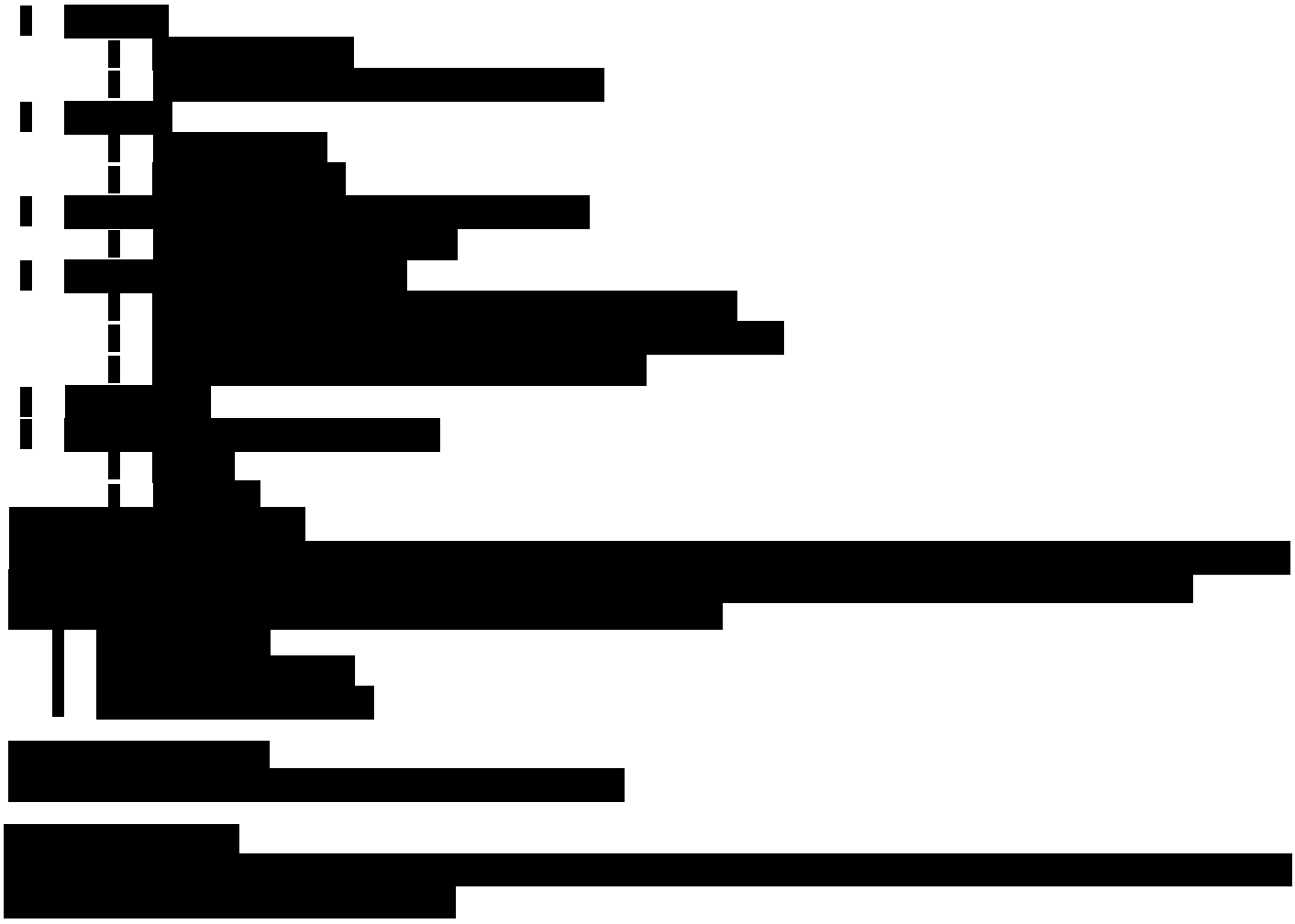
- Review Explanation of Services document
- Understand network topology and requirements
- Question and answer

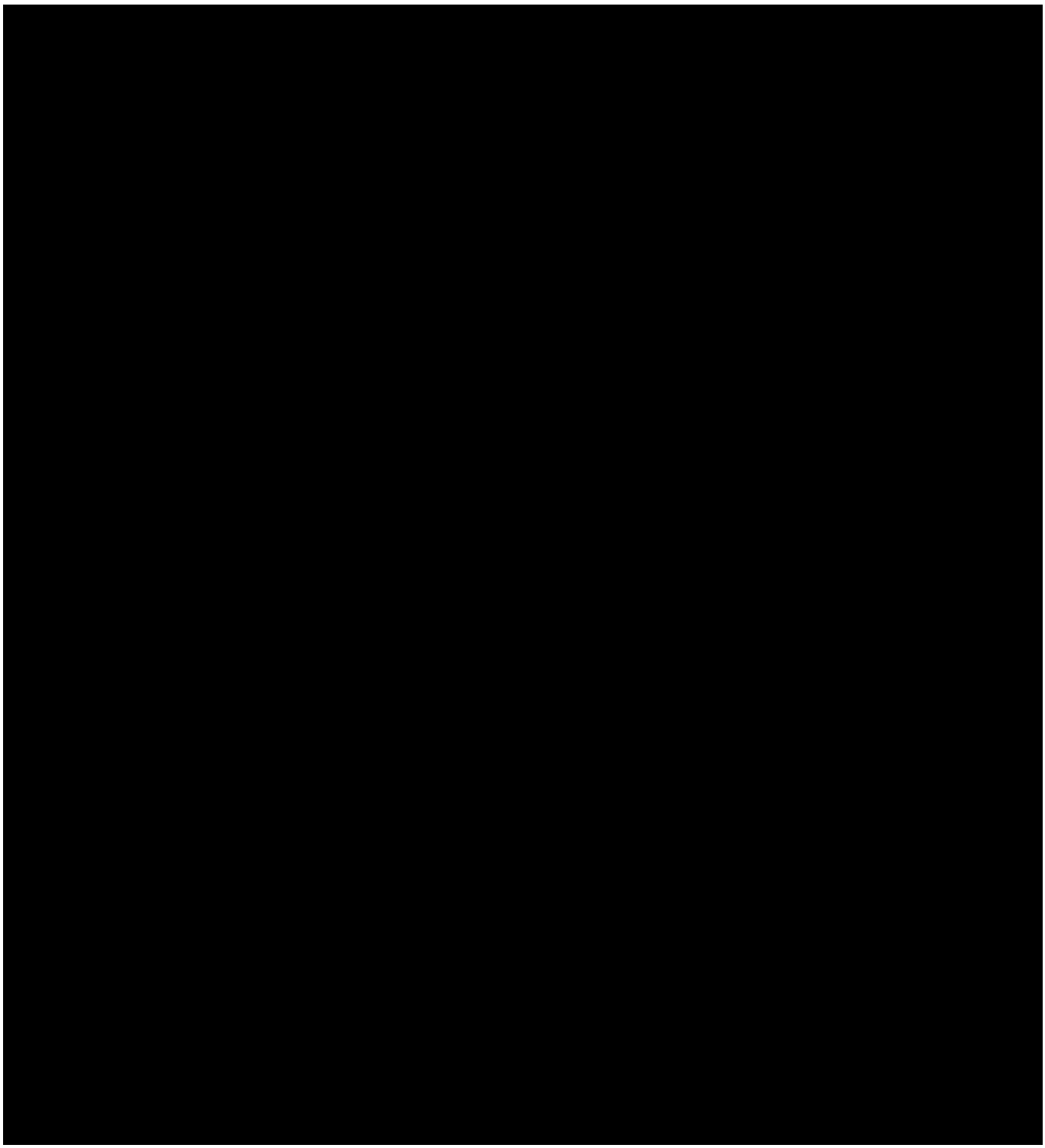
FortiVoice Enterprise Voice Configuration

The system will be configured to enable operation as defined and agreed to by Empire Computing and Consulting. After validation and testing of the configuration, Fortinet will provide a text version of the final configuration. Initial controller setup includes:

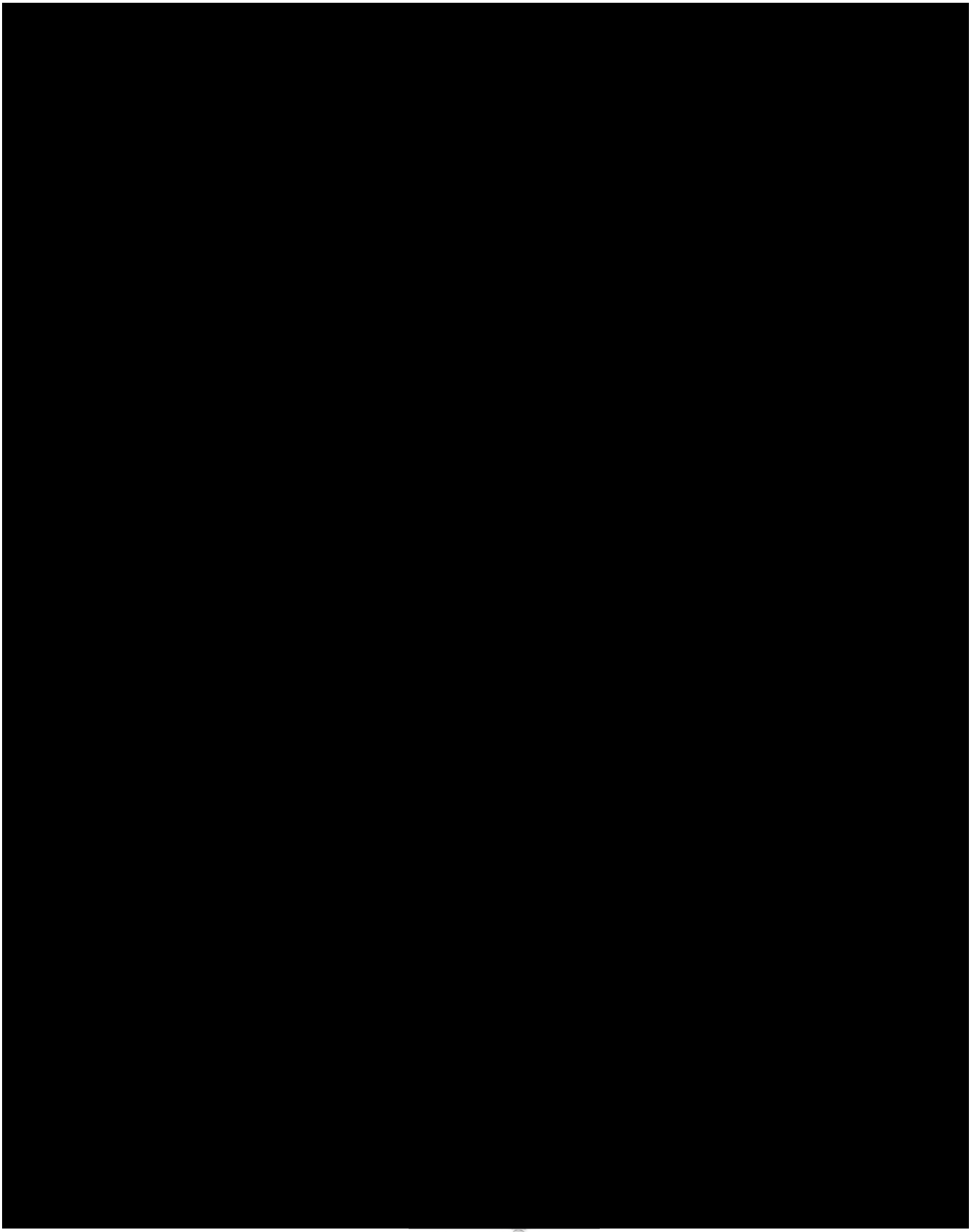
- 300 Extension configuration
- Dial tone provided ▪ SIP
- Extensions Created via ▪ CSV Import / Standalone

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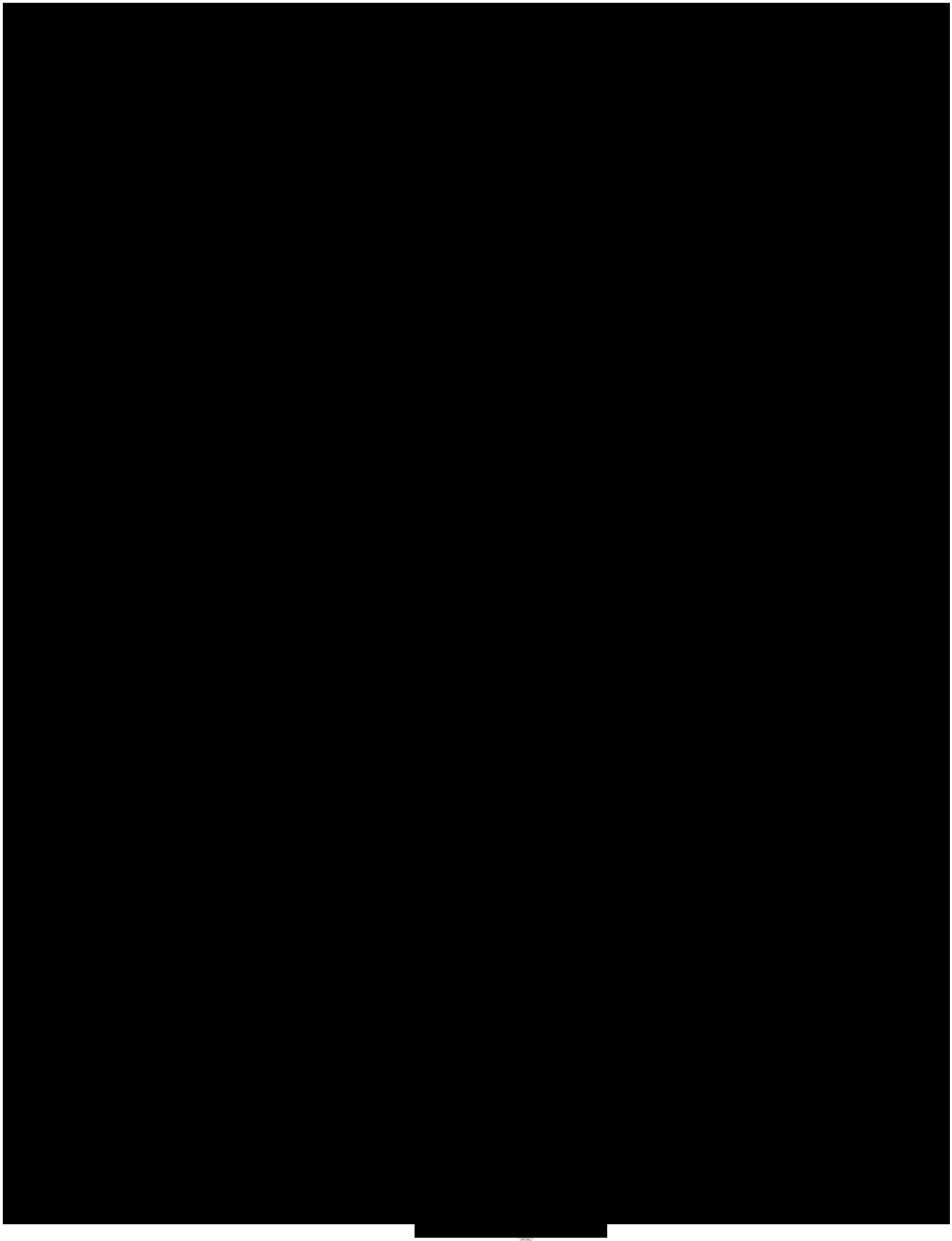




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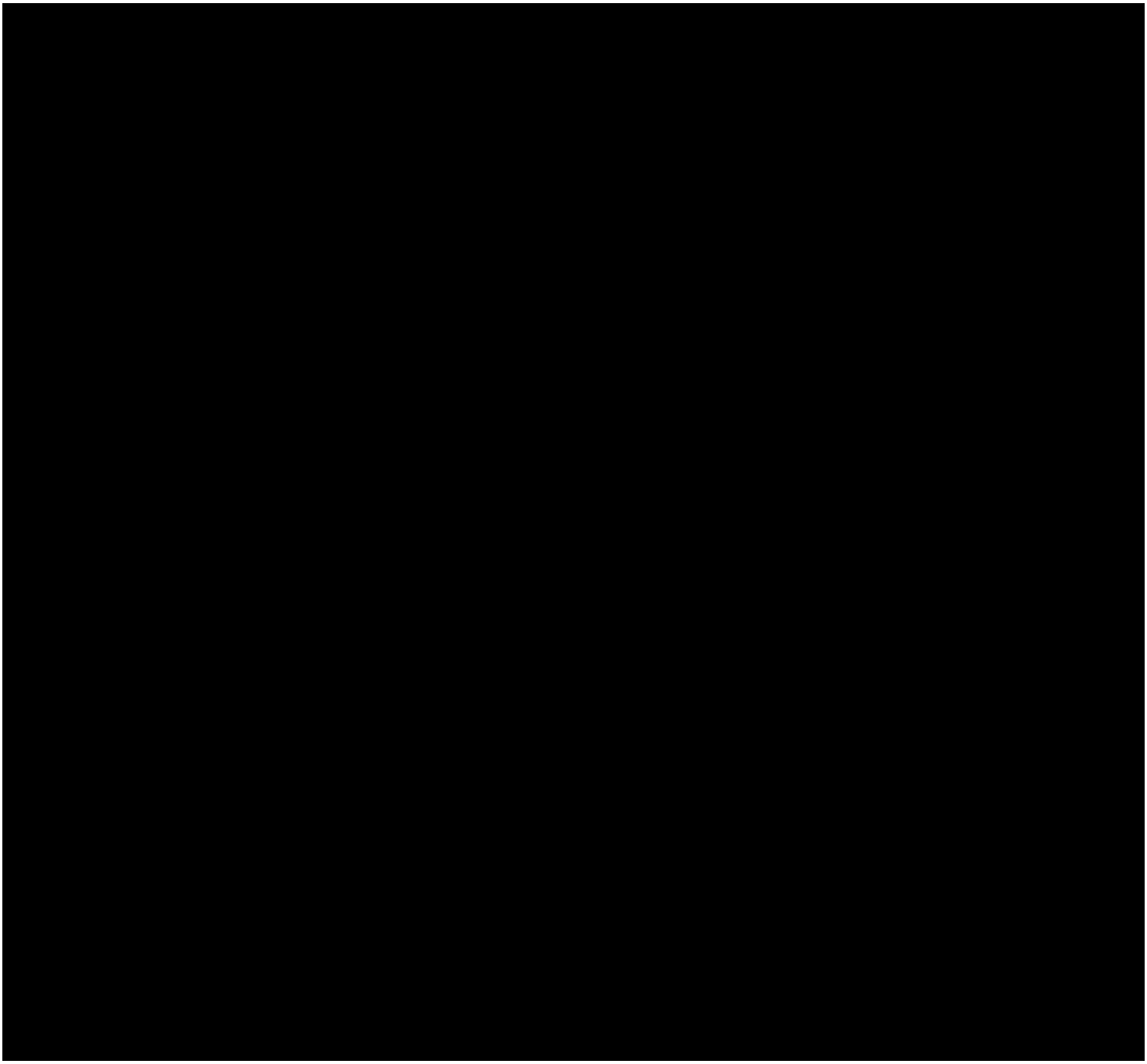


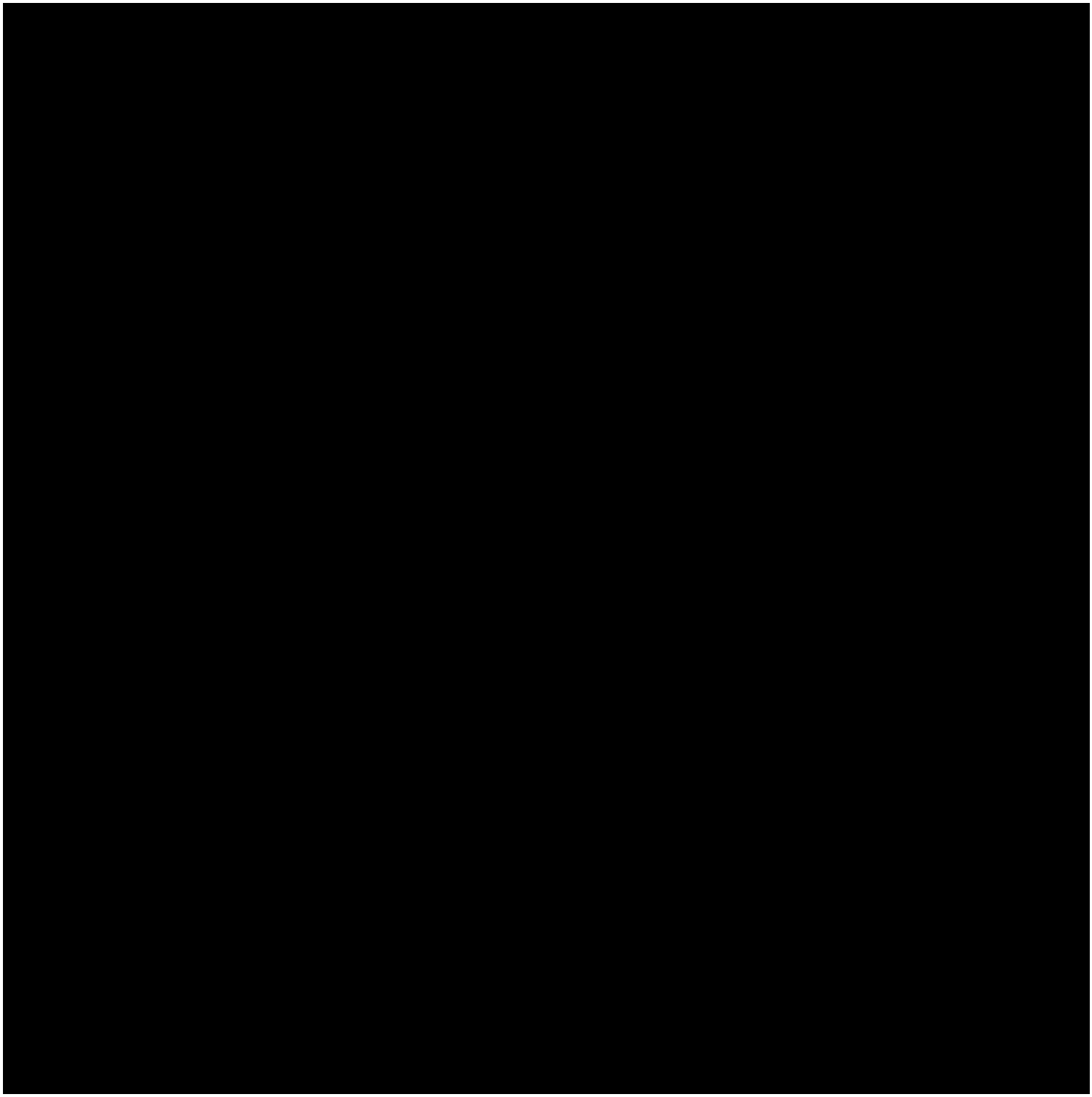
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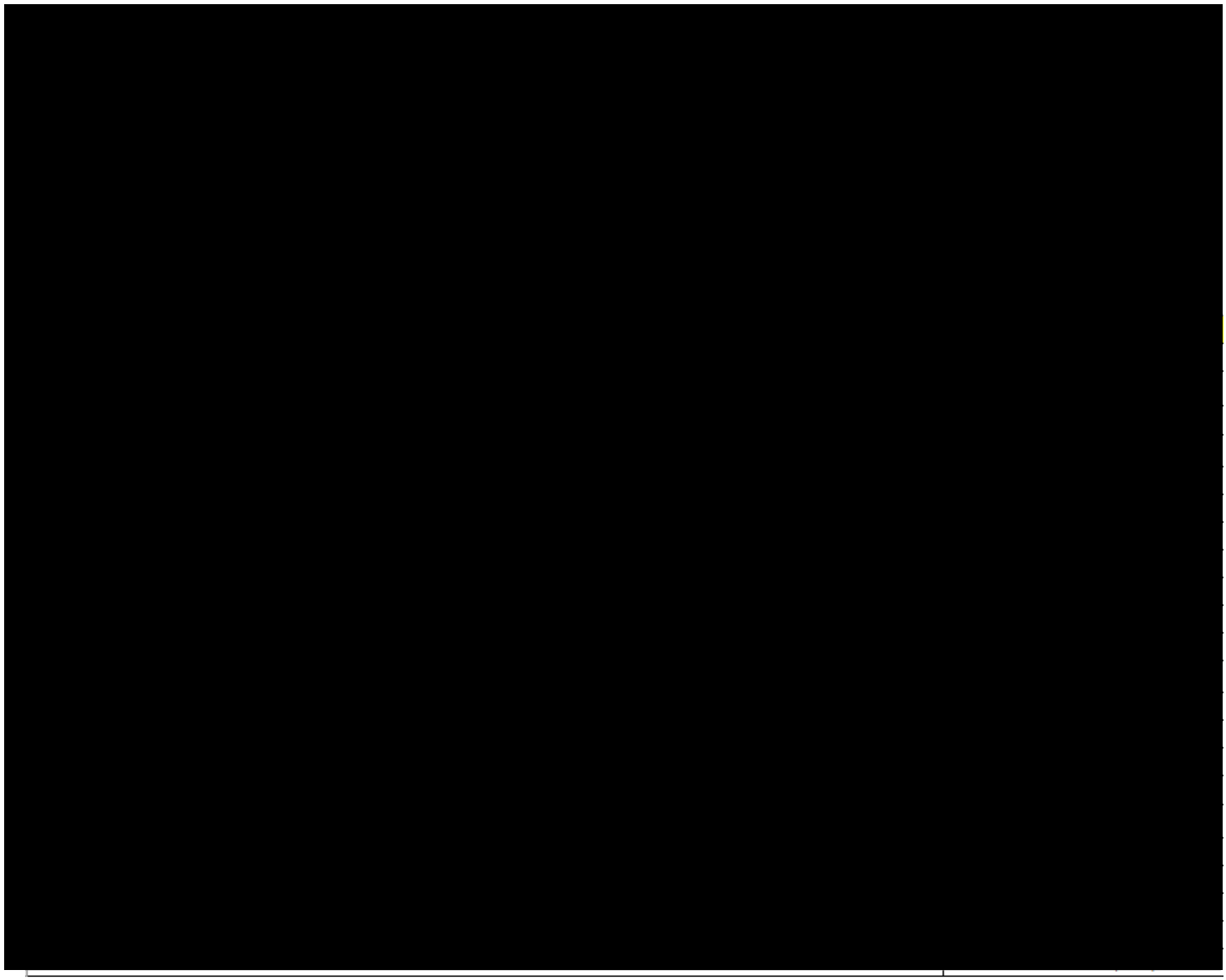
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Infrastructure Cabling Costs Phones & AP's



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[redacted]

[redacted]

- [redacted]
- [redacted]

[redacted]

- [redacted]

Empire will be on site per the RFP requirements for post-cutover to assist with any issues or changes required.

Post-Installation Warranty and Support

All hardware shown on the implementation pricing pages above has a minimum of 1 YR warranty and support. 3 YR support has also been shown as an option, per RFP requirements. Fortinet's Premium support covers the following:

FortiCare Service Offerings

FortiCare Included Features	Per-device Service Op		
	FortiCare ESSENTIAL	FortiCare PREMIUM	FortiCare ELITE
RMA	Return and replace only	Advanced replacement (PRMA available)	Advanced replacement (PRMA available)
Web Support	✓	✓	✓
Telephone Support	—	✓	✓
Firmware Updates	✓	✓	✓
Asset Management Portal	✓	✓	✓
Response Time (Critical Issue)	Next business day	1 hour	15 mins
Response Time (Non-critical Issue)	Next business day	Next business day	2 business hours
Extended End-of-Engineering-Support (E-EoES) for Long Term Supported Firmware (LTS) of 18 months*	—	—	✓
Device Insights and Monitoring Portal (FortiCare Elite Portal)	—	—	✓

* Currently available for FortiGate only

FortiCare Services are provided by the support teams located across 20 regional Technical Assistance Centers (TACs) and three regional Centers of Excellence (COE).

https://www.fortinet.com/content/dam/fortinet/assets/solution-guides/sb-forticare-services.pdf

Empire offers a 1 YR workmanship warranty on any devices installed by Empire. The manufacturer's warranty may not cover replacement installation should the device itself fail.

Empire offer 8x5xNBD support on the proposed products to the City with 4 hour response time at $150/hour without a service agreement or labor negotiated contract in place. Replacement (RMA) hardware can be replaced in the 24 hour NBD environment.

To cover critical core devices (excluding internet or SIP or those deliveries provided by another Vendor or Carrier) of the Voice platform on a 24x7x4 SLA, Empire will negotiate at a time and material rate of $375/hour with 4 hour response time. FortiCare Elite may be a service to be considered in conjunction with the local time and materials support provided by Empire. Should the City be interested, we can provide a plan to cover this service

As proven by our long-standing relationship with the City, Empire can be counted on to support the City in any outage and will work with the IT staff to ensure that critical outages are handled and resolved in a time-sensitive manner.

EMPIRE PROJECT STAFF

Richard Campos, Senior Vice President Engineering

Richard has been working with City governments deploying network and voice systems since Empire's inception in 1994. Richard carries many certifications including Cisco's CCNP/CCNA/CCDA and Aruba Certified Switching Professional. Since graduating from University of Florida with a BS in Electrical Engineering, Richard has worked across multiple vendor platforms, including Fortinet, Cisco, HPE/Aruba, Ruckus.

He has handled city wide, hospital and campus wide migrations including design, planning and configuration, implementation and project management. His voice experience includes Cisco's Call Manager, Nortel BCM VoIP, Barracuda Voice, 3CX SIP voice and has trained on Fortivoice.

Richard will act as Senior Engineer on this project.

Thomas Burns, Network Engineer

Thomas is a graduate of University of Florida with a degree in Computer Science Engineering. Thomas also holds his Cisco CCNA. He has experience in network hardware configuration on various manufacturing platforms including Fortinet, Ruckus, HPE Aruba, Lantronix and Cisco. Thomas has experience in initializing servers on access control platforms including Avigilon, Verkada and March Networks.

For this project, Thomas will work under the direction of Richard Campos and will be the on-site contact post conversion.

Fortinet Professional Services (voice implementation HW)

Fortinet Professional Services provides a remote professional services engineer experienced in the Fortinet enterprise products – keying on voice – to implement the FortiVoice enterprise system. This engineer will provide configuration to enable the system to operate as defined in the RFP and includes:

- Network settings
- High availability stings
- Administrative accounts
- Mail settings
- Trunk settings

Gloria Burke, Director, Project Management

Gloria has experience directing projects of various sizes and platforms. She currently is the direct Sales contact for the City of Ormond Beach and was the Project Manager for the recently completed physical security project for the Ormond Beach Police Department. She is a graduate of Sawyer Business School and has a construction management degree from University of Central Florida.

For this project, Gloria will work directly with the City of Ormond beach on planning and directives and manage the project timelines. She will also be responsible for the staff training.

Pete Moukakos, Business Development Representative

Pete has been working at Empire since 2019 and has his AA from UNF in Business Management. He is actively involved in building new client relationships. He has training experience in his previous position at Gold's Gym as a program development manager. Pete excels in bringing large groups of individuals together in a teaching environment and will be utilizing that experience to assist with training of City of Ormond staff on this project.

Knowledge transfer will be active and is open to participation from City of Ormond staff as required.

Glenn Molander, Infrastructure Cabling Management

Glenn comes to Empire with 35 years of experience from a School District in North Central Florida. As Director of Construction Services, Glenn contracted and managed teams that implemented physical security products and was directly involved in the infrastructure cabling required to run the district. He will use this experience to manage the infrastructure cabling portion of this project and oversee the cleanup of the current IDF's.

ATTACHMENT A

FortiVoice E911 solution.

FortiVoice is a comprehensive communication solution offered by Fortinet that includes an E911 feature. E911, also known as Enhanced 911, is an emergency service that allows users to dial emergency services like 911 and provide their location information automatically.

FortiVoice's E911 solution ensures that emergency calls made from within an organization are routed to the appropriate emergency services with accurate location information. This feature is crucial in emergency situations, as it helps emergency responders quickly locate and assist individuals in need.

When a user dials 911 using FortiVoice, the E911 feature automatically transmits the caller's location information to the emergency services. This information can include the caller's address, building or floor number, and other relevant details. By providing this information, FortiVoice helps emergency services respond promptly and effectively.

It's important to note that the E911 solution from FortiVoice requires proper configuration and integration with the organization's network infrastructure and phone system. This ensures that accurate location information is transmitted during emergency calls.

Overall, FortiVoice's E911 solution is designed to enhance the safety and security of organizations by enabling efficient emergency communication.

Configuring the E911 feature in FortiVoice involves a few key steps to ensure accurate location information is transmitted during emergency calls. Here's a high-level overview of the configuration process:

1. Network Setup: FortiVoice needs to be connected to the organization's network infrastructure. This typically involves connecting the FortiVoice system to the local area network (LAN) and ensuring proper network connectivity.

2. Location Configuration: FortiVoice allows you to define and configure different locations within your organization. Each location represents a physical address or area within your premises. You can specify details such as the address, building or floor number, and other relevant information for each location.

3. Emergency Service Provider Configuration: FortiVoice needs to be configured with the contact information of the emergency service provider(s) in your area. This includes the phone number(s) for emergency services like 911.

4. Mapping Locations to Extensions: In FortiVoice, you can associate each extension or phone number with a specific location. This mapping ensures that when an emergency call is made from a particular extension, the corresponding location information is transmitted to the emergency services.

To insure proper E911 call management Fortivoice E911 solution is using Emergency Zone.

The FortiVoice emergency zone profile is a feature that allows organizations to define specific areas within their premises as emergency zones. These zones can be associated with different emergency response protocols or routing rules to ensure appropriate handling of emergency calls.

With the emergency zone profile in FortiVoice, organizations can designate specific areas such as floors, buildings, or departments as separate emergency zones. Each zone can have its own set of rules and configurations for handling emergency calls.

For example, an organization may have multiple buildings on their premises, and each building may have its own emergency response team or designated evacuation procedures. By creating separate emergency zones for each building, FortiVoice can route emergency calls from specific zones directly to the corresponding response team or emergency services.

1. Emergency Zone Configuration: FortiVoice allows administrators to define specific emergency zones within their organization. These zones can be customized based on physical locations, such as buildings, floors, or departments. By configuring emergency zones, administrators can ensure that emergency calls are routed to the appropriate responders.

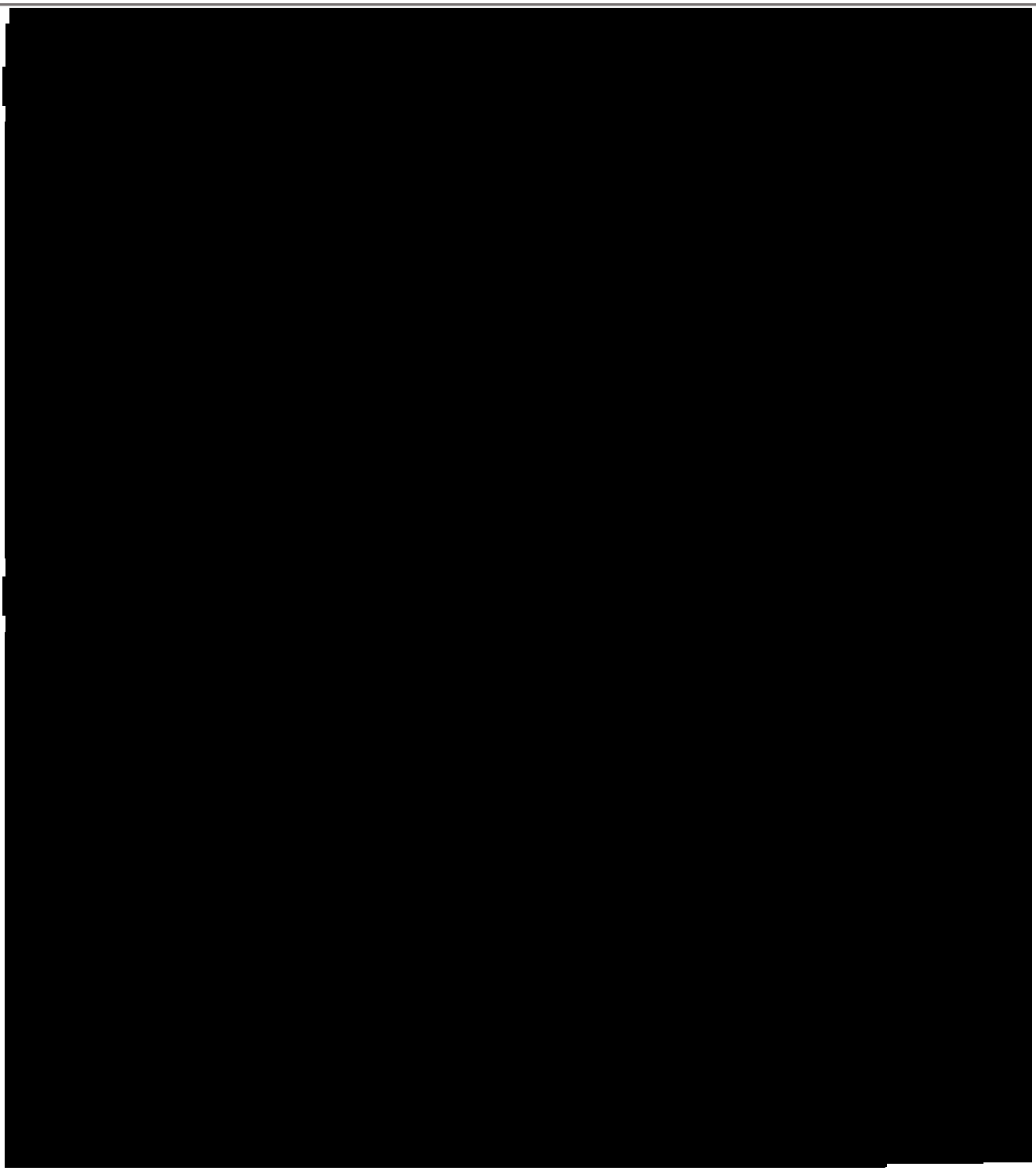
2. Automatic Call Routing: When an emergency call is made from a specific emergency zone, FortiVoice automatically routes the call to the designated emergency response team or personnel. This ensures that the right individuals are notified and can take immediate action.

3. Location-Based Routing: FortiVoice utilizes location-based routing to determine the appropriate emergency response team based on the caller's location within the organization. This helps emergency responders quickly identify the source of the emergency and respond accordingly.

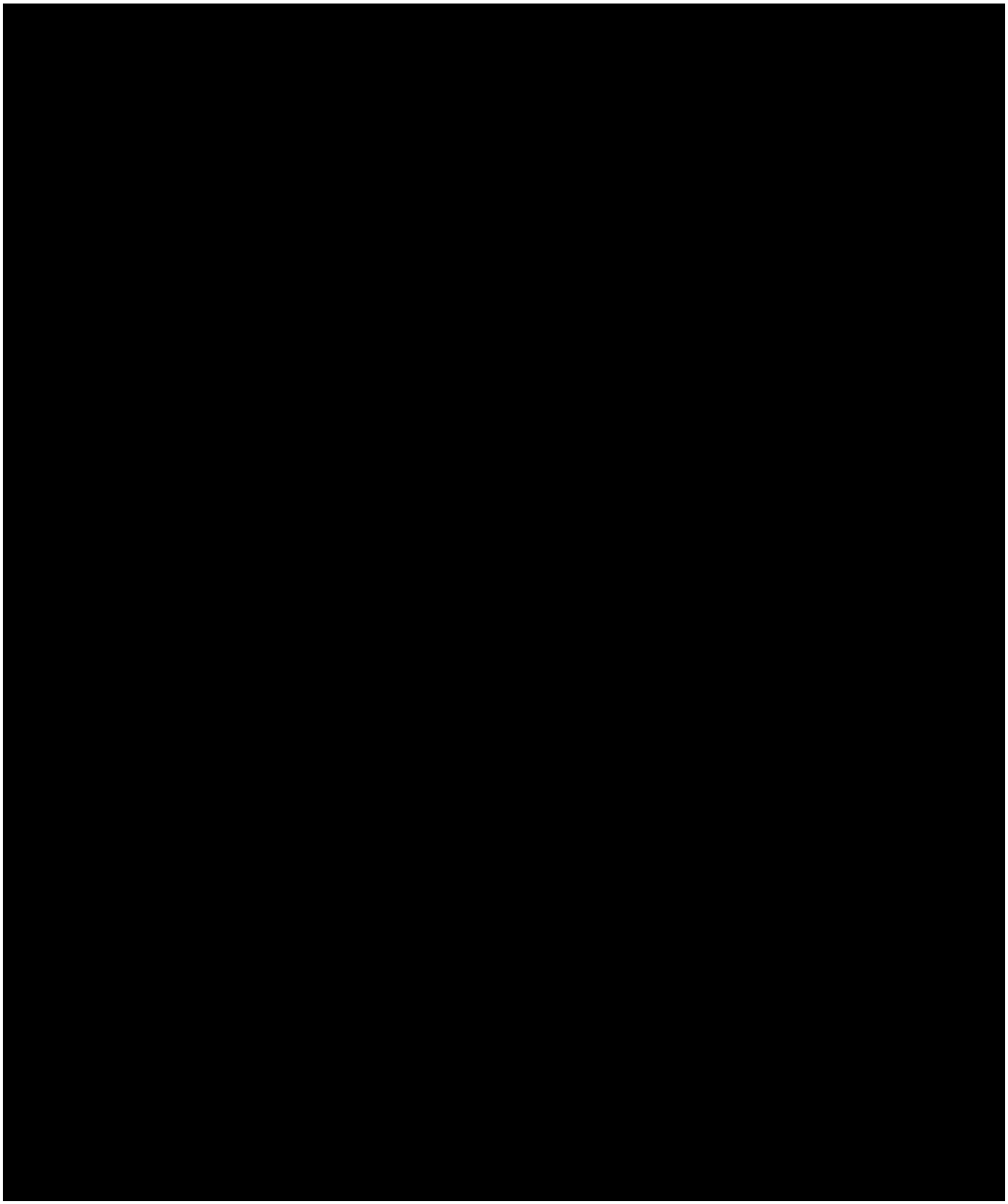
4. Emergency Notifications: In addition to routing emergency calls, FortiVoice can also send notifications to designated individuals or groups within the organization. These notifications can be in the form of emails, text messages, or other communication channels, alerting them about the emergency situation.

5. Emergency Response Plans: FortiVoice allows administrators to create and store emergency response plans within the system. These plans can include step-by-step instructions, contact information, and other relevant details to guide responders during an emergency.

In addition, every 911 voice conversation can be recorder based on rules and archived on the Fortivoice itself or an external storage.



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Telecommunication System Upgrades & Improvements

RFP 2024-07

Name of Firm: R2

Reviewer: Chuck Osteen IT Manager

Date:11/29/2023

Criteria	**Max Points**	**Reviewer Score**
Experience & Past Performance	**15 points**	**14**
Financial ability	**5 points**	**5**
Management & Service Level Plans	**10 points**	**7**
Organization Structure	**15 points**	**12**
Equipment and Infrastructure	**25 points**	**23**
Transition Plan	**10 points**	**10**
Price	**20 points**	**14**
	Total Points	**85**

Notes (public record):_____

_____

_____

_____

RFP Evaluation Summary

Recommendation for award highlighted

Project:Telecommunication System Upgrades & Im

RFP Number: 2024-07

Date & Time: March 12, 2024 2:00 PM

	Empire Consulting					R2 Unified Technologies				
The RFP's were scored on the following criteria:	K. M.	S.F.	A.S.	C.O.	Total	K. M.	S.F.	A.S.	C.O.	Total
Experience & Past Performance - 15 points max					15					15
Financial ability - 5 points max					5					5
Management & Service Level Plans - 10 points max					10					7
Organization Structure - 15 points max					13					15
Equipment and Infrastructure - 25 points max					25					20
Transition Plan - 10 points max					10					8
Price - 20 points max					20					14
Total	0	0	0	0	98	0	0	0	0	84
Rank					1					2

Rob Hart	**Alex Schumann**	**Chuck Osteen**	**Kelly McGuire**
Purchasing Coordinator	**City Engineer**	**IT Manager**	**Finance Director**

City of Ormond Beach

AGENDA ITEM

August 20, 2024 - City Commission

Number: 7.K

Section:	CONSENT AGENDA		
Item Category:	Consent - Disposition Item	**Res./Ord. No:**	
Strategic Goal:	Transportation & Community Development - Other		
Department:	Planning & Building		
Subject:	Comprehensive Plan 2045 Update (aka Evaluation & Appraisal Report)		
Summary:	The state required Comprehensive Plan 2045 update (2045 update), also known as the Evaluation and Appraisal Report (EAR), must be completed by June 2025. Below is a tentative schedule designed to have the Planning Board as the primary advisory board. The process would allow public participation and opportunities for the City Commission to provide policy direction. Florida Statutes require this 2045 update, and City staff cannot modify the date on which the 2045 update is due. The 2045 update is designed to occur in 3 phases: **Phase 1 Introduction: August 2024** The introduction phase would include a community engagement meeting planned for Monday, Aug 26, 2024. It will include each Comprehensive Plan element as a station with a City staff member available to discuss aspects of the element and take any input. A PowerPoint would describe the Comprehensive Plan and the 2045 update process. Finally, there would be a City map station where any comment could be made. The community engagement meeting would be from 5:30 to 7:00 p.m., where individuals can walk through at any time. A survey will also be available on the City's website. **Phase 2, Review and Analysis: September - February 2025** This phase would utilize the Planning Board to review the individual Comprehensive Plan elements. The Planning Board meetings are public and would allow input from any interested individual. The City Commission would be updated on the review and analysis of the Comprehensive Plan. A January 2025 public meeting is planned to summarize the review and analysis. Planning Department staff is tentatively scheduling a City Commission workshop on February 4,		

	2025, to review the Planning Board review and the potential amendments to obtain City Commission input. **<u>Phase 3, Comprehensive Plan Amendments, February - June 2025</u>** Comprehensive Plan amendments based on the review and analysis will be presented to the Planning Board in February and March 2025. The 2045 update amendments are anticipated to be presented to the City Commission in May 2025, for transmittal to state agencies, VGMC, and abutting cities.
Financial Impact:	There is no financial impact as a result of the Comprehensive Plan 2045 update.
Citizen Impact:	The Comprehensive Plan 2045 update is designed to guide future development and related policies. The 2045 provides an opportunity to review existing policies and update them as needed. There are multiple meetings where public input can be provided, starting with the community engagement meeting on August 26, 2024.
Recommended Action (Staff, Advisory Board and/or Other):	This disposition item is provided to update the City Commission on the Comprehensive Plan update. No action is required.
Staff Contact:	Steven Spraker, Planning Director, (386) 676-3341
Attachments:	
Approval:	Kelly McGuire, Finance Director 8/6/2024 Shawn Finley, Assistant City Manager 8/9/2024 Joyce Shanahan, City Manager 8/14/2024

City of Ormond Beach
AGENDA ITEM

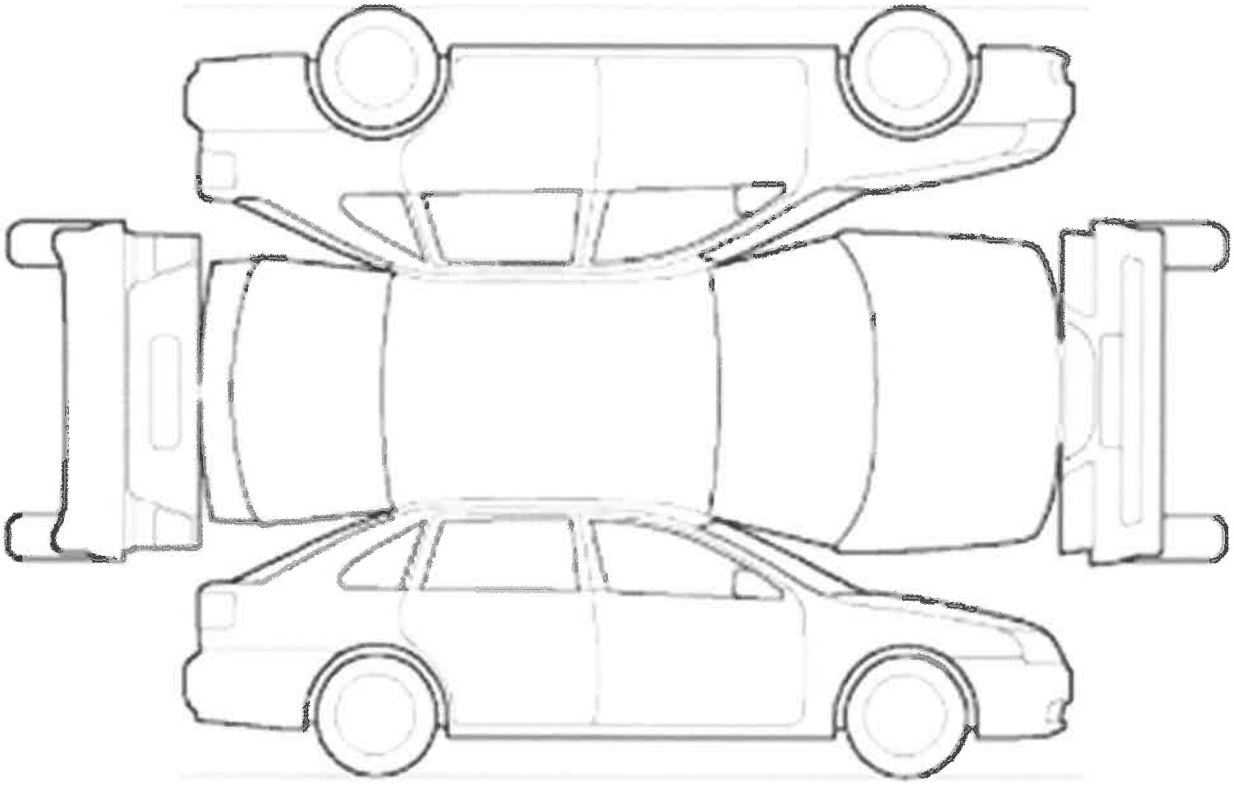
August 20, 2024 - City Commission

Number: 7.L

Section:	CONSENT AGENDA		
Item Category:	Consent - Disposition Item	**Res./Ord. No:**	
Strategic Goal:	Quality of Life - Other		
Department:	Leisure Services		
Subject:	Auto Renewal - Stanley Steamer		
Summary:	On November 5, 2018, the City Commission authorized an artifacts loan agreement to display the Stanley Steamer Rocket replica inside the Ormond Garage Brewery. The agreement shall be for 2 years beginning November 5, 2018 and may be renewed for one-year periods unless the agreement is terminated in writing by either party. This is to notify the City Commission of staff's intent to allow the auto-renewal of the Stanley Steamer display agreement for an additional year.		
Financial Impact:	None		
Citizen Impact:	The replica display will continue to allow residents and visitors the opportunity to view a piece of Ormond Beach racing heritage.		
Recommended Action (Staff, Advisory Board and/or Other):	Staff intends to renew the agreement for one additional year, unless otherwise directed.		
Staff Contact:	Robert Carolin, Leisure Services Director, (386) 676-3279		
Attachments:	1. Stanley Steamer Replica Vehicle Inspection Worksheet 2. Stanley Steamer Agreement		
Approval:	Kelly McGuire, Finance Director 7/16/2024 Shawn Finley, Assistant City Manager 8/9/2024 Joyce Shanahan, City Manager 8/14/2024		

7/18/23

STANLEY STEAMER REPLICA
VEHICLE INSPECTION WORKSHEET



In the lines below, document any noticeable damage, defects, and/or wear. If anything out of the ordinary is noticed, notify the Director of Leisure Services immediately.

Protection - Car is protected and away from public access.
Clean - Car is clean and well maintained
Overall - Car is well kept and staff could find no issues.

Staff Signature :

Date: 7/18/23

ARTIFACTS LOAN AGREEMENT

THIS AGREEMENT is entered into by and between the City of Ormond Beach ("City"), a Florida municipal corporation, 22 South Beach Street, Ormond Beach, Volusia County, Florida and William H. Jones, Jr. ("Jones"), 460 Walker Street, Holly Hill, FL 32117.

WITNESSETH:

WHEREAS, the City is the owner of a three-quarter scale 1906 Stanley Steamer Rocket replica-automobile, an artifact of historical importance, hereafter referred to as "Automobile," which is currently located in the City's fleet maintenance building; and

WHEREAS, the Automobile is a replica and is not operational; and

WHEREAS, Jones is the owner of the Ormond Garage ("Garage") located at 48 W. Granada Boulevard, Ormond Beach, FL 32174; and

WHEREAS, the foregoing artifact is of historical importance and the City desires to loan the Automobile to Jones for public display at the Garage; and

WHEREAS, the Leisure Services Advisory Board and the Ormond Beach Historical Society have both unanimously recommended loaning the Automobile to Jones for public display at the Garage; and

WHEREAS, the Automobile will be prominently displayed in the window facing Granada Boulevard in the northwest side of Garage and Jones will have a contractor build a lexan display case covering and protecting the Automobile; and

WHEREAS, Jones has agreed to pay all costs and expenses, including property and liability insurance, incurred and associated with the display and transportation of the Automobile to the Garage; and

NOW THEREFORE, for and in consideration of the mutual covenants, promises and conditions herein contained, it is expressly agreed and understood as follows:

1. **PURPOSE**: The foregoing recitals are true, form material conditions for entering into this Agreement, and are incorporated herein by reference and made part hereof.

2. **TERM:** The term of this Agreement shall be for a period of two (2) years. Thereafter, this Agreement shall be automatically renewed for additional one (1) year periods unless the Agreement is terminated by either party, as provided in paragraph (7) herein.

3. **PROPERTY:** The following artifact shall be on loan from the City to Jones for the duration of this Agreement:

One (1) three-quarter scale Stanley Steamer Rocket replica-automobile

4. **RISK OF LOSS:** Jones shall at its sole expense insure the Automobile for its replacement value of $500,000.00 for its transportation and public display for the duration of this Agreement. Jones shall at its sole expense transport the Automobile from the City's fleet maintenance building (500 N. Orchard Street, Ormond Beach, FL) to the Garage. Jones shall utilize a professional antique shipper to transport the Automobile. The method of shipping and the shipping company are subject to pre-approval by the City Leisure Services Director. Jones shall at all times material hereto bear the risk of loss or damage to the Automobile. The promises and covenants contained in this Agreement shall survive the termination of the Agreement.

5. **DISPLAY AND MAINTENANCE:** Jones shall at its sole expense, maintain and display the Automobile in a manner that is commercially reasonable for public viewing at the Garage, and shall provide such security as reasonably required to ensure its safe maintenance and public display. Jones shall at its sole expense maintain the condition of the Automobile in the same condition in which it existed at the time of its initial delivery to Garage. Further, upon the

termination of this Agreement, Jones shall at its sole expense return the Automobile to City in the same condition that it existed at the time of initial delivery to Jones.

6. **CONSIDERATION:** Jones shall not be required to pay any monetary consideration to the City for the public display and use of the Automobile. Jones shall display a sign indicating that the Automobile is on loan from the City, which sign shall prominently incorporate the City's trademarked "Birthplace of Speed" logo. The parties further acknowledge that the covenants, promises and conditions herein contained constitute good and valuable consideration for entering into this Agreement.

7. **TERMINATION:** This Agreement may be terminated as follows:

FOR CAUSE:

The City may immediately terminate this Agreement for cause and promptly regain possession of the Automobile upon giving written notice of such termination, as a result of a material breach by Jones of any covenant, promise or condition herein contained that unduly jeopardized the safety, or adversely affects the value or condition of the Automobile in each instance.

The City may terminate this Agreement for cause upon giving thirty (30) days' prior written notice, as a result of a material breach by Jones of any covenant, promise, or condition herein contained, that does not unduly jeopardize the safety, or adversely affect the value or condition of the Automobile in each instance.

WITHOUT CAUSE:

Either party may terminate this Agreement for any reason and without penalty by providing at least ninety (90) days' prior written notice to the other party of their intent to terminate.

Upon the termination of this Agreement, Jones shall, at his sole expense, promptly return the Automobile to the City.

8. **NOTICES:** All notices required hereby shall be provided by certified mail, return receipt requested, to the parties at the following addresses, or at such other address as may be designated in writing by either party:

City of Ormond Beach	**William H. Jones, Jr.**
Joyce Shanahan, City Manager	460 Walker Street
(copy to City Attorney)	Holly Hill, FL 32117
22 South Beach Street	
Ormond Beach, FL 32174	

9. **WAIVER:** A waiver of any covenant, promise or condition herein by any party to this agreement shall not constitute a subsequent or continuing waiver of the same or any other covenant, promise or condition by the waiving party.

10. **SEVERABILITY:** In the event any part of this Agreement shall be declared to be null and void and of no effect by a court of competent jurisdiction, the remaining parts of this Agreement shall continue in force and effect.

11. **LAW APPLICABLE:** This Agreement shall be governed by the law of the State of Florida.

12. **VENUE:** Any action or proceeding, either at law or in equity, regarding this Agreement shall be brought in the circuit court in and for Volusia County, Florida. Venue in any other jurisdiction, whether it be any other state or federal venue, is hereby expressly waived.

13. **SOVEREIGN IMMUNITY:** The City expressly retains all rights, privileges, benefits, and immunities of sovereign immunity. This provision shall be construed broadly in favor of the City.

14. **ATTORNEYS FEES AND COSTS:** As a result of any action or proceeding regarding this Agreement, the prevailing party shall be entitled to recover a reasonable attorney's fee and all taxable costs, through and including any and all appeals, in addition to any damages which may be awarded.

15. **EXECUTION OF AGREEMENT:** This Agreement shall be executed in duplicate originals, and each party shall be entitled to retain an original hereof.

16. **ENTIRE AGREEMENT:** This Agreement constitutes the entire and complete agreement of the parties, and no amendment hereof shall be effective unless the same is reduced to writing and signed by all parties.

17. **EFFECTIVE DATE:** This Agreement shall become effective on the date it is last signed by the respective parties.

DATED this 5 day of November, 2018.

Witnesses:

Print name: Wendy J Nichols

Print name: Andrew Moss

CITY OF ORMOND BEACH

By: Bill Partington
BILL PARTINGTON
Mayor

Attest: Joyce Shanahan
JOYCE SHANAHAN
City Manager

DATED this 29 day of OCT., 2018.

Witnesses:

Print name: DONNA BURT

Print name: John Mullen

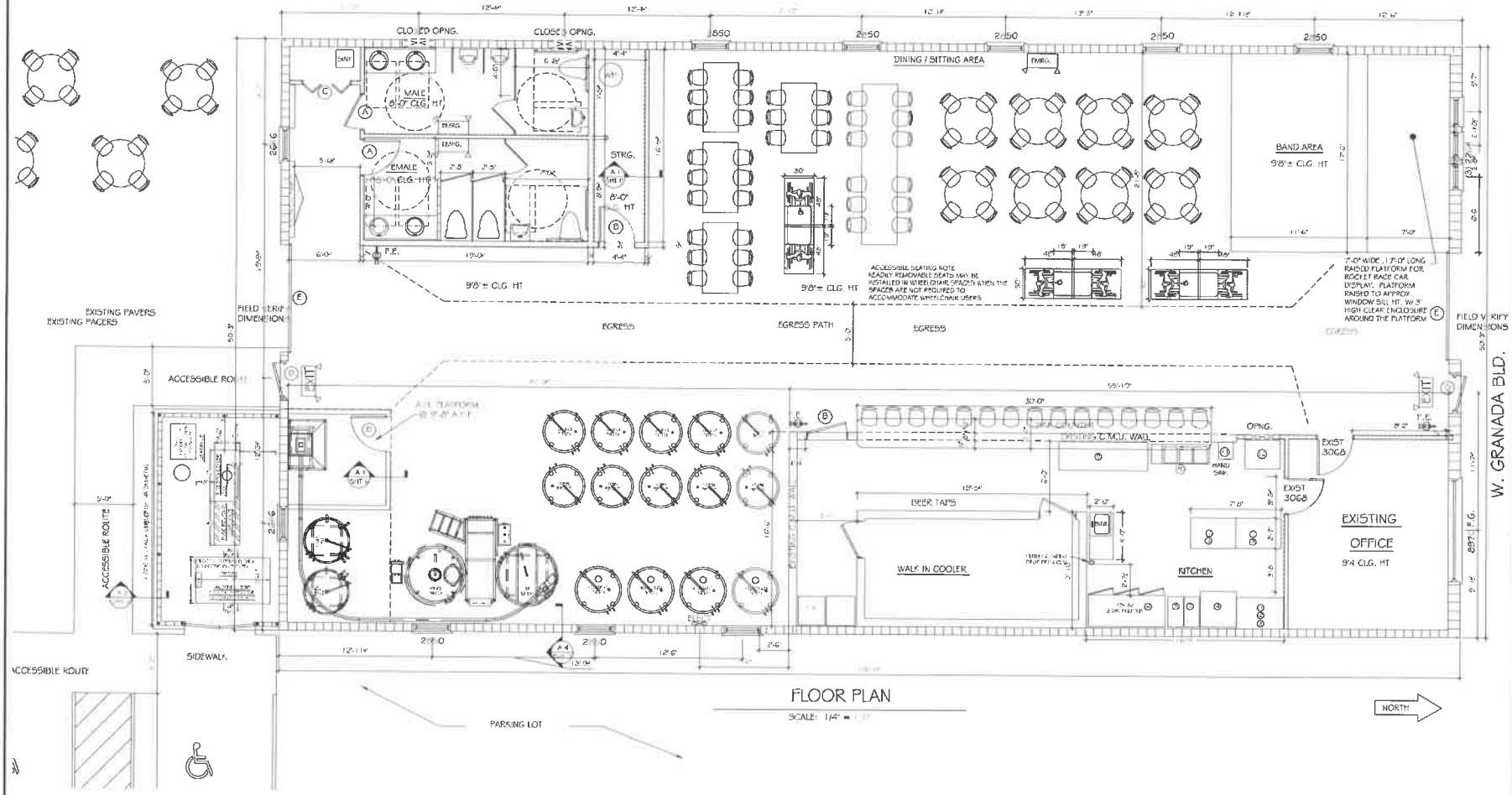
WILLIAM H. JONES, JR.

William H. Jones, Jr.

Attest:

Print: Stefan Sibley

Title: Assistant LS Director



FLOOR PLAN

SCALE: 1/4" = 1'-0"

DOOR SCHEDULE

MARK	QUANTITY	STYLE	R.O. SIZE	HARDWARE	REMARKS
A	2	3068 DOOR	38" x 83"	LEVER	W/ AUTOMATIC CLOSER
B	3	3068 DOOR	38" x 83"	LEVER	
C	1	4068 B.F.	50" x 82"		
D	2	3070	40" x 87"	FIRE EXIT	
E	2	[illegible]			

VERIFY OPENING DIMENSIONS W/ MANUFACTURER

ROOM FINISH SCHEDULE

ROOM NAME	CEILING FINISH	WALL FINISH	FLOOR FINISH	BASE
EXISTING OFFICE	SUSPENDED ACOUSTICAL	DRYWALL / PAINT	CONC / PAINT	[illegible]
KITCHEN AREA	[illegible]	[illegible]	CONC. / PAINT	VINYL
BREW AREA	WOOD / PAINT	DRYWALL / PAINT	[illegible]	[illegible]
BATHS	DRYWALL / PAINT	DRYWALL-PAINT FRP: APPLY TO ALL WALLS WITH IN 2 FT. OF SINKS, URINALS, WATER CLOSETS AND NOT LESS THAN 4 FT. ABV. THE FLOOR	CONC. / PAINT	[illegible]
STORAGE	DRYWALL / PAINT	DRYWALL / PAINT	CONC. / PAINT	VINYL
[illegible]	WOOD / PAINT	DRYWALL / PAINT	[illegible]	VINYL

WINDOWS & DOORS TO WITHSTAND A BASE WIND SPEED OF 136 M.P.H., RISK CATEGORY 2, EXPOSURE B, ENCLOSED BUILDING, INTERNAL PRESSURE COEFFICIENT ± .18

COMPONENTS AND CLADDING WIND PRESSURES (p.s.f.)

± 7'-4" WALL HT. (SEE LOADING DIAGRAM FOR ZONE LOCATIONS)

ZONE	[illegible]	ZONE	[illegible]
1 INTERIOR ROOF ZONE	[illegible]	4 INTERIOR WALL ZONE	[illegible]
2 ROOF EDGE ZONE AND RIDGES	[illegible]	5 END WALL ZONE	[illegible]
3 CORNER ROOF ZONE	[illegible]	GARAGE DOOR 9' W.X	[illegible]

DESIGNED AS ENCLOSED BUILDING

Revisions

PROJECT:
HIGHLANDER CORP
46 W. GRANADA BLVD
ORMOND BEACH, FL.

FOR:
SEABOARD CONSTRUCTION INC.
162 VINING CRT.
ORMOND BEACH, FL. 32174
386-871-6660

STANLEY P. HOELLE
A R C H I T E C T
1114 MISTLETOE DR. DAYTONA BEACH, FL. 32117
DATE: AR0009033 386 295-9750

PROJECT NO: ----
CAD DWG FILE: 46 E. GRANADA BLVD. DWG
DRAWN BY: -
CHKD BY: KEN
COPYRIGHT: 11/2/17

A004 FLR. PLAN

SHEET 4 of 8

City of Ormond Beach
AGENDA ITEM

August 20, 2024 - City Commission

Number: 7.M

Section:	CONSENT AGENDA		
Item Category:	Consent - Disposition Item	**Res./Ord. No:**	
Strategic Goal:	Water Quality & the Environment - Other		
Department:	Public Works - Engineering		
Subject:	Intent to Bid - Hudson Wellfield Expansion		
Summary:	This item provides public notice of the City's intent to issue an invitation to bid for the Hudson Wellfield Expansion project, Bid No. 2024-22. The work consists of drilling 3 new raw water wells and constructing 3 new well houses adjacent to Airport Road at SR40, constructing access roads suitable for fire truck access, and extending the existing raw water main from SR40 to the wells. The City's Hudson Wellfield is currently permitted through Saint Johns River Water Management District (SJRWMD) for an average daily water withdrawal of 7.93 million gallons (MG) through the year 2024. Of this allocation, the City is currently permitted to withdraw 2.45 MG from the Hudson Wellfield. The expansion will provide for the installation of new wells to meet rising water demands and provide redundancy in the City's raw water source. This project was recommended as a priority in the Western Service Area Master Plan.		
Financial Impact:	The amount included in the Fiscal Years 2023-2024 budget for this project is $2,572,500 from Fund 434 - Water Impact Fees.		
Citizen Impact:	This project will provide increased potable water capacity to ensure the City's water treatment plant can continue to meet the needs of residents.		
Recommended Action (Staff, Advisory Board and/or Other):	Staff intends to publicly advertise this project for competitive bidding, unless otherwise directed.		

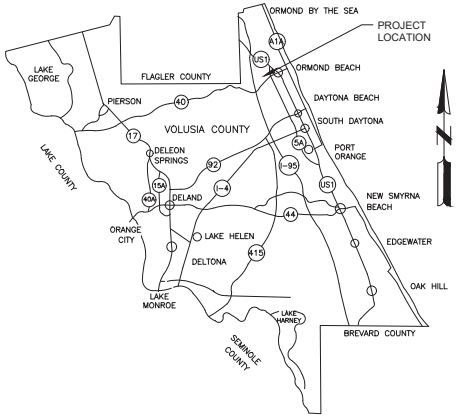
Staff Contact:	Bob Preis, Utilities Manager, (386) 676-3305
Attachments:	1. HUDSON WELLFIELD EXPANSION - PLAN SET 2. HUDSON WELLFIELD EXPANSION - BID DOCUMENT
Approval:	Kelly McGuire, Finance Director 8/8/2024 Shawn Finley, Assistant City Manager 8/9/2024 Joyce Shanahan, City Manager 8/14/2024

CITY OF ORMOND BEACH
HUDSON WELLFIELD EXPANSION
100% PLANS
MAY 2024



VOLUSIA COUNTY

VICINITY MAP



LOCATION MAP



SHEET INDEX

SHEET NUMBER	SHEET TITLE
G-001	COVER SHEET
G-002	LEGEND AND ABBREVIATIONS
G-003	MAINTENANCE OF TRAFFIC DETAILS
G-004	MAINTENANCE OF TRAFFIC DETAILS
SU-1	SURVEY MAP
SU-2	LINE TABLE
SU-3	TOPO SURVEY
SU-4	TOPO SURVEY
SU-5	TOPO SURVEY
SU-6	TOPO SURVEY
SU-7	SURVEYOR REPORT
C-111	EROSION AND SEDIMENT CONTROL PLAN
C-112	WELL 1- EROSION AND SEDIMENT CONTROL PLAN
C-113	WELL 2 & 3- EROSION AND SEDIMENT CONTROL PLAN
C-114	EROSION AND SEDIMENT CONTROL DETAILS
C-001	WETLAND IMPACTS-IMPORVEMENTS ONLY
C-002	WETLAND IMPACTS -IMPROVEMENTS AND 25' BUFFER
C-003	WETLAND IMPACTS- IMPROVEMENTS AND 100' BUFFER
C-200	ACCESS ROAD GEOMETRY
C-201	OVERALL SITE PLAN
C-202	AIRPORT ROAD PLAN AND PROFILE
C-203	AIRPORT ROAD PLAN AND PROFILE
C-204	WELL SITE 1 PLAN AND PROFILE
C-205	WELL SITE 2 PLAN AND PROFILE
C-206	WELL SITE 3 PLAN AND PROFILE
C-207	TYPICAL SITE LAYOUT AND DETAILS
M-001	TYPICAL WELL SITE MECHANICAL
M-002	TYPICAL WELL SITE MECHANICAL
C-501	STANDARD DETAILS
C-502	STANDARD DETAILS
C-503	STANDARD DETAILS
C-504	STANDARD DETAILS
E-001	ELECTRICAL LEGEND AND NOTES
E-011	ELECTRICAL SITE PLAN
E-101	ELECTRICAL PLAN
E-501	DETAILS
E-601	SCHEDULES
E-701	RISER DIAGRAM
I-001	LEGEND AND NOTES
I-101	P&ID WELLS

PROJECT TEAM:

OWNER:
CITY OF ORMOND BEACH
CONTACT: GEORGE LAVATELLI, PE
22 SOUTH BEACH STREET
ORMOND BEACH, FL 32174
PHONE: (386) 676-3306

CIVIL ENGINEER:
MEAD & HUNT, INC.
CONTACT: JUSTIN KISE, PE
4401 EASTPORT PARKWAY
PORT ORANGE, FL 32127
PHONE: (386) 761-6810

SURVEYOR:
UPHAM, INC.
265 KENILWORTH AVE
ORMOND BEACH, FL 32174
PHONE: (386) 672-9515

ELECTRICAL ENGINEER:
MEAD & HUNT, INC.
CONTACT: KEFF KURELLA, PE
4010 W. BOY SCOUT BLVD,
SUITE 1000
TAMPA, FL 33607
PHONE: (813) 210-8744

ENGINEER OF RECORD: JUSTIN KISE, PE

CITY OFFICIALS

MAYOR	BILL PARTINGTON
CITY MANAGER	JOYCE SHANAHAN

COMMISSIONERS

DISTRICT 1	LORI TOLLAND
DISTRICT 2	TRAVIS SARGENT
DISTRICT 3	SUSAN PERSIS
DISTRICT 4	HAROLD BRILEY

811 Know what's below. Call before you dig.

Mead & Hunt
Mead and Hunt, Inc.
4401 Eastport Parkway
Port Orange, FL 32127
phone: 386-761-6810
meadhunt.com
FL Cert. #26730

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CITY OF ORMOND BEACH
HUDSON WELLFIELD EXPANSION
AIRPORT ROAD
ORMOND BEACH, FL

ISSUED

11/27/23	90% PLANS
12/15/23	PERMITTING
03/29/24	100% PLANS

M&H NO.:	1000714-212249.01
DATE:	MAY 2024
DESIGNED BY:	JCK
DRAWN BY:	WKM
CHECKED BY:	RRF

DO NOT SCALE DRAWINGS

SHEET CONTENTS
COVER SHEET

SHEET NO.
G-001

X:\1000714\212249.01\TECHCAD\DRAWINGS\GENERAL SHEETS.DWG
5/28/2024 2:34:51 PM 1445wern

STANDARD ABBREVIATIONS FOR PROPOSED WORK

A

ABD	ABANDON OR ABANDONED
AC	ACRE
A/C	AIR CONDITIONING
ACCMP	ASPHALT COATED CORRUGATED METAL PIPE
ACP	ASBESTOS CEMENT PIPE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHD	AHEAD
AIR	AIR
AL	ALUMINUM
ALT	ALTERNATE
APPROX	APPROXIMATE
ARCH	ARCHITECTURE
ARV	AIR RELEASE VALVE
ARVV	AIR RELEASE VACUUM VALVE
ASPH	ASPHALT
ASSY	ASSEMBLY
AVE	AVENUE
AUTO	AUTOMATIC

B

BCV	BALL CHECK VALVE
BF	BLIND FLANGE
BFV	BUTTERFLY VALVE
BK	BACK
℄	BASE LINE
BLDG	BUILDING
BLK	BLOCK
BM	BENCH MARK
BOC	BACK OF CURB
BOT	BOTTOM
BRG	BEARING
BS	BLACK STEEL PIPE
BV	BALL VALVE
BWW	BACKWASH WATER

C

CATV	CABLE TELEVISION
CB	CATCH BASIN
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
C&G	CURB AND GUTTER
CIP	CAST IRON PIPE
CIR	CIRCUIT
CISP	CAST-IRON SOIL PIPE
CJ	CONSTRUCTION JOINT
℄	CENTER LINE
CL	CLASS
CLF	CHAIN LINK FENCE
CLR	CLEAR/CLEARANCE
CMP	CORRUGATED METAL PIPE
CMPA	CORRUGATED METAL PIPE ARCH
CMU	CONCRETE MASONRY UNIT
CND	CONDUIT
CO	CLEANOUT
CO	COMPANY
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCT/CONSTRUCTION
CONT	CONTINUOUS
COORD	COORDINATE
COR	CORNER
CPLG	COUPLING
CPVC	CHLORINATED POLYVINYL CHLORIDE
CS	CHLORINE SOLUTION
CTR	CENTER
CULV	CULVERT
CY	CUBIC YARD
CYL	CYLINDER
CU FT	CUBIC FEET
CU IN	CUBIC INCHES
CV	CHECK VALVE

D

D	DEGREE OF CURVATURE
DBL	DOUBLE
DET	DETAIL
DF	DRINKING FOUNTAIN
DF	DIESEL FUEL
DI	DUCTILE IRON/DROP INLET
DIA	DIAMETER
DIAG	DIAGONAL
DIFF	DIFFUSER
DIM	DIMENSION
DIP	DUCTILE IRON PIPE
DISCH	DISCHARGE
DR	DRIVE
DRN	DRAIN
DWG	DRAWING
DWL	DESIGN WATER LEVEL
DWV	DRAIN, WASTE AND VENT
D/W	DRIVEWAY

E

E	EAST
EA	EACH
ECC	ECCENTRIC
EF	EACH FACE
EFF	EFFLUENT
℄	EASEMENT LINE
EL	ELEVATION
ELEC	ELECTRIC/ELECTRICAL
ELP	ELLIPTICAL
ENC	ENCASEMENT
ENGR	ENGINEER
EOP	EDGE OF PAVEMENT
EQUIP	EQUIPMENT
ESMT	EASEMENT
EST	ESTIMATE/ESTIMATED
EW	EACH WAY
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR/EXTENSION

F

FAB	FABRICATE
FAC	FLANGED ADAPTER COUPLING
FCV	FLOW CONTROL VALVE
FD	FLOOR DRAIN
FE	FILTERED EFFLUENT
FF	FINISHED FLOOR
FG	FINISHED GRADE
FH	FIRE HYDRANT
FIG	FIGURE
FIN	FINISH
FL	FLOW LINE
FL	FLOOR/FLOOR LINE
FLG	FLANGE
FM	FORCE MAIN
FRP	FIBERGLASS REINFORCED PLASTIC
FS	FLOOR STAND
FT	FEET/FOOT
FTG	FOOTING

G

GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GAS	GAS MAIN
GEJ	GROOVED END JOINT
GND	GROUND
GPD	GALLONS PER DAY
GPM	GALLONS PER MINUTE
GR	GRADE
GS	GALVANIZED STEEL
GSP	GALVANIZED STEEL PIPE
GSR	GROUND STORAGE RESERVOIR
GV	GATE VALVE

H

HB	HOSE BIBB
HD	HEAVY DUTY
HOA	HAND/OFF/AUTO
HORIZ	HORIZONTAL
HP	HORSEPOWER
HR	HOUR
HT	HEIGHT
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
HWL	HIGH WATER LEVEL
HWY	HIGHWAY
HYDR	HYDRAULIC

I

ID	INSIDE DIAMETER
IN	INCHES
INF	INFLUENT
INT	INTERSECTION
INV	INVERT
IP	IRON PIPE
IRR	IRRIGATION

J

JB	JUNCTION BOX
JT	JOINT

L

LAB	LABORATORY
LAT	LATERAL
LAV	LAVATORY
LB	POUND
LF	LINEAR FEET
LP	LIGHT POLE
LS	LIFT STATION
LT	LEFT
LVR	LOUVER
LWL	LOW WATER LEVEL

M

MATL	MATERIAL
MAX	MAXIMUM
MB	MACHINE BOLT
MCC	MOTOR CONTROL CENTER
ME	MITERED END
MECH	MECHANICAL
MFR	MANUFACTURER
MGD	MILLION GALLONS PER DAY
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MOD	MODIFY/MODIFIED
MON	MONUMENT
MW	MANWAY
MWL	MEAN WATER LEVEL
MG	MILLION GALLON
MTD	MOUNT

N

N	NORTH
N/A	NOT APPLICABLE
N & C	NAIL AND CAP
NC	NORMALLY CLOSED
NE	NORTHEAST
NG	NATURAL GROUND
NIC	NOT IN CONTRACT
NO	NUMBER
NO	NORMALLY OPEN
NOM	NOMINAL
NPT	NATIONAL PIPE THREAD
NPW	NON-POTABLE WATER
NRS	NON-RISING STEM
NS	NEAR SIDE
NTS	NOT TO SCALE
NW	NORTHWEST
NY	NYLON TUBING

0

OC	ON CENTER
OD	OUTSIDE DIAMETER
ODP	OPEN DRIP PROOF
O/E	OR EQUAL
OF	OUTSIDE FACE
OH	OVERHEAD
OPP	OPPOSITE
OPT	OPTIONAL
OSY	OUTSIDE SCREW AND YOKE

P

PAVT	PAVEMENT
PC	POINT OF CURVATURE
PCM	PERMANENT CONTROL MONUMENT
PE	POLYETHYLENE
PE	PLAIN END
PEJM	PREMOLDED EXPANSION JOINT MATERIAL
PEP	POLYETHYLENE PIPE
PF	POLYMER FEED
PG	PRESSURE GUAGE
PI	POINT OF INTERSECTION
℄	PROPERTY LINE
PL	PLATE
PLAS	PLASTIC/PLASTER
POLY	POLYETHYLENE-LINED DUCTILE IRON
POB	POINT OF BEGINNING
POJ	PUSH ON JOINT
PP	POWER POLE
PPD	POUNDS PER DAY
PP	POLYPROPYLENE
PPM	PARTS PER MILLION
PRESS	PRESSURE
PROP	PROPOSED
PRT	PRESSURED TREATED
PRV	PRESSURE REDUCING VALVE
PS	PUMP STATION
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENCY
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE/ POLYVINYL CHLORIDE PIPE
PVMT	PAVEMENT
PW	POTABLE WATER
PWL	PEAK WATER LEVEL
PWR	POWER

Q

Q	FLOW RATE

R

R	RADIUS
RAS	RETURN ACTIVATED SLUDGE
RBR	RUBBER HOSE
RC	REINFORCED CONCRETE
RC BOX	REINFORCED CONCRETE BOX
RCP	REINFORCED CONCRETE PIPE
RCPA	REINFORCED CONCRETE PIPE ARCH
RD	ROAD
RDRN	ROOF DRAIN
RED	REDUCER
REBAR	REINFORCING STEEL
REF	REFERENCE
REINF	REINFORCE/REINFORCED
RPMP	REINFORCED PLASTIC MORTAR PIPE
REM	REMOVE/REMOVABLE
REQD	REQUIRED
R DRN	ROOF DRAIN
RIV	RIVETED
RJ	RESTRAINED JOINT
RM	ROOM
RND	ROUND
RPM	REVOLUTIONS PER MINUTE
RR	RAILROAD
RS	RESILIENT SEAT (VALVE)
RT	RIGHT
RV	RELIEF VALVE
R/W	RIGHT OF WAY
RWL	RAW WATER LINE

S

S	SOUTH
SAN	SANITARY SEWER
SC	SCUM
S=	SLOPE (FT/FT)
SAN	SANITARY
SCHED	SCHEDULE
SE	SOUTHEAST
SE	SECONDARY EFFLUENT
SER	SECONDARY EFFLUENT RETURN
SECT	SECTION
SF	SQUARE FOOT
SGL	SINGLE
SHLD	SHOULDER
SHT	SHEET/SHEETING
SIG	SIGNAL
SIM	SIMILAR
SLV	SLEEVE
SM	SHEET METAL
SOF	SOFFIT
SOL	SOLUTION
SOLV	SOLENOID VALVE
SP	SPACE
SPCG	SPACING
SPEC	SPECIFICATION
SPRT	SUPPORT
SQ	SQUARE
SS	SANITARY SEWER
SSTL	STAINLESS STEEL
ST	STREET
STA	STATION
STD	STANDARD
STK	STAKE
STL	STEEL
STLP	STEEL PIPE
STR	STRAIGHT
STRUCT	STRUCTURAL
STS	STORM SEWER
SURF	SURFACE
SVC	SERVICE
SW	SOUTHWEST
SYM	SYMMETRICAL

T

TAN	TANGENT
T & B	TOP & BOTTOM
TB	TOP OF BEAM
TBM	TEMPORARY BENCH MARK
TE	TOTALLY ENCLOSED
TEFC	TOTALLY ENCLOSED, FAN COOLED
TEL	TELEPHONE
TEMP	TEMPORARY/TEMPERATURE
TENV	TOTALLY ENCLOSED, NON-VENTILATED
THD	THREAD/THREADED
THK	THICK
TNO	TURNOUT
TO	TOP OF
TOB	TOP OF BANK
TOC	TOP OF CURB
TOS	TOP OF SLAB
TOT	TOTAL
TP	TOP OF PIPE
TP	TELEPHONE POLE
TR	TREAD OF STAIR
TRA	TIE ROD ASSEMBLY
TRANS	TRANSFER
TS	TUBE STEEL
TV	TELEVISION
TYP	TYPICAL

U

UD	UNDERDRAIN
UG	UNDERGROUND
UGP	UNDERGROUND POWER
ULT	ULTIMATE
UON	UNLESS OTHERWISE NOTED
UP	UTILITY POLE
UTC	UNDERGROUND TELEPHONE CABLE
UTIL	UTILITY
UN	UNION

V

VAC	VACUUM
VAR	VARIES
VB	VALVE BOX
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VEL	VELOCITY
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VPC	VERTICAL POINT OF CURVATURE
VOL	VOLUME
VTR	VENT THROUGH ROOF

W

W	WEST
W/	WITH (COMBINED FORM)
WAS	WASTE ACTIVATED SLUDGE
WC	WATER CLOSET (TOILET)
WCO	WALL CLEANOUT
WF	WIDE FLANGE
WG	WATER GAUGE
WHC	WELDED HALF COUPLING
WL	WATER LINE
WM	WATER MAIN
W/O	WITHOUT
WP	WATER PROOF
WP-1	WEATHER PROTECTED-1
WS	WATER SURFACE
WSEL	WATER SURFACE ELEVATION
WSP	WELDED STEEL PIPE
WT	WEIGHT
WTP	WATER TREATMENT PLANT
WWF	WELDED WIRE FABRIC
WWM	WELDED WIRE MESH
WWTP	WASTEWATER TREATMENT PLANT

Y

YD(S)	YARD(S)
YH	YARD HYDRANT
YR	YEAR

PROPOSED FACILITIES LEGEND

- WATER MAIN (DIRECTIONAL DRILL)
- WATER MAIN (OPEN CUT)
- PROPOSED WATER METER
- PROPOSED AIR-RELEASE VALVE
- PROPOSED TEE
- PROPOSED 90° BEND
- PROPOSED 45° BEND
- PROPOSED 22.50° BEND
- PROPOSED 11.25° BEND
- PROPOSED BENDS (VERTICAL)
- PROPOSED REDUCER
- PROPOSED BUTT FUSED MJ ADAPTER
- PROPOSED WYE
- PROPOSED GATE VALVE
- PROPOSED BLOW OFF
- PROPOSED CAP
- PROPOSED HYDRANT
- PROPOSED SAMPLE POINT
- OPEN CUT & REPAIR PAVEMENT / SIDEWALK
- MILL & OVERLAY
- SUE LEVEL A TEST HOLE
- GEOTECHNICAL BORING
- SILT FENCE
- OTHER EROSION CONTROL METHODS

SURVEY ABBREVIATIONS / LEGEND

±	MORE OR LESS
A/C	AIR CONDITIONING
AC	ACRES
ALTA	AMERICAN LAND TITLE ASSOCIATION
ADA	AMERICAN DISABILITY ACT
BFE	BASE FLOOD ELEVATION
BLDG	BUILDING
BTM	BOTTOM
(C)	CALCULATED
CA	CENTRAL ANGLE
CH	CHORD LENGTH
CHB	CHORD BEARING
CMP	CORRUGATED METAL PIPE
CPP	CORRUGATED PLASTIC PIPE
CONC	CONCRETE
CR	COUNTY ROAD
(D)	DESCRIPTION OR DEED
DIP	DUCTILE IRON PIPE
FD	FOUND
EL	ELEVATION
EOP	EDGE OF PAVEMENT
ERCP	ELLIPTICAL REINFORCED CONCRETE PIPE
ESMT	EASEMENT
FAC	FLORIDA ADMINISTRATIVE CODE
FDEP	FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
FDNR	FLORIDA DEPARTMENT OF NATURAL RESOURCES
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION
FFE	FINISH FLOOR ELEVATION
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY
FIRM	FLOOD INSURANCE RATE MAP
FL	FLORIDA
FP&L	FLORIDA POWER & LIGHT
GNSS	GLOBAL NAVIGATION SATELLITE SYSTEM
HDPE	HIGH DENSITY POLYETHYLENE PIPE
ID	IDENTIFICATION
INV	INVERT ELEVATION
L	LENGTH
LB	LICENSED BUSINESS
LC	LICENSED CORPORATION
LF	LINEAL FEET
LLC	LIMITED LIABILITY COMPANY
LS	LICENSED SURVEYOR
(M)	FIELD MEASURED
MB	MAP BOOK
MES	MITERED END SECTION
MPH	MILES PER HOUR
NAD83	NORTH AMERICAN DATUM OF 1983
NAVD88	NORTH AMERICAN VERTICAL DATUM OF 1988
NGVD29	NATIONAL GEODETIC VERTICAL DATUM OF 1929
No.	NUMBER
NSPS	NATIONAL SOCIETY OF PROFESSIONAL SURVEYORS
ORB	OFFICIAL RECORD BOOK
(P)	REFERS TO PLAT OF RECORD
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PCP	PERMANENT CONTROL POINT
PG(S)	PAGE(S)
POC	POINT ON CURVE
PRC	POINT OF REVERSE CURVE
PRM	PERMANENT REFERENCE MONUMENT
PSM	PROFESSIONAL SURVEYOR AND MAPPER
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
RLS	REGISTERED LAND SURVEYOR
R/W	RIGHT-OF-WAY
SF	SQUARE FEET
SJRWMD	ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
SR	STATE ROAD
STY	STORY
SP	STATE PLANE
TELECOM	TELECOMMUNICATIONS
TYP	TYPICAL
US	UNITED STATES
USACOE	UNITED STATES ARMY CORP OF ENGINEERS
VCP	VITRIFIED CLAY PIPE

CM..	4"x4" CONCRETE MONUMENT (AS NOTED)
IRC..	IRON ROD & CAP (AS NOTED)
IR..	IRON ROD (NO ID)
NAD..	NAIL & DISK (AS NOTED)
NLW..	NAIL & WASHER (AS NOTED)
IPC..	IRON PIPE & CAP (AS NOTED)
IP..	IRON PIPE (NO ID)
MP..	METAL PIPE (AS NOTED)
PKD..	PARKER-KALON MAGNETIC NAIL & DISK (AS NOTED)
SPIKE..	RAILROAD SPIKE (NO ID)
NAIL..	NAIL IN PAVEMENT (NO ID)
X-CUT..	SURVEYOR'S X-CUT
	ADA / HANDICAP SYMBOL
	BICYCLE LANE SYMBOL
	THRU LANE ARROW
	TURN LANE ARROW
A/C	A/C UNIT
	ANTENNA
	BOLLARD
	FENCE POST
	IRRIGATION CONTROL VALVE
MB	MAIL BOX
MW	MONITORING / OBSERVATION WELL
P	PUMP
	SATELLITE DISH
	SIGN
TSB	TRAFFIC SIGNAL BOX
TSP	TRAFFIC SIGNAL POLE
	CONCRETE LIGHT POLE
	FIBERGLASS LIGHT POLE
	METAL LIGHT POLE
	WOOD LIGHT POLE
	MITER-END SECTION
ST	STORMWATER MANHOLE
	STORM INLET / CATCH BASIN
	YARD DRAIN
E	ELECTRIC BOX
	ELECTRIC LINE MARKER
	ELECTRIC PANEL
	ELECTRIC PEDESTAL
	ELECTRIC METER
	GUY ANCHOR
	CONCRETE POWER POLE
	METAL POWER POLE
	WOOD POWER POLE
	TRANSFORMER PAD
	GAS LINE MARKER
	GAS METER
	GAS VALVE
	REUSE BACKFLOW PREVENTER
	REUSE SERVICE STUB
	REUSE WATER METER
	REUSE WATER VALVE
GT	GREASE TRAP MANHOLE
LS	LIFT STATION
	CLEANOUT
SS	SANITARY SEWER MANHOLE
	SANITARY SEWER VALVE
	FIBER OPTIC CABLE MARKER
F	FIBER OPTIC PEDESTAL
TB	TELECOM BOX
T	TELECOM MANHOLE
	TELECOM LINE MARKER
T	TELECOM PEDESTAL
TV	CABLE TV PEDESTAL
	BACTERIOLOGICAL SAMPLE POINT
	END-CAP
	11° BEND
	22° BEND
	45° BEND
	90° BEND
	TEE
	CROSS
	HOSE BIB
	BLOW-OFF VALVE
	BACKFLOW PREVENTER
DDCV	DOUBLE DETECTOR CHECK VALVE
	FIRE DEPARTMENT CONNECTION
	FIRE HYDRANT
	POST INDICATOR VALVE
	REDUCER
	WATER METER
	WATER SERVICE STUB
	WATER VALVE
W	WELL
	AIR RELEASE VALVE
MH	UNKNOWN MANHOLE
U	UNKNOWN UTILITY PEDESTAL
VLT	UTILITY VAULT (AS NOTED)
	BENCHMARK
WF1	WETLAND FLAG
BORING ID NUMBER BORING ELEVATION	
X=12.5 Y=12.5	EXISTING SOFT ELEVATION
	EXISTING HARD ELEVATION
60	MAJOR CONTOUR LINE
59	MINOR CONTOUR LINE
CLS	CENTERLINE SWALE
EOW	EDGE OF WATER
	BARB WIRE FENCE
X	CHAIN LINK FENCE
	GUARDRAIL
V	VINYL FENCE
	WOOD FENCE
STM	STORM PIPE (# DENOTES SIZE)
TOS	TOE OF SLOPE
TOB	TOP OF BANK
OHE	OVERHEAD WIRE
UGP	UNDERGROUND POWER
GAS	GAS LINE (# DENOTES SIZE)
REC	REUSE LINE (# DENOTES SIZE)
FM	FORCE MAIN (# DENOTES SIZE)
SAN	SEWER LINE (# DENOTES SIZE)
TEL	TELECOM LINE
FOC	FIBER OPTIC CABLE
WM	WATER LINE (# DENOTES SIZE)
R/W	RIGHT-OF-WAY LINE
UNK	UNKNOWN UTILITY LINE
OHT	OVERHEAD TRAFFIC CABLE

TREE LEGEND

SIZE DENOTED IN SYMBOL

- ASH
- BAY
- CAMPHOR
- CEDAR
- CHINABERRY
- CHERRY
- CITRUS
- CYPRESS
- ELM
- SWEETGUM
- HACKBERRY
- HICKORY
- HOLLY
- JUNIPER
- MAGNOLIA
- MAPLE
- MYRTLE
- OAK
- LAUREL OAK
- LIVE OAK
- PALM
- PINE
- SYCAMORE
- MISC. 1
- MISC. 2
- MISC. 3
- UNKNOWN
- DENOTES SIZE

UTILITY INFORMATION PROVIDED TO OR COLLECTED BY MEAD & HUNT DURING DESIGN

UTILITY TYPE	UTILITY COMPANY	CONTACT	PHONE	EMAIL	PRELIMINARY PLANS PROVIDED TO UTILITY	INFORMATION QUALITY LEVEL AND DATE RECEIVED				FINAL PLANS PROVIDED TO UTILITY
						LEVEL A/4	LEVEL B/3	LEVEL C/2	LEVEL D/1	
CONDUIT, ELECTRIC, RE-USE LINES, SEWER, STORM WATER, WATER	CITY OF ORMOND BEACH	STEVE JOHNSON	(386) 676-3269	steve.johnson@ormondbeach.org	08.23.2023					05.09.24
TELEPHONE	AT & T DISTRIBUTION	JAMES FRANKLIN	(772) 332-2493	g27896@att.com	08.23.2023				12.18.2023	05.09.24
ELECTRIC	FLORIDA POWER & LIGHT - VOLUSIA	JOEL BRAY	(386) 586-8403	joel.bray@fpl.com	08.23.2023					05.09.24
FIBER	UNITI FIBER LLC	CHARLIE CROFT	(251) 214-7059	charlie.croft@uniti.com	08.23.2023				08.23.2023	05.09.24

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CITY OF ORMOND BEACH
HUDSON WELLFIELD EXPANSION

AIRPORT ROAD
ORMOND BEACH, FL

ISSUED

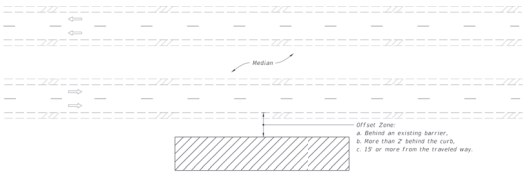
11/27/23	90% PLANS
12/15/23	PERMITTING
03/29/24	100% PLANS

M&H NO.: 1000714-212249.01
DATE: MAY 2024
DESIGNED BY: JCK
DRAWN BY: WKM
CHECKED BY: RRF
DO NOT SCALE DRAWINGS

SHEET CONTENTS
LEGEND AND ABBREVIATIONS

SHEET NO.
G-002

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MULTILANE ROADWAY SHOWN, TWO-LANE ROADWAY SIMILAR

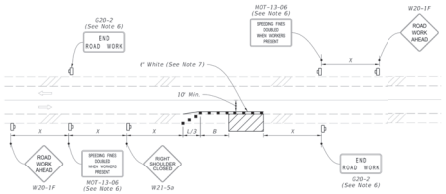
NOTES:
1. This Index applies to Two-Lane, Two-Way and Multilane Roadways, including Medians of divided roadways, with work beyond the shoulder.
2. Use Index 102-602 when the work operation (excluding establishing and terminating the work area) requires that two or more work vehicles cross the Offset Zone in any one hour period.
3. Use Index 102-660 when Work Area encroaches a Sidewalk.

SYMBOLS:
Work Area
Lane Identification and Direction of Traffic

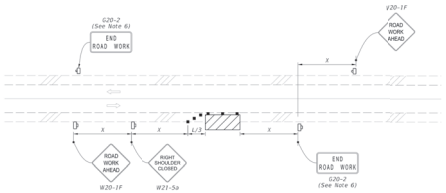
LAST REVISION 11/01/20	REVISION	DESCRIPTION:	FDOT FY 2023-24 STANDARD PLANS	TWO-LANE AND MULTILANE ROADWAY, WORK BEYOND THE SHOULDER	INDEX 102-601	SHEET 1 of 1

NOTE:
1. This Index applies to Two-Lane, Two-Way and Multilane Roadways, including Medians of divided roadways, with work on the shoulder.
2. L = Taper Length
X = Work Zone Sign Spacing
B = Buffer Length
See Index 102-600 for "L", "X", "B", and channelizing device spacing values.
3. Where work activities are between 2' and 15' from the edge of traveled way, the Engineer may omit signs and channelizing devices for work operations 60 minutes or less.
4. When four or more work vehicles enter the through traffic lane in a one hour period (excluding establishing and terminating the work area), use a Flagger or lane closure to accommodate work vehicle ingress and egress.
5. For work less than 2' from the traveled way and work zone speed is greater than 45 MPH, use a lane closure.
6. The "Speeding Fines Doubled When Workers Present" signs (MOT-13-06) and "End Road Work" Signs (G20-2) along with the associated work zone sign spacing distances may be omitted when the work operation is in place for 24 hours or less.
7. Temporary pavement markings may be omitted when the work operation is in place for 3 days or less.
8. Omit "Shoulder Closed" signs (W21-5a) along with associated work zone sign spacing distances for work on the median.
9. When there is no paved shoulder, the "Worker" sign (W21-1) may be used instead of the "Shoulder Closed" sign (W21-5a).

SYMBOLS:
Work Area
Channelizing Device (See Index 102-600)
Work Zone Sign
Lane Identification and Direction of Traffic

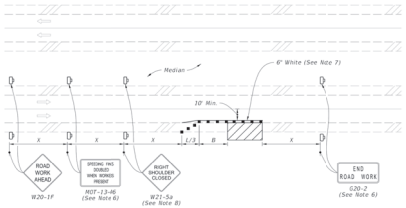


TWO-LANE ROADWAY
SHOULDER WORK LESS THAN 2' FROM THE TRAVELED WAY WITH WORK ZONE SPEED OF 45 MPH OR LESS

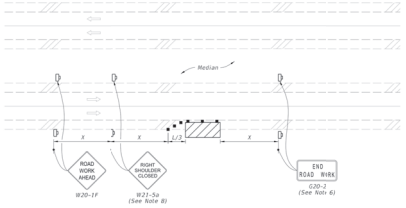


TWO-LANE ROADWAY
SHOULDER WORK BETWEEN 2' AND 15' FROM THE TRAVELED WAY

LAST REVISION 11/01/21	REVISION	DESCRIPTION:	FDOT FY 2023-24 STANDARD PLANS	TWO-LANE AND MULTILANE, WORK ON SHOULDER	INDEX 102-602	SHEET 1 of 2



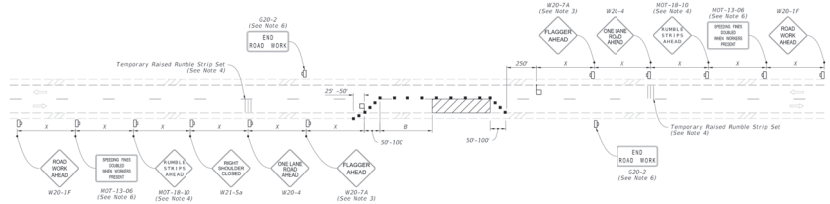
MULTILANE ROADWAY
SHOULDER WORK LESS THAN 2' FROM THE TRAVELED WAY WITH WORK ZONE SPEED OF 45 MPH OR LESS



MULTILANE ROADWAY
SHOULDER WORK BETWEEN 2' AND 15' FROM THE TRAVELED WAY

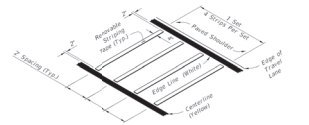
SYMBOLS:
Work Area
Channelizing Device (See Index 102-600)
Work Zone Sign
Lane Identification and Direction of Traffic

LAST REVISION 11/01/20	REVISION	DESCRIPTION:	FDOT FY 2023-24 STANDARD PLANS	TWO-LANE AND MULTILANE, WORK ON SHOULDER	INDEX 102-602	SHEET 2 of 2

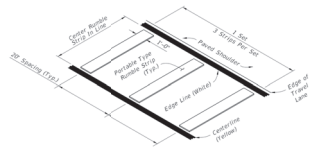


NOTES:
1. This Index applies to Two-Lane, Two-Way Roadways with work within the traveled way.
2. L = Taper Length
B = Buffer Length
X = Work Zone Sign Spacing
See Index 102-600 for "L", "B", "X" and channelizing device spacing values.
3. Optionally, use "Flagger Ahead" sign with symbol (W20-7) instead of "Flagger Ahead" sign with text (W20-7A).
4. Use temporary raised rumble strips when the existing posted speed is 55 mph or greater and the work duration is greater than 60 minutes. If temporary raised rumble strips are not used, omit "Rumble Strips Ahead" signs (MOT-18-10) and associated work zone sign spacing.
5. Additional one-way control may be provided by the following means:
a. Flag-carrying vehicle
b. Official vehicle
c. Pilot vehicles
d. Traffic signals
When flaggers are the sole means of one-way control, the flaggers must be in sight of each other or in direct communication at all times.
6. The "Speeding Fines Doubled When Workers Present" signs (MOT-13-06) and "End Road Work" signs (G20-2), along with associated work zone sign spacing, may be omitted when the work operation will be in place for 24 hours or less.
7. Automated Flagger Assistance Devices (AFADs) may be used in accordance with Specification Sections 102, 990 and the APL vendor drawings.
8. Railroad Crossings:
a. If an active railroad crossing is located closer to the Work Area than the queue length plus 300 feet, extend the buffer space as shown on sheet 4.
b. If the queuing of vehicles across an active railroad crossing cannot be avoided, provide a uniformed traffic control officer or Flagger at the highway-rail grade crossing to prevent vehicles from stopping within the highway-rail grade crossing, even if automatic train warning devices are in place.

SYMBOLS:
Work Area
Channelizing Device (See Index 102-600)
Work Zone Sign
Flagger
Lane Identification and Direction of Traffic



OPTION - 1
REMOVABLE STRIPING TYPE



OPTION - 2
PORTABLE TYPE

RUMBLE STRIP SETS

LAST REVISION 11/01/21	REVISION	DESCRIPTION:	FDOT FY 2023-24 STANDARD PLANS	TWO-LANE, TWO-WAY WORK WITHIN THE TRAVEL WAY	INDEX 102-603	SHEET 1 of 2

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CITY OF ORMOND BEACH
HUDSON WELLFIELD EXPANSION

AIRPORT ROAD
ORMOND BEACH, FL

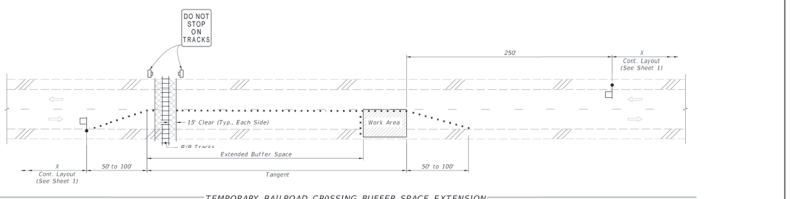
ISSUED
11/27/23 90% PLANS
12/15/23 PERMITTING
03/29/24 100% PLANS

M&H NO.: 1000714-212249.01
DATE: MAY 2024
DESIGNED BY: JK
DRAWN BY: WKM
CHECKED BY: JK
DO NOT SCALE DRAWINGS

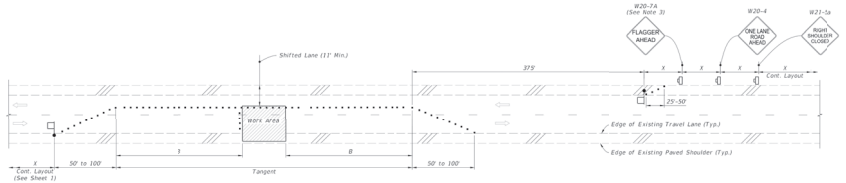
SHEET CONTENTS
MAINTENANCE OF TRAFFIC DETAILS

SHEET NO.
G-003

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TEMPORARY RAILROAD CROSSING BUFFER SPACE EXTENSION



TEMPORARY LANE SHIFT TO SHOULDER WHEN WORK AREA ENCROACHES ON THE CENTERLINE
(For Work Operations In place 24 Hours or Less)

SYMBOLS:
- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Flagger
- Lane Identification and Direction of Traffic

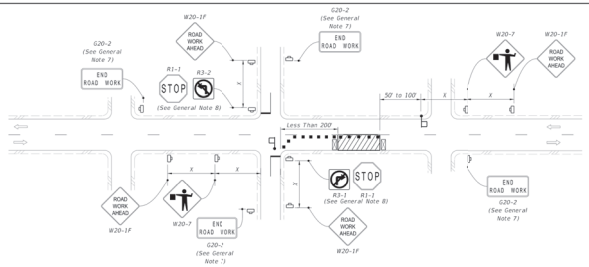
SPECIAL CONDITIONS

LAST REVISION 11/01/21	REVISION	DESCRIPTION:	FDOT FY 2023-24 STANDARD PLANS	TWO-LANE, TWO-WAY WORK WITHIN THE TRAVEL WAY	INDEX 102-603	SHEET 2 of 2

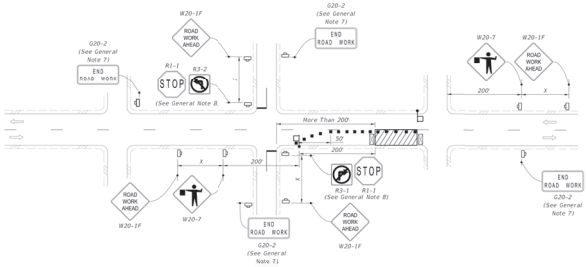
GENERAL NOTES:

1. This Index applies to two-lane, two-way roadways with work within or near the intersection.
2. X = Work Zone Sign Spacing
   See Index 102-600 for "X" and channelizing device spacing values.
3. Optionally, use "Flagger Ahead" sign with text (W20-7A) instead of "Flagger Ahead" sign with symbol (W20-7).
4. If vehicles in a parking zone block the line of sight to TCZ signs, locate and post mount signs in accordance with Index 700-101.
5. If the work area extends across a crosswalk, close the crosswalk in accordance with Index 102-660.
6. For unsignalized intersections, use Temporary Raised Rumble Strips in accordance with Index 102-603. Placement of Rumble Strips and additional signs should begin at FLAGGER sign location.
7. The "End Road Work" signs (G20-2) along with the associated work zone sign distances may be omitted when the work zone will be in place for 24 hours or less.
8. As an option to the "STOP" sign (R1-1) and Restricted Left/Right Turning Movement sign (R3-1 or R3-2), the "SIDE ROAD INTERSECTING THE WORK ZONE" flagging operation from Index 102-600 may be used.

SYMBOLS:
- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Type III Barricade
- Stop Bar
- Flagger
- Lane Identification and Direction of Traffic

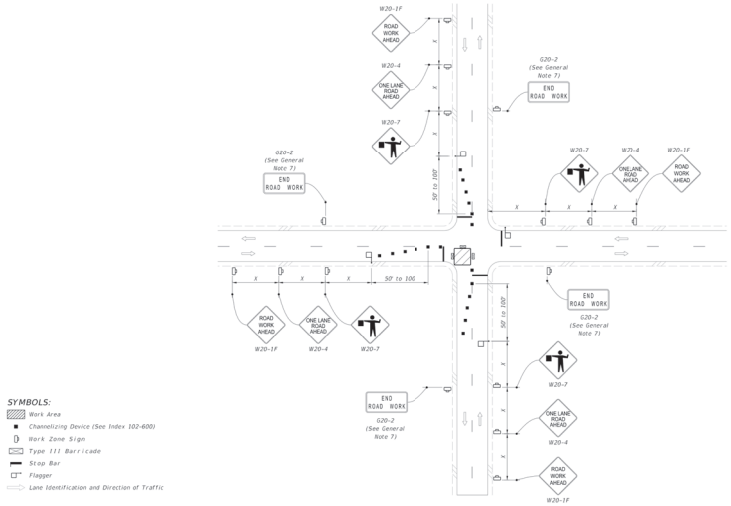


LANE CLOSURE FOR WORK LESS THAN 200' FROM INTERSECTION



LANE CLOSURE FOR WORK MORE THAN 200' FROM INTERSECTION

LAST REVISION 11/01/22	REVISION	DESCRIPTION:	FDOT FY 2023-24 STANDARD PLANS	TWO-LANE, TWO-WAY, INTERSECTION WORK	INDEX 102-604	SHEET 1 of 2



WORK IN INTERSECTION OF TWO-LANE ROADWAY

SYMBOLS:
- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Type III Barricade
- Stop Bar
- Flagger
- Lane Identification and Direction of Traffic

LAST REVISION 11/01/22	REVISION	DESCRIPTION:	FDOT FY 2023-24 STANDARD PLANS	TWO-LANE, TWO-WAY, INTERSECTION WORK	INDEX 102-604	SHEET 2 of 2

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CITY OF ORMOND BEACH
HUDSON WELLFIELD EXPANSION

AIRPORT ROAD
ORMOND BEACH, FL

ISSUED

11/27/23	90% PLANS
12/15/23	PERMITTING
03/29/24	100% PLANS

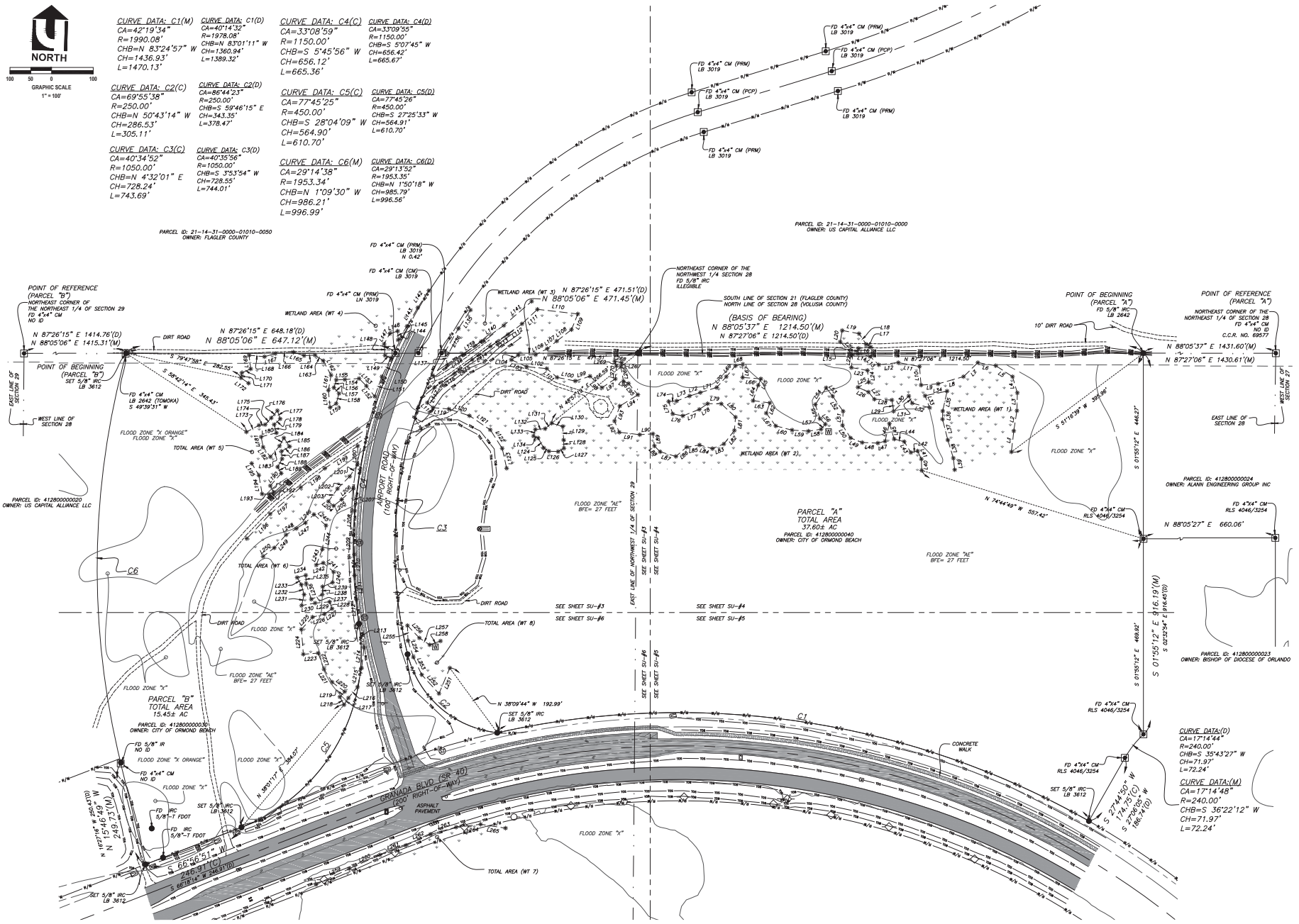
M&H NO.:	1000714-212249.01
DATE:	MAY 2024
DESIGNED BY:	JK
DRAWN BY:	WKM
CHECKED BY:	JK

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SHEET CONTENTS
MAINTENANCE OF TRAFFIC DETAILS

SHEET NO.
G-004

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SEE CERTIFICATION FOR SURVEYOR SIGNATURE

SURVEY MAP

THIS MAP IS NEITHER FULL NOR COMPLETE WITHOUT THE REPORT

UPDATED 5/21/24 FOR ADDITIONAL WETLAND FLAGS

SHEET 1 OF 7

TYPE OF SURVEY: **BOUNDARY, TOPOGRAPHIC & SPECIAL PURPOSE SURVEY**

MAP SUBJECT: **HUDSON WELLFIELD EXPANSION**

ADDRESS: **AIRPORT ROAD & SR 40 ORMOND BEACH, FLORIDA**

LOCATION No:	14-31-28
PROJECT No:	230204
FIELD WORK BY:	JGP
DATE:	05/05/2023
OFFICE WORK BY:	JAE
DATE:	05/11/2023
FIELD BOOK & PG:	## - ##
SCALE:	1" = 100'

SHEET NUMBER:

SU-1

WETLANDS LINE TABLE

LINE TABLE (WT 1)		
LINE #	BEARING	DISTANCE
L1	N 04°35'35" E	50.78'
L2	N 06°55'28" E	49.27'
L3	N 00°32'56" W	42.90'
L4	N 18°39'46" W	40.50'
L5	N 58°31'57" W	48.07'
L6	N 82°19'57" W	43.73'
L7	S 43°41'48" W	48.00'
L8	S 72°16'26" W	63.64'
L9	S 83°49'59" W	40.90'
L10	N 06°40'50" W	45.08'
L11	N 81°42'47" W	51.75'
L12	S 81°47'02" W	47.06'
L13	N 48°47'20" W	28.96'
L14	N 78°23'51" W	30.26'
L15	N 05°15'46" E	12.59'
L16	N 81°56'01" E	29.79'
L17	N 60°13'55" W	13.14'
L18	N 35°44'14" W	30.36'
L19	N 81°15'00" W	41.38'
L20	S 07°42'40" W	27.62'
L21	S 46°08'03" E	42.69'
L22	S 03°37'12" W	31.44'
L23	S 81°57'05" E	39.27'
L24	S 07°52'07" E	28.37'
L25	S 62°52'04" W	28.74'
L26	S 67°30'29" E	27.88'
L27	S 41°16'36" E	22.37'
L28	S 89°17'15" E	42.14'
L29	S 10°26'06" E	27.32'
L30	N 42°56'34" E	51.92'
L31	S 26°58'58" E	19.19'
L32	S 77°18'11" E	43.37'
L33	N 23°08'21" W	30.95'
L34	N 76°17'56" E	54.04'
L35	S 10°15'53" W	48.94'
L36	S 00°19'00" E	19.54'
L37	S 16°13'30" E	51.76'
L38	S 18°52'30" E	45.50'
L39	S 08°31'36" E	28.05'

LINE TABLE (WT 2)					
LINE #	BEARING	DISTANCE	LINE #	BEARING	DISTANCE
L40	N 03°25'38" W	27.37'	L88	N 46°18'43" W	19.45'
L41	N 26°52'07" W	21.27'	L89	N 09°02'53" W	29.30'
L42	S 75°44'15" W	16.77'	L90	S 84°37'53" W	31.75'
L43	N 33°01'07" W	30.57'	L91	N 85°11'34" W	49.39'
L44	N 77°30'54" W	24.98'	L92	N 25°05'38" W	29.23'
L45	N 19°00'57" W	39.05'	L93	N 17°35'26" E	38.21'
L46	S 11°54'24" W	43.93'	L94	N 56°07'01" E	51.36'
L47	S 73°49'59" W	17.87'	L95	N 41°41'54" W	35.25'
L48	N 89°51'47" W	37.64'	L96	N 68°18'23" W	13.24'
L49	N 70°22'34" W	29.99'	L97	S 54°25'35" W	38.56'
L50	N 34°21'42" W	35.99'	L98	N 47°44'19" W	39.84'
L51	N 00°33'03" E	33.69'	L99	S 69°53'26" W	37.29'
L52	N 36°38'56" W	44.24'	L100	N 80°42'50" W	44.77'
L53	N 39°30'38" W	25.53'	L101	N 51°04'48" W	32.43'
L54	S 30°56'31" W	47.79'	L102	N 86°27'20" W	48.77'
L55	S 19°43'48" E	35.72'	L103	N 67°43'34" W	40.26'
L56	S 46°31'03" E	18.69'	L104	N 53°39'41" E	20.06'
L57	S 38°27'45" W	16.18'	L105	N 86°48'36" E	41.80'
L58	S 79°44'05" W	30.47'	L106	N 60°55'40" E	31.54'
L59	N 88°19'48" W	39.22'	L107	N 49°13'26" E	29.21'
L60	N 77°34'53" W	40.74'	L108	N 50°09'53" E	44.76'
L61	N 38°37'18" W	38.28'	L109	N 20°11'02" E	40.70'
L62	N 17°42'18" E	26.19'	L110	N 85°22'56" W	97.77'
L63	N 84°20'24" W	40.85'	L111	S 44°47'40" W	50.68'
L64	N 16°59'16" E	39.06'	L112	S 50°25'31" W	42.40'
L65	N 20°14'28" E	16.72'	L113	S 54°28'45" W	51.18'
L66	N 87°41'12" W	43.92'	L114	S 51°55'41" W	54.20'
L67	N 01°14'05" W	32.07'	L115	S 49°40'52" W	53.95'
L68	S 75°10'55" W	18.04'	L116	S 53°36'29" W	58.12'
L69	S 38°20'31" W	34.21'	L117	S 23°14'11" W	40.97'
L70	S 39°37'58" W	34.70'	L118	S 50°34'59" E	17.95'
L71	S 70°49'42" W	41.10'	L119	S 87°01'47" E	38.50'
L72	S 70°38'01" W	27.29'	L120	S 73°48'57" E	52.01'
L73	S 66°45'59" W	33.31'	L121	S 57°43'22" E	60.25'
L74	S 84°56'12" W	19.18'	L122	S 34°49'40" E	52.81'
L75	S 19°55'59" E	31.45'	L123	S 14°22'06" E	49.26'
L76	S 81°12'15" E	24.71'	L124	S 31°17'28" E	27.70'
L77	N 66°54'50" E	42.57'	L125	S 59°44'42" E	14.63'
L78	N 53°25'40" E	24.17'	L126	S 89°56'34" E	22.06'
L79	N 88°36'28" E	32.93'	L127	N 58°30'50" E	16.08'
L80	S 48°48'45" E	46.92'	L128	N 04°05'29" W	19.87'
L81	S 03°03'56" W	31.94'	L129	N 05°38'47" W	32.52'
L82	S 35°55'03" W	41.14'	L130	N 75°10'12" W	27.67'
L83	S 65°51'18" W	29.63'	L131	S 48°23'51" W	20.47'
L84	N 76°26'32" W	32.35'	L132	S 82°51'24" W	23.57'
L85	S 79°02'08" W	31.19'	L133	S 14°15'43" W	16.44'
L86	S 47°05'37" W	34.30'	L134	S 69°53'00" E	12.05'
L87	N 75°32'50" W	39.63'	L266	N 12°15'47" W	35.83'
			L267	N 09°35'17" E	9.81'
			L268	N 79°43'11" W	17.07'
			L269	S 21°50'40" E	12.11'
			L270	S 02°49'14" W	31.23'

LINE TABLE (WT 3)		
LINE #	BEARING	DISTANCE
L135	S 31°05'14" W	53.21'
L136	S 28°21'16" W	63.46'
L137	S 10°41'09" E	33.82'
L138	N 53°37'56" E	45.68'
L139	N 52°38'56" E	53.78'
L140	N 52°41'59" E	66.39'
L141	N 47°07'35" E	88.73'

N 68°18'23" W

LINE TABLE (WT 4)		
LINE #	BEARING	DISTANCE
L142	S 31°08'20" W	48.69'
L143	S 28°09'47" W	51.87'
L144	S 30°44'24" W	39.07'
L145	N 04°45'24" W	21.49'
L146	S 70°17'59" W	19.86'
L147	S 26°44'48" W	28.34'
L148	S 06°08'42" E	27.56'
L149	S 68°36'00" E	15.48'
L150	S 23°59'43" W	49.89'
L151	S 17°59'46" W	50.66'
L152	N 40°16'26" W	32.18'
L153	N 46°30'30" W	25.01'
L154	S 84°00'09" W	34.23'
L155	S 86°09'04" W	20.63'
L156	S 15°14'32" W	19.72'
L157	S 43°19'24" E	18.83'
L158	S 13°52'10" W	25.16'
L159	S 55°39'39" W	17.19'
L160	N 07°50'48" W	41.42'
L161	N 08°21'05" E	36.97'
L162	N 30°23'26" W	39.60'
L163	N 57°39'03" W	23.85'
L164	S 85°07'45" W	26.18'
L165	N 74°19'54" W	27.41'
L166	S 83°50'36" W	43.12'
L167	S 71°55'00" W	27.10'
L168	N 86°26'08" W	37.40'
L169	S 08°52'17" E	33.11'
L170	S 63°46'20" W	23.48'
L171	S 06°39'30" W	12.17'
L172	S 56°39'14" E	22.22'

LINE TABLE (WT 5)		
LINE #	BEARING	DISTANCE
L173	N 60°24'07" E	34.17'
L174	N 81°20'21" E	15.02'
L175	N 40°14'11" E	21.76'
L176	N 37°54'31" E	23.00'
L177	S 20°43'09" E	21.09'
L178	S 44°59'09" W	20.07'
L179	S 17°31'35" E	20.76'
L180	S 73°29'18" W	38.00'
L181	S 12°36'34" E	25.38'
L182	S 39°07'34" E	29.07'
L183	N 37°56'48" E	34.15'
L184	N 26°14'44" E	21.89'
L185	S 36°07'46" E	25.12'
L186	S 58°12'43" W	22.77'
L187	S 06°41'54" E	18.24'
L188	S 27°18'31" W	22.16'
L189	S 31°28'10" E	17.72'
L190	S 39°24'55" W	39.92'
L191	S 29°53'02" E	17.06'
L192	S 61°50'43" W	12.22'
L193	N 89°07'09" W	16.72'
L194	N 11°39'02" W	45.71'
L195	N 33°14'25" W	33.17'

LINE TABLE (WT 6)		
LINE #	BEARING	DISTANCE
L196	N 41°41'50" E	81.65'
L197	N 46°56'34" E	97.18'
L198	N 49°53'26" E	73.89'
L199	N 53°48'44" E	95.55'
L200	S 01°32'53" E	44.79'
L201	S 31°59'32" W	34.29'
L202	S 42°57'33" W	41.46'
L203	S 33°24'41" W	37.65'
L204	S 52°10'27" E	16.56'
L205	N 49°30'44" E	24.57'
L206	N 45°14'37" E	38.40'
L207	S 05°25'37" E	53.62'
L208	S 01°23'59" W	57.39'
L209	S 04°16'05" E	47.72'
L210	S 02°32'55" E	50.35'
L211	S 06°26'13" E	57.72'
L212	S 06°37'27" E	60.65'
L213	S 15°16'06" E	56.95'
L214	S 04°29'32" W	49.51'
L215	S 10°24'29" W	46.52'
L216	S 37°50'46" W	34.41'
L217	S 30°11'35" W	19.28'
L218	N 30°24'04" W	21.66'
L219	N 41°22'40" E	17.38'
L220	N 55°13'13" W	37.93'
L221	N 33°55'11" W	36.81'
L222	N 21°33'55" W	40.97'
L223	S 83°51'46" W	35.85'
L224	N 06°26'57" W	59.78'
L225	N 40°14'14" E	39.89'
L226	N 73°45'45" E	29.53'
L227	N 52°48'39" E	22.51'
L228	N 21°47'43" W	17.45'
L229	S 83°15'03" W	35.10'
L230	S 77°39'48" W	33.04'
L231	N 11°19'47" E	27.21'
L232	N 17°51'51" W	24.70'
L233	N 32°01'03" W	19.91'
L234	N 73°02'37" E	21.56'
L235	S 04°19'38" E	19.95'
L236	S 20°15'17" E	39.78'
L237	N 65°29'45" E	28.44'
L238	N 00°13'38" E	19.17'
L239	N 65°26'31" E	26.04'
L240	N 03°18'55" E	25.75'
L241	N 50°55'40" W	32.65'
L242	S 71°10'15" W	17.65'
L243	N 19°02'17" E	40.65'
L244	N 06°48'14" E	57.80'
L245	N 49°24'01" W	39.26'
L246	S 43°44'00" W	28.79'
L247	S 55°39'22" W	25.52'
L248	S 56°45'53" W	29.07'
L249	S 40°02'52" W	42.14'
L250	S 50°48'31" W	34.17'

LINE TABLE (WT 8)		
LINE #	BEARING	DISTANCE
L251	S 21°02'59" W	66.71'
L252	N 44°23'50" W	61.44'
L253	N 27°09'04" W	46.78'
L254	N 20°11'50" W	41.62'
L255	N 03°37'38" W	36.37'
L256	S 45°35'30" E	41.15'
L257	S 58°17'23" E	29.96'
L258	N 68°36'12" E	27.63'

LINE TABLE (WT 7)		
LINE #	BEARING	DISTANCE
L259	S 62°39'57" W	88.60'
L260	S 63°45'19" W	80.74'
L261	S 68°07'37" W	66.51'
L262	S 63°50'53" W	64.89'
L263	S 72°27'40" W	63.58'
L264	S 81°19'44" W	59.31'
L265	N 83°07'32" W	60.56'

UPDATED 5/21/24 FOR ADDITIONAL WETLAND FLAGS

SHEET 2 OF 7

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SURVEY MAP

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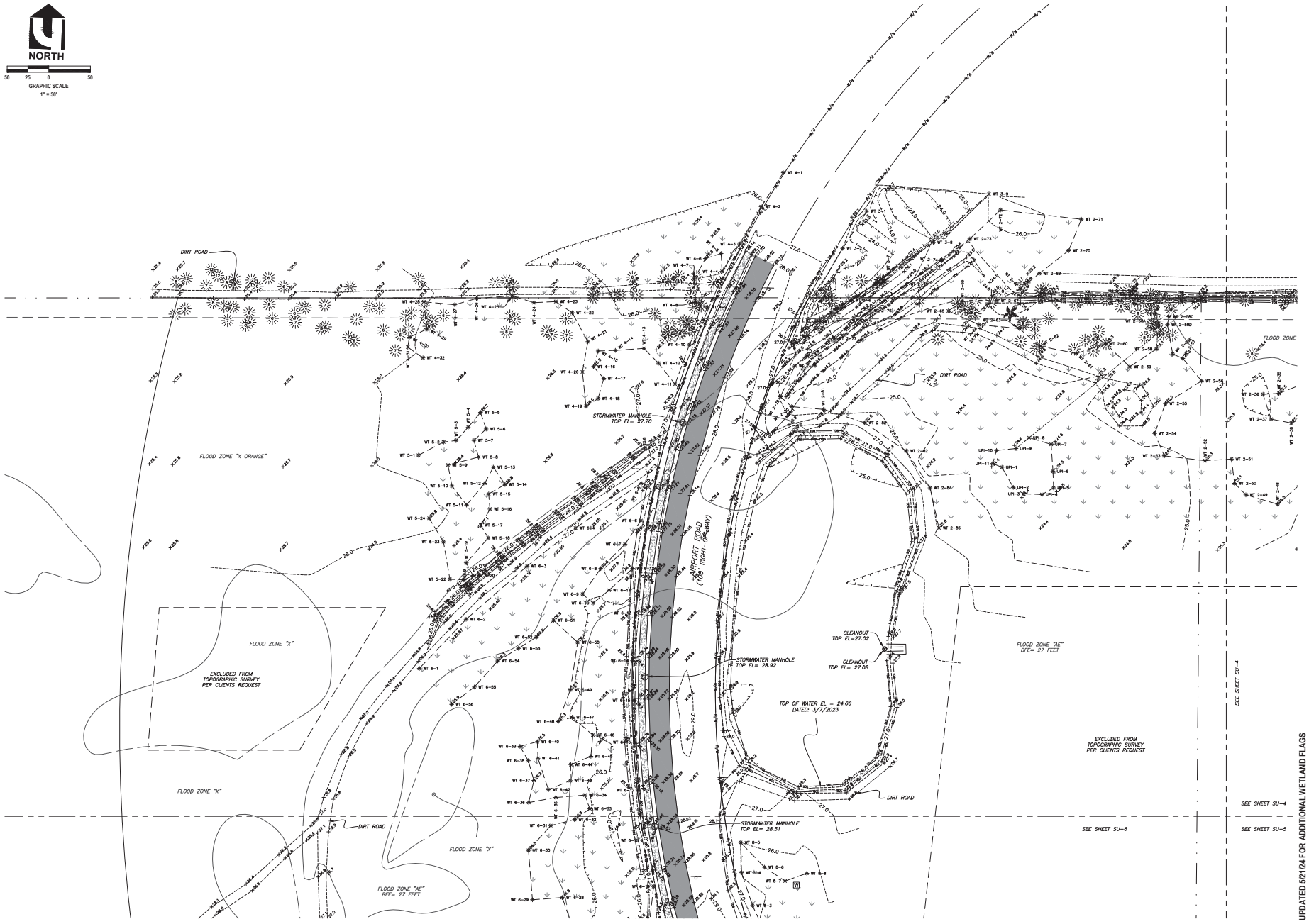
TYPE OF SURVEY: BOUNDARY, TOPOGRAPHIC & SPECIAL PURPOSE SURVEY

MAP SUBJECT: HUDSON WELLFIELD EXPANSION

ADDRESS: AIRPORT ROAD AND SR 40 ORMOND BEACH, FLORIDA

LOCATION No:	14-31-28
PROJECT No:	230204
FIELD WORK BY:	JGP
DATE:	05/05/2023
OFFICE WORK BY:	JAE
DATE:	05/11/2023
FIELD BOOK & PG:	## - ##
SCALE:	##########

SHEET NUMBER: SU-2



SHEET 3 OF 7

UPDATED 5/21/24 FOR ADDITIONAL WETLAND FLAGS

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SURVEY MAP

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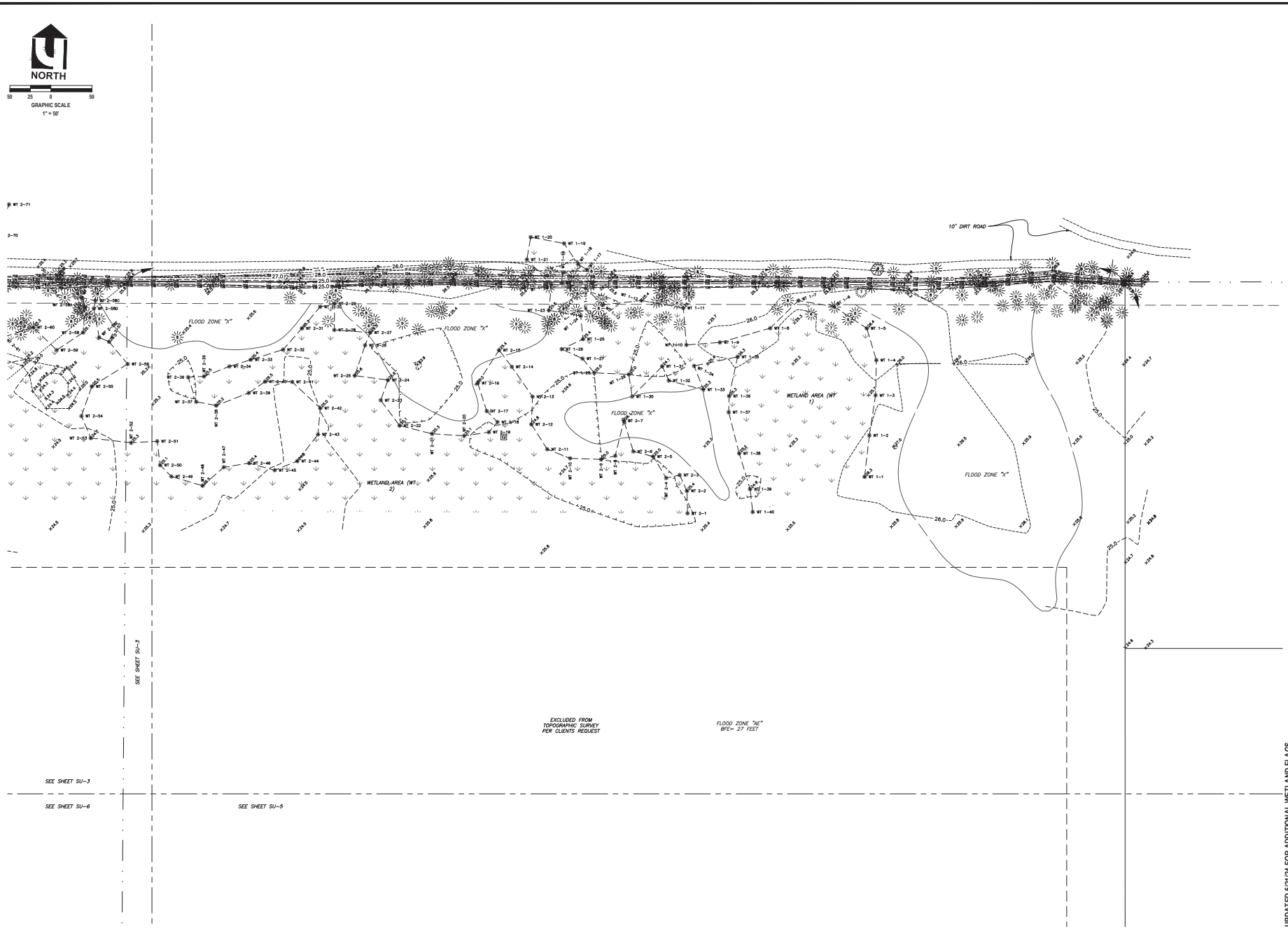
TYPE OF SURVEY: BOUNDARY, TOPOGRAPHIC & SPECIAL PURPOSE SURVEY

MAP SUBJECT: HUDSON WELLFIELD EXPANSION

ADDRESS: AIRPORT ROAD AND SR 40 ORMOND BEACH, FLORIDA

LOCATION No:	14-31-28
PROJECT No:	230204
FIELD WORK BY:	JGP
DATE:	05/05/2023
OFFICE WORK BY:	JAE
DATE:	05/11/2023
FIELD BOOK & PG:	## - ##
SCALE:	1" = 50'

SHEET NUMBER: SU-3



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SURVEY MAP

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UPDATED 5/21/24 FOR ADDITIONAL WETLAND FLAGS

TYPE OF SURVEY: BOUNDARY, TOPOGRAPHIC & SPECIAL PURPOSE SURVEY

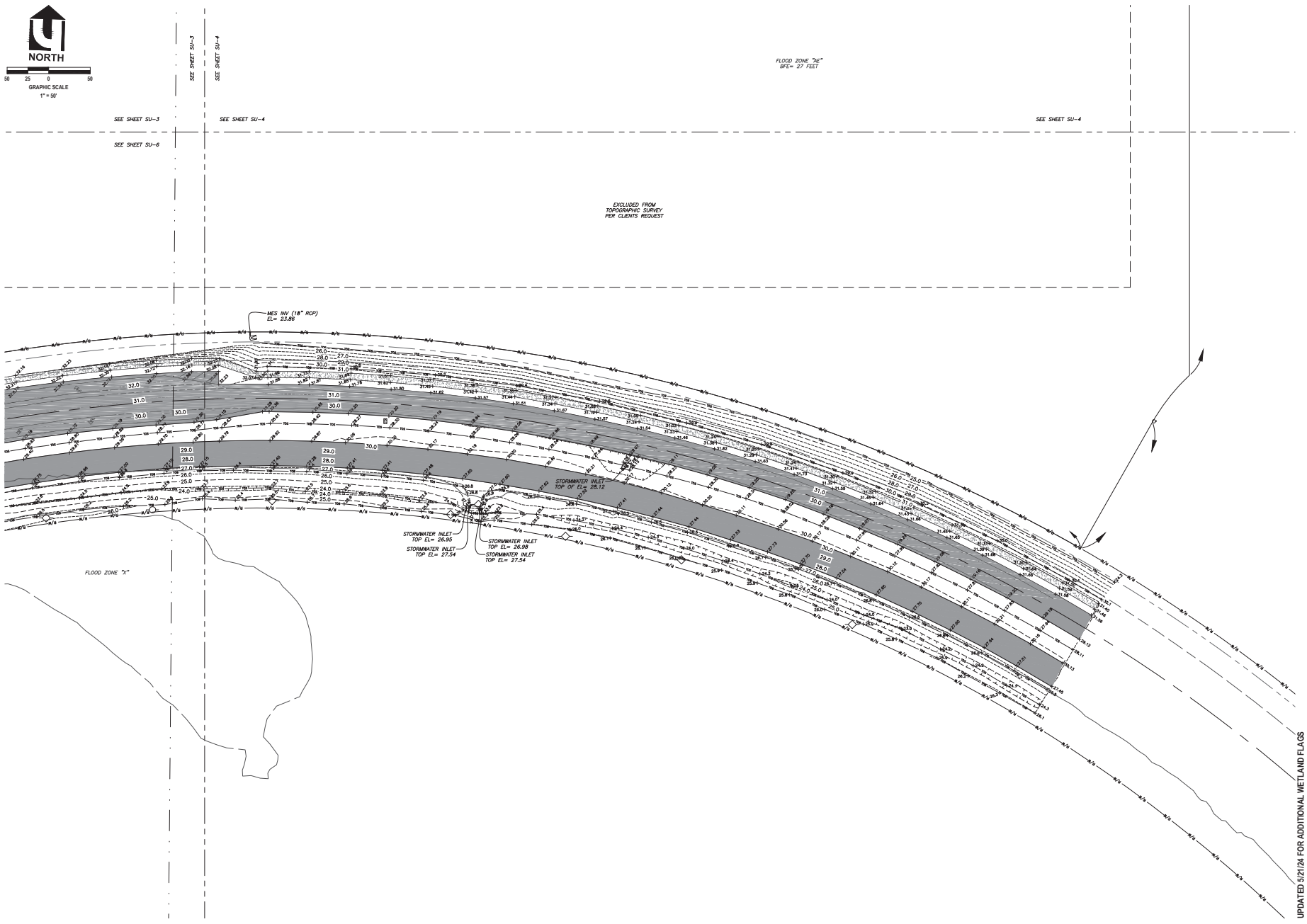
MAP SUBJECT: HUDSON WELLFIELD EXPANSION

ADDRESS: AIRPORT ROAD AND SR 40 ORMOND BEACH, FLORIDA

LOCATION No:	14-31-28
PROJECT No:	230204
FIELD WORK BY:	JGP
DATE:	05/05/2023
OFFICE WORK BY:	JAE
DATE:	05/11/2023
FIELD BOOK & PG:	## - ##
SCALE:	1" = 50'

SHEET NUMBER: SU-4

SHEET 4 OF 7



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SURVEY MAP

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TYPE OF SURVEY: BOUNDARY, TOPOGRAPHIC & SPECIAL PURPOSE SURVEY

MAP SUBJECT: HUDSON WELLFIELD EXPANSION

ADDRESS: AIRPORT ROAD AND SR 40 ORMOND BEACH, FLORIDA

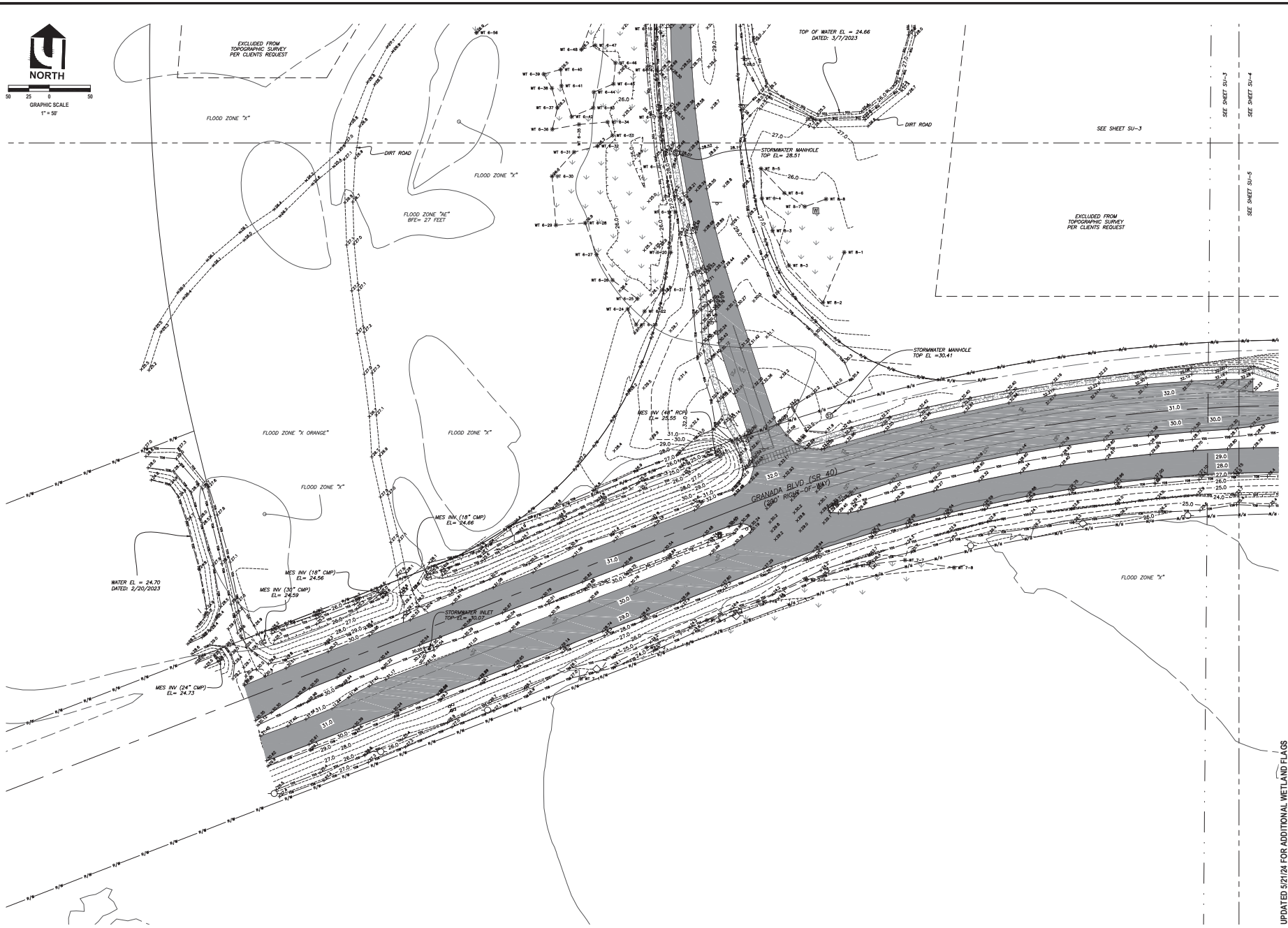
LOCATION No:	14-31-28
PROJECT No:	230204
FIELD WORK BY:	JGP
DATE:	05/05/2023
OFFICE WORK BY:	JAE
DATE:	05/11/2023
FIELD BOOK & PG:	## - ##
SCALE:	1" = 50'

SHEET NUMBER:

SU-5

UPDATED 5/21/24 FOR ADDITIONAL WETLAND FLAGS

SHEET 5 OF 7



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SURVEY MAP

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UPDATED 5/21/24 FOR ADDITIONAL WETLAND FLAGS

TYPE OF SURVEY: **BOUNDARY, TOPOGRAPHIC & SPECIAL PURPOSE SURVEY**

MAP SUBJECT: **HUDSON WELLFIELD EXPANSION**

ADDRESS: **AIRPORT ROAD AND SR 40 ORMOND BEACH, FLORIDA**

LOCATION No:	14-31-28
PROJECT No:	230204
FIELD WORK BY:	JGP
DATE:	05/05/2023
OFFICE WORK BY:	JAE
DATE:	05/11/2023
FIELD BOOK & PG:	## - ##
SCALE:	1" = 50'

SHEET NUMBER:

SU-6

ABBREVIATIONS / LEGEND

±	MORE OR LESS
A/C	AIR CONDITIONING
AC	ACRES
ALTA	AMERICAN LAND TITLE ASSOCIATION
ADA	AMERICAN DISABILITY ACT
BFE	BASE FLOOD ELEVATION
BLDG	BUILDING
BTM	BOTTOM
(C)	CALCULATED
CA	CENTRAL ANGLE
CH	CHORD LENGTH
CHB	CHORD BEARING
CMP	CORRUGATED METAL PIPE
CPP	CORRUGATED PLASTIC PIPE
CONC	CONCRETE
CR	COUNTY ROAD
(D)	DESCRIPTION OR DEED
DIP	DUCTILE IRON PIPE
FD	FOUND
EL	ELEVATION
EOP	EDGE OF PAVEMENT
ERCP	ELLIPTICAL REINFORCED CONCRETE PIPE
ESMT	EASEMENT
FAC	FLORIDA ADMINISTRATIVE CODE
FDEP	FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
FDNR	FLORIDA DEPARTMENT OF NATURAL RESOURCES
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION
FFE	FINISH FLOOR ELEVATION
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY
FIRM	FLOOD INSURANCE RATE MAP
FL	FLORIDA
FP&L	FLORIDA POWER & LIGHT
GNSS	GLOBAL NAVIGATION SATELLITE SYSTEM
HDPE	HIGH DENSITY POLYETHYLENE PIPE
ID	IDENTIFICATION
INV	INVERT ELEVATION
L	LENGTH
LB	LICENSED BUSINESS
LC	LICENSED CORPORATION
LF	LINEAL FEET
LLC	LIMITED LIABILITY COMPANY
LS	LICENSED SURVEYOR
(M)	FIELD MEASURED
MB	MAP BOOK
MES	MITERED-END SECTION
MPH	MILES PER HOUR
NAD83	NORTH AMERICAN DATUM OF 1983
NAVD88	NORTH AMERICAN VERTICAL DATUM OF 1988
NGVD29	NATIONAL GEODETIC VERTICAL DATUM OF 1929
No.	NUMBER
NSPS	NATIONAL SOCIETY OF PROFESSIONAL SURVEYORS
ORB	OFFICIAL RECORD BOOK
(P)	REFERS TO PLAT OF RECORD
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PCP	PERMANENT CONTROL POINT
PG(S)	PAGE(S)
POC	POINT ON CURVE
PRC	POINT OF REVERSE CURVE
PRM	PERMANENT REFERENCE MONUMENT
PSM	PROFESSIONAL SURVEYOR AND MAPPER
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
RLS	REGISTERED LAND SURVEYOR
R/W	RIGHT-OF-WAY
SF	SQUARE FEET
SJRWMD	ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
SR	STATE ROAD
STY	STORY
SP	STATE PLANE
TELECOM	TELECOMMUNICATIONS
TYP	TYPICAL
US	UNITED STATES
USACOE	UNITED STATES ARMY CORP OF ENGINEERS
VCP	VITRIFIED CLAY PIPE

CM...	4"x4" CONCRETE MONUMENT (AS NOTED)
IRC...	IRON ROD & CAP (AS NOTED)
IR...	IRON ROD (NO ID)
NID...	NAIL & DISK (AS NOTED)
NSW...	NAIL & WASHER (AS NOTED)
IPC...	IRON PIPE & CAP (AS NOTED)
IP...	IRON PIPE (NO ID)
MP...	METAL PIPE (AS NOTED)
PKD...	PARKER-KALON MAGNETIC NAIL & DISK (AS NOTED)
SPIKE...	RAILROAD SPIKE (NO ID)
NAIL...	NAIL IN PAVEMENT (NO ID)
X-CUT...	SURVEYOR'S X-CUT
	ADA / HANDICAP SYMBOL
	BICYCLE LANE SYMBOL
	THRU LANE ARROW
	TURN LANE ARROW
A/C	A/C UNIT
	ANTENNA
	BOLLARD
	FENCE POST
	IRRIGATION CONTROL VALVE
MB	MAIL BOX
MW	MONITORING / OBSERVATION WELL
P	PUMP
	SATELLITE DISH
	SIGN
TSB	TRAFFIC SIGNAL BOX
	TRAFFIC SIGNAL POLE
	CONCRETE LIGHT POLE
	FIBEROGLASS LIGHT POLE
	METAL LIGHT POLE
	WOOD LIGHT POLE
	MITER-END SECTION
ST	STORMWATER MANHOLE
	STORM INLET / CATCH BASIN
	YARD DRAIN
E	ELECTRIC BOX
	ELECTRIC LINE MARKER
	ELECTRIC PANEL
	ELECTRIC PEDESTAL
	ELECTRIC METER
	GUY ANCHOR
	CONCRETE POWER POLE
	METAL POWER POLE
	WOOD POWER POLE
	TRANSFORMER PAD

	GAS LINE MARKER
G	GAS METER
	GAS VALVE
	REUSE BACKFLOW PREVENTER
	REUSE SERVICE STUB
	REUSE WATER METER
	REUSE WATER VALVE
GT	GREASE TRAP MANHOLE
LS	LIFT STATION
	CLEANOUT
SS	SANITARY SEWER MANHOLE
	SANITARY SEWER VALVE
	FIBER OPTIC CABLE MARKER
F	FIBER OPTIC PEDESTAL
TB	TELECOM BOX
T	TELECOM MANHOLE
	TELECOM LINE MARKER
T	TELECOM PEDESTAL
TV	CABLE TV PEDESTAL
	BACTERIOLOGICAL SAMPLE POINT
	END-CAP
	11° BEND
	22° BEND
	45° BEND
	90° BEND
	TEE
	CROSS
	HOSE BIB
	BLOW-OFF VALVE
	BACKFLOW PREVENTER
DCVA	DOUBLE DETECTOR CHECK VALVE
	FIRE DEPARTMENT CONNECTION
	FIRE HYDRANT
	POST INDICATOR VALVE
	REDUCER
	WATER METER
	WATER SERVICE STUB
	WATER VALVE
W	WELL
	AIR RELEASE VALVE
UM	UNKNOWN MANHOLE
U	UNKNOWN UTILITY PEDESTAL
UV	UTILITY VAULT (AS NOTED)

	BENCHMARK
WF	WETLAND FLAG
	BORING ID NUMBER BORING ELEVATION
X1.2 X13.2	EXISTING SOFT ELEVATION EXISTING HARD ELEVATION
—60—	MAJOR CONTOUR LINE
—59—	MINOR CONTOUR LINE
CLS	CENTERLINE SWALE
EOW	EDGE OF WATER
	BARB WIRE FENCE
X	CHAIN LINK FENCE
	GUARDRAIL
V	VINYL FENCE
//	WOOD FENCE
STM	STORM PIPE (# DENOTES SIZE)
TOS	TOE OF SLOPE
TOB	TOP OF BANK
OHE	OVERHEAD WIRE
UGP	UNDERGROUND POWER
GAS	GAS LINE (# DENOTES SIZE)
REC	REUSE LINE (# DENOTES SIZE)
FM	FORCE MAIN (# DENOTES SIZE)
SAN	SEWER LINE (# DENOTES SIZE)
TEL	TELECOM LINE
FOC	FIBER OPTIC CABLE
WM	WATER LINE (# DENOTES SIZE)
R/W	RIGHT-OF-WAY LINE
UNK	UNKNOWN UTILITY LINE
OHT	OVERHEAD TRAFFIC CABLE

TREE LEGEND

SIZE DENOTED IN SYMBOL

- ASH
- BAY
- CAMPHOR
- CEDAR
- CHINABERRY
- CHERRY
- CITRUS
- CYPRESS
- ELM
- SWEETGUM
- HACKBERRY
- HICKORY
- HOLLY
- JUNIPER
- MAGNOLIA
- MAPLE
- MYRTLE
- OAK
- LAUREL OAK
- LIVE OAK
- PALM
- PINE
- SYCAMORE
- MISC. 1
- MISC. 2
- MISC. 3
- UNKNOWN
- DENOTES SIZE

LEGAL DESCRIPTION: PARCEL "A" (ORB 3721, PG 3984)

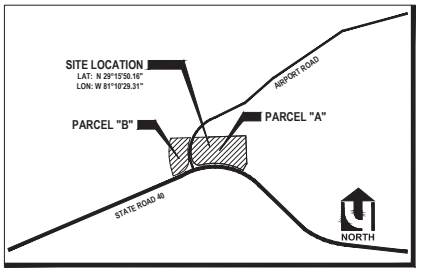
A PARCEL OF LAND BEING A PORTION OF SECTION 28, TOWNSHIP 14 SOUTH, RANGE 31 EAST, VOLUSIA COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

AS A POINT OF REFERENCE COMMENCE AT THE NORTHEAST CORNER OF SAID SECTION 28, THENCE ALONG THE NORTH LINE OF SAID SECTION SOUTH 87°27'06" WEST, A DISTANCE OF 1430.61 FEET TO THE POINT OF BEGINNING; THENCE DEPARTING SAID SECTION LINE SOUTH 02°32'54"EAST, A DISTANCE OF 916.45 FEET TO A POINT ON A CURVE CONCAVE SOUTHWESTERLY, HAVING A RADIUS OF 240.00 FEET FROM WHICH A RADIAL LINE BEARS SOUTH 45°39'11" EAST; THENCE ALONG THE ARC OF SAID CURVE A DISTANCE OF 72.24 FEET THROUGH A CENTRAL ANGLE OF 17° 14'44" AND BEING SUBTENDED BY A CHORD BEARING OF SOUTH 35°43'27" WEST; THENCE SOUTH 27°06'05" WEST, A DISTANCE OF 186.74 FEET TO A POINT ON THE NORTHERLY RIGHT OF WAY LINE OF STATE ROAD 40 (A 200 FOOT RIGHT OF WAY); SAID POINT ALSO LYING ON A CURVE CONCAVE SOUTHERLY HAVING A RADIUS OF 1978.08 FEET, AND FROM WHICH A RADIAL LINE BEARS SOUTH 27°06'05" WEST, THENCE WESTERLY ALONG SAID RIGHT OF WAY LINE AND ALONG THE ARC OF SAID CURVE A DISTANCE OF 1389.33 FEET, THROUGH A CENTRAL ANGLE OF 40°14'32" AND BEING SUBTENDED BY A CHORD BEARING OF NORTH 83°01'11" WEST TO THE POINT OF REVERSE CURVATURE CONCAVE NORTHEASTERLY HAVING A RADIUS OF 250.00 FEET; THENCE NORTHWESTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 378.47 FEET, THROUGH A CENTRAL ANGLE OF 86°44'23" AND BEING SUBTENDED BY A CHORD BEARING OF NORTH 59°46'15" WEST TO THE POINT OF COMPOUND CURVATURE OF A CURVE CONCAVE EASTERLY, HAVING A RADIUS OF 1050.00 FEET; THENCE NORTHERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 744.01 FEET, THROUGH A CENTRAL ANGLE OF 40°35'56" AND BEING SUBTENDED BY A CHORD BEARING OF NORTH 03°53'54"EAST TO A POINT ON THE AFOREMENTIONED NORTH LINE OF SECTION 28; THENCE ALONG SAID SECTION LINE, BEING A NON-TANGENT LINE, NORTH 87°26'15" EAST, A DISTANCE OF 471.51 FEET TO THE NORTHWEST CORNER OF THE NORTHEAST 1/4 OF SAID SECTION 28, THENCE CONTINUING ALONG SAID NORTH SECTION LINE NORTH 87°27'06" EAST, A DISTANCE OF 1214.50 FEET TO THE POINT OF BEGINNING.

LEGAL DESCRIPTION: PARCEL "B" (ORB 3721, PG 3980)

A PARCEL OF LAND BEING A PORTION OF SECTION 28, TOWNSHIP 14 SOUTH, RANGE 31 EAST, VOLUSIA COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

AS A POINT OF REFERENCE COMMENCE AT THE NORTHWEST CORNER OF SAID SECTION 28; THENCE ALONG THE NORTH LINE OF SAID SECTION NORTH 87°26'15" EAST A DISTANCE OF 1414.76 FEET TO THE POINT OF BEGINNING; THENCE CONTINUE ALONG NORTH SECTION LINE NORTH 87°26'15" EAST A DISTANCE OF 648.18 FEET TO A POINT ON A CURVE CONCAVE EASTERLY, HAVING A RADIUS OF 1150.00 FEET, FROM WHICH A RADIAL LINE BEARS SOUTH 68°17'17" EAST; THENCE SOUTHERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 665.67 FEET, THROUGH A CENTRAL ANGLE OF 33° 09'55" AND BEING SUBTENDED BY A CHORD BEARING OF SOUTH 05°07'45" WEST TO THE POINT OF REVERSE CURVATURE OF 'A CURVE CONCAVE NORTHWESTERLY, HAVING A RADIUS OF 450.00 FEET; THENCE SOUTHWESTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 610.70 FEET, THROUGH A CENTRAL ANGLE OF 77°45'26" AND BEING SUBTENDED BY A CHORD BEARING OF SOUTH 27°25'31" WEST TO A POINT ON THE NORTHERLY RIGHT OF WAY LINE OF STATE ROAD 40 (A 200 FOOT RIGHT OF WAY); THENCE ALONG SAID RIGHT OF WAY LINE SOUTH 66°16'14" WEST, A DISTANCE OF 246.91 FEET; THENCE DEPARTING SAID RIGHT OF WAY LINE NORTH 16°27'16" WEST, A DISTANCE OF 250.43 FEET TO THE POINT OF CURVATURE OF A CURVE CONCAVE EASTERLY, HAVING A RADIUS OF 1953.34 FEET; THENCE NORTHERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 996.55 FEET, THROUGH A CENTRAL ANGLE OF 29°13'52" AND BEING SUBTENDED BY A CHORD BEARING OF NORTH 01°50'20" WEST TO THE POINT OF BEGINNING.



LOCATION MAP

SCALE 1" = 2000'

GENERAL NOTES AND SURVEY REPORT:

1. BEARINGS AS SHOWN HEREON ARE BASED ON THE FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE GRID, NORTH AMERICAN DATUM OF 1983 (NAD83) WITH 2011 ADJUSTMENT AS DERIVED FROM THE LENGEMANN NETWORK, A TOPCON GNSS NETWORK. AS A REFERENCE FOR THIS SURVEY, ALONG THE NORTH LINE OF SECTION 28 HAVING A BEARING OF (N 88°05'37" E).
2. LEGAL DESCRIPTION PER: CLIENT (WARRANTY DEED ORB 3721, PG 3984 & ORB 3721, PG 3980)
3. MEASURED DIMENSIONS ARE DENOTED (M), WHEN DIFFERS FROM RECORDED/DESCRIBED DIMENSIONS. DIMENSIONS INDICATED HEREON ARE IN U.S. STANDARD FEET AND DECIMAL PART THEREOF, UNLESS OTHERWISE NOTED HEREON.
4. FLOOD PLAIN CERTIFICATION ACCORDING TO THE FEMA (FEDERAL EMERGENCY MANAGEMENT AGENCY) F.I.R.M (FEDERAL INSURANCE RATE MAP), MAP NUMBER 12127C0193H COMMUNITY: CITY OF ORMOND BEACH DATED: SEPTEMBER 19, 2014. THE PROPERTY APPEARS TO BE IN FLOOD ZONE "X" AND ZONE "X" (ORANGE) WITH 0.2% ANNUAL CHANCE FLOOD HAZARD, AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTH LESS THAN ONE SQUARE MILE. THE PROPERTY ALSO APPEARS TO BE IN FLOOD ZONE "AE" WITH A BASE FLOOD ZONE ELEVATION OF 27 FEET.
5. ACCURACY STATEMENT: THE EXPECTED ACCURACY OF THE CONTROL TO ESTABLISH THE BOUNDARY OF THE SUBJECT PROPERTY IS COMMERCIAL. THE CLOSURE OF THE TRAVERSE FOR THIS PROJECT EXCEEDS 1:10,000.
6. VERTICAL DATA SOURCES: ELEVATIONS REFER TO (NAVD 88) NORTH AMERICAN VERTICAL DATUM 1988. BENCHMARK REFERENCE NGS DESIGNATION H 623, PID DI8709, ELEVATION = 26.20 FEET (NAVD 88)
7. MEASUREMENT METHODS: HORIZONTAL AND VERTICAL MEASURES MADE BY ONE OR MORE OF THE FOLLOWING INSTRUMENTS: TOPCON INSTRUMENTS GPT-3003W, SOKKIA GRX-1 GPS INSTRUMENTS, TOPCON FC500 & FC5000 DATA COLLECTORS USING MAGNET SOFTWARE, PAL-2 LUFKIN STEEL TAPE, CST STEEL TAPE, STEEL HIGHWAY CHAIN, CST & LUFKIN FIBERGLASS TAPE FOR DIMENSIONS FOR BUILDINGS.
8. LINEAGE OF DATA HORIZONTAL DATA REFERENCES, DATE OF ORIGINAL PLAT.
   A) BOUNDARY AND TOPOGRAPHIC SURVEY PREFORMED BY: TOMOKA ENGINEERING, DATED: DECEMBER 3, 1998
   B) FDOT RIGHT-OF-WAY MAP, SECTION 79100, PER FP NO. 241009-1 DATED: APRIL 19, 2001
9. LIMITATIONS:
   A) NO INSTRUMENTS OF RECORD REFLECTING EASEMENTS, RIGHT-OF-WAY AND OR OWNERSHIP WERE FURNISHED TO THIS SURVEYOR. THERE MAY BE ADDITIONAL RESTRICTIONS AND/OR OTHER MATTERS THAT ARE NOT SHOWN ON THIS PLAT OF SURVEY THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY, NO UNDERGROUND INSTALLATIONS OR IMPROVEMENTS HAVE BEEN LOCATED EXCEPT AS SHOWN. IF LOCATION OF EASEMENTS OR RIGHT-OF-WAY OF RECORD, OTHER THAN THOSE ON RECORD PLATS, IS REQUIRED, THIS INFORMATION MUST BE FURNISHED TO THE SURVEYOR AND MAPPER.
   B) IT IS UNDERSTOOD TO BE THE PROFESSIONAL OPINION OF THIS SURVEYOR AND THE FIRM, FROM WHICH IS FORMULATED ON HIS BEST KNOWLEDGE, INFORMATION AND BELIEF, AND AS SUCH, DOES NOT CONSTITUTE A GUARANTEE OR WARRANTY, EITHER EXPRESSED OR IMPLIED. FURTHERMORE, THIS SURVEYOR AND FIRM, DOES NOT ASSUME RESPONSIBILITY AND SHALL NOT BE LIABLE FOR CLAIMS ARISING FROM ERRONEOUS OR INCORRECT INFORMATION FURNISHED BY THE OWNER, LENDER, OR OWNER'S CONTRACTORS OR OTHERS, WHICH IS USED AS A BASIS TO FORMULATE THIS SURVEYOR'S OPINION.
   C) THE ACCEPTANCE OF THIS SURVEY AS CERTIFIED FOR THE EXCLUSIVE USE OF NAMES SHOWN HEREON SHALL CONSTITUTE FULFILLMENT OF MY CONTRACTUAL OBLIGATION. ADDITIONAL SEALED ORIGINALS MAY BE PURCHASED UP TO SIX MONTHS AFTER THE DATE OF THE INVOICE. "ORIGINAL" AS DEFINED HEREON REFERS TO THE SIGNED AND SEALED GRAPHIC REPRESENTATION OF THE FIELD SURVEY. CAD FILES ARE NOT THE SURVEY AND THERE WILL BE A SURCHARGE FOR THEM. ADDITIONS OR DELETIONS TO SURVEY MAPS OR REPORTS BY OTHER THAN THE SIGNING PARTY IS PROHIBITED WITHOUT WRITTEN CONSENT OF THE PARTY.
   D) TAX PARCEL IDENTIFICATION NUMBERS, ADJACENT OWNERS NAMES AND ADDRESS WHEN SHOWN SHOWN IS EITHER SUPPLIED BY CLIENT AND/OR TAKEN FROM COUNTY APPRAISER'S INTERNET WEB PAGE AND MAY NOT BE THE MOST CURRENT.
   E) SPECIAL PURPOSE SURVEYS WHEN IDENTIFIED AS TYPE OF SURVEY:
      1) WHEN TREES AS SHOWN ON THE SURVEY IT IS FOR THE LOCATION OF THE TREES 6" INCHES DIAMETER AND ABOVE TREES TAKEN APPROXIMATELY 4 TO 4-1/2 FEET ABOVE GROUND LEVEL TREE IDENTIFICATION OTHER THAN LOCATION AND SIZE, SEE AN ARBORIST.
      2) JURISDICTIONAL WETLANDS WHEN SHOWN WERE LOCATED FROM FLAGS/MARKS BY BIOLOGIST / ENVIRONMENTALIST. AND THE DETERMINATION OF WETLANDS ARE OUT OF THE EXPERTISE OF THIS SURVEYOR AND MAPPER.
      3) ARCHAEOLOGICAL FEATURES WHEN SHOWN WERE LOCATED FROM OBJECTS IDENTIFIED BY OTHERS AND THE DETERMINATION OF WHAT CONSTITUTES A ARCHAEOLOGICAL FEATURES IS OUT OF THE EXPERTISE OF THIS SURVEYOR AND MAPPER.
      4) WILDLIFE CORRIDORS OR HABITATS WHEN SHOWN WERE LOCATED FROM OBJECTS IDENTIFIED BY WHAT CONSTITUTES A WILDLIFE CORRIDORS OR HABITATS IS OUT OF THE EXPERTISE OF THIS SURVEYOR AND MAPPER
      5) GEOTECHNICAL BORINGS SHOWN AS MARKED AND FIELD LOCATED.
   F) AS-BUILT / RECORD SURVEYS WHEN IDENTIFIED AS TYPE OF SURVEY:
      1) WHEN UNDERGROUND UTILITIES, SUCH AS UNDERGROUND CABLES, GAS MAINS, WATER MAINS, SANITARY SEWER SYSTEMS AND STORM COLLECTIONS SYSTEMS ARE SHOWN. THE LIMITS OF THIS SURVEY INCLUDE VISIBLE STRUCTURES / IMPROVEMENTS IN COMBINATION WITH AS-BUILT / RECORD DRAWINGS SUPPLIED BY OTHERS.
      2) WHEN THE PERCENTAGE OF SLOPES ARE SHOWN IT IS BASED ON THE INVERTS BETWEEN VISIBLE STRUCTURES. THIS SURVEY DOES NOT INCLUDE VIDEO PIPELINE INSPECTIONS. VERIFICATION OF LINE OF SITE HAS NOT BEEN VERIFIED. THIS SURVEYOR SUGGESTS VIDEO PIPELINE INSPECTION BY A PROFESSIONALS PROVIDING SERVICE OF THAT SPECIALTY.
      3) THIS SURVEYOR SUGGESTS VIDEO PIPELINE INSPECTION BY A PROFESSIONAL PROVIDING SERVICE OF THAT SPECIALTY.
   G) TOPOGRAPHIC SURVEY:
      1) CONTOURS ARE ON ONE FOOT INTERVALS, INTERPOLATED BETWEEN 100 FOOT GRIDS, VISIBLE GRADE BREAKS, ALONG WITH RANDOM GROUND ELEVATIONS.
      2) OFF-SITE TOPOGRAPHIC INFORMATION SHOWN IS BASED ON THE REQUEST BY THE CLIENT AND OR THE CLIENT'S AGENT, BEING AN ARCHITECT OR ENGINEER.
   H.) "AFFECT" AS USED HEREON REFERS TO AN ITEM BEING LOCATED ON OR INCLUDES THE SUBJECT PARCEL. "DOES NOT AFFECT" AS USED HEREON REFERS TO THE ITEM BEING LOCATED OFF THE SUBJECT PARCEL. ANY OTHER USE OF THE ABOVE TERMINOLOGY IS A MATTER OF LAW AND OUTSIDE THE EXPERTISE OF A FLORIDA PROFESSIONAL SURVEYOR AND MAPPER.
      1.) AFFECTS THE PROPERTY AND IS DEPICTED ON THE SURVEY
      2.) AFFECTS THE PROPERTY BUT IS NOT PLOTTABLE
      3.) DOES NOT AFFECT THE PROPERTY
      4.) IS NOT A SURVEY MATTER
      5.) DOCUMENTATION NOT PROVIDED TO SURVEYOR

SURVEYOR'S CERTIFICATION:

CERTIFIED FOR THE EXCLUSIVE USE OF AS FOLLOWS:

MEAD & HUNT

THE FOREGOING PLAT IS CERTIFIED TO MEET THE STANDARDS OF PRACTICE SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL LAND SURVEYORS, EFFECTIVE DATE JULY 1, 2018, AS PURSUANT TO SECTIONS 5J-17.051 AND 5J-17.052, FLORIDA ADMINISTRATIVE CODE.

DATE OF FIELD WORK: 05/05/2023

THIS ITEM HAS BEEN SIGNED AND SEALED ON THE DATE AND TIME AS SHOWN HEREON; NOT VALID WITHOUT THE ORIGINAL SIGNATURE AND THE RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER; FLORIDA ADMINISTRATIVE CODE 5J-17.062

BY: _____ DATE: 05/25/2023

MICHAEL E. AWAD, PSM No. 5574

THIS ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY MICHAEL E. AWAD, PSM ON THE DATE AND TIME STAMP, AS SHOWN HEREON, USING AN ELECTRONIC SIGNATURE. THIS ELECTRONIC SIGNATURE AND SEAL ARE IN COMPLIANCE WITH FLORIDA ADMINISTRATIVE CODE CHAPTER 5J-17.062 (3) EFFECTIVE DATE: JULY 13, 2016.

AN ELECTRONIC SIGNATURE IS A DIGITAL AUTHENTICATION PROCESS ATTACHED TO OR LOGICALLY ASSOCIATED WITH AN ELECTRONIC DOCUMENT AND SHALL CARRY THE SAME WEIGHT, AUTHORITY AND EFFECT AS AN ORIGINAL SIGNATURE AND SEAL. THE ELECTRONIC SIGNATURE, WHICH CAN BE GENERATED BY USING EITHER PUBLIC KEY INFRASTRUCTURE OR SIGNATURE DYNAMICS TECHNOLOGY, MUST BE AS FOLLOWS:
(A) UNIQUE TO THE PERSON USING IT
(B) CAPABLE OF VERIFICATION
(C) UNDER THE SOLE CONTROL OF THE PERSON USING IT
(D) LINKED TO A DOCUMENT IN SUCH MANNER THAT THE ELECTRONIC SIGNATURE IS INVALIDATED IF ANY DATA IN THE DOCUMENT IS CHANGED.

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UPDATED 5/21/24 FOR ADDITIONAL WETLAND FLAGS

SHEET 7 OF 7

UPHAM
CIVIL ENGINEERING • SURVEYING • LANDSCAPE ARCHITECTURE
265 Kentlworth Avenue • Ormond Beach • Florida 32174
Voice: 386.672.9515 • Fax: 386.673.6554 • uphaminc.com
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SEE CERTIFICATION FOR SURVEYOR SIGNATURE

SURVEY REPORT

THIS REPORT IS NEITHER FULL NOR COMPLETE WITHOUT THE MAP

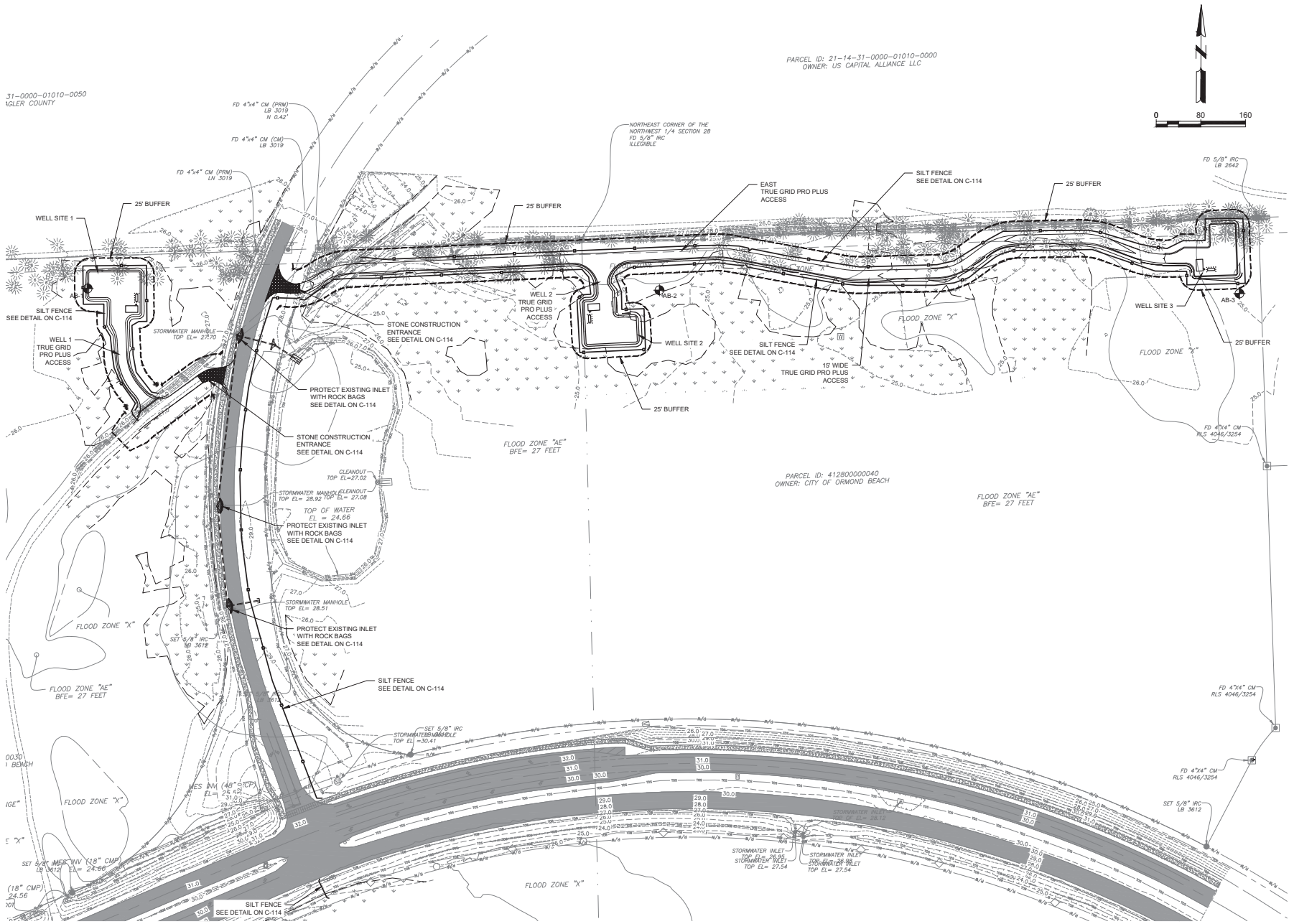
TYPE OF SURVEY: BOUNDARY, TOPOHRAPHIC & SPECIAL PURPOSE SURVEY

MAP SUBJECT: HUDSON WELLFIELD EXPANSION

ADDRESS: AIRPORT ROAD AND SR 40 ORMOND BEACH, FLORIDA

LOCATION No:	14-31-28
PROJECT No:	230204
FIELD WORK BY:	JGP
DATE:	05/05/2023
OFFICE WORK BY:	JAE
DATE:	05/11/2023
FIELD BOOK & PG:	## - ##
SCALE:	AS SHOWN

SHEET NUMBER: SU-7



Mead & Hunt

Mead and Hunt, Inc.
4401 Eastport Parkway
Port Orange, FL 32127
phone: 386-761-6810
meadhunt.com
FL Cert. #26730

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CITY OF ORMOND BEACH
HUDSON WELLFIELD EXPANSION

AIRPORT ROAD
ORMOND BEACH, FL

ISSUED

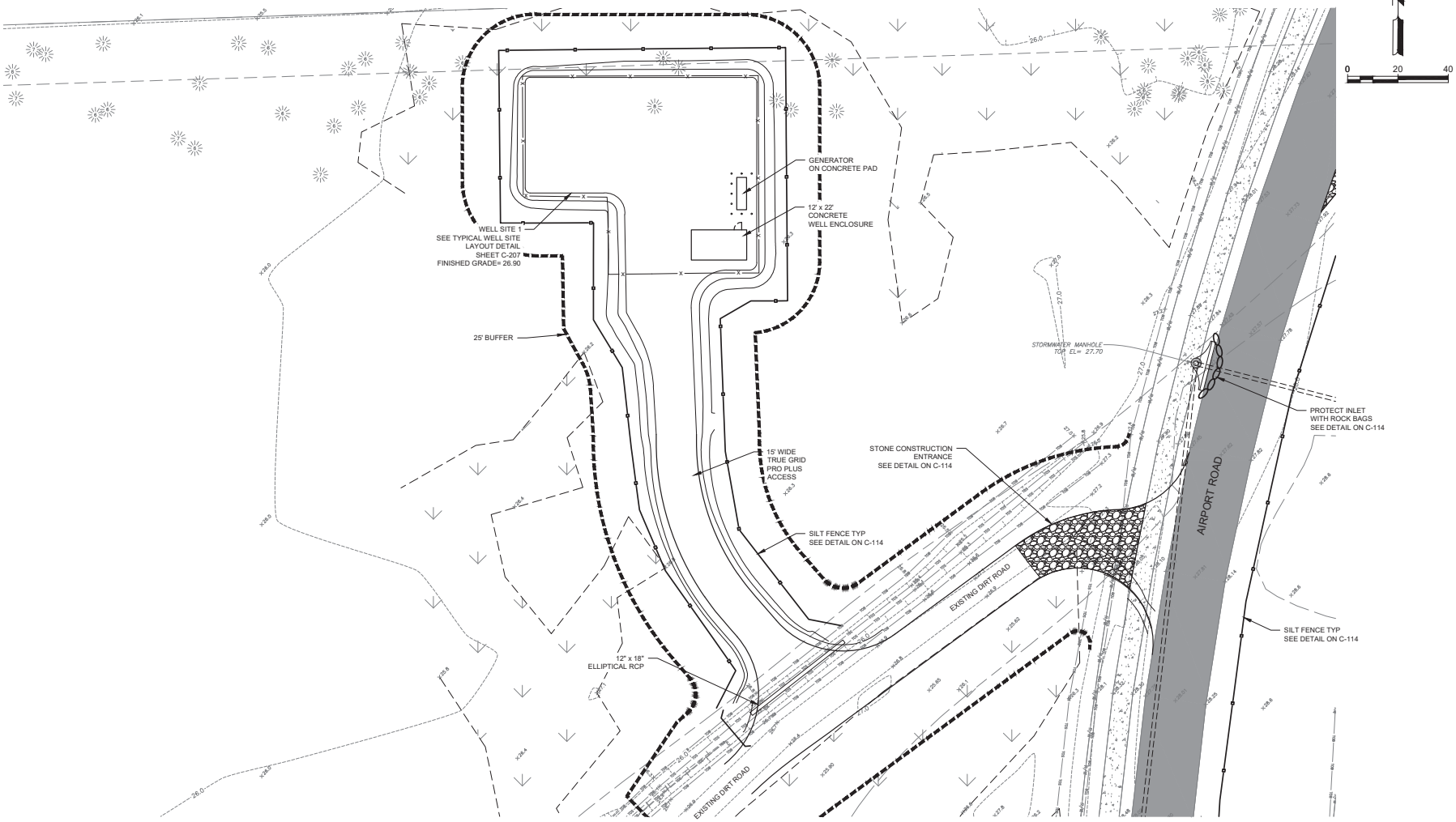
11/27/23	90% PLANS
12/15/23	PERMITTING
03/29/24	100% PLANS

M&H NO.: 1000714-212249.01
DATE: MAY 2024
DESIGNED BY: JCK
DRAWN BY: WKM
CHECKED BY: RRF
DO NOT SCALE DRAWINGS

SHEET CONTENTS
EROSION AND SEDIMENT CONTROL PLAN

SHEET NO.
C-111

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5/28/2024 2:36:00 PM 1445wern



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CITY OF ORMOND BEACH
HUDSON WELLFIELD EXPANSION

AIRPORT ROAD
ORMOND BEACH, FL

ISSUED

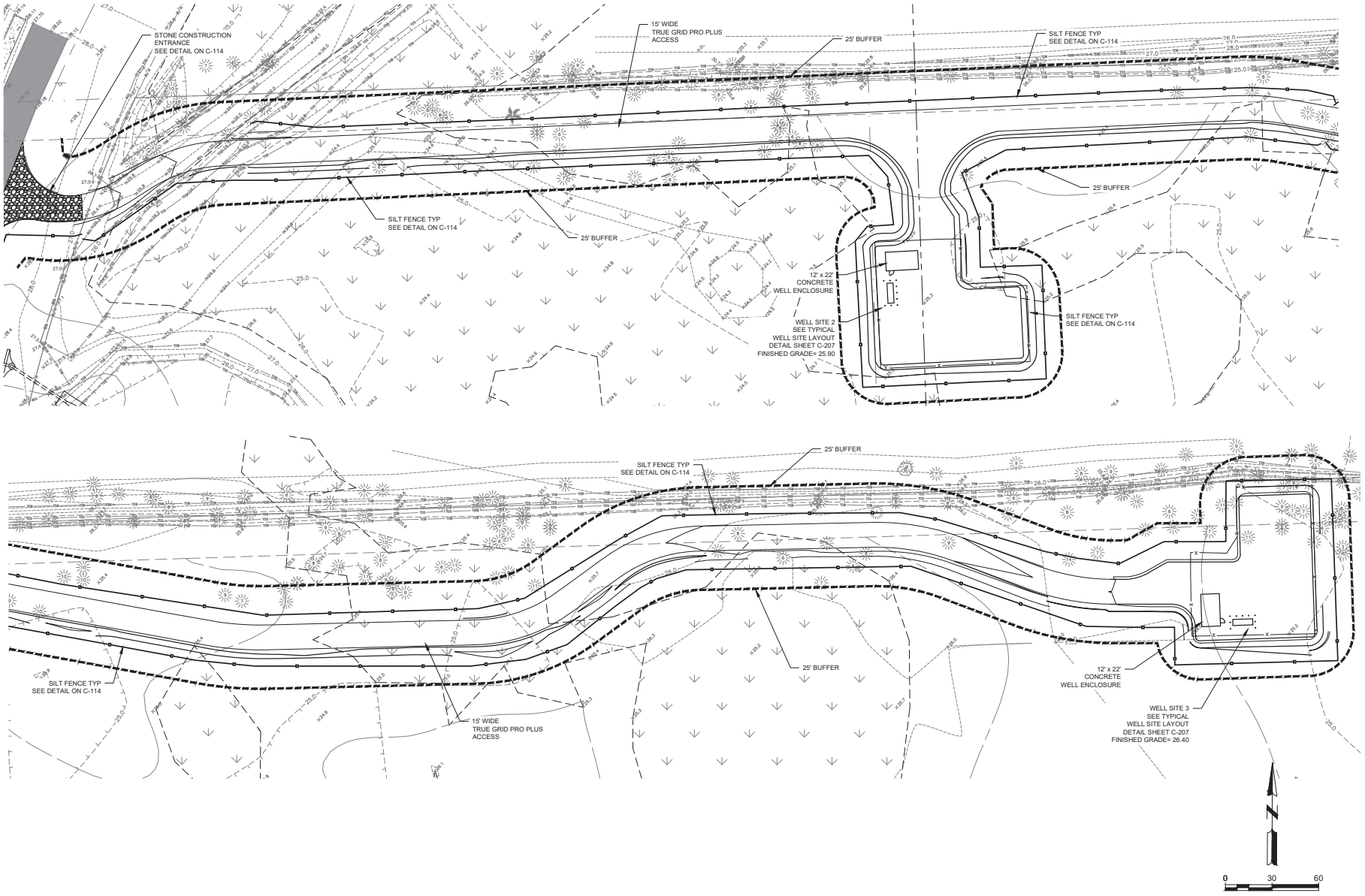
11/27/23	90% PLANS
12/15/23	PERMITTING
03/29/24	100% PLANS

M&H NO.: 1000714-212249.01
DATE: MAY 2024
DESIGNED BY: JCK
DRAWN BY: WKM
CHECKED BY: RRF
DO NOT SCALE DRAWINGS

SHEET CONTENTS
WELL 1- EROSION AND SEDIMENT CONTROL PLAN

SHEET NO.
C-112

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5/28/2024 2:36:04 PM 1445wern



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CITY OF ORMOND BEACH
HUDSON WELLFIELD EXPANSION

AIRPORT ROAD
ORMOND BEACH, FL

ISSUED

11/27/23	90% PLANS
12/15/23	PERMITTING
03/29/24	100% PLANS

M&H NO.: 1000714-212249.01
DATE: MAY 2024
DESIGNED BY: JCK
DRAWN BY: WKM
CHECKED BY: RRF
DO NOT SCALE DRAWINGS

SHEET CONTENTS
WELL 2 & 3- EROSION AND SEDIMENT CONTROL PLAN

SHEET NO.
C-113

X:\1000714\212249.01\TECH\CAD\DRAWINGS\E&S SHEETS.DWG
5/28/2024 2:35:11 PM 1445wern

ES BMP 1.01

TEMPORARY GRAVEL
CONSTRUCTION ENTRANCE

DEFINITION

A STONE STABILIZED PAD LOCATED AT POINTS OF VEHICULAR INGRESS AND EGRESS ON A CONSTRUCTION SITE.

PURPOSE

TO REDUCE THE AMOUNT OF SEDIMENT TRANSPORTED ONTO PUBLIC ROADS BY MOTOR VEHICLES OR RUNOFF.

CONDITIONS WHERE PRACTICE APPLIES

WHEREVER TRAFFIC WILL BE LEAVING A CONSTRUCTION SITE AND MOVES DIRECTLY ONTO A PUBLIC ROAD OR OTHER PAVED AREA.

PLANNING CONSIDERATIONS

CONSTRUCTION ENTRANCES PROVIDE AN AREA WHERE MUD CAN BE REMOVED FROM CONSTRUCTION VEHICLE TIRES BEFORE THE ENTER A PUBLIC ROAD. IF THE ACTION OF THE VEHICLE TRAVELING OVER THE GRAVEL PAD IS NOT SUFFICIENT TO REMOVE THE MAJORITY OF THE MUD, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLE ENTERS A PUBLIC ROAD. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP THE SEDIMENT BEFORE IT IS CARRIED OFF-SITE. CONSTRUCTION ENTRANCES SHOULD BE USED IN CONJUNCTION WITH THE STABILIZATION OF CONSTRUCTION ROADS TO REDUCE THE AMOUNT OF MUD PICKED UP BY CONSTRUCTION VEHICLES.

DESIGN CRITERIA

AGGREGATE SIZE

FDOT AGGREGATE NO. 1 (1.5 – 3.5 INCH STONE) SHOULD BE USED.

ENTRANCE DIMENSIONS

AGGREGATE LAYER MUST BE AT LEAST 6 INCHES THICK. IT MUST EXTEND THE FULL WIDTH OF THE VEHICULAR INGRESS AND EGRESS AREA. THE LENGTH OF THE ENTRANCE MUST BE AT LEAST 50 FEET. (SEE DETAIL).

WASHING

IF CONDITIONS OF THE SITE ARE SUCH THAT THE MAJORITY OF THE MUD IS NOT REMOVED BY THE VEHICLES TRAVELING OVER THE GRAVEL, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLE ENTERS A PUBLIC ROAD. THE WASHING MUST BE DONE ON AN AREA STABILIZED WITH AGGREGATE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE. ENTRANCE TO A SETTLING AREA TO REMOVE SEDIMENT. A WASH RACK MAY ALSO BE USED TO MAKE WASHING MORE CONVENIENT AND EFFECTIVE. SEE DETAIL.

LOCATION

THE ENTRANCE SHOULD BE LOCATED TO PROVIDE FOR MAXIMUM UTILITY BY ALL CONSTRUCTION VEHICLES.

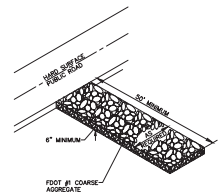
INDICATE PROPOSED LOCATION OF GRAVEL CONSTRUCTION ENTRANCE ON THE GRADING PLAN.

CONSTRUCTION SPECIFICATIONS

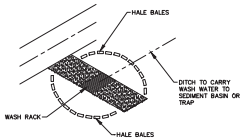
THE AREA OF THE ENTRANCE SHOULD BE CLEARED OF ALL VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL. THE GRAVEL SHALL BE PLACED TO THE SPECIFIED DIMENSIONS. ANY DRAINAGE FACILITIES REQUIRED BECAUSE OF WASHING SHOULD BE CONSTRUCTED ACCORDING TO SPECIFICATIONS. IF WASH RACKS ARE USED, THEY SHOULD BE CONSTRUCTED ACCORDING TO SPECIFICATIONS. IF WASH RACKS ARE TO MANUFACTURER'S SPECIFICATIONS.

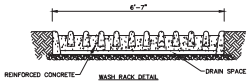
MAINTENANCE

THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH 2-INCH STONE, AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY STRUCTURES USED TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.



GRAVEL CONSTRUCTION ENTRANCE
N.T.S.



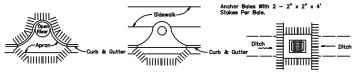


WASH RACK DETAIL

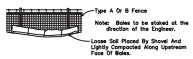
GRAVEL CONSTRUCTION ENTRANCE
W/ WASH RACK (IF REQUIRED)

NOTE: COMPLY WITH FDOT REQUIREMENTS FOR SOIL TRACKING PREVENTION DEVICE IN FDOT ROADWAY ROW (INDEX NO. 106)

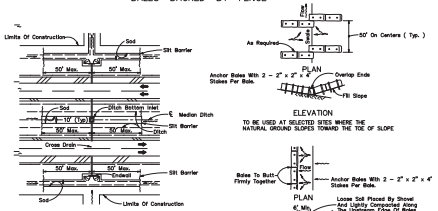
STANDARD CONSTRUCTION DETAIL	INDEX
TEMPORARY GRAVEL CONSTRUCTION ENTRANCE NTS	M–13
	MAY 2020



PROTECTION AROUND INLETS OR SIMILAR STRUCTURES
NOTE: SUBSTITUTE ROCK BAGS AT PAVED SURFACES



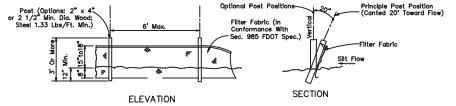
BALES BACKED BY FENCE



DITCH INSTALLATIONS AT DRAINAGE STRUCTURES

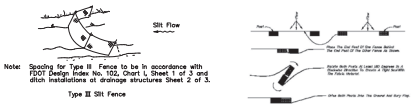
BARRIERS FOR FILL SLOPES

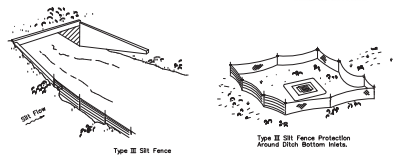
STANDARD CONSTRUCTION DETAIL	INDEX
EROSION CONTROL – SYNTHETIC BALES NT	M–14A
	MAY 2020



Note: Silt Fence to be paid for under the contract unit price for Staked Silt Fence (LF).

TYPE III SILT FENCE





Do not deploy in a manner that silt fences will act as a dam across permanent flowing watercourses. Silt fences are to be used at upland locations and turbidity barriers used at permanent bodies of water.

SILT FENCE APPLICATIONS

STANDARD CONSTRUCTION DETAIL	INDEX
EROSION CONTROL – SILT FENCE NTS	M–15
	MAY 2020

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CITY OF ORMOND BEACH
HUDSON WELLFIELD EXPANSION

AIRPORT ROAD
ORMOND BEACH, FL

ISSUED

11/27/23	90% PLANS
12/15/23	PERMITTING
03/29/24	100% PLANS

M&H NO.:	1000714-212249.01
DATE:	MAY 2024
DESIGNED BY:	JCK
DRAWN BY:	WKM
CHECKED BY:	RRF

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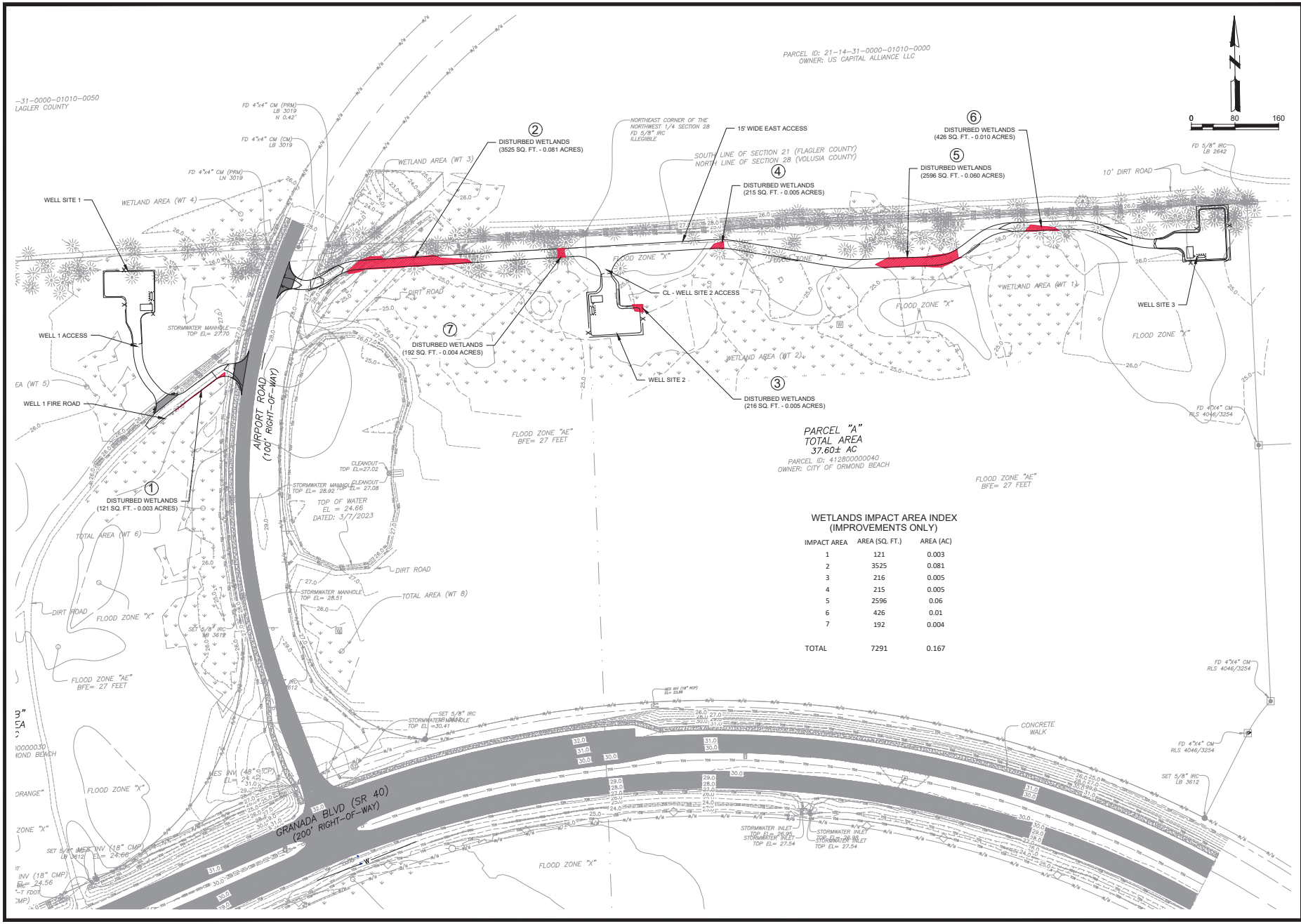
SHEET CONTENTS

EROSION AND SEDIMENT CONTROL DETAILS

SHEET NO.

C-114

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WETLANDS IMPACT AREA INDEX
(IMPROVEMENTS ONLY)

IMPACT AREA	AREA (SQ. FT.)	AREA (AC)
1	121	0.003
2	3525	0.081
3	216	0.005
4	215	0.005
5	2596	0.06
6	426	0.01
7	192	0.004
TOTAL	7291	0.167

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CITY OF ORMOND BEACH
HUDSON WELLFIELD EXPANSION

AIRPORT ROAD
ORMOND BEACH, FL

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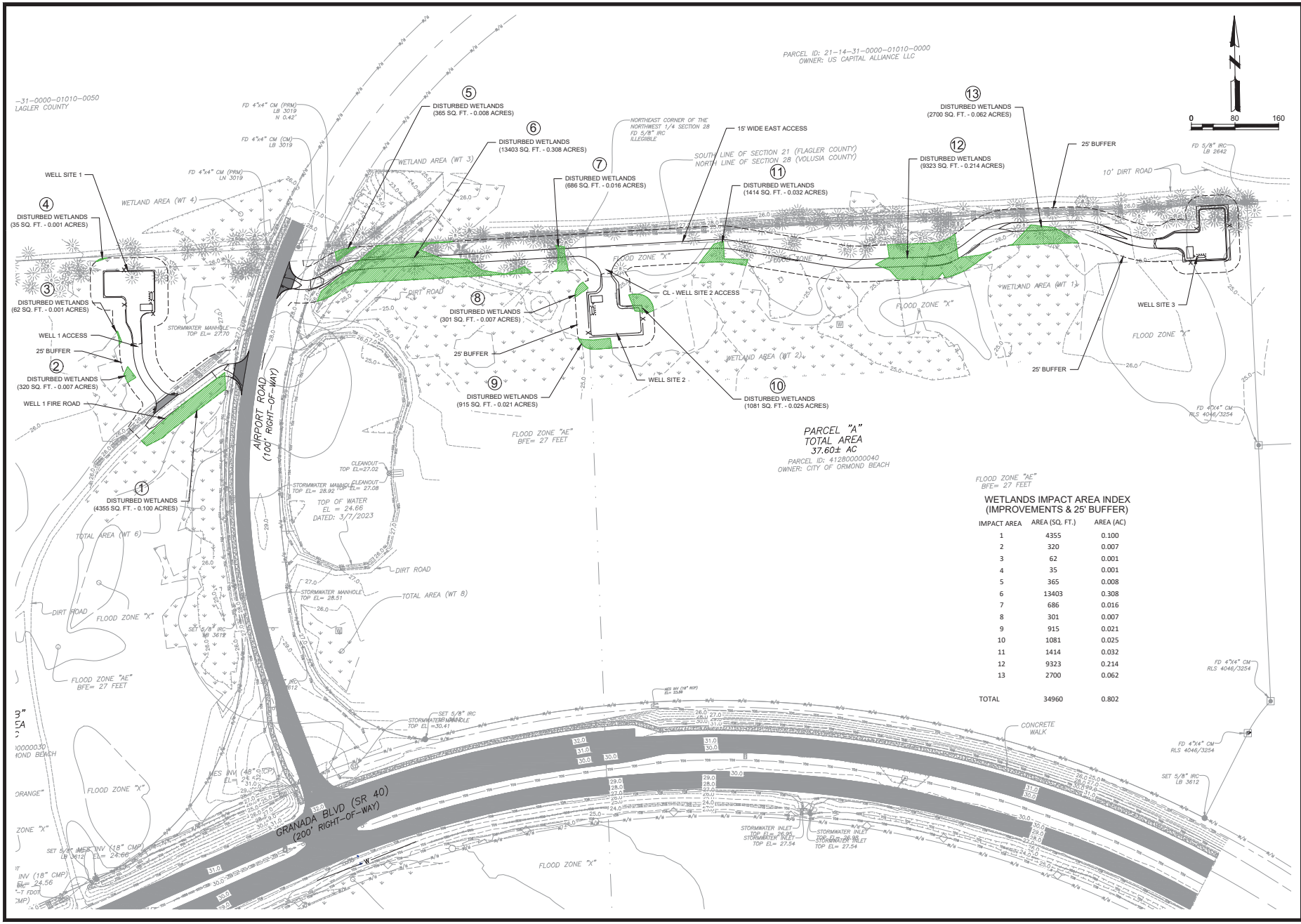
ISSUED
11/27/23 90% PLANS

M&H NO.: 1000714-212249.01
DATE: DECEMBER 2023
DESIGNED BY: JK
DRAWN BY: WKM
CHECKED BY: JK
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SHEET CONTENTS
WETLAND IMPACTS-IMPROVEMENTS ONLY EXHIBIT 1

SHEET NO.
C-001

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WETLANDS IMPACT AREA INDEX (IMPROVEMENTS & 25' BUFFER)

IMPACT AREA	AREA (SQ. FT.)	AREA (AC)
1	4355	0.100
2	320	0.007
3	62	0.001
4	35	0.001
5	365	0.008
6	13403	0.308
7	686	0.016
8	301	0.007
9	915	0.021
10	1081	0.025
11	1414	0.032
12	9323	0.214
13	2700	0.062
TOTAL	34960	0.802

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CITY OF ORMOND BEACH
HUDSON WELLFIELD EXPANSION

AIRPORT ROAD
ORMOND BEACH, FL

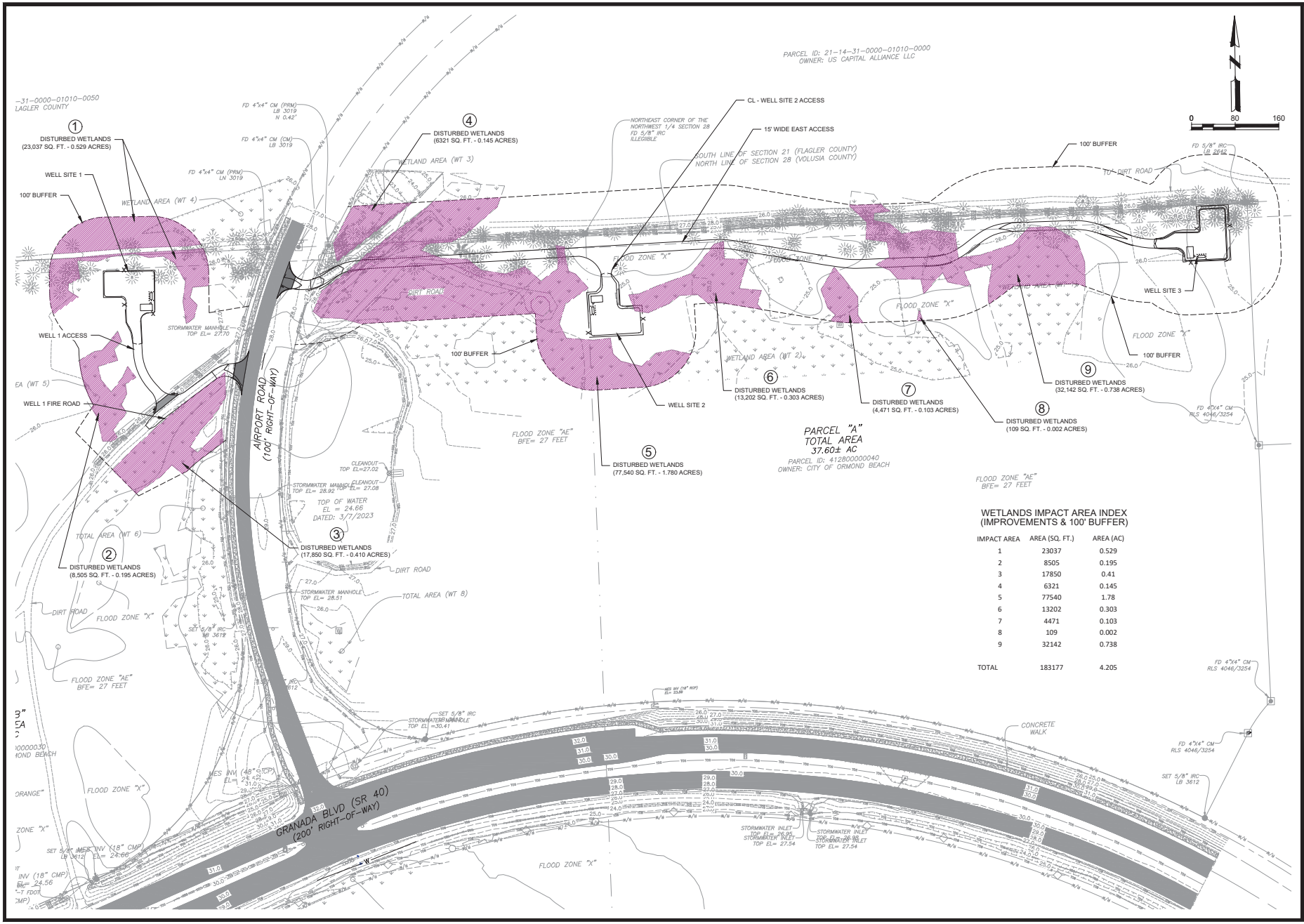
ISSUED
11/27/23 90% PLANS

M&H NO.: 1000714-212249.01
DATE: DECEMBER 2023
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SHEET CONTENTS
WETLAND IMPACTS-IMPROVEMENTS AND 25' BUFFER EXHIBIT 2

SHEET NO.
C-002

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WETLANDS IMPACT AREA INDEX
(IMPROVEMENTS & 100' BUFFER)

IMPACT AREA	AREA (SQ. FT.)	AREA (AC)
1	23037	0.529
2	8505	0.195
3	17850	0.41
4	6321	0.145
5	77540	1.78
6	13202	0.303
7	4471	0.103
8	109	0.002
9	32142	0.738
TOTAL	183177	4.205

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CITY OF ORMOND BEACH
HUDSON WELLFIELD EXPANSION

AIRPORT ROAD
ORMOND BEACH, FL

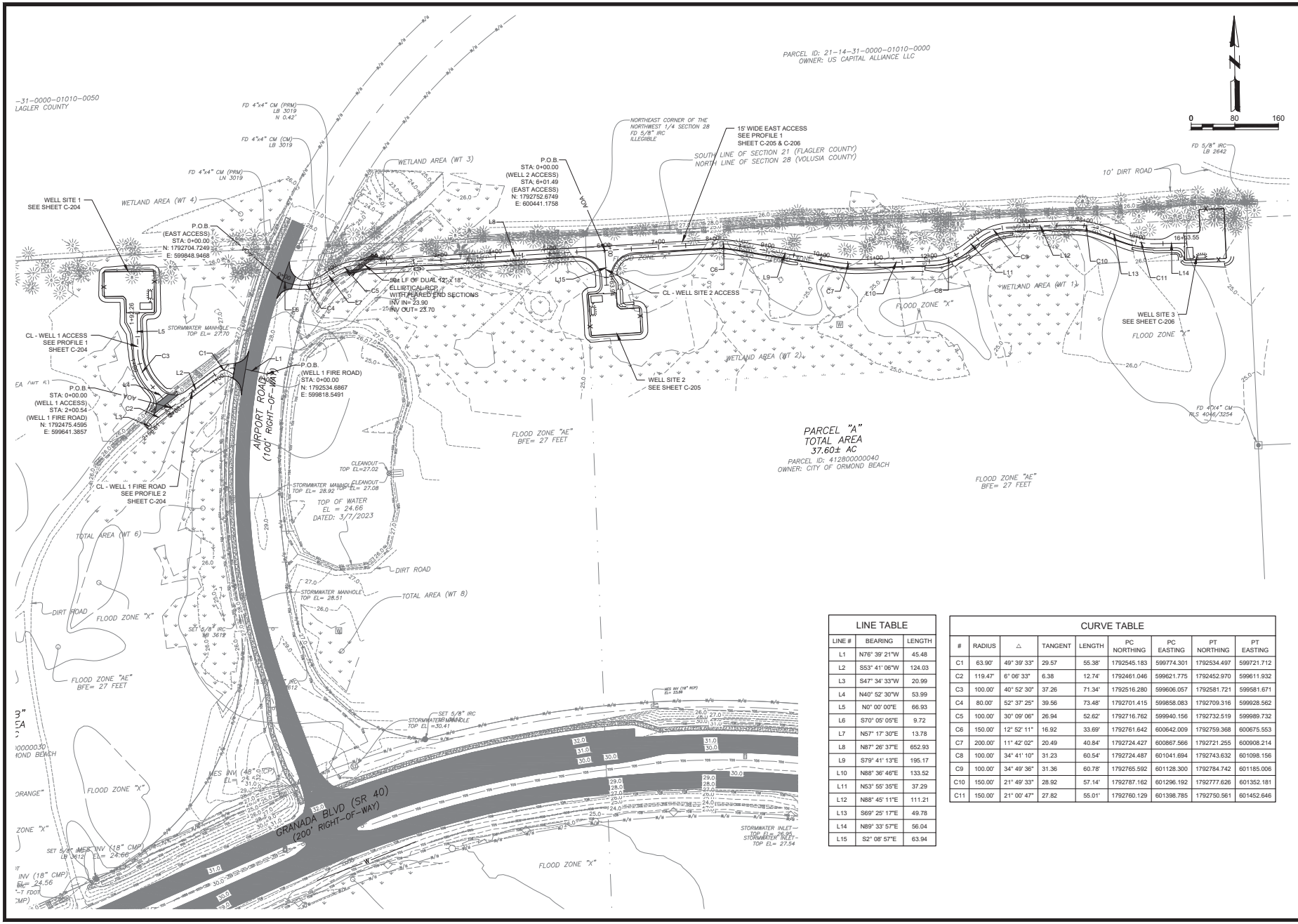
ISSUED
11/27/23 90% PLANS

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SHEET CONTENTS
WETLAND IMPACTS-IMPROVEMENTS AND 100' BUFFER EXHIBIT 3

SHEET NO.
C-003

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LINE TABLE		
LINE #	BEARING	LENGTH
L1	N76° 39' 21"W	45.48
L2	S53° 41' 06"W	124.03
L3	S47° 34' 33"W	20.99
L4	N40° 52' 30"W	53.99
L5	N0° 00' 00"E	66.93
L6	S70° 05' 05"E	9.72
L7	N57° 17' 30"E	13.78
L8	N87° 26' 37"E	652.93
L9	S79° 41' 13"E	195.17
L10	N88° 36' 46"E	133.52
L11	N53° 55' 35"E	37.29
L12	N88° 45' 11"E	111.21
L13	S69° 25' 17"E	49.78
L14	N89° 33' 57"E	56.04
L15	S2° 08' 57"E	63.94

CURVE TABLE								
#	RADIUS	Δ	TANGENT	LENGTH	PC NORTHING	PC EASTING	PT NORTHING	PT EASTING
C1	63.90'	49° 39' 33"	29.57	55.38'	1792545.183	599774.301	1792534.497	599721.712
C2	119.47'	6° 06' 33"	6.38	12.74'	1792461.046	599621.775	1792452.970	599611.932
C3	100.00'	40° 52' 30"	37.26	71.34'	1792516.280	599606.057	1792581.721	599581.671
C4	80.00'	52° 37' 25"	39.56	73.48'	1792701.415	599858.083	1792709.316	599928.562
C5	100.00'	30° 09' 06"	26.94	52.62'	1792716.762	599940.156	1792732.519	599989.732
C6	150.00'	12° 52' 11"	16.92	33.69'	1792761.642	600642.009	1792759.368	600675.553
C7	200.00'	11° 42' 02"	20.49	40.84'	1792724.427	600867.566	1792721.255	600908.214
C8	100.00'	34° 41' 10"	31.23	60.54'	1792724.487	601041.694	1792743.632	601098.156
C9	100.00'	34° 49' 36"	31.36	60.78'	1792765.592	601128.300	1792784.742	601185.006
C10	150.00'	21° 49' 33"	28.92	57.14'	1792787.162	601296.192	1792777.626	601352.181
C11	150.00'	21° 00' 47"	27.82	55.01'	1792760.129	601398.785	1792750.561	601452.646

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HUDSON WELLFIELD EXPANSION

AIRPORT ROAD
ORMOND BEACH, FL

ISSUED

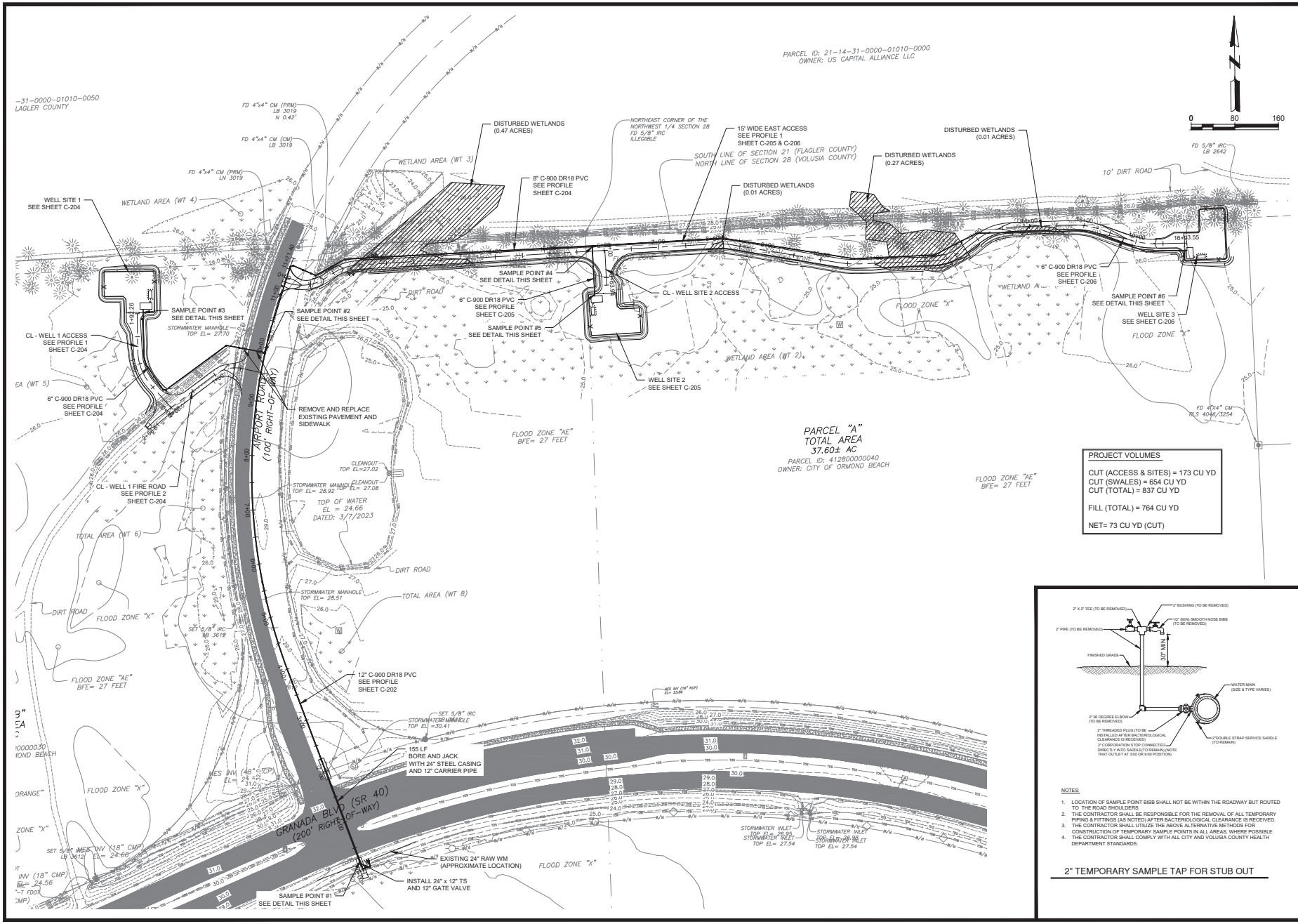
11/27/23	90% PLANS
12/15/23	PERMITTING
03/29/24	100% PLANS

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SHEET CONTENTS
ACCESS ROAD GEOMETRY

SHEET NO.
C-200

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NOTES:

1. LOCATION OF SAMPLE POINT BIBB SHALL NOT BE WITHIN THE ROADWAY BUT ROUTED TO THE ROAD SHOULDERS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL TEMPORARY PIPING & FITTINGS (AS NOTED) AFTER BACTERIOLOGICAL CLEARANCE IS RECEIVED.
3. THE CONTRACTOR SHALL UTILIZE THE ABOVE ALTERNATIVE METHODS FOR CONSTRUCTION OF TEMPORARY SAMPLE POINTS IN ALL AREAS, WHERE POSSIBLE.
4. THE CONTRACTOR SHALL COMPLY WITH ALL CITY AND VOLUSIA COUNTY HEALTH DEPARTMENT STANDARDS.

2" TEMPORARY SAMPLE TAP FOR STUB OUT

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CITY OF ORMOND BEACH
HUDSON WELLFIELD EXPANSION

AIRPORT ROAD
ORMOND BEACH, FL

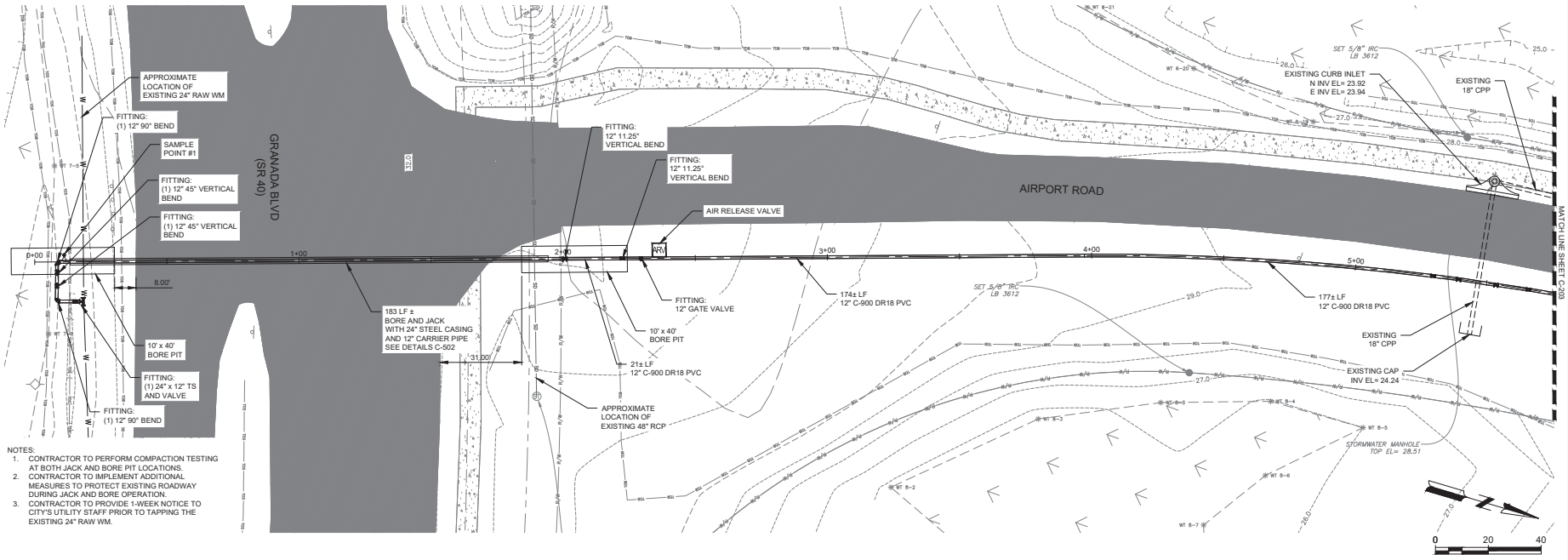
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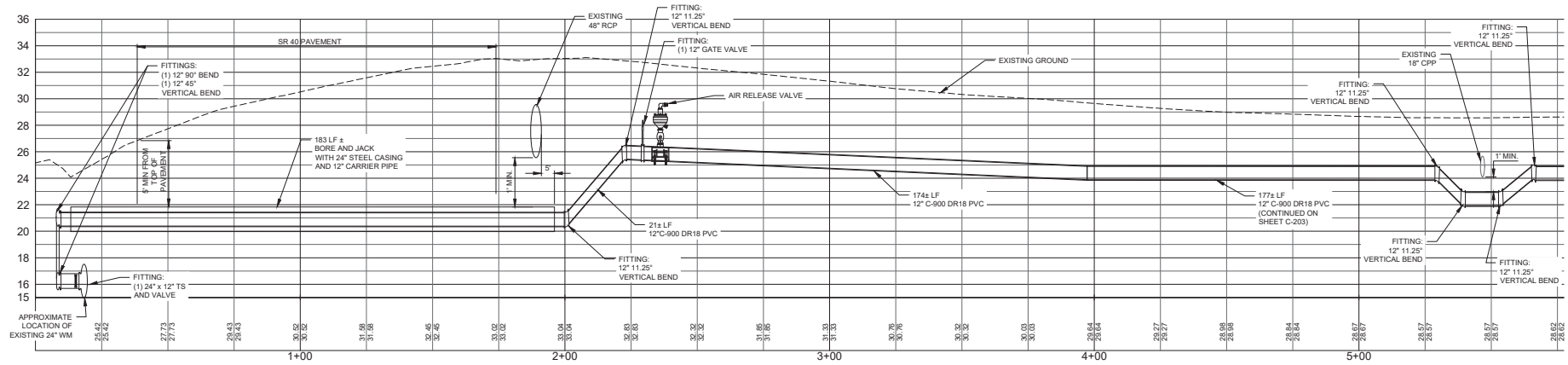
SHEET CONTENTS
OVERALL SITE PLAN

SHEET NO.
C-201

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NOTES:
1. CONTRACTOR TO PERFORM COMPACTION TESTING AT BOTH JACK AND BORE PIT LOCATIONS.
2. CONTRACTOR TO IMPLEMENT ADDITIONAL MEASURES TO PROTECT EXISTING ROADWAY DURING JACK AND BORE OPERATION.
3. CONTRACTOR TO PROVIDE 1-WEEK NOTICE TO CITY'S UTILITY STAFF PRIOR TO TAPPING THE EXISTING 24" RAW WM.



1 **AIRPORT ROAD PROFILE**
1" = 20' HORIZ, 1" = 4' VERT

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CITY OF ORMOND BEACH
HUDSON WELLFIELD EXPANSION

AIRPORT ROAD
ORMOND BEACH, FL

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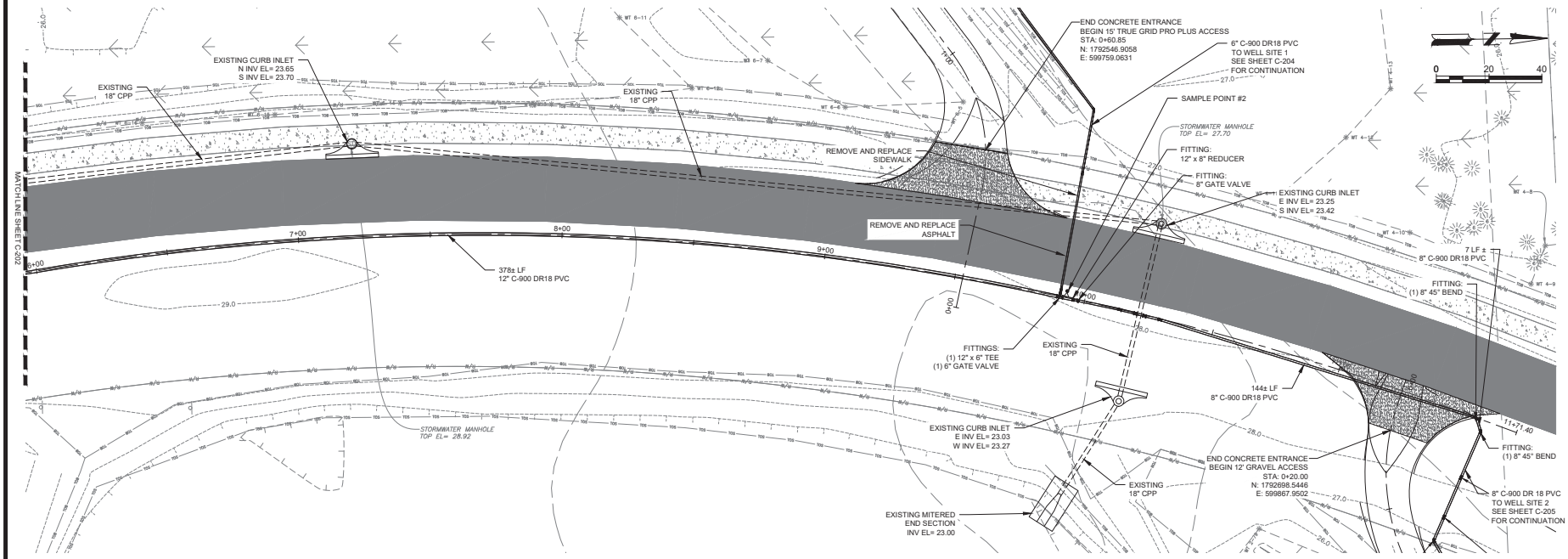
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12/15/23	PERMITTING
03/29/24	100% PLANS

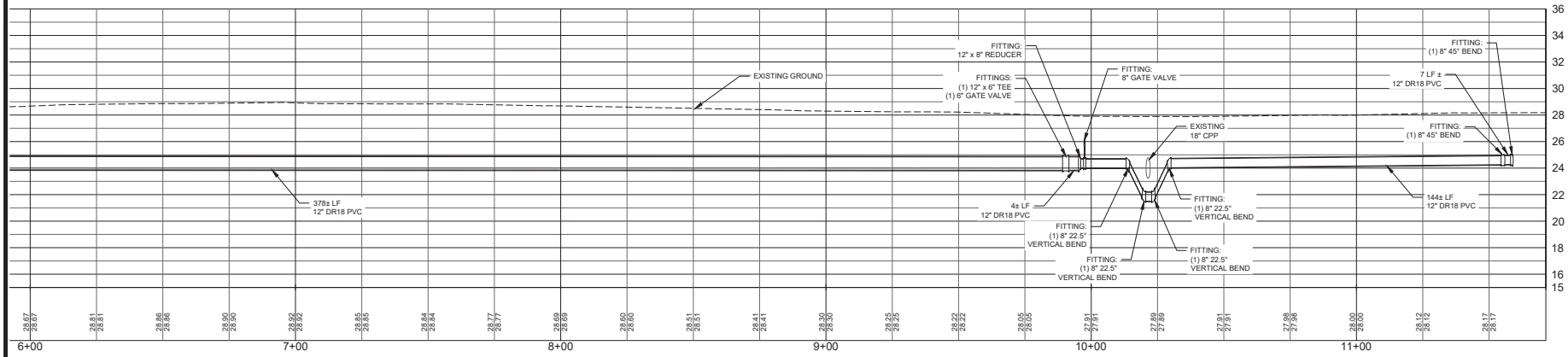
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SHEET CONTENTS
AIRPORT ROAD PLAN AND PROFILE

SHEET NO.
C-202

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1 AIRPORT ROAD PROFILE

1" = 20' HORIZ, 1" = 4' VERT

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CITY OF ORMOND BEACH
HUDSON WELLFIELD EXPANSION

AIRPORT ROAD
ORMOND BEACH, FL

ISSUED

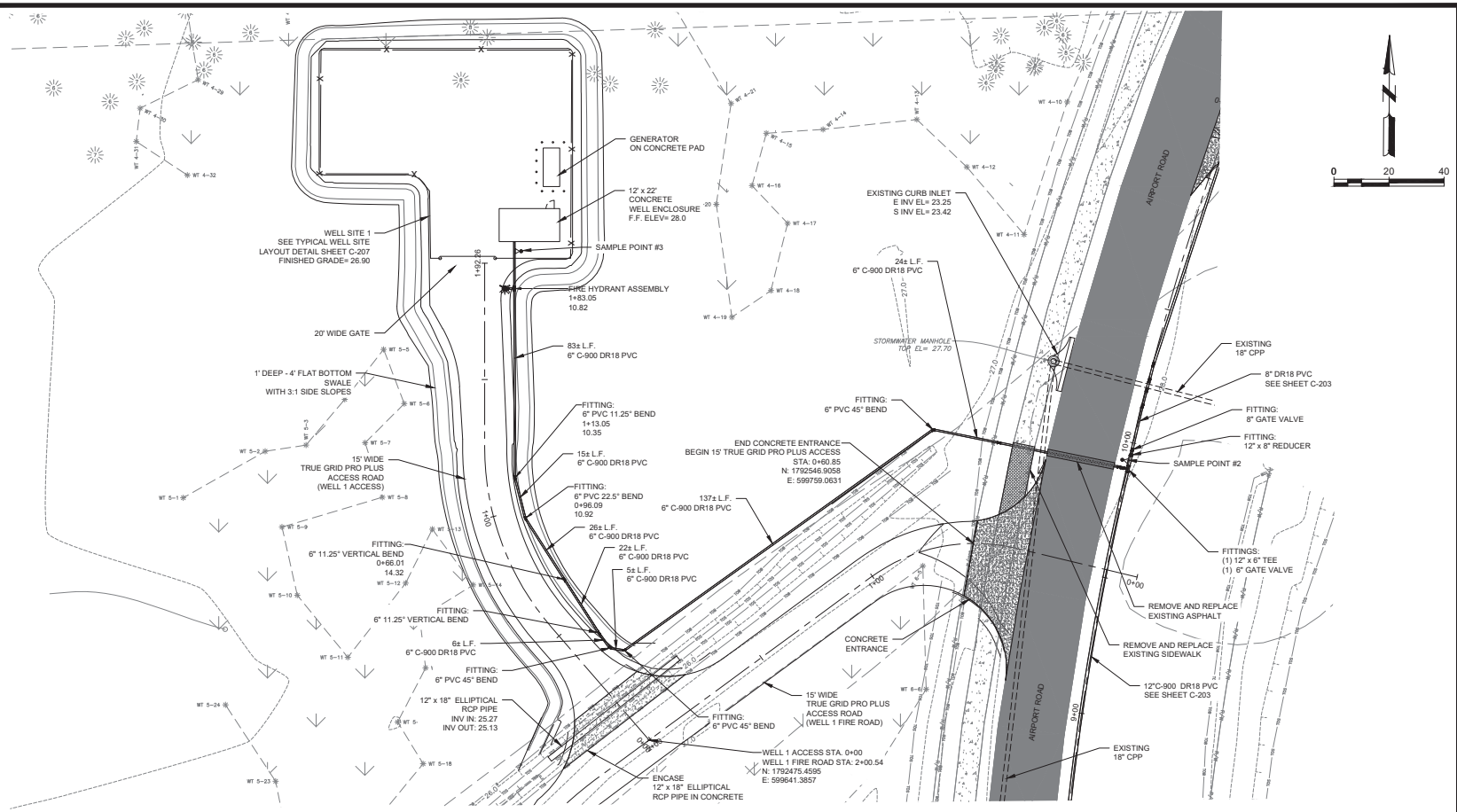
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12/15/23	PERMITTING
03/29/24	100% PLANS

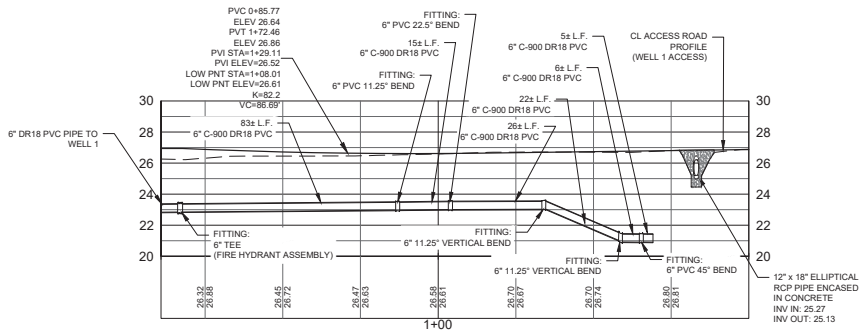
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DATE: MAY 2024
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SHEET CONTENTS
AIRPORT ROAD PLAN AND PROFILE

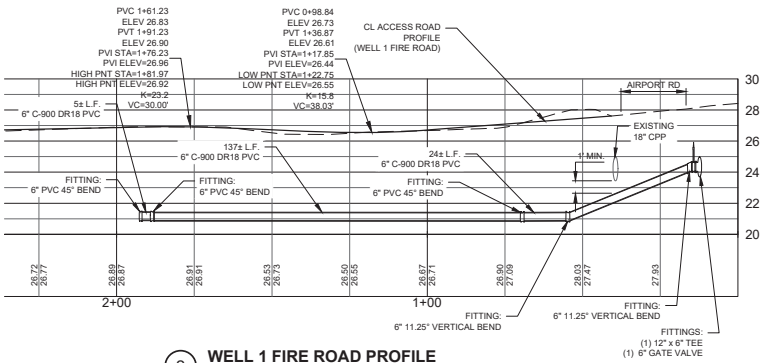
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C-203

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1 **WELL 1 ACCESS ROAD PROFILE**
1" = 20' HORIZ, 1" = 4' VERT



2 **WELL 1 FIRE ROAD PROFILE**
1" = 20' HORIZ, 1" = 4' VERT

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CITY OF ORMOND BEACH
HUDSON WELLFIELD EXPANSION

AIRPORT ROAD
ORMOND BEACH, FL

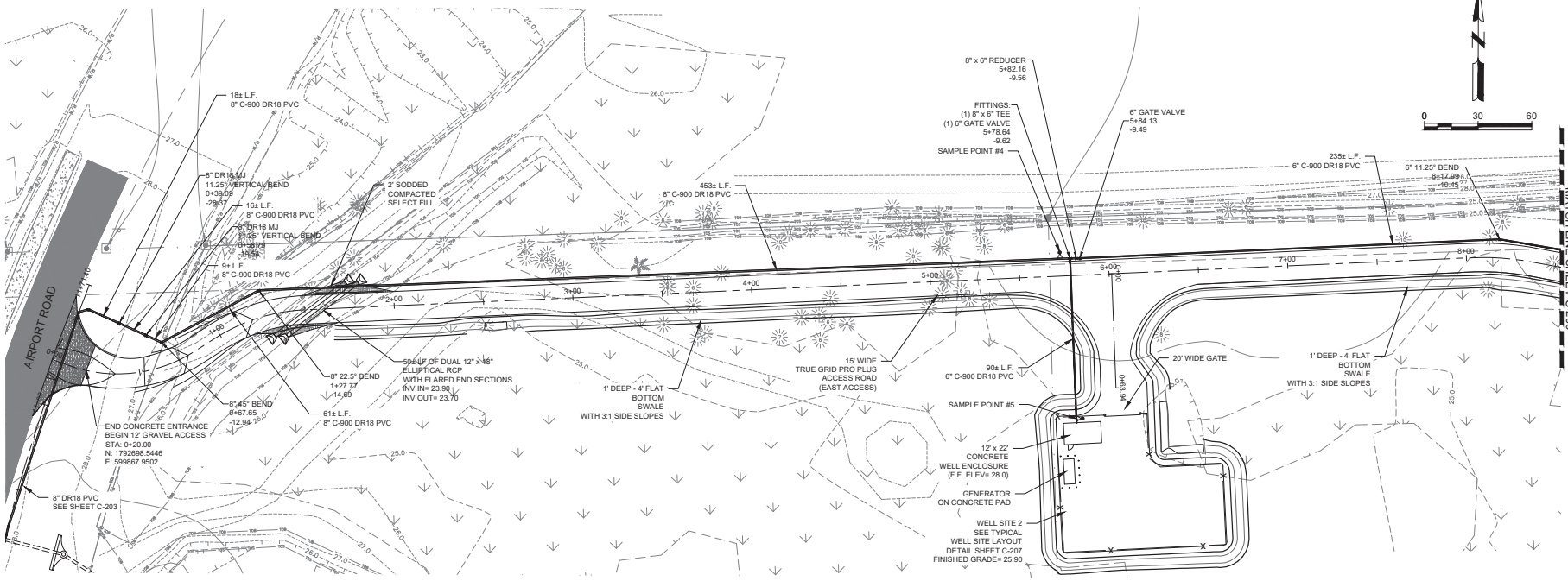
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12/15/23	PERMITTING
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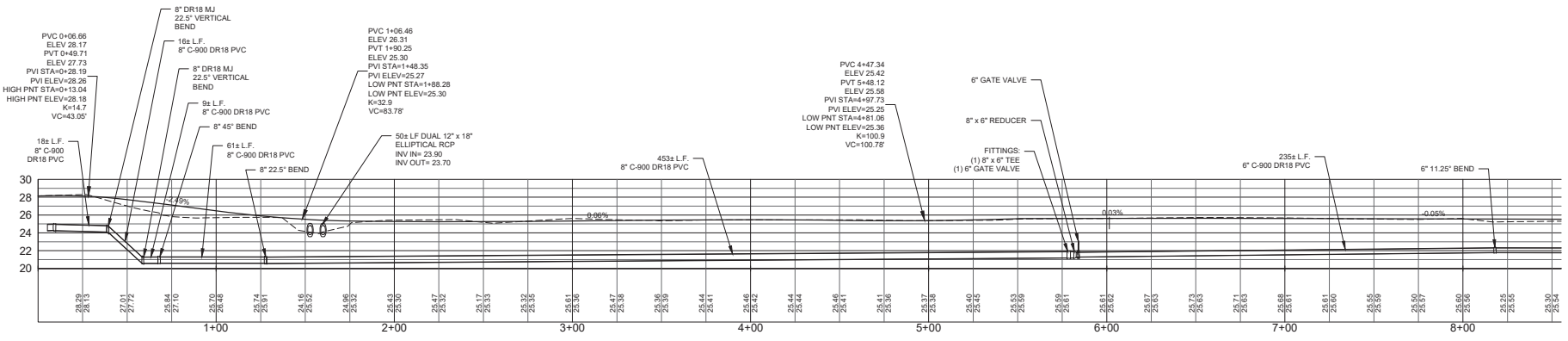
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SHEET CONTENTS
WELL SITE 1 PLAN
AND PROFILE

SHEET NO.
C-204

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1 **EAST ACCESS ROAD PROFILE**
1" = 30' HORIZ, 1" = 6' VERT

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CITY OF ORMOND BEACH
HUDSON WELLFIELD EXPANSION

AIRPORT ROAD
ORMOND BEACH, FL

ISSUED

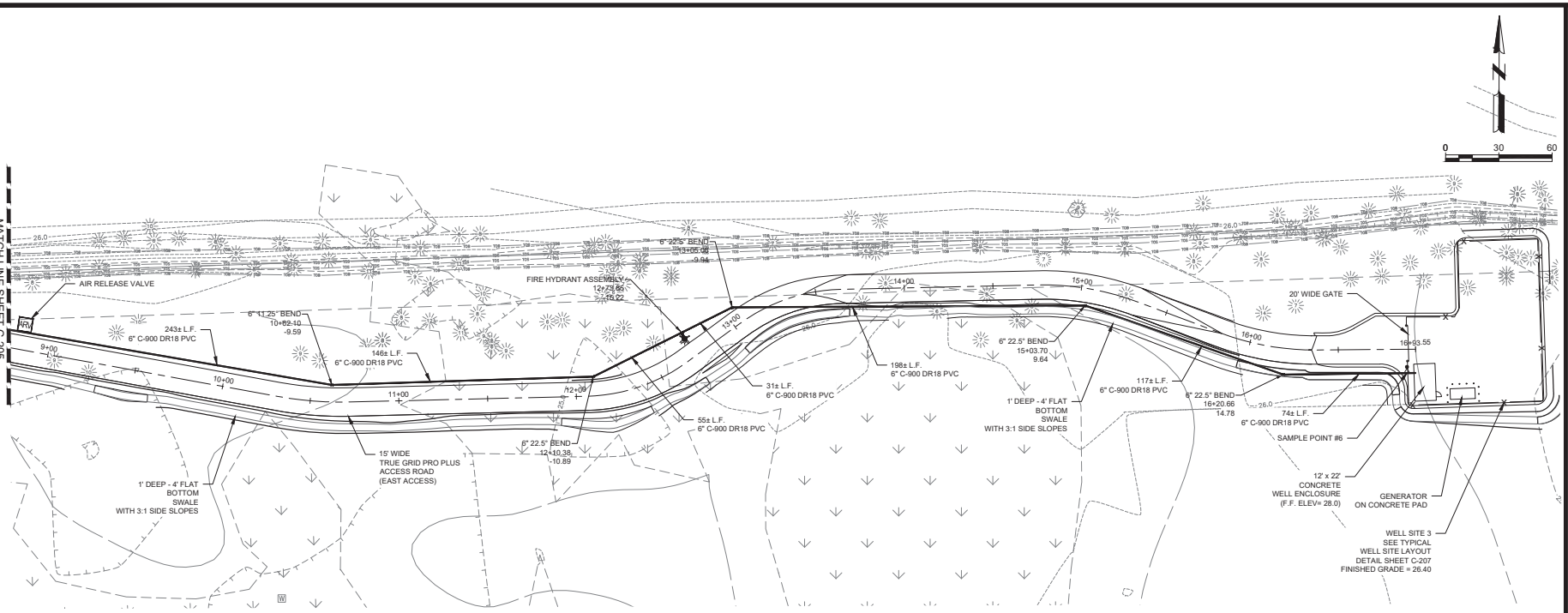
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12/15/23	PERMITTING
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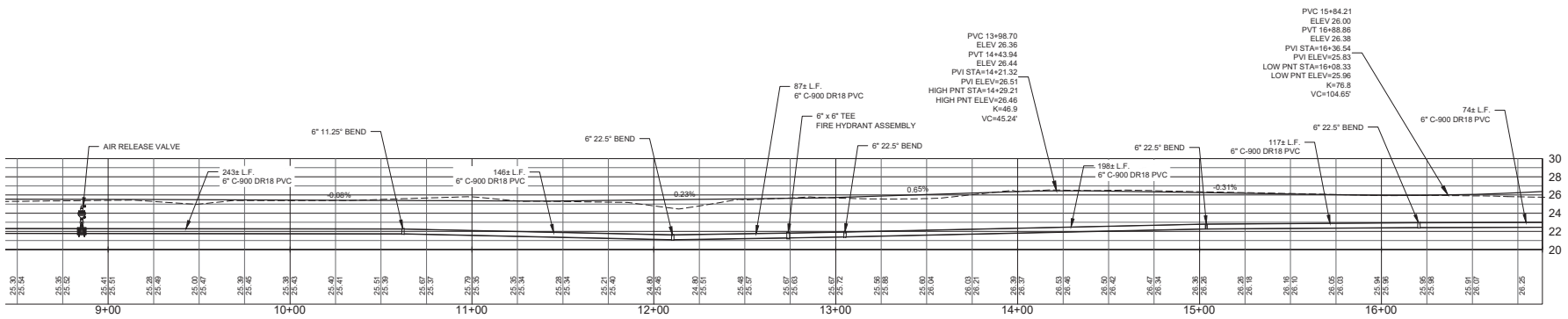
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SHEET CONTENTS
WELL SITE 2 PLAN AND PROFILE

SHEET NO.
C-205

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5/28/2024 2:27:22 PM





1 **EAST ACCESS ROAD PROFILE**
1" = 30' HORIZ, 1" = 6' VERT

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CITY OF ORMOND BEACH, FLORIDA

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CITY OF ORMOND BEACH
HUDSON WELLFIELD EXPANSION

AIRPORT ROAD
ORMOND BEACH, FL

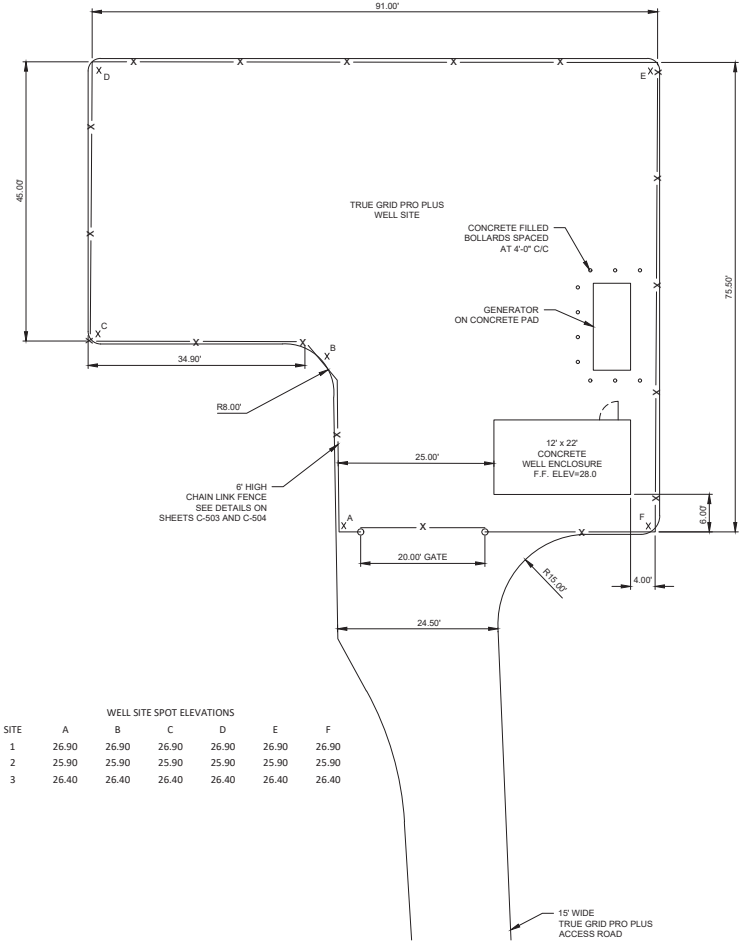
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12/15/23	PERMITTING
03/29/24	100% PLANS

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SHEET CONTENTS
WELL SITE 3 PLAN AND PROFILE

SHEET NO.
C-206

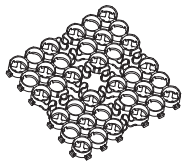
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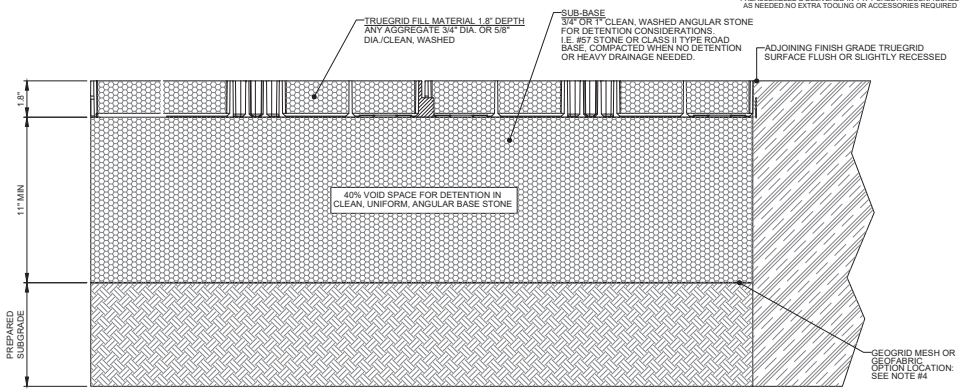
WELL SITE SPOT ELEVATIONS

SITE	A	B	C	D	E	F
1	26.90	26.90	26.90	26.90	26.90	26.90
2	25.90	25.90	25.90	25.90	25.90	25.90
3	26.40	26.40	26.40	26.40	26.40	26.40

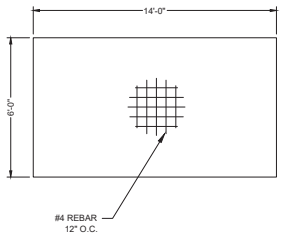
1 TYPICAL WELL SITE LAYOUT
1" = 10'

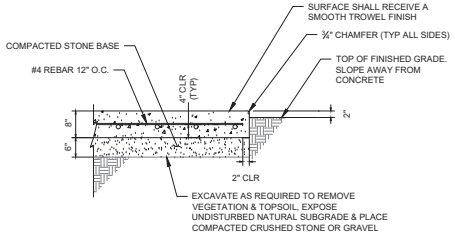


TRUEGRID BLOCK REFERENCE VIEW
PREASSEMBLED & DELIVERED IN 4' X 4' SHEET, RECONFIGURED AS NEEDED NO EXTRA TOOLING OR ACCESSORIES REQUIRED



2 TYPICAL ACCESS ROAD AND WELL SITE SECTION
NTS





CONCRETE GENERAL NOTES

1. ALL CONCRETE WORK SHALL CONFORM TO ACI 318-08, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" AND TO THE PROJECT SPECIFICATIONS.
2. ALL CONCRETE IS TO BE NORMAL DENSITY CONCRETE WITH A MAXIMUM SLUMP OF 4 INCHES. MAXIMUM AGGREGATE SIZE ¾". NO ADDITIONAL WATER SHALL BE ADDED TO THE CONCRETE AT THE JOB SITE.
3. PROVIDE AIR ENTRAINMENT OF 4 TO 6 PERCENT IN ALL EXPOSED CONCRETE WORK WITH AIR-ENTRAINING ADMIXTURE COMPLYING WITH ASTM C 260.
4. CONCRETE TO RECEIVE A TROWEL-FINISH. NO HOLES OR SLEEVES SHALL BE MADE THROUGH CONCRETE WORK OTHER THAN INDICATED ON THE PLANS.
5. ALLOWABLE CAPACITY OF CONCRETE USED IN DESIGN MIN. 4000 PSI. IN 28 DAYS. TEST REPORTS SHALL BE FURNISHED.
6. ALL FORMWORK OFFSET TOLERANCES (PER ACI 117) TO BE CLASS A.
7. FLOOR SLAB TOLERANCES TO ASTM E1155; SPECIFIED OVERALL MINIMUM VALUE OF FLATNESS FF=25 WITH LOCAL MINIMUM FF=17, AND MINIMUM VALUE OF LEVELNESS FF=20 WITH LOCAL MINIMUM F 1 AND FF WITHIN 72 HOURS OF SLAB CONSTRUCTION.

3 CONCRETE GENERATOR PAD DETAIL
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HUDSON WELLFIELD EXPANSION
AIRPORT ROAD
ORMOND BEACH, FL

ISSUED

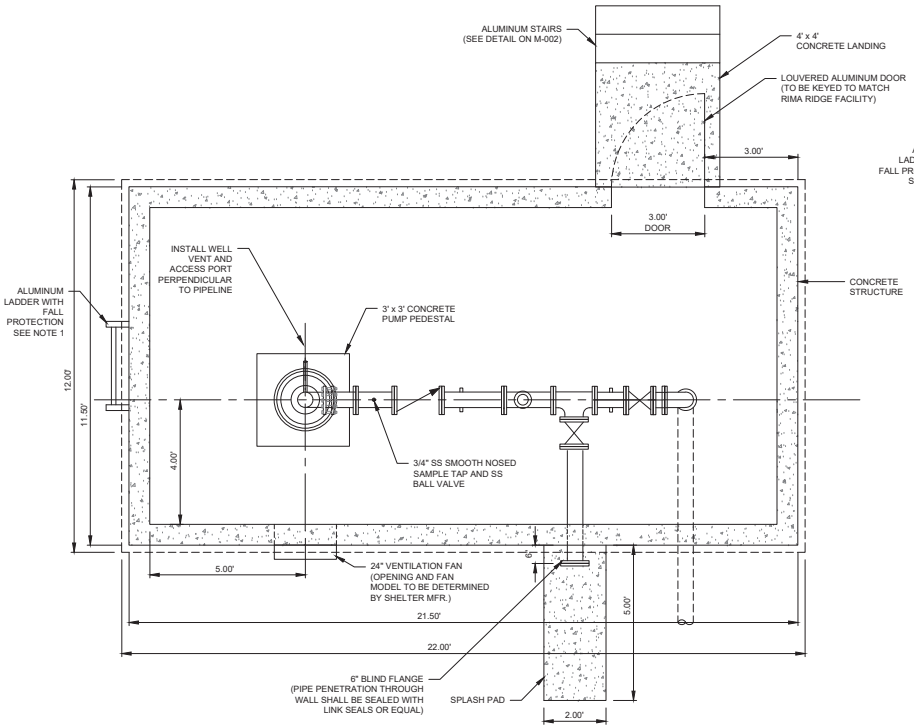
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12/15/23	PERMITTING
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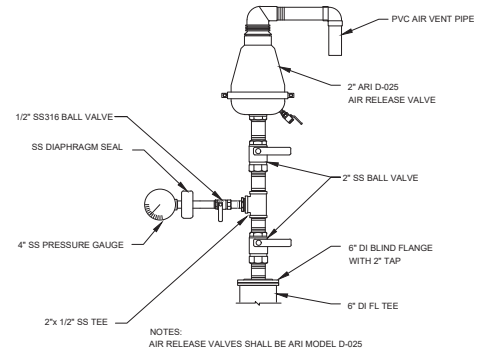
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TYPICAL SITE LAYOUT AND DETAILS

SHEET NO.
C-207

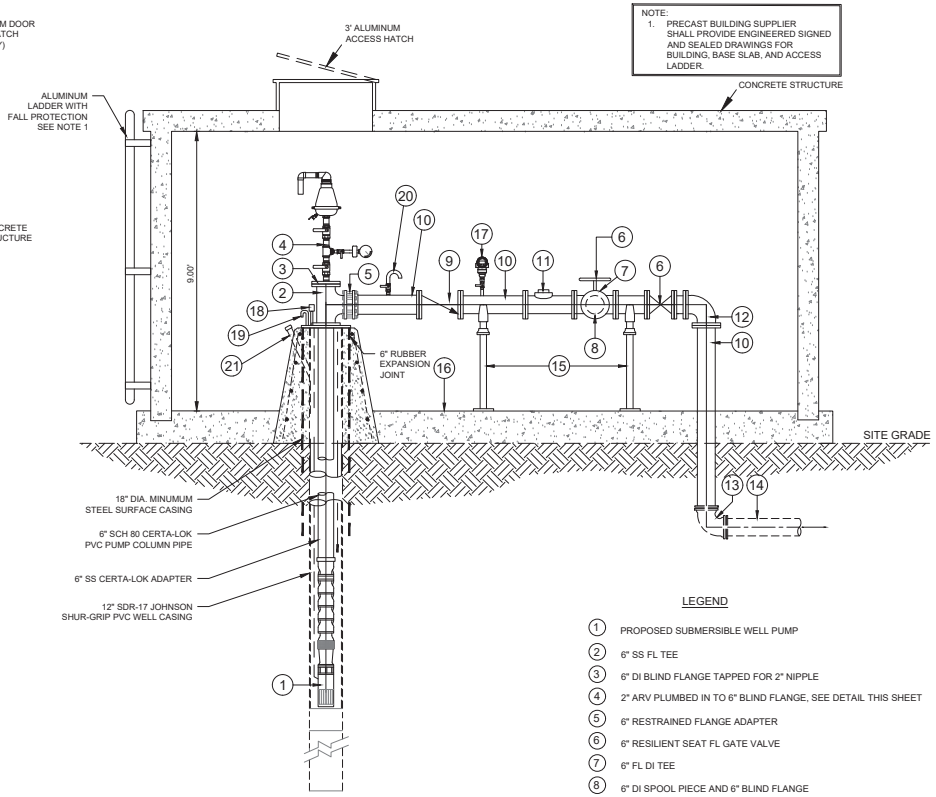
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1 **WELL OUTFITTING PLAN VIEW**
NTS



3 **ARV ASSEMBLY DETAIL**
NTS



2 **WELL OUTFITTING SECTION VIEW**
NTS

LEGEND

1. PROPOSED SUBMERSIBLE WELL PUMP
2. 6" SS FL TEE
3. 6" DI BLIND FLANGE TAPPED FOR 2" NIPPLE
4. 2" ARV PLUMBED IN TO 6" BLIND FLANGE, SEE DETAIL THIS SHEET
5. 6" RESTRAINED FLANGE ADAPTER
6. 6" RESILIENT SEAT FL GATE VALVE
7. 6" FL DI TEE
8. 6" DI SPOOL PIECE AND 6" BLIND FLANGE
9. 6" FL CHECK VALVE
10. 6" DI SPOOL PIECE
11. 6" MAG METER McCROMETER OR APPROVED EQUAL
12. 6" FL DI 90° BEND
13. 6" MJ 90° BEND
14. 6" C-900 PVC PIPING
15. PIPE SUPPORTS SEE DETAIL 2 ON C-502
16. CONCRETE SLAB
17. PRESSURE TRANSMITTER (ROSEMOUNT 2051 - NO LCD SCREEN)
18. ELECTRICAL JUNCTION BOX
19. 1" SS WELL VENT
20. 3/4" SS SMOOTH NOSED SAMPLE TAP AND SS BALL VALVE
21. 2" PVC ACCESS PORT

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CITY OF ORMOND BEACH
HUDSON WELLFIELD EXPANSION

AIRPORT ROAD
ORMOND BEACH, FL

ISSUED

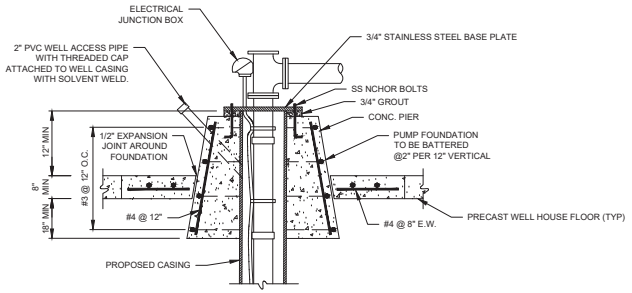
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12/15/23	PERMITTING
03/29/24	100% PLANS

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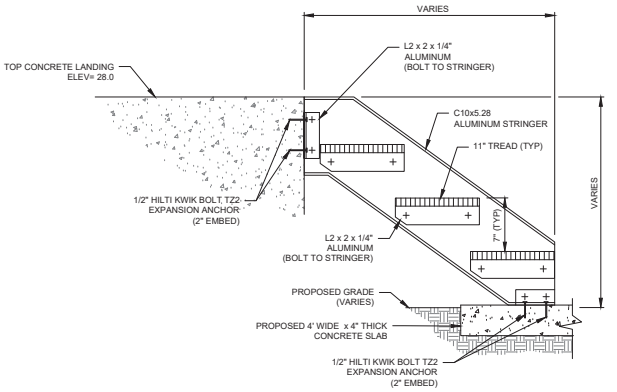
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TYPICAL WELL SITE MECHANICAL

SHEET NO.
M-001

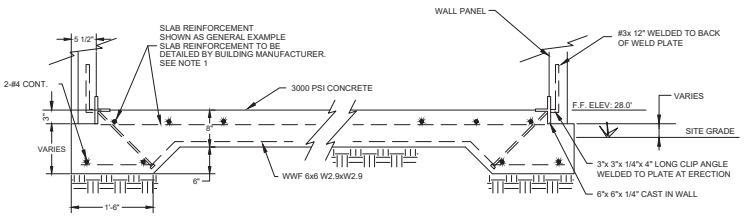
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1 **TYPICAL WELL FOUNDATION DETAIL**
NTS



2 **TYPICAL ALUMINUM STAIR DETAIL**
NTS



3 **TYPICAL SECTION THROUGH FLOOR PAD**
NTS

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HUDSON WELLFIELD EXPANSION
AIRPORT ROAD
ORMOND BEACH, FL

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SHEET CONTENTS
TYPICAL WELL SITE MECHANICAL

SHEET NO.
M-002

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GENERAL NOTES
WATER SYSTEM CONSTRUCTION

1. THE CITY'S PUBLIC UTILITIES DEPARTMENT SHALL BE NOTIFIED PRIOR TO BEGINNING ANY WATER SYSTEM CONSTRUCTION.
2. DEWATERING SHALL BE PROVIDED TO KEEP GROUNDWATER ELEVATION A MINIMUM OF 6 INCHES BELOW WATER MAIN BEING LAID.
3. ALL WATER MAINS SHALL BE LAID ON A FIRM FOUNDATION WITH ALL UNSUITABLE MATERIAL (MUCK, ROCK, COQUINA, ETC.) REMOVED AND REPLACED WITH CLEAN GRANULAR MATERIAL.
4. TRENCHES SHALL BE BACKFILLED WITH CLEAN GRANULAR MATERIAL IN MAX. 1' LIFTS WITH A MINIMUM COMPACTION OF 98 PERCENT (AASHTO-T180) IN PAVED AREAS AND 90 PERCENT IN UNPAVED AREAS.
5. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT TRENCH COMPACTION TESTS BE PROVIDED AT POINTS 1 FOOT ABOVE THE PIPE AND AT 1 FOOT VERTICAL INTERVALS TO FINISH GRADE, AT A MINIMUM SPACING OF EVERY 300 FEET, AND TO FURNISH COPIES OF TEST REPORTS PROMPTLY TO THE CITY INSPECTOR.
6. METALLIZED PIPE LOCATION TAPE SHALL BE LOCATED 18 INCHES ABOVE TOP OF PIPE OR AS SPECIFIED BY MANUFACTURER FOR ALL PVC LINES. MARKER TAPE SHALL BE USED ON ALL DUCTILE IRON PIPE.
7. WATER SERVICES (SINGLE 1") SHALL BE POLYETHYLENE TUBING (BLUE IN COLOR) ; POLYBUTYLENE SHALL NO" BE ALLOWED.
8. ALL WATER SERVICE ENDINGS SHALL BE MARKED WITH 4" X 4" LUMBER (PRESSURE TREATED) EXTENDING 4 FEET ABOVE GRADE, WITH WATER SERVICES SECURED 24" ABOVE THE GROUND. WIRE TIES SHALL BE USED TO SECURE THE CURB STOPS TO SUPPORT POSTS.
9. WATER VALVES SHALL BE PLACED AT ALL STREET INTERSECTIONS AND AT MAXIMUM SPACING OF 500 FEET.
10. AT ALL WATER MAIN TEES AND CROSSES, VALVES SHALL BE INSTALLED ON ALL LEGS EXCEPT ONE.
11. APPROVED WATER VALVE TYPES ARE THE FOLLOWING:
    A. STANDARD GATE VALVES LESS THAN 48" DIAMETER RESILIENT SEAT GATE VALVES (AWWA C-509 OR C-515).
    B. MECHANICAL TAPPING SLEEVE SHALL BE STAINLESS STEEL. (AWWA C - 509)
    C. 2" OR SMALLER VALVES SHALL BE BRASS BALL VALVES.

STANDARD CONSTRUCTION DETAIL
GENERAL NOTES
WATER SYSTEM CONSTRUCTION
INDEX W-1A
JUNE 2023

GENERAL NOTES
WATER SYSTEM CONSTRUCTION

12. ALL WATER VALVE BOXES SHALL BE ADJUSTED TO FINISH GRADE AND THE LIDS PAINTED BLUE TO MAKE THEM PLAINLY VISIBLE.
13. WATER VALVES SHALL BE COMPLETELY OPENED BY THE CONTRACTOR UPON FINAL ACCEPTANCE OF NEW WATER SYSTEMS IN THE PRESENCE OF UTILITY DEPARTMENT PERSONNEL.
14. HYDRANTS SHALL BE PLACED AT 500 FEET MAXIMUM SPACING IN RESIDENTIAL DEVELOPMENTS AND AT 300 FEET MAXIMUM SPACING IN BUSINESS AND INDUSTRIAL DEVELOPMENTS. ALL WATER MAINS TO WHICH HYDRANTS ARE CONNECTED SHALL BE 8 INCHES MINIMUM.
15. ALL FIRE HYDRANTS SHALL BE CONSTRUCTED TO MAKE THEM EASILY ACCESSIBLE TO FIRE PERSONNEL IN CASE OF FIRE. THE MAIN NOZZLE CONNECTION SHOULD ALWAYS FACE THE STREET AND BE 18-24" ABOVE GRADE.
16. AS STANDARD PRACTICE, WATER MAINS SHALL BE INSTALLED 4 FEET OFF THE BACK OF CURB OR AS APPROVED BY THE CITY.
17. ALL WATER MAINS SHALL BE NSF-APPROVED FOR POTABLE WATER USE, AND SHALL HAVE A MINIMUM COVER OF 36 INCHES. IN SPECIAL CASES WHERE IT IS IMPOSSIBLE OR INAPPROPRIATE TO PROVIDE ADEQUATE COVER, DUCTILE IRON CLASS 350 MAY BE USED AS APPROVED BY THE CITY.
18. ALL NEWLY CONSTRUCTED WATER MAINS SHALL BE FLUSHED, CLEANED WITH A POLY PIG, PRESSURE TESTED, DISINFECTED AND BACTERIOLOGICALLY CLEARED FOR SERVICE IN ACCORDANCE WITH LATEST AWWA STANDARDS AND THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION REQUIREMENTS.
19. WATER MAINS SHALL BE AWWA C-900 CL 150, OR D.I.P. CLASS 350 STANDARD CEMENT LINED AWWA C-104.
20. UPON CONSTRUCTION COMPLETION AND ACCEPTANCE OF THE SYSTEM, IT SHALL BE THE DESIGN ENGINEER'S RESPONSIBILITY TO ENSURE THAT THE SYSTEM IS PROPERLY CERTIFIED AND ACCEPTED BY THE HEALTH DEPARTMENT, AND THAT CERTIFIED AS-BUILT DRAWINGS (24"x36") ARE PROVIDED TO THE CITY PRIOR TO PAVING AND ANY USE OF THE SYSTEM. SEE M-1A & M-1B FOR AS-BUILT REQUIREMENTS
21. MEGALUG OR EQUIVALENT, RESTRAINED JOINT SYSTEM MAY BE USED ON ALL RESTRAINED FITTINGS, VALVES, ETC. MINIMUM DEPTH OF BURY ON PIPES NOT MEETING REQUIRED COVER REQUIREMENTS SHALL FOLLOW THE MOST RECENT DIPRA THRUST RESTRAINT DESIGN GUIDELINES.
22. ALL DI BENDS, TEES, VALVES, WYE FITTINGS TO HAVE CEMENT INTERIOR LINING IN ACCORDANCE WITH AWWA C-550

STANDARD CONSTRUCTION DETAIL
GENERAL NOTES
WATER SYSTEM CONSTRUCTION
INDEX W-1B
JUNE 2023

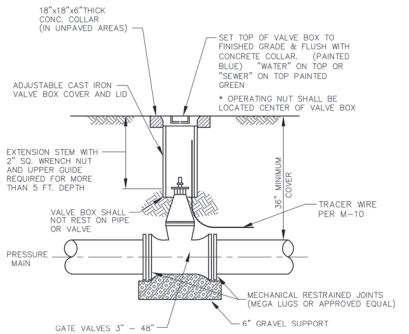
GENERAL NOTES
WATER SYSTEM CONSTRUCTION

23. WATER SYSTEMS SHALL BE PRESSURE TESTED AT 150 PSI STATIC PRESSURE FOR A PERIOD OF 2 HOURS PER AWWA STANDARDS. TESTS SHALL BE CONDUCTED BEFORE FINAL PAVING AND IN THE PRESENCE OF THE CITY'S INSPECTOR.
24. ALL WATER SERVICES SHALL BE MARKED WITH A " ^ " SAW CUT INTO THE CURB OR BY METAL TABS SET INTO THE PAVEMENT.
25. ALL WATER VALVES AND BLOW-OFFS SHALL BE MARKED WITH AN "X" SAW CUT INTO THE CURB OR BY METAL TABS SET INTO THE PAVEMENT. LOCATION OF METAL TABS IN INCHES FROM EDGE OF PAVEMENT SHALL EQUAL DISTANCE IN FEET FROM EDGE OF PAVEMENT TO VALVE.
26. UNIFLANGE 1300 SERIES PIPE RESTRAINTS AS MANUFACTURED BY FORD OR APPROVED EQUAL MAY BE USED AS APPROPRIATE FOR RESTRAINING IN-LINE PRESSURE PIPE EACH SIDE OF PIPE JOINT. AS REQUIRED BY RESTRAINT TABLE.
27. TRACING WIRE SHALL BE INSTALLED IN ACCORDANCE WITH UTILITY PIPE LOCATION MATERIALS DETAIL.
28. NO GALVANIZED PIPE, FITTINGS, ETC. ARE ACCEPTED.
29. ALL WATER METERS SHALL BE INSTALLED AT THE RIGHT OF WAY LINE ONLY REGARDLESS OF SIZE.
30. SUBMIT ASSEMBLY CERTIFICATION FOR ALL BACKFLOW PREVENTERS TO THE CITY'S ENGINEERING & PLANNING DEPARTMENT BEFORE FINAL INSPECTION AT COMDEV@ORMONDBEACH.ORG.
31. PIPING FOR RAW WATER SHALL BE WHITE FOR ABOVE GROUND PIPING, BURIED PVC PIPING SHALL BE WHITE WITH LOCATOR TAPE PLACED DIRECTLY ON TOP OF THE PIPE AND AT 12" TO 18" ABOVE THE PIPE. THE TAPE SHALL CONTINUOUSLY READ "CAUTION - RAW WATER MAIN BURIED BELOW" OR WHITE WITH LOCATOR TAPE PLACED 12" TO 18" ABOVE THE TOP OF THE PIPE.
32. SEE CHART BELOW FOR WATER MAIN SIZE AND MATERIALS.

MATERIALS		
DIAMETER	MATERIAL	STANDARD
1" - 2"	BLUE ENDOT ENDTRACE POLYETHYLENE TUBING (CTS SIDR)	ASTM D 2737
4" - 12"	PVC DR-18	AWWA C 900
> 4" - 12" SIDCUTED FIRE LINE	PVC DR-14	AWWA C 900
14" - 36" (16"- 24" DR - 18) (30"- 36" DR - 21)	PVC 1121	AWWA C 905
ALL SIZES	HDPE DIPS 3R 11	ASTM F 714

NOTE: PVC PIPE COLOR SHALL BE BLUE FOR POTABLE WATER MAINS. BLUE WITH WHITE LOCATOR TAE OR WHITE WHITE LOCATOR TAPE FOR RAW WATER MAIN.

STANDARD CONSTRUCTION DETAIL
GENERAL NOTES
WATER SYSTEM CONSTRUCTION
INDEX W-1C
JUNE 2023



GATE VALVES 3" - 48" SHALL BE RESILIENT SEAT WEDGE VALVE (AWWA C-509 OR C-515). AS MANUFACTURED BY AMERICAN FLOW CONTROL, CLOW, M&H, KENNEDY, OR MUELLER. VALVES LESS THAN 3" SHALL BE BRASS CONFORMING TO FED. SPEC. WW-V-54. BRASS ¼ TURN (OPEN LEFT) BALL VALVES.

NOTE: USE RESTRAINED JOINT WHERE APPLICABLE.

QUARTER TURN BALL VALVE - FORD #B11-777-NL BALL VALVE FXF

GATE VALVES SHALL BE OPEN LEFT (C.C.W.)

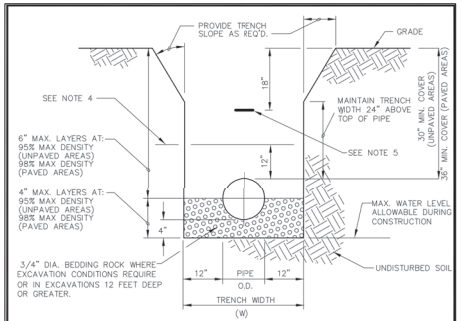
STANDARD CONSTRUCTION DETAIL
GATE VALVE AND VALVE BOX
NTS.
INDEX W-2
JUNE 2023

OTHER PIPE	HORIZONTAL SEPARATION	CROSSINGS (1)	JOINT SPACING @ CROSSINGS (FULL JOINT CENTERED)
STORM SEWER, STORM WATER FORCE MAIN, RECLAIMED WATER (2)	3 FT. MINIMUM	12 INCHES IS THE MINIMUM, EXCEPT FOR STORM SEWER, MINIMUM AND 12 INCHES PREFERRED.	ALTERNATE 3 FT. MINIMUM
VACUUM SANITARY SEWER	10 FT. PREFERRED 3 FT. MINIMUM	12 INCHES PREFERRED 6 INCHES MINIMUM	ALTERNATE 3 FT. MINIMUM
GRAVITY OR PRESSURE SANITARY SEWER, SANITARY FORCE MAIN, RECLAIMED WATER (4)	10 FT. PREFERRED 6 FT. MINIMUM (3)	12 INCHES IS THE MINIMUM, EXCEPT FOR GRAVITY SEWER, THEN 6 INCHES IS THE MINIMUM AND 12 INCHES PREFERRED	ALTERNATE 6 FT. MINIMUM
ON-SITE SEWAGE TREATMENT & DISPOSAL SYSTEM	10 FT. MINIMUM	—	—

(1) WATER MAIN SHOULD CROSS ABOVE OTHER PIPE. WHEN WATER MAIN MUST BE BELOW OTHER PIPE, THE MINIMUM SEPARATION IS 18 INCHES.
(2) RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.
(3) 3 FT. FOR GRAVITY SEWER WHERE BOTTOM OF THE WATER MAIN IS LAID AT LEAST 6 INCHES ABOVE THE TOP OF THE GRAVITY SANITARY SEWER.
(4) RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

DISCLAIMER - THIS DOCUMENT WAS PROVIDED FOR YOUR CONVENIENCE ONLY. PLEASE REFER TO F.A.C. RULE 62-555.314 FOR ADDITIONAL CONSTRUCTION REQUIREMENTS

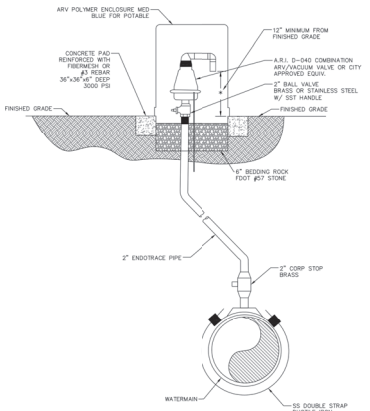
STANDARD CONSTRUCTION DETAIL
WATER MAIN SEPARATION
NTS
INDEX W-9A
JUNE 2023



PIPE INSTALLATION DETAIL

NOTES:
1. WHERE SOIL CONDITIONS CAN NOT BE MAINTAINED AS SHOWN ABOVE, PROVIDE APPROVED METHOD OF CONSTRUCTION.
2. SHEETING WILL BE REQUIRED AS DETERMINED IN THE FIELD.
3. COMPACTION PERCENTAGES SHOWN REFER TO A.A.S.H.T.O. T-180. PROVIDE COPIES OF CERTIFIED TEST REPORTS TO CITY INSPECTOR.
4. MECHANICAL COMPACTION NOT ALLOWED BELOW THIS LEVEL.
5. INSTALL METALLIC TAPE OVER FULL LENGTH OF PIPE.

STANDARD CONSTRUCTION DETAIL
PIPE INSTALLATION
NTS
INDEX M-9
MAY 2020



STANDARD CONSTRUCTION DETAIL
AUTOMATIC AIR RELEASE VALVE (WATER MAIN)
NTS
INDEX W-10B
JUNE 2023

Mead & Hunt
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HUDSON WELLFIELD EXPANSION
AIRPORT ROAD
ORMOND BEACH, FL

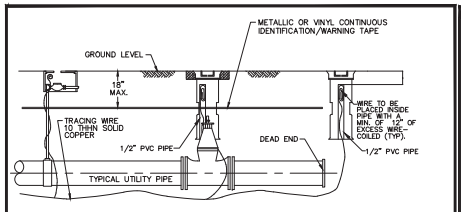
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11/27/23 90% PLANS
12/15/23 PERMITTING
03/29/24 100% PLANS

M&H NO.: 1000714-212249.01
DATE: MAY 2024
DESIGNED BY: JCK
DRAWN BY: WKM
CHECKED BY: RRF
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SHEET CONTENTS
STANDARD DETAILS

SHEET NO.
C-501

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5/28/2024 2:27:52 PM 1445wern



ALL PVC PIPE, OR OTHER CITY APPROVED NONMETALLIC PIPE INSTALLED WITHIN THE CITY'S WATER, SANITARY SEWER, OR RECLAIMED WATER SYSTEMS, SHALL BE INSTALLED WITH 10 THHN SOLID COPPER TRACING WIRE. IF PIPE IS INSTALLED BY DIRECTIONAL BORE, USE (2) 10 THHN SOLID COPPER TRACING WIRE.

THE TRACING WIRE MUST BE INSTALLED DIRECTLY BELOW THE PIPE AND BROUGHT TO THE SURFACE AT 500' MINIMUM INTERVALS. WIRE SHALL EXTEND A MINIMUM OF 12" ABOVE GRADE AT EACH INTERVAL AND BE COILED AND PLACED IN A VALVE BOX, METER BOX, MANHOLE, CLEANOUT OR OTHER APPLICABLE STRUCTURE.

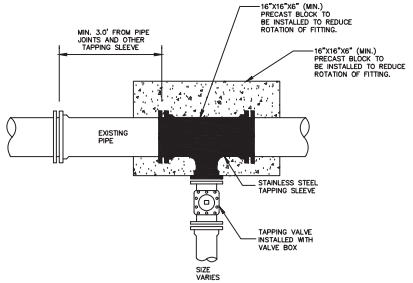
TRACING WIRE BETWEEN INTERVALS SHALL BE INSTALLED SO AS TO PROVIDE CONTINUOUS CURRENT WHEN LINE LOCATION EQUIPMENT IS CONNECTED TO THE TRACING WIRE. WIRE BRANCHING FROM MAIN LINES SHALL BE LINKED BY A CITY APPROVED CONNECTOR SUCH AS KING # 2011 SAFETY SEALED CONNECTORS OR APPROVED EQUAL.

COLOR CODING:

POTABLE WATER SYSTEM:	BLUE
RECLAIMED WATER SYSTEM:	LAVENDER
SANITARY SEWER FORCE MAIN SYSTEM:	GREEN
RAW WATER MAIN SYSTEM:	WHITE

1. POTABLE WATER AND RECLAIMED WATER SYSTEMS: WIRE SHALL BE INSTALLED BELOW ALL MAINS AND SERVICE LINES AND ATTACHED TO VALVES, HYDRANTS AND FITTINGS. WIRE INSTALLED WITH SERVICE LINES SHALL CONNECT TO THE WIRE INSTALLED BELOW THE MAIN AND EXTEND TO THE CURB STOP.
2. FIRE SPRINKLER LINES: WIRE SHALL CONNECT TO THE WIRE INSTALLED BELOW THE MAIN AND EXTEND TO THE RISER CONNECTION.
3. SANITARY SEWER FORCE MAINS: WIRE SHALL BE INSTALLED BELOW THE FORCE MAIN AND ATTACHED TO ALL VALVES AND FITTINGS AND BROUGHT TO THE SURFACE AND PLACED IN A METAL, CITY APPROVED, VALVE BOX.
4. DEAD END MAINS: WIRE SHALL BE PLACED IN A PROPERLY IDENTIFIED METAL VALVE BOX AT THE END OF THE RUN.
5. WIRE SHALL NOT BE FASTENED OR COILED TO VALVE OPERATING NUT.

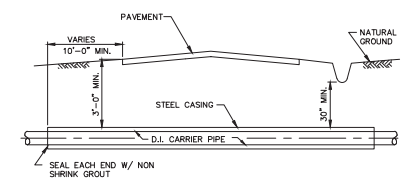
STANDARD CONSTRUCTION DETAIL	INDEX
UTILITY PIPE LOCATION MATERIALS NTS	M–10 MAY 2020



NOTES:

1. STAINLESS STEEL SLEEVES ONLY WITH 316 STAINLESS STEEL BOLTS ARE PERMITTED FOR ALL TYPES OF PIPE MATERIALS.
2. INSTALL REQUIRED RESTRAINED JOINTS. IN NO INSTANCE SHALL THRUST BLOCK BE PERMITTED.
3. ALL TAPPING OF MAINS SHALL BE PERFORMED BY THE CONTRACTOR UNDER SUPERVISION OF A CITY REPRESENTATIVE. ALL MATERIALS TO BE PROVIDED BY DEVELOPER / CONTRACTOR
4. ALL VALVES 3" OR LARGER SHALL BE GATE VALVES WITH 2" OPERATING NUTS. ALL VALVES 2" AND SMALLER SHOULD BE 1/4 TURN OPEN LEFT BRASS BALL VALVES. (FORD PART B61–777W–NI)
5. PRESSURE TEST SHALL BE PERFORMED ON TAPPING VALVE AND SLEEVE.

STANDARD CONSTRUCTION DETAIL	INDEX
TAPPING VALVE AND SLEEVE NTS	W–17 JUNE 2023



NOTE: BORING & JACKING TO BE IN ACCORDANCE W/ FDOT SPECS.

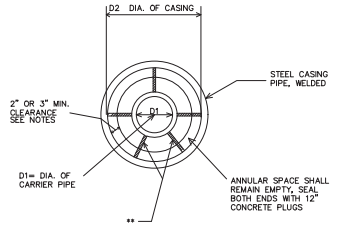
NOTES

1. MINIMUM COVER FOR TOP OF CASING ON ALL CITY STREETS SHALL BE 3.0'
2. ROTATION OF CARRIER PIPE INSIDE THE CASING PIPE WILL NOT BE PERMITTED. RESTRAINED MECHANICAL OR FLANGED JOINT PIPE SHALL BE USED TO HELP PREVENT SUCH ROTATION.
3. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF CASING AND CARRIER PIPE INSTALLATION FOR APPROVAL PRIOR TO FABRICATION OF PIPING, CASING, AND APPURTENANCES. CERTIFICATION OF CASING PIPE IS REQUIRED.
4. GROUTING OF SPACE BETWEEN CASING AND CARRIER PIPE NOT REQUIRED UNLESS NEGATIVE FLOTATION EXISTS.
5. WELDING OF CASING PIPE TO BE DONE BY CERTIFIED WELDER. ALL ENDS OF CASING PIPE SHALL BE CHAMFERED PRIOR TO ANY WELDING.
6. SEAL END OF CASING PIPE WITH CONCRETE.
7. CITY INSPECTOR SHALL BE PRESENT THROUGHOUT ALL BORE AND JACK ACTIVITIES.

NOTE TO ENGINEER

CROSSING DETAIL SHALL BE TO SIZE AND SCALE. SHOW ALL EXISTING UTILITIES, CLEARANCES, CARRIER AND CASING SIZE AND LENGTH, LOCATION OF PAVED ROAD, LIMITS OF RIGHT OF WAY, EXISTING AND PROPOSED SPOT ELEVATIONS AND PROPOSED PIPE INVERT ELEVATIONS.

STANDARD CONSTRUCTION DETAIL	INDEX
BORE AND JACK NTS	M–8A MAY 2020



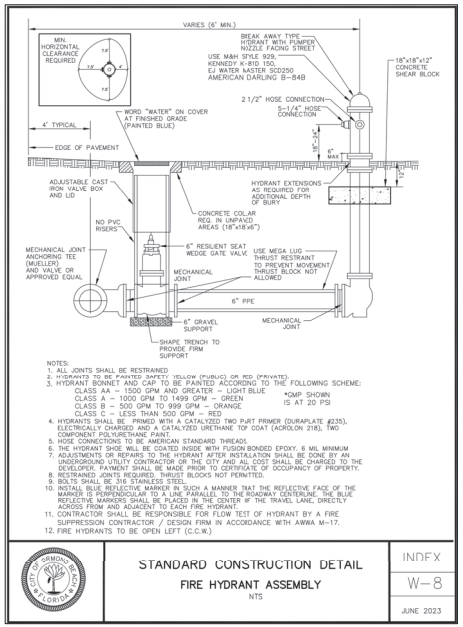
1. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF CASING INSTALLATION TO ENGINEER FOR REVIEW PRIOR TO INSTALLATION
2. SEAL BOTH ENDS OF CASING W/ 12" GROUT (MINIMUM)
3. ROTATION OF CARRIER PIPE INSIDE THE CASING WILL NOT BE PERMITTED
4. THE CARRIER PIPE MUST BE IN THE CENTERED AND RESTRAINED POSITION WITHIN THE CASING.

CARRIER PIPE AND CASING PIPE SIZES (MIN.)														
CARRIER PIPE NOM. DIA. (D1)	4	6	8	10	12	14	16	18	20	24	30	36	42	48
CASING PIPE NOM. DIA. (D2)	14	16	18	22	24	30	30	30	36	36	48	54	60	66
WALL THICKNESS–INCHES *	PER AUTHORITY HAVING JURISDICTION													

* WITHIN CITY OF ORMOND BEACH RIGHT OF WAY, USE CURRENT FDOT STANDARDS.

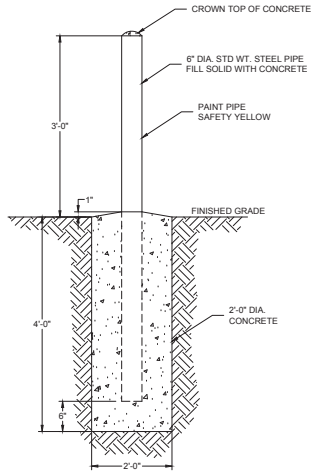
** SPECIALLY DESIGNED SPACERS SHALL BE USED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. USE CASCADE CASING SPACERS OR PRE–APPROVED EQUAL.

STANDARD CONSTRUCTION DETAIL	INDEX
BORE AND JACK NTS	M–8B MAY 2020

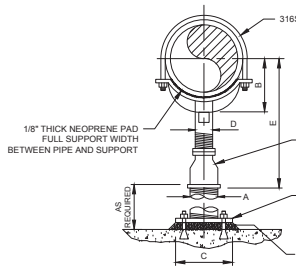


NOTES:
1. ALL JOINTS SHALL BE RESTRAINED
2. HYDRANTS TO BE PAINTED SAFETY YELLOW (PUBLIC) OR RED (PRIVATE)
3. HYDRANT BONNET AND CAP TO BE PAINTED ACCORDING TO THE FOLLOWING SCHEME:
   CLASS AA – 1500 GPM AND GREATER – LIGHT BLUE
   CLASS A – 1000 GPM TO 1499 GPM – GREEN
   CLASS B – 500 GPM TO 999 GPM – ORANGE
   CLASS C – LESS THAN 500 GPM – RED
   *OMP SHOWN IS AT 20 PSI
4. HYDRANTS SHALL BE PRIMED WITH A CATALYZED TWO PART PRIMER (DURAPLATE #235), ELECTRICALLY CHARGED AND A CATALYZED URETHANE TOP COAT (ACROLON 218), TWO COMPONENT POLYURETHANE PAINT.
5. HOSE CONNECTIONS TO BE AMERICAN STANDARD THREADS.
6. THE HYDRANT SHOE WILL BE COATED INSIDE WITH FUSION BONDED EPOXY, 6 MIL MINIMUM
7. ADJUSTMENTS OR REPAIRS TO THE HYDRANT AFTER INSTALLATION SHALL BE DONE BY AN UNDERGROUND UTILITY CONTRACTOR OR THE CITY AND ALL COST SHALL BE CHARGED TO THE DEVELOPER. PAYMENT SHALL BE MADE PRIOR TO CERTIFICATE OF OCCUPANCY OF PROPERTY.
8. RESTRAINED JOINTS REQUIRED. THRUST BLOCKS NOT PERMITTED.
9. BOLTS SHALL BE 316 STAINLESS STEEL.
10. INSTALL BLUE REFLECTIVE MARKER IN SUCH A MANNER THAT THE REFLECTIVE FACE OF THE MARKER IS PERPENDICULAR TO A LINE PARALLEL TO THE ROADWAY CENTERLINE. THE BLUE REFLECTIVE MARKERS SHALL BE PLACED IN THE CENTER 8' THE TRAVEL LANE, DIRECTLY ACROSS FROM AND ADJACENT TO EACH FIRE HYDRANT.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR FLOW TEST OF HYDRANT BY A FIRE SUPPRESSION CONTRACTOR / DESIGN FIRM IN ACCORDANCE WITH AWWA M–17.
12. FIRE HYDRANTS TO BE OPEN LEFT (C.C.W.)

STANDARD CONSTRUCTION DETAIL	INDEX
FIRE HYDRANT ASSEMBLY NTS	W–8 JUNE 2023



1 **TYPICAL BOLLARD DETAIL**
NTS



NOTES:
1. PROVIDE HALF ROUND RIGID INSULATION & INSULATION PROTECTION SHIELD, SIMILAR TO GRINNELL FIG.167 OR ELCEN FIG.219 WHEN PIPING IS INSULATED.
2. FOR BASE, HEIGHT, & FLANGE DIMENSIONS, SEE TABLE TO RIGHT. ALL DIMENSIONS IN INCHES.

PIPE SIZE	A	B	C	D	E	
					MIN.	MAX.
2-1/2	2-1/2	3-1/2	9	1-1/2	8	13
3	2-1/2	3-3/4	9	1-1/2	8-1/4	13-1/4
3-1/2	2-1/2	4	9	1-1/2	8-1/2	13-1/2
4	3	4-1/4	9	2-1/2	9-1/4	14
5	3	4-7/8	9	2-1/2	10	14-3/4
6	3	5-1/2	9	2-1/2	10-1/2	15-1/4
8	3	6-7/8	9	2-1/2	11-3/4	16-1/2
10	3	8-1/2	9	2-1/2	13-1/2	18-1/4
12	3	9-15/16	9	2-1/2	15	19-3/4
14	4	10-15/16	11	3	16-1/4	20-3/4
16	4	12-3/8	11	3	17-3/4	22-1/4
18	6	13-7/8	13-1/2	3-1/2	19-1/2	24
20	6	15-3/8	13-1/2	3-1/2	21	25-1/2
24	6	17-15/16	13-1/2	4	23-3/4	28-1/4

2 **PIPE SUPPORT DETAIL**
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AIRPORT ROAD
ORMOND BEACH, FL

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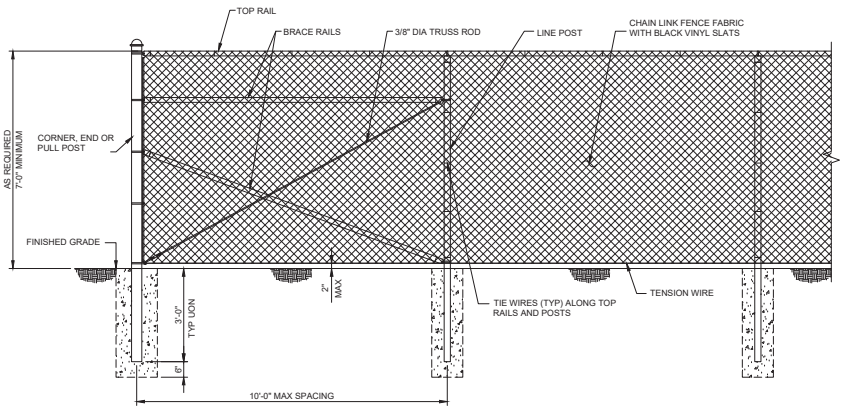
11/27/23	90% PLANS
12/15/23	PERMITTING
03/29/24	100% PLANS

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STANDARD DETAILS

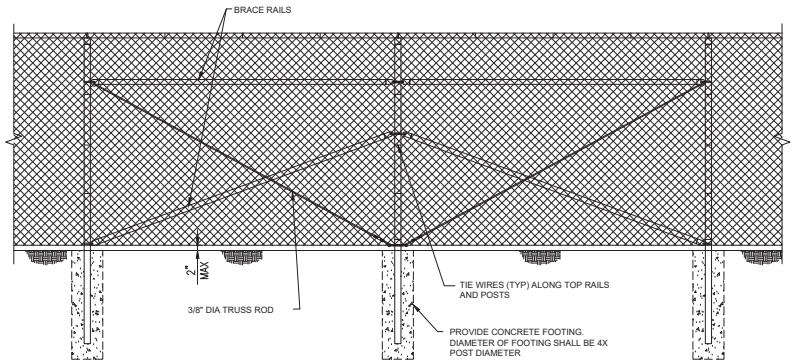
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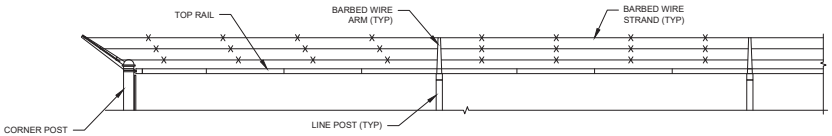
1 TYPICAL FENCE AND CORNER PANEL ELEVATION

1" = 1'-0"



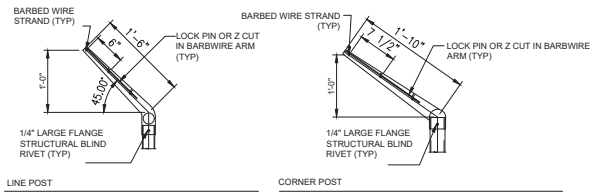
2 TYPICAL FENCE AND BRACED PANEL ELEVATION

1" = 1'-0"



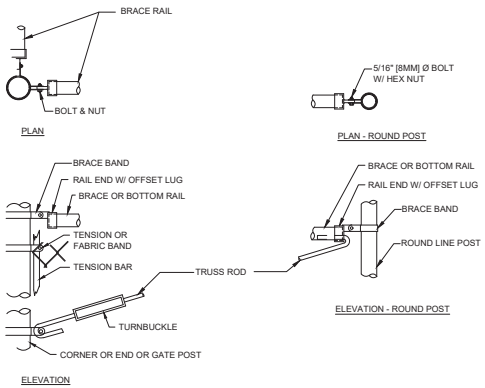
3 TYPICAL 3 STRAND BARBED WIRE AND SINGLE EXTENSION ARM CONFIGURATION

1" = 1'-0"



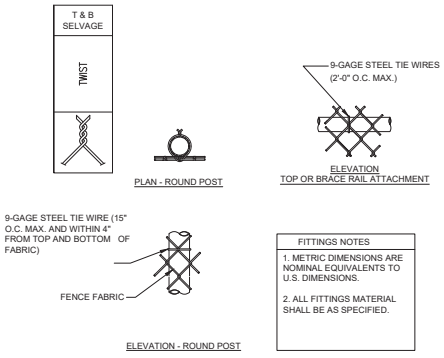
4 SINGLE EXTENSION ARM DETAILS

NOT TO SCALE



5 CORNER OR END POST DETAILS

1 1/2" = 1'-0"

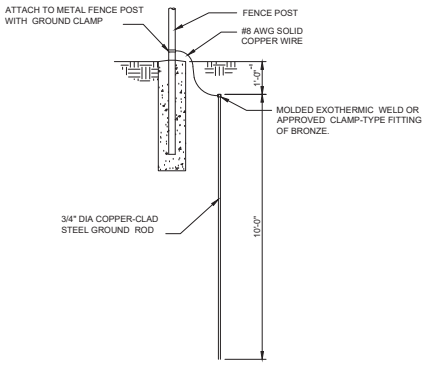


FITTINGS NOTES

1. METRIC DIMENSIONS ARE NOMINAL EQUIVALENTS TO U.S. DIMENSIONS.
2. ALL FITTINGS MATERIAL SHALL BE AS SPECIFIED.

6 LINE POST DETAILS

1 1/2" = 1'-0"



7 GROUNDING DETAIL

NOT TO SCALE

Mead & Hunt

Mead and Hunt, Inc.
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Port Orange, FL 32127
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CITY OF ORMOND BEACH, FLORIDA

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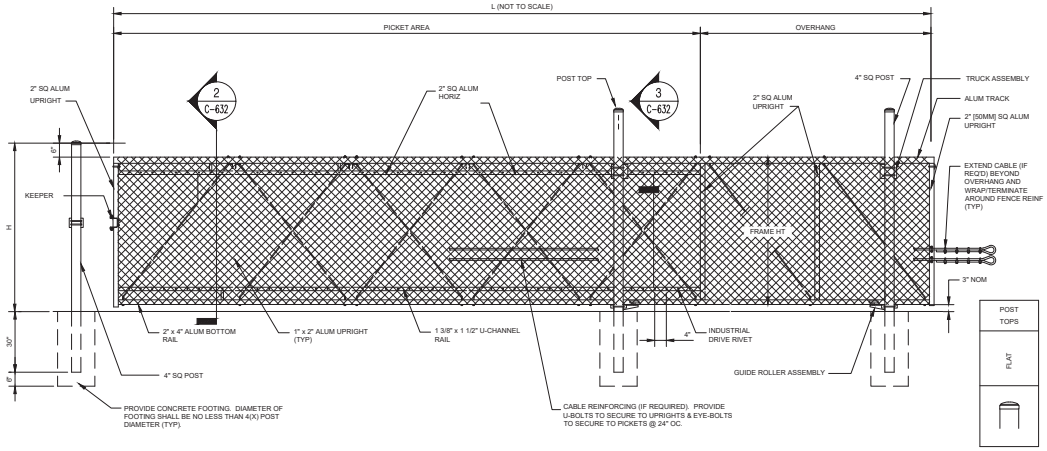
SHEET CONTENTS
STANDARD DETAILS

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C-503

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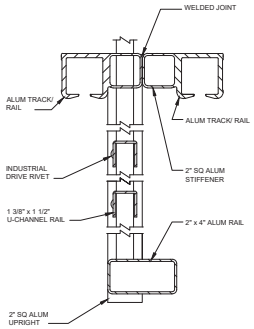


PLAN

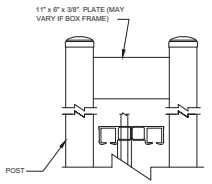


ELEVATION

1 **TYPICAL SINGLE CANTILEVERED GATE DETAIL**
NO SCALE



2 **SECTION**
NO SCALE



3 **SECTION**
NO SCALE

REINFORCING NOTES

1. REINFORCING CABLES SHALL BE U.S. DOMESTIC MINIMUM 3/4" Ø 6x19 CLASS WIRE ROPE, REGULAR LAY, EXTRA IMPROVED PLOW STEEL (EIP), INDEPENDENT WIRE ROPE CORE (IWRC), CONFORMING TO ASTM A1023 AND GALVANIZED IN ACCORDANCE WITH ASTM A475 CLASS A, & HAVE A MINIMUM BREAKING STRENGTH OF 40,000 POUNDS (20 TONS). CABLES WITH A BLACK VINYL COATING, SHALL NOT BE IMPREGNATED.
2. CABLES SHALL BE CONTINUOUS FROM DEADMAN TO DEADMAN. NO SPLICES IN CABLE SHALL BE ALLOWED. CABLE BARRIER SHALL BE INSTALLED BETWEEN FENCE POST AND FENCE FABRIC AS PER PLANS. U-BOLTS SHALL BE INSTALLED PERPENDICULAR TO THE LAY OF THE STRANDS OF THE WIRE ROPE AND SHALL BE TIGHTENED AFTER SAG IN CABLE BARRIER HAS BEEN REMOVED. UNLESS INDICATED OTHERWISE, CONCRETE DEADMAN SPACING SHALL BE AT MAXIMUM 200' INTERVALS & TURNING POINTS (EXTERNAL CORNERS).
3. WIRE ROPE ENDS SHALL TERMINATE AROUND TURNBUCKLES, GATE POSTS OR EXTRA HEAVY-DUTY WIRE ROPE THIMBLES (AT GATES). THESE TERMINATIONS REQUIRE 18" MINIMUM OF ROPE FOR TURN BACK AND A MINIMUM OF (4)- CLIPS EACH (EQUAL SPACING).
4. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO ORDERING MATERIALS.
5. DEADMEN SHALL BE INSTALLED ON THE SECURED SIDE (INTERIOR) OF THE FENCE; WHILE CABLES SHALL BE INSTALLED ON THE EXTERIOR SIDE OF POST.
6. PROVIDE NECESSARY SLACK IN CABLES (GATES ONLY) TO ALLOW FOR FULL SWING OF ALL GATE LEAVES, LOCK PIN REQUIRED ON EXTENSION ARMS.
7. OFFSET DEADMAN SYSTEMS FROM FENCELINE (PLAN VIEW) TO AVOID CONFLICT WITH EXISTING FENCE POSTS.
8. ALLOW EPOXY ANCHOR BOLTS (MIN 2 DAYS) & CONCRETE DEADMEN (MIN 7 DAYS) TO CURE, PRIOR TO APPLYING LOADS (INSTALLING TURNBUCKLES & STRAIGHTENING CABLES).
9. ALL WELDING SHALL BE DONE IN ACCORDANCE WITH AWS D1.1. ALL WELD MATERIAL SHALL BE E70XX ELECTRODES.
10. STRUCTURAL STEEL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NINTH EDITION OF THE AISC "MANUAL OF STEEL CONSTRUCTION FOR ALLOWABLE STRESS DESIGN.
11. STRUCTURAL STEEL SHALL CONFORM TO ASTM A36 AND SHALL HAVE A MINIMUM YIELD STRESS OF 36,000 PSI.
12. ALL STRUCTURAL STEEL MEMBERS AND HARDWARE USED IN CABLE ANCHORING SYSTEM SHALL BE HOT-DIPPED GALVANIZED. ANY AREAS WHERE COATING IS DAMAGED OR REMOVED SHALL BE COVERED WITH A ZINC RICH COMPOUND.
13. TURNBUCKLES SHALL BE 1⅛"x18", TYPE I, GALVANIZED IN ACCORDANCE WITH ASTM F1145.
14. WIRE ROPE CLAMPS SHALL BE TYPE I, GALVANIZED, AND CONFORM TO FS FF-C-450.
15. ALL THREADED RODS, U-BOLTS, AND BOLTS SHALL CONFORM TO ASTM A307 AND SHALL BE INSTALLED WITH F844 WASHERS AND A563 NUTS. ENTIRE BOLT ASSEMBLY SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
16. ZINC RICH COMPOUND FOR REPAIRS SHALL BE 95% METALLIC ZINC, BY WEIGHT IN DRIED FILM; INSTALL AT LEAST TWO COATS, 4 MILS MIN TOTAL THICKNESS.
17. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ACI 318. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI. THE MINIMUM CONCRETE COVER SHALL BE 3", UNLESS OTHERWISE NOTED.
18. AT CABLE REINFORCING GATES, PROVIDE TWIST-OFF METAL TIES TO SECURE CABLE TO GATE FABRIC @ 24" OC & U-BOLTS TO SECURE TO GATE UPRIGHTS. MODIFY AS NEEDED TO FACILITATE OPERATION OF GATE.
19. FOR CABLE REINFORCING SWINGING GATES, PROVIDE EYEBOLTS TO SECURE CABLE TO GATE PICKETS @ 24" OC & U-BOLTS TO SECURE TO GATE UPRIGHTS. MODIFY AS NEEDED FOR OPERATION.

CHAIN LINK FENCING NOTES

1. FABRIC: THE STANDARD FENCE FABRIC SHALL BE VINYL, ZINC OR ALUMINUM-COATED STEEL WIRE CHAIN LINK WITH BLACK VINYL SLATS. THE CHAIN LINK MESH OPENINGS SHALL NOT BE LARGER THAN TWO INCHES PER SIDE AND A TWISTED AND BARBED SELVAGE AT TOP AND BOTTOM IN ACCORDANCE WITH THE SPECIFICATIONS.
2. FABRIC TIES: ONLY 12-GAUGE STEEL TIES SHALL BE USED. COATING OR PLATING WILL BE ELECTROLYTICALLY COMPATIBLE WITH THE FENCE FABRIC TO INHIBIT CORROSION.
3. REINFORCEMENT: TENSION WIRES SHALL BE INSTALLED AND INTERWOVEN (OR AFFIXED WITH FABRIC TIES) ALONG THE TOP & BOTTOM OF THE FENCE FOR STABILIZATION OF THE FENCE FABRIC.
4. FENCE HEIGHT: CHAIN LINK FABRIC SHALL BE 7' HIGH WITH AN ADDITIONAL 1' IN HEIGHT COMPOSED OF 3 STRANDS OF BARBED WIRE AS REQUIRED. THE TOTAL FENCE HEIGHT SHALL BE 8'.
5. GROUND CLEARANCE: BOTTOM OF THE FENCE FABRIC SHALL BE WITHIN TWO INCHES OF FIRM SOIL.
6. TOP GUARDS: A TOP GUARD IS AN OVERHANG OF BARBED WIRED ALONG THE TOP OF A FENCE, FACING OUTWARD (AWAY FROM PROTECTED SITE) AND UPWARD AT APPROX. 45 ANGLE. TOP GUARD SUPPORTING ARMS WILL BE PERMANENTLY AFFIXED TO THE TOP OF FENCE POSTS TO INCREASE THE OVERALL HEIGHT OF THE FENCE AT LEAST 1 FOOT. THREE STRANDS OF 12-GAUGE BARBED WIRE, EQUALLY SPACED, SHALL BE INSTALLED ON THE SUPPORTING ARMS. LOCKING PINS ARE REQUIRED ON EXTENSION ARMS.
7. FENCE POSTS: SHALL BE ASTM F1043 OR F1083 ROUND PIPE AND SHALL BE GALVANIZED IN ACCORDANCE WITH THE SPECIFICATIONS. FENCE POST SPACING AND SIZE (DIAMETER) SHALL BE DETERMINED IN ACCORDANCE WITH CHAIN LINK FENCE MANUFACTURERS' INSTITUTE (WLG 2445). SPACING SHALL NOT EXCEED 10'-0" OC. SIZE (DIAMETER) SHALL NOT BE LESS THAN THAT SPECIFIED.

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HUDSON WELLFIELD EXPANSION

AIRPORT ROAD
ORMOND BEACH, FL

ISSUED

11/27/23	90% PLANS
12/15/23	PERMITTING
03/29/24	100% PLANS

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DATE: MAY 2024
DESIGNED BY: JK
DRAWN BY: WKM
CHECKED BY: JK
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SHEET CONTENTS
STANDARD DETAILS

SHEET NO.
C-504

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ELECTRICAL SYMBOL SCHEDULE

LUMINAIRE SYMBOLS

- RECESSED LUMINAIRE
- RECESSED TROFFER
- RECESSED LINEAR
- SURFACE LUMINAIRE
- SURFACE LINEAR
- SURFACE COVE STRIP
- PENDANT LUMINAIRE
- PENDANT LINEAR
- PENDANT INDUSTRIAL
- (#) TRACK (# INDICATES NUMBER TRACK HEADS)
- WALL BRACKET
- WALL SURFACE LINEAR
- WALL RECESSED LINEAR
- CEILING MOUNTED EXIT SIGN
- WALL MOUNTED EXIT SIGN
- ARROW DENOTES EXIT SIGN CHEVRON
- EMERGENCY BATTERY UNIT
- RECESSED EMERGENCY BATTERY UNIT
- WALL WASH MODIFIER
- EMERGENCY SHADING MODIFIER (PARTIAL OR FULL SHADE)

LUMINAIRE CIRCUITRY & CONTROL KEY:

- A1 — LUMINAIRE TYPE
- 1Ra — LOWER CASE LETTER INDICATES SWITCHLEG CONTROL; "R" INDICATES LIGHTING CONTROL PANEL REFER TO LIGHTING CONTROL PANEL SCHEDULE; NUMBER INDICATES BRANCH PANEL CIRCUIT NUMBER

LUMINAIRE CONTROL SYMBOLS

- OS — OCCUPANCY SENSOR CEILING MOUNT (x REPRESENTS SCHEDULE DESIGNATION)
- OSX — OCCUPANCY SENSOR BRACKET MOUNT (x REPRESENTS SCHEDULE DESIGNATION)
- DS — DAYLIGHT SENSOR , SEE OCCUPANCY SENSOR SCHEDULE
- TC — ELECTRONIC TIME CLOCK
- PE — PHOTO ELECTRIC CONTROL
- LC — LIGHTING CONTACTOR
- LCPX — LIGHTING CONTROL PANEL (x REPRESENTS PANEL DESIGNATION)
- PT — UL 924 LISTED EMERGENCY LIGHTING BYPASS CONTROL UNIT
- PP — POWER PACK USED IN CONJUNCTION WITH OCCUPANCY SENSORS OR DAYLIGHT SENSORS
- PS — REMOTE POWER SUPPLY OR DRIVER
- DR — DIMMER RACK
- D — DIMMER CONTROL STATION MULTI-PRESET MODULAR DIMMING SYSTEM

DIMMER NOTATIONS:

MCS DENOTES MASTER CONTROL STATION
RS DENOTES REMOTE STATION
ES ENTRY STATION
PS PARTITION STATION

- L* — LOW VOLTAGE SWITCH; * DENOTES SWITCH NAME, SEE LIGHTING CONTROL PANEL & SWITCH SCHEDULE.
- S — SINGLE POLE SWITCH

SWITCH NOTATIONS:

3 DENOTES 3-WAY SWITCH
4 DENOTES 4-WAY SWITCH
WL DENOTES WET LOCATION SWITCH
D DENOTES DIMMER SWITCH
T DENOTES TIMMER SWITCH
K DENOTES KEY SWITCH
P DENOTES PILOT SWITCH
O DENOTES OCCUPANCY SENSOR

MOTORS & MOTOR CONTROL SYMBOLS

- 3 PHASE MOTOR CONNECTION
- 1 PHASE MOTOR CONNECTION
- EQUIPMENT CONNECTION
- COMBINATION MAGNETIC MOTOR CONTROLLER
- M — MANUAL MOTOR CONTROLLER (3 PHASE)
- SS — SOLID STATE MOTOR CONTROLLER
- VFD — VARIABLE FREQUENCY MOTOR CONTROLLER
- MAGNETIC MOTOR CONTROLLER
- NON-FUSED DISCONNECT SWITCH
- FUSED DISCONNECT SWITCH
- DOUBLE THROW SWITCH
- S_F — FUSED SINGLE POLE SWITCH
- S_M — MOTOR RATED STARTER / DISCONNECT SWITCH

RECEPTACLE SYMBOLS

- 60" — DUPLEX RECEPTACLE TEXT INDICATES MOUNTING HEIGHT
- DOUBLE DUPLEX RECEPTACLE
- ABOVE COUNTER DUPLEX RECEPTACLE
- SIMPLEX RECEPTACLE
- SPLIT WIRED DUPLEX RECEPTACLE
- SPECIAL PURPOSE CONNECTION, SEE EQUIPMENT WIRING SCHEDULE
- F — FLOOR BOX
- P — POKE THRU
- C — CEILING MOUNTED DUPLEX RECEPTACLE
- C — CEILING MOUNTED DOUBLE DUPLEX RECEPTACLE
- C — SPECIAL PURPOSE RECEPTACLE, NEMA TYPE ON DRAWING
- CORD REEL
- WELDING RECEPTACLE
- DISCONNECT/WELDING RECEPTACLE
- 4X — DISCONNECT/WELDING RECEPTACLE, NEMA 4X
- SURFACE METAL RACEWAY - REFER TO DRAWINGS AND/OR SPECIFICATIONS, MOUNTED 6" ABOVE COUNTER OR AT HEIGHT AS INDICATED.

RECEPTACLE NOTATIONS:

a DENOTES SWITCH LEG FOR SWITCHED OUTLETS
D DENOTES DEDICATED OUTLETS
EWC DENOTES ELECTRIC WATER COOLER OUTLETS
GFCI DENOTES GROUND FAULT INTERRUPTER OUTLETS
IG DENOTES ISOLATED GROUND OUTLETS
H DENOTES HORIZONTALLY MOUNTED OUTLETS
TR DENOTES TAMPER RESISTANT SAFETY OUTLETS
USB DENOTES COMBINATION DUPLEX/USB OUTLETS
WP DENOTES WEATHER PROOF OUTLETS
X1 DENOTES EXPLOSION PROOF CLASS 1 DIVISION 1 OUTLETS
X2 DENOTES EXPLOSION PROOF CLASS 1 DIVISION 2 OUTLETS

SERVICE & DISTRIBUTION SYMBOLS

- M — CUSTOMER METERING
- GAP — GENERATOR ANNUNICATOR PANEL
- GROUND ACCESS WELL
- GROUND ROD
- GR — GROUND RECEPTACLE
- LIGHTNING ROD
- GROUNDING CONDUCTOR
- PMS — PAD MOUNTED SWITCH
- T — GENERAL LIGHTING AND POWER TRANSFORMER-DRY TYPE
- T_W — WALL MOUNTED LIGHTING AND POWER TRANSFORMER-DRY TYPE
- T_{NL} — DISTRIBUTION TRANSFORMER FOR NON-LINEAR LOADS

SITE SYMBOLS

- E — ELECTRIC HANDHOLE
- HH — HANDHOLE, GENERIC
- M — ELECTRIC METER
- FLOOD LIGHT POLE
- BOLLARD LIGHT
- DOUBLE LIGHT POLE
- LIGHT POLE
- POWER POLE
- DOUBLE POWER POLE
- POWER POLE WITH LIGHT

ONE-LINE SYMBOLS

- AUTOMATIC TRANSFER SWITCH
- ATO — AUTOMATIC THROW OVER
- LOW VOLTAGE CIRCUIT BREAKER
- # — CURRENT TRANSFORMER (# DENOTES QUANTITY)
- MPR — MULTI FUNCTION PROTECTIVE RELAY
- DPM — DIGITAL POWER METER
- DRAWOUT BREAKER WITH CURRENT LIMITING FUSE
- DRAWOUT BREAKER
- LOW VOLTAGE FUSE
- FUSED DISCONNECT SWITCH
- G — GENERATOR
- ST — GROUND FAULT SHUNT TRIP BREAKER
- GF — GROUND FAULT SHUNT TRIP SWITCH
- EARTH GROUND
- K# — KEY INTERLOCK
- LA — LIGHTNING ARRESTORS
- LOAD BREAK ELBOW
- M — METER
- MO — MOTOR OPERATOR
- 52 — MEDIUM VOLTAGE DRAW-OUT CIRCUIT BREAKER
- MEDIUM VOLTAGE FUSED SWITCH
- MEDIUM VOLTAGE SWITCH
- MEDIUM VOLTAGE TERMINATION
- N — NEUTRAL BOND
- NON-FUSED DISCONNECT SWITCH
- NORMALLY CLOSED CONTACT
- NORMALLY OPEN CONTACT
- 51 — OVERCURRENT PROTECTIVE RELAY
- PANELBOARD (ELEVATION VIEW)
- # — POTENTIAL TRANSFORMER (# DENOTES QUANTITY)
- ST — SHUNT TRIP
- SPD — SURGE PROTECTIVE DEVICE
- TRANSFORMER
- UNINTERRUPTIBLE POWER SUPPLY (UPS)
- UTILITY CONNECTION

LINE TYPE KEY

- NEW WORK BY THIS CONTRACTOR (DARK SOLID LINE)
- EXISTING TO BE REMOVED BY THIS CONTRACTOR (DARK DASHED LINE)
- EXISTING TO REMAIN WORK (THIN SOLID LINE)
- NEW WORK UNDER FLOOR BY THIS CONTRACTOR

ABBREVIATIONS

3R	NEMA 3R RATING
4X	NEMA 4X RATING
A	AMPERES
A/E	ARCHITECT / ENGINEER
ACCU	AIR COOLED CONDENSING UNIT
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPERE INTERRUPTING CAPACITY
AL	ALUMINUM
ALT	ALTERNATE
ATS	AUTOMATIC TRANSFER SWITCH
C	CONDUIT
CB	CIRCUIT BREAKER
CBV	CABLING BY VENDOR
CKT	CIRCUIT
CP	CIRCULATION PUMP OR CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CU	COPPER
D	DEMOLISH
DH	DUCT HEATER
DISC	DISCONNECT
DO	DOOR OPERATOR
DPST	DOUBLE POLE SINGLE THROW
DWG	DRAWING
E	EXISTING
E/O	ELECTRICAL-TO-OPTICAL CONVERTER
EC	ELECTRICAL CONTRACTOR
ECB	ENCLOSED CIRCUIT BREAKER
EF	EXHAUST FAN
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ES	EQUIPMENT SUPPLIER
ETR	EXISTING TO REMAIN
EWC	ELECTRICAL WATER COOLER
EWH	ELECTRICAL WATER HEATER
F	FUSED
FCU	FAN COIL UNIT
FVNR	FULL VOLTAGE NON REVERSING
GC	GENERAL CONTRACTOR
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
GRS	GALVANIZED RIGID STEEL
HOA	HAND OFF AUTO
HOR	HAND OFF REMOTE
HP	HORSEPOWER
HVAC	HEATING, VENTILATION, AIR CONDITIONING
IG	ISOLATED GROUND
IH	INFRARED HEATER
IMC	INTERMEDIATE METALLIC CONDUIT
INT	INTERLOCK
J-BOX	JUNCTION BOX
KMCIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT-AMPERES
LA	LIGHTNING ARRESTOR
LBS	POUNDS
LCS	LOCAL CONTROL STATION
LFS	LIGHTING FIXTURE SCHEDULE
LTG	LIGHTING
MAU	MAKE-UP AIR UNIT
MAX	MAXIMUM
MC	MECHANICAL CONTRACTOR OR METAL CLAD CABLE
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MDP	MAIN DISTRIBUTION PANEL
MH	MANHOLE
MIN	MINIMUM
MLO	MAIN LUG ONLY
MM	MULTIMODE (FIBER)
MTD	MOUNTED
MTG	MOUNTING
MTS	MANUAL TRANSFER SWITCH
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NL/EL	NIGHT LIGHT AND EMERGENCY LIGHT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OC	ON CENTER
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED, OWNER INSTALLED
OL	OVERLOAD
P	POLE
PB	PUSH BUTTON
PH	PHASE
PM	PHASE MONITOR
PNL	PANEL
PVC	POLYVINYL CHLORIDE
RECPT	RECEPTACLE
REF	REFRIGERATOR
REQ'D	REQUIRED
RF	RETURN FAN
RGS	RIGID GALVANIZED STEEL CONDUIT MAY ALSO BE REFERENCED AS RMC OR
RMC	RIGID METAL CONDUIT
SM	SINGLE MODE (FIBER)
S/N	SOLID NEUTRAL
SE	SERVICE ENTRANCE
SF	SUPPLY FAN
SP	SUMP PUMP
SS	STAINLESS STEEL
ST	SHUNT TRIP
SW	SWITCH
TBR	TO BE REMOVED
TFA	TO FLOOR ABOVE
TFB	TO FLOOR BELOW
TGB	TELECOMMUNICATIONS GROUNDING BUSBAR
TYP	TYPICAL
UC	UNIT COOLER
UG	UNDERGROUND
UH	UNIT HEATER
UNO	UNLESS NOTED OTHERWISE
V	VOLTS
VFD	VARIABLE FREQUENCY DRIVE
VS	VERSUS
W	WATTS
WH	WATER HEATER
WL	WET LOCATION LISTED
WP	WEATHERPROOF
XFMR	TRANSFORMER
XP	EXPLOSION PROOF

GENERAL NOTES:

1. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE DETAILS OF WORK, VERIFY DIMENSIONS IN THE FIELD AND ADVISE THE ENGINEER OF ANY DISCREPANCY BEFORE PERFORMING THE WORK.
2. FLUSH-MOUNT ALL LIGHTING CONTROL DEVICES AT 42" FROM FINISHED FLOOR TO CENTERLINE OF DEVICE, EXCEPT WHERE OTHERWISE NOTED.
3. FLUSH-MOUNT ALL RECEPTACLES AT 18" FROM FINISHED FLOOR TO CENTERLINE OF DEVICE, EXCEPT WHERE OTHERWISE NOTED.
4. CIRCUIT NUMBERS ARE SHOWN FOR CIRCUIT IDENTIFICATION. CIRCUITING SHALL AGREE WITH NUMBERING ON THE PANEL SCHEDULES PROVIDED. BALANCE THE LOAD ON PANELS AS EVENLY AS POSSIBLE BETWEEN EACH PHASE. COMMON NEUTRALS MAY NOT BE USED FOR BRANCH CIRCUITS.
5. A #12 GREEN INSULATED GROUND CONDUCTOR SHALL BE INSTALLED WITH CIRCUIT CONDUCTORS TO ALL RECEPTACLES.
6. CONCEAL ALL CONDUIT IN WALLS, PARTITIONS, ABOVE CEILING, ETC. UNLESS OTHERWISE INDICATED ON THE PLANS OR IN THE SPECIFICATIONS. CONDUIT IN MECHANICAL ROOMS, AND STORAGE ROOMS WITHOUT CEILINGS MAY BE EXPOSED ON BUILDING STRUCTURE. WHERE RACEWAY IS REQUIRED ON EXISTING CONCRETE AND MASONRY WALLS, SURFACE RACEWAY MAY BE USED IN LIEU OF CHANNELING WALLS TO ALLOW CONCEALED ROUTING. THE RACEWAY SHALL BE SINGLE CHANNEL STYLE TYPE WITH IVORY FINISH. THIS APPLIES FOR BRANCH CIRCUIT CONDUITS UP TO 3/4" SIZE. CONDUITS LARGER THAN 3/4" MAY BE ROUTED EXPOSED, BUT INSTALLED PARALLEL AND/OR PERPENDICULAR TO BUILDING LINES AND RUN AS UNOBTRUSIVELY AS POSSIBLE.
7. CONTRACTOR TO PROVIDE SUITABLE MECHANICAL PROTECTION AROUND ALL CONDUITS STUBBED OUT FROM FLOORS, WALLS OR CEILINGS DURING CONSTRUCTION TO PREVENT BENDING OR DAMAGING OF STUB OUTS DUE TO CARELESSNESS WITH CONSTRUCTION EQUIPMENT.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OPENINGS REQUIRED IN WALLS. ALL OPENINGS SHALL BE REPAIRED TO MATCH EXISTING BY A QUALIFIED CONTRACTOR AT THE EXPENSE OF THIS CONTRACTOR. ALL CONDUITS THROUGH WALLS SHALL BE GROUTED OR SEALED INTO OPENINGS.
9. DRAWINGS INDICATE THE EXTENT OF HAZARDOUS OR WET LOCATIONS. INSTALLATION MEANS AND METHODS SHALL BE SUITABLY RATED FOR THE ENVIRONMENT INDICATED ON THE DRAWINGS.
10. ALL INTERLOCKING REQUIRED BY THE DRIVE MANUFACTURER BETWEEN THE VARIABLE FREQUENCY DRIVE AND THE DISCONNECT SWITCHES SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
11. SCCR RATINGS LISTED FOR EQUIPMENT ARE MINIMUM REQUIREMENTS FOR BUS BRACING AND DEVICE ALL EQUIPMENT SHALL BE FULLY RATED UNLESS SPECIFICALLY NOTED AS SERIES RATED.
12. CONTRACTOR SHALL COORDINATE ALL UTILITY CONNECTIONS WITH FPL.

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CITY OF ORMOND BEACH
HUDSON WELLFIELD EXPANSION

AIRPORT ROAD
ORMOND BEACH, FL

ISSUED

11/27/23	90% PLANS
12/15/23	PERMITTING
03/29/24	100% PLANS

M&H NO.: 1000714-212249.01
DATE: MAY 2024
DESIGNED BY: JK
DRAWN BY: WKM
CHECKED BY: JK
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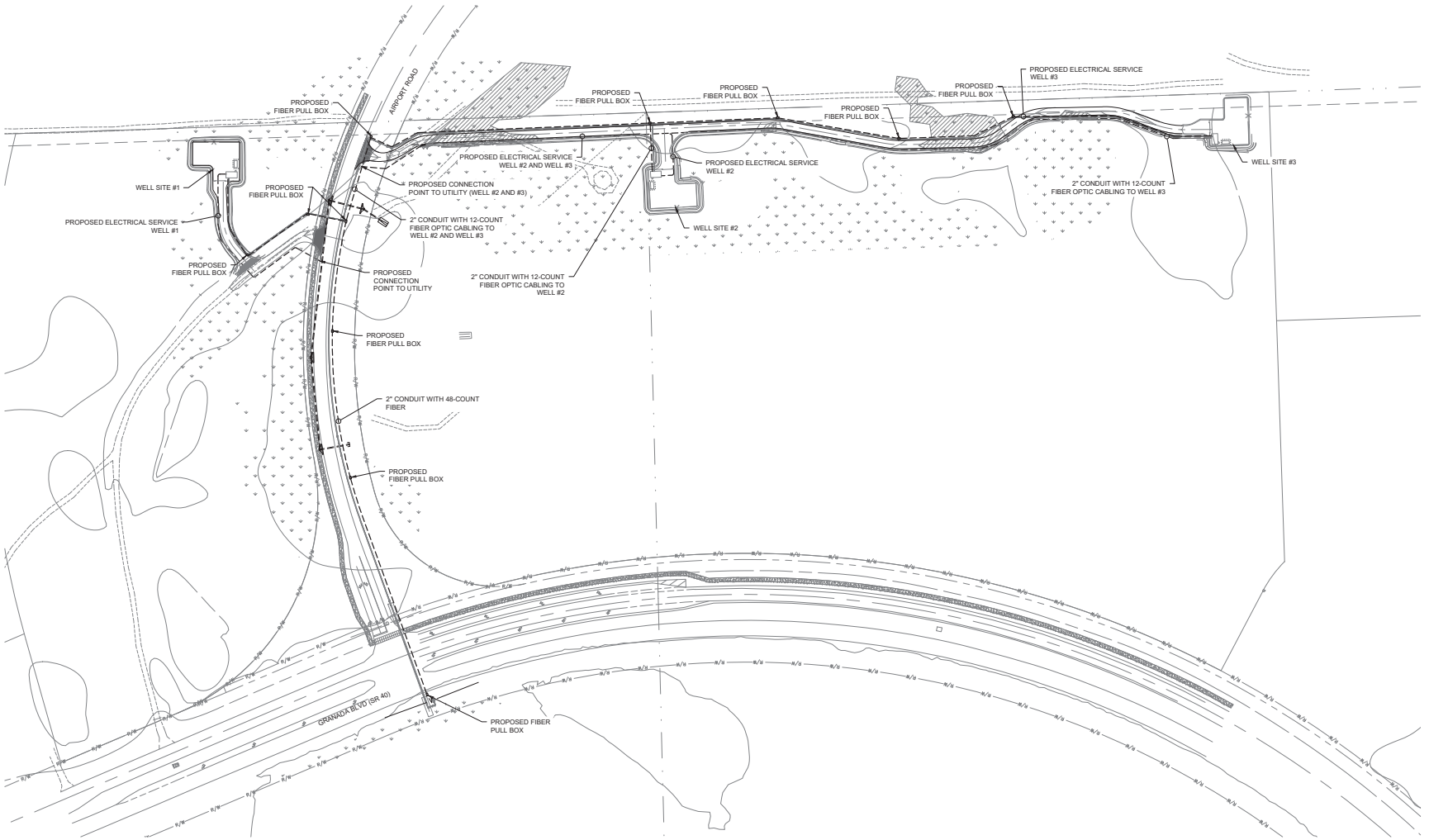
SHEET CONTENTS
ELECTRICAL LEGEND AND NOTES

SHEET NO.
E-001

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GENERAL NOTES:

1. COORDINATE ALL REQUIREMENTS FOR NEW ELECTRICAL SERVICES WITH THE LOCAL UTILITY.
2. REFER TO SHEET E-501 FOR INSTALLATION DETAILS FOR FIBER OPTIC CABLING RACEWAY. MAXIMUM 1000'-0" BETWEEN HANDHOLES.
3. CONTRACTOR SHALL PROVIDE A RADIO PATH STUDY.



PLAN NORTH

1 **ELECTRICAL SITE PLAN**
1" =100'

0 50 100 200

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SHEET CONTENTS
ELECTRICAL SITE PLAN

SHEET NO.
E-011

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LUMINAIRE SCHEDULE

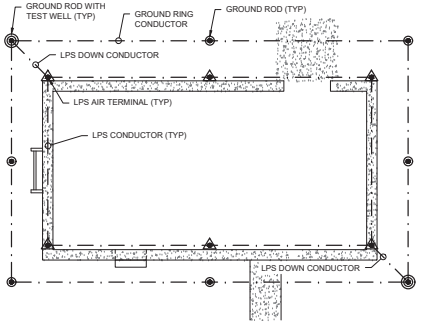
NOTE: SEE SPECIFICATION FOR ADDITIONAL INFORMATION REGARDING LUMINAIRE AND INSTALLATION REQUIREMENTS. PROVIDE OPTIONS AND ACCESSORIES REFERENCED BY THE COLUMN TITLED " OPTIONS/ACCESSORIES". MANUFACTURERS LISTED ACCEPTABLE SHALL MEET ALL REQUIREMENTS AND FEATURES INDICATED. ACCEPTABLE MANUFACTURERS MUST MEET THE PHOTOMETRIC PERFORMANCE OF THE LISTED UNIT.

ABBREVIATIONS: GWB = GYPSUM WALL BOARD; ES = EXPOSED STRUCTURE; LG = LAY-IN GRID; P = PENDANT; PLAS = PLASTER; PL = POLE MOUNTED; R = RECESSED; S = SURFACE; UNV = UNIVERSAL VOLTAGE; V = VARIES; W = WALL MOUNTED

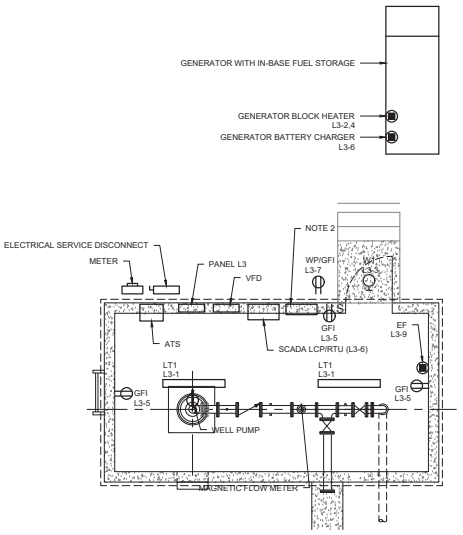
DES.	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	LAMP DATA	VOLTAGE	BALLAST / DRIVER	MOUNT	CEILING TYPE	FIXTURE DEPTH	LED SYSTEM INPUT WATTAGE	LED DELIVERED LUMENS	OPTIONS / ACCESSORIES	ACCEPTABLE MANUFACTURERS	KEYED NOTE
LT1	HOLOPHANE	EVT4 6000LM PCL MD MVOLT GZ10 30K 80 CRI	4' ROUGH SERVICE LED, IP65 RATED RATED ENCLOSURE, CLEAR POLYCARBONATE LENS	LED	UNV	D	S/P	-	4 1/8"	49	6000		ORION CT2 SERIES	
													RIGALITE NMF2 SERIES	
W1	LITHONIA	TWH 20C 1000 40K T3M MVOLT DDBXD	LED WALL MOUNTED FIXTURE WITH DIE CAST ALUMINUM HOUSING, ACRYLIC LENS, IP65 RATED, TYPE III MEDIUM DISTRIBUTION, DARK BRONZE FINISH.	LED	UNV	D	W		9 1/8"	72	6983		MCGRAW EDISON IST SERIES	
													PHILIPS 101 SCONCE SERIES	

NOTES:

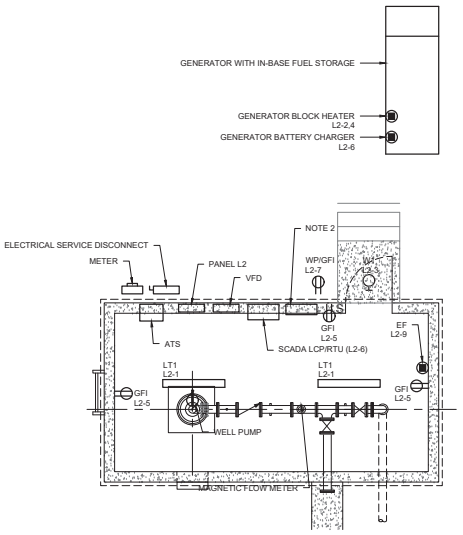
1. PROVIDE LIGHTNING PROTECTION FOR WELL PUMP BUILDINGS. REFER TO SPECIFICATION SECTION 26 41 13 FOR REQUIREMENTS.
2. PROVIDE A 24" x 24" x 6" DEEP HINGED, GASKETED, NEMA 4X 316SS JUNCTION BOX WITH LOCKABLE COVER FOR NETWORK EQUIPMENT BY OWNER. ADJACENT TO THIS BOX PROVIDE A FIBER OPTIC TERMINATION CABINET WITH ST TYPE FIBER OPTIC PATCH PANELS. PROVIDE A 2" NIPPLE FROM THE SCADA CABINET TO THE FIBER OPTIC PATCH PANEL.



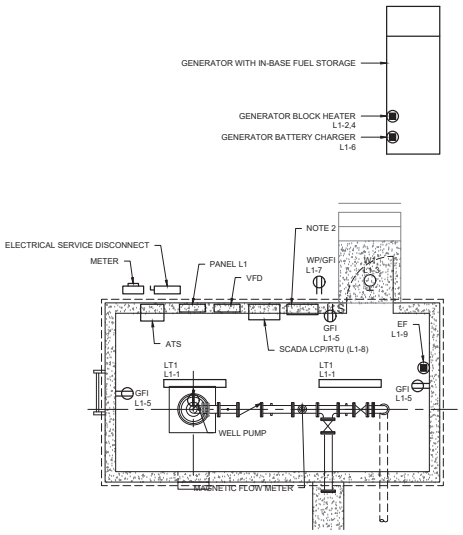
4 **WELL PUMP BUILDING TYPICAL LPS & GROUNDING PLAN**
1/4" = 1'-0"
0 2' 4' 8'



PLAN NORTH 3 **WELL PUMP #3 BUILDING ELECTRICAL PLAN**
1/4" = 1'-0"
0 2' 4' 8'



PLAN NORTH 2 **WELL PUMP #2 BUILDING ELECTRICAL PLAN**
1/4" = 1'-0"
0 2' 4' 8'



PLAN NORTH 1 **WELL PUMP #1 BUILDING ELECTRICAL PLAN**
1/4" = 1'-0"
0 2' 4' 8'

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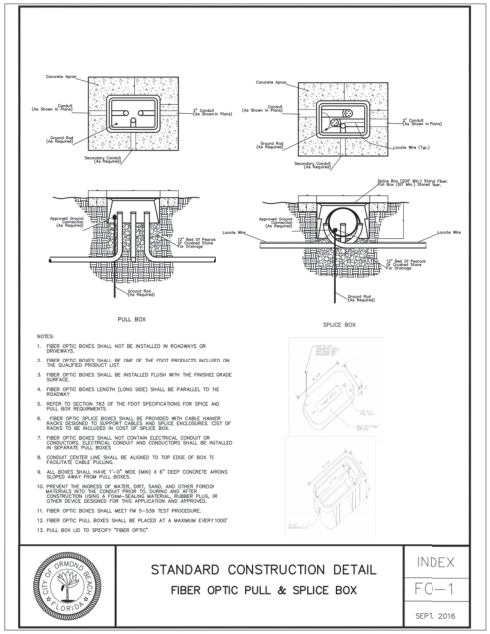
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12/15/23	PERMITTING
03/29/24	100% PLANS

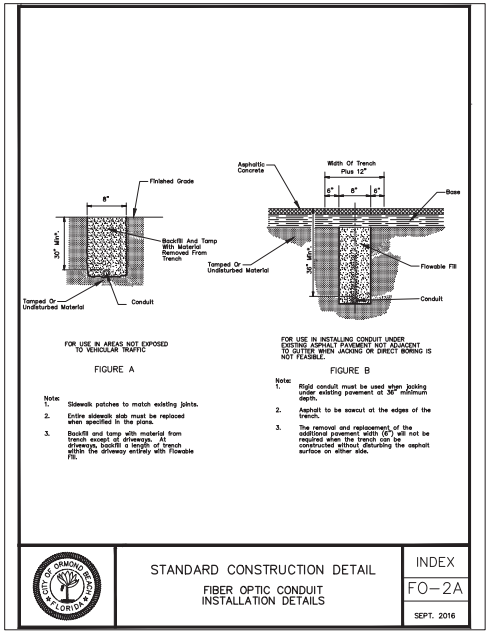
M&H NO.: 1000714-212249.01
DATE: MAY 2024
DESIGNED BY: JK
DRAWN BY: WKM
CHECKED BY: JK
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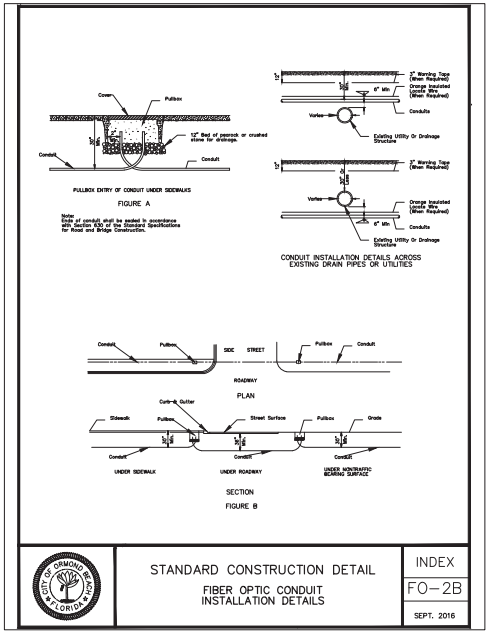
SHEET CONTENTS
ELECTRICAL PLAN

SHEET NO.
E-101

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SHEET CONTENTS
DETAILS

SHEET NO.
E-501

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Panel L1

Panelboard:	Panel L1				
Bus Ampacity	30	Volts	240/120	Panel Source:	XFMR
Branch Brkr Space	18 Poles	Phase	1	Feed-Thru Lugs	None
Main Type	MCB	Wires	3		
MCB Amps	30	Delta/Wye	-	Sub-Feed Lugs	None
		Mounting	Surface		
		Enclosure	NEMA 3R	Sub-Feed Brkr #1	None
		SCCR	18 kA		
		SE Rated	No	Sub-Feed Brkr #2	None
		Pnl MCA	18 A		
Comments:				SPD	
				Iso Grd	

Key Note	Load Description	Cct No	Brkr A/P	Left Side A	Left Side B	Right Side A	Right Side B	Brkr A/P	Cct No	Load Description	Key Note
	LIGHTS INTERIOR	1	20/1	100		1,000		20/2	2	GEN BLOCK HEATER	
	LIGHTS EXTERIOR	3	20/1		72		1,000		4		
	RECEPT INTERIOR	5	20/1	540		500		20/1	6	GEN BATT CHARGER	
	RECEPT EXTERIOR	7	20/1		180		500	20/1	8	SCADA CTRL PNL	
	EXHAUST FAN	9	20/1	500		0		20/1	10	SPARE	
	SPARE	11	20/1		0		0	20/1	12	SPARE	
	SPARE	13	20/1	0		0		20/1	14	SPARE	
	SPARE	15	20/1		0		0	20/1	16	SPARE	
				0		0					

Key Notes: A=HACR G=GFI H=HANDLE LOCK C=THRU CONTACTOR I=ISOLATED GRD S=SHUNT TRIP P=PADLOCK HASP D=HID LIGHTING E=EXISTING

Panel L2

Panelboard:	Panel L2				
Bus Ampacity	30	Volts	240/120	Panel Source:	XFMR
Branch Brkr Space	18 Poles	Phase	1	Feed-Thru Lugs	None
Main Type	MCB	Wires	3		
MCB Amps	30	Delta/Wye	-	Sub-Feed Lugs	None
		Mounting	Surface		
		Enclosure	NEMA 3R	Sub-Feed Brkr #1	None
		SCCR	18 kA		
		SE Rated	No	Sub-Feed Brkr #2	None
		Pnl MCA	18 A		
Comments:				SPD	
				Iso Grd	

Key Note	Load Description	Cct No	Brkr A/P	Left Side A	Left Side B	Right Side A	Right Side B	Brkr A/P	Cct No	Load Description	Key Note
	LIGHTS INTERIOR	1	20/1	100		1,000		20/2	2	GEN BLOCK HEATER	
	LIGHTS EXTERIOR	3	20/1		72		1,000		4		
	RECEPT INTERIOR	5	20/1	540		500		20/1	6	GEN BATT CHARGER	
	RECEPT EXTERIOR	7	20/1		180		500	20/1	8	SCADA CTRL PNL	
	EXHAUST FAN	9	20/1	500		0		20/1	10	SPARE	
	SPARE	11	20/1		0		0	20/1	12	SPARE	
	SPARE	13	20/1	0		0		20/1	14	SPARE	
	SPARE	15	20/1		0		0	20/1	16	SPARE	
				0		0					

Key Notes: A=HACR G=GFI H=HANDLE LOCK C=THRU CONTACTOR I=ISOLATED GRD S=SHUNT TRIP P=PADLOCK HASP D=HID LIGHTING E=EXISTING

Panel L3

Panelboard:	Panel L3				
Bus Ampacity	30	Volts	240/120	Panel Source:	XFMR
Branch Brkr Space	18 Poles	Phase	1	Feed-Thru Lugs	None
Main Type	MCB	Wires	3		
MCB Amps	30	Delta/Wye	-	Sub-Feed Lugs	None
		Mounting	Surface		
		Enclosure	NEMA 3R	Sub-Feed Brkr #1	None
		SCCR	18 kA		
		SE Rated	No	Sub-Feed Brkr #2	None
		Pnl MCA	18 A		
Comments:				SPD	
				Iso Grd	

Key Note	Load Description	Cct No	Brkr A/P	Left Side A	Left Side B	Right Side A	Right Side B	Brkr A/P	Cct No	Load Description	Key Note
	LIGHTS INTERIOR	1	20/1	100		1,000		20/2	2	GEN BLOCK HEATER	
	LIGHTS EXTERIOR	3	20/1		72		1,000		4		
	RECEPT INTERIOR	5	20/1	540		500		20/1	6	GEN BATT CHARGER	
	RECEPT EXTERIOR	7	20/1		180		500	20/1	8	SCADA CTRL PNL	
	EXHAUST FAN	9	20/1	500		0		20/1	10	SPARE	
	SPARE	11	20/1		0		0	20/1	12	SPARE	
	SPARE	13	20/1	0		0		20/1	14	SPARE	
	SPARE	15	20/1		0		0	20/1	16	SPARE	
				0		0					

Key Notes: A=HACR G=GFI H=HANDLE LOCK C=THRU CONTACTOR I=ISOLATED GRD S=SHUNT TRIP P=PADLOCK HASP D=HID LIGHTING E=EXISTING

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HUDSON WELLFIELD EXPANSION

AIRPORT ROAD
ORMOND BEACH, FL

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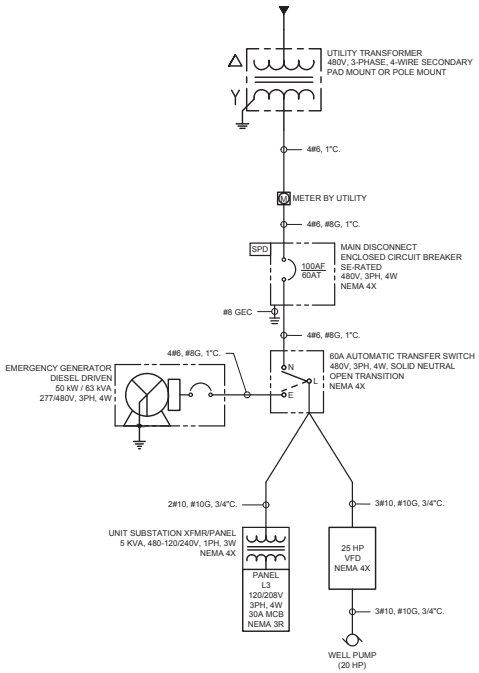
SHEET CONTENTS
SCHEDULES

SHEET NO.
E-601

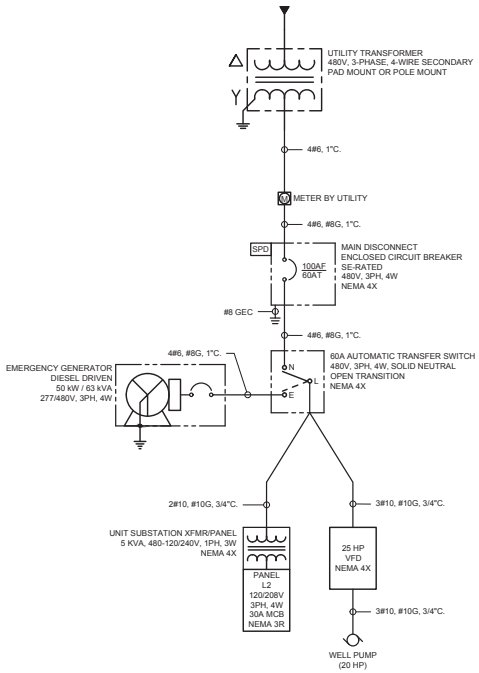
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GENERAL NOTES:

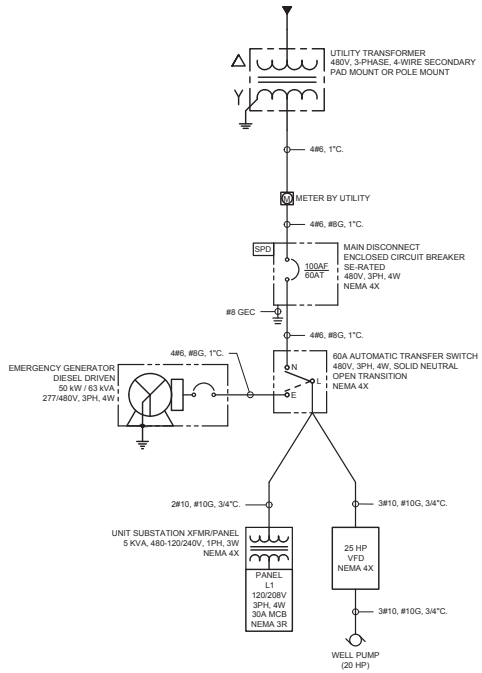
1. COORDINATE ALL ELECTRICAL SERVICE REQUIREMENTS WITH THE LOCAL UTILITY.



3 **WELL PUMP #3 RISER DIAGRAM**
NO SCALE



2 **WELL PUMP #2 RISER DIAGRAM**
NO SCALE



1 **WELL PUMP #1 RISER DIAGRAM**
NO SCALE

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SHEET CONTENTS
RISER DIAGRAM

SHEET NO.
E-701

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INSTRUMENTATION & CONTROL SYMBOL SCHEDULE

INSTRUMENT IDENTIFICATION MATRIX					
	FIRST LETTER		SUCCEEDING LETTERS		
	MEASUREMENT	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER		USER CHOICE	USER CHOICE	USER CHOICE
C	CONDUCTIVITY			CONTROL	CLOSE / CLOSED
D	DENSITY / S.G.	DIFFERENTIAL			
E	VOLTAGE		PRIMARY ELEMENT		
F	FLOW RATE	RATIO (FRACTION)			
G	USER CHOICE		GLASS / GAUGE		
H	HAND (MANUAL)				HIGH
I	CURRENT (ELEC)		INDICATION		
J	POWER	SCAN			
K	TIME	TIME / RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	MOISTURE	MOMENTARY			MIDDLE
N	TORQUE		USER CHOICE	USER CHOICE	USER CHOICE
O	USER CHOICE		ORIFICE		OPEN / OPENED
P	PRESSURE		TEST POINT		
Q	QUANTITY	INTEGRATE / TOTALIZE			MULTIFUNCTION
R	RADIATION		RECORD	REPORT	RUN / RUNNING
S	SPEED / FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMITTER	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION			VALVE	
W	WEIGHT / FORCE		WELL		
X	FAILURE / TROUBLE	X-AXIS			
Y	EVENT / STATUS	Y-AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION	Z-AXIS		DRIVE, ACTUATE, FINAL CONTROL ELEMENT	

PROCESS EQUIPMENT

- CENTRIFUGAL PUMP
- PERISTALTIC PUMP
- ROTARY LOBE PUMP
- BLOWER
- METERING PUMP
- SUBMERSIBLE PUMP
- VERTICAL TURBINE PUMP
- MIXER
- VERTICAL TANK
- DOME TANK
- OPEN TANK
- HORIZONTAL TANK

MOTOR STARTER

STR XXXX

STR

SYMBOL USED TO INDICATE CONNECTION TO A MOTOR STARTER. INCLUDES THE FOLLOWING TYPICAL FUNCTIONS:

STR STP	IN AUTO	RUN IND	MOTOR OL
HS	YIA	YIR	XA

VARIABLE FREQUENCY DRIVE

VFD XXXX

VFD

SYMBOL USED TO INDICATE CONNECTION TO A VARIABLE FREQUENCY DRIVE. INCLUDES THE FOLLOWING TYPICAL FUNCTIONS:

STR STP	IN AUTO	RUN IND	MOTOR OL	SPD CTRL	SPD IND
HS	YIA	YIR	XA	SC	SI

ACTUATOR CONTROL STATION

ACS YYY — CONTROL STATION SYMBOL USED FOR AUTOMATED VALVES AND/OR ACTUATORS. FUNCTIONS INDICATED ON THE P&ID

YYY = MOD = MODULATING VALVE OPERATION
YYY = O/O = ON/OFF VALVE OPERATION
YYY = 3W = 3-WAY VALVE OPERATION

GENERAL SYMBOLS

- YY XXXX Z — INSTRUMENT - FIELD MOUNTED; YY = INSTRUMENT IDENTIFICATION; XXXX = LOOP NUMBER; Z = IDENTIFIER FOR MEASUREMENT/ANALYSIS
- YY XXXX — INSTRUMENT - PANEL MOUNTED
- YY XXXX / YY XXXX — INSTRUMENTS SHARING A COMMON HOUSING
- 1 — CONTROL INTERLOCK (HARDWIRE)
- CS 1 — CONTROL SEQUENCE OF OPERATIONS FOR EQUIPMENT AS DETAILED IN THE SPECIFICATIONS
- YY XXXX — I/O POINT FOR SHARED CONTROL & DISPLAY IN SCADA/DCS
- PILOT LIGHT
- M — MOTOR

FLOW METERS

- FE XXXX — ORIFICE PLATE
- FE XXXX — ROTAMETER
- FE XXXX M — MAGNETIC
- FE XXXX — VENTURI
- FE XXXX — TURBINE
- FE XXXX — PARSHALL FLUME
- FE XXXX — VORTEX
- FE XXXX — WEIR
- FE XXXX — ULTRASONIC

CONTROL STATIONS

HS YYY — SELECTOR SWITCH, YYY = FUNCTION DESCRIPTION

FOR	FORWARD-OFF-REVERSE
FOJR	FORWARD-OFF-JOG REVERSE
HOA	HAND-OFF-AUTO
HOR	HAND-OFF-REMOTE
HOSB	HAND-OFF-STANDBY
LOR	LOCAL-OFF-REMOTE
KYPD	KEYPAD
MOA	MANUAL-OFF-AUTO
OC	OPEN-CLOSE
OCR	OPEN-CLOSE-REMOTE
OO	ON-OFF
OSC	OPEN-STOP-CLOSE
RO	RUN-OFF
TOD	TRANSFER-OFF-DILUTION

HK YYY — PUSH BUTTON, YYY = FUNCTION DESCRIPTION

CLS	CLOSE
ESTOP	EMERGENCY STOP
LT	LAMP TEST
OPN	OPEN
RS	RESET FAULT
SIL	SILENCE ALARM
STR	START
STP	STOP
STPL	STOP WITH LOCOUT

SK — SPEED CONTROL POTENTIOMETER

YY YL — INDICATING LIGHT, YY = COLOR CODE

GR	GREEN (OFF, STOP, CLOSED)
RD	RED (RUN, START, OPEN)
WH	WHITE (POWER ON)
BL	BLUE (STATUS)
AM	AMBER (ALARM CONDITION)

YY YL — STROBE LIGHT, YY = COLOR CODE

ELECTRONIC HORN

VALVES

- GATE
- PLUG
- GLOBE
- BALL
- BUTTERFLY
- 3-WAY
- 4-WAY
- CHECK
- DIAPHRAGM
- PINCH
- NEEDLE
- ANGLE
- SOLENOID
- MOTOR OPERATED
- PNEUMATIC OPERATED
- PRESSURE REGULATING
- PRESSURE SUSTAINING
- HYDRAULIC OPERATED
- AIR RELEASE (AR)
- AIR/VACUUM (AV)
- COMBINATION (CAV)
- SLIDE GATE (SLG) / KNIFE GATE (KNG) / SLUICE GATE (SCG)
- AIR RELIEF VALVE (ARV)
- EYEWASH STATION

LEVEL

- LS XXXX — FLOAT SWITCH
- LE XXXX — EXTERNAL CHAMBER
- LE XXXX Z — NON CONTACT TYPE (ULTRASONIC OR RADAR)
- LG XXXX — SIGHT GAUGE
- LG XXXX — MAGNETIC LEVEL GAUGE

LINE TYPES

ARROWHEAD INDICATES DIRECTION OF FLOW OR INPUT VS OUTPUT

- PRIMARY PROCESS LINE
- SECONDARY PROCESS LINE
- EXISTING PROCESS LINE
- ELECTRIC SIGNAL (ANALOG)
- ELECTRIC SIGNAL (DISCRETE)
- ELECTRIC SIGNAL (DISCRETE & ANALOG)
- SOFTWARE LINK, COMMUNICATION LINK
- FOC — FIBER OPTIC COMMUNICATION
- YYY | XXX | DDD — PROCESS/SIGNAL LINE OFF PAGE CONTINUATION; YYY = SERVICE, XXX = SHEET NUMBER, DDD = DESCRIPTION
- TP XX — TIE-IN POINT
- INSULATED PROCESS LINE

PIPING

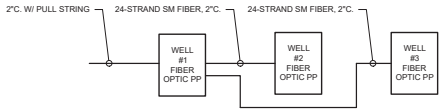
- YxX — CONCENTRIC REDUCER
- YxX — ECCENTRIC REDUCER
- Y-STRAINER
- VENT
- DIAPHRAGM SEAL WITH ISOLATION VALVE
- PULSATION DAMPENER WITH ISOLATION VALVE
- FLEXIBLE CONNECTION
- QUICK CONNECT
- DRAIN
- CALIBRATION COLUMN

ABBREVIATIONS

A	AUTOMATIC
ABS	ABSOLUTE
AI	ANALOG INPUT
AO	ANALOG OUTPUT
ALT	ALTERNATE
AS	AIR SUPPLY
AVG	AVERAGE
CAP	CAPACITANCE
CHW	CHILLED WATER
CO	CARBON MONOXIDE
CO2	CARBON DIOXIDE
COND	CONDUCTIVITY
COR	CORIOLIS
CP	CONTROL PANEL
CS	CONTROL STATION
DEN	DENSITY
DI	DIGITAL INPUT
DO	DIGITAL OUTPUT
DO	DISSOLVED OXYGEN
DOP	DOPPLER
DP	DIFFERENTIAL PRESSURE
DW	DRINKING WATER
ETR	EXISTING TO REMAIN
FC	FAIL CLOSED
FO	FAIL OPEN
GC	GAS CHROMATOGRAPH
GWR	GUIDED WAVE RADAR
H	HAND
H2S	HYDROGEN SULFIDE
H2O	WATER
HMI	HUMAN MACHINE INTERFACE
HOA	HAND - OFF - AUTO
HP	HORSEPOWER
IR	INFRARED
L	LOCAL
LC	LIQUID CHROMATOGRAPH
LC	LOAD CELL
LEL	LOWER EXPLOSIVE LIMIT
LOR	LOCAL - OFF - REMOTE
M	MODULATE
MAG	MAGNETIC
MCC	MOTOR CONTROL CENTER
MM	MULTI-MODE FIBER OPTIC CABLE
MS	MASS SPECTROMETER
NIC	NOT IN CONTRACT
NC	NETWORK CABINET OR NORMALLY CLOSED
NTS	NOT TO SCALE
NUC	NUCLEAR
O2	OXYGEN
OP	OPACITY
ORP	OXIDATION REDUCTION POTENTIAL
PE	PHOTOELECTRIC
pH	HYDROGEN ION CONCENTRATION
PLC	PROGRAMMABLE LOGIC CONTROLLER
PROX	PROXIMITY
RAD	RADAR
REF	REFRACTOMETER
REQ'D	REQUIRED
RI	REFRACTIVE INDEX
RTD	RESISTANCE TEMPERATURE DETECTOR
RTU	REMOTE TELEMETRY UNIT
RW	RAW WATER
SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION
SG	SPECIFIC GRAVITY
SG	STRAIN GAUGE
SM	SINGLE-MODE FIBER OPTIC CABLE
SNR	SONAR
SON	SONIC
SP	SET POINT
SS	STAINLESS STEEL
TC	THERMAL CONDUCTIVITY
TC	THERMOCOUPLE
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
US	ULTRASONIC
UV	ULTRAVIOLET
VAC	VACUUM
VENT	VENTURI TUBE
VIS	VISIBLE LIGHT
VISC	VISCOSITY
VFD	VARIABLE FREQUENCY DRIVE
VOR	VORTEX SHEDDING
WS	WEIGH SCALE
WW	WASTEWATER
WP	WEATHERPROOF
XP	EXPLOSION PROOF

GENERAL NOTES:

1. THIS IS A GENERAL LEGEND SHEET. SOME SYMBOLS AND ABBREVIATIONS MAY NOT APPLY TO THIS SPECIFIC PROJECT.
2. THE SYMBOLS SHOWN ARE GENERALLY BASED ON THE INSTRUMENT SOCIETY OF AMERICA'S STANDARDS. SOME ADDITIONS AND ALTERNATIONS MAY HAVE BEEN MADE TO ACCOMMODATE SPECIFIC PROJECT REQUIREMENTS.
3. SOME PROCESS ITEMS (EQUIPMENT, VALVES, LINES, FITTINGS, ETC.) THAT ARE NOT CRITICAL FOR THE OVERALL UNDERSTANDING OF THE INSTRUMENTATION AND CONTROL SYSTEM FUNCTIONS ARE NOT SHOWN FOR CLARITY.
4. REFER TO THE ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL CONTROLS, INTERLOCKS AND OTHER REQUIREMENTS FOR EQUIPMENT THAT MAY NOT BE SUPPLIED BY THE SYSTEMS INTEGRATOR.



1 **CONTROL SYSTEM BLOCK DIAGRAM**
NO SCALE

Mead & Hunt
Mead and Hunt, Inc.
4401 Eastport Parkway
Port Orange, FL 32127
phone: 386-761-6810
meadhunt.com
FL Cert. #26730

CITY OF ORMOND BEACH
FLORIDA

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CITY OF ORMOND BEACH
HUDSON WELLFIELD EXPANSION

AIRPORT ROAD
ORMOND BEACH, FL

ISSUED

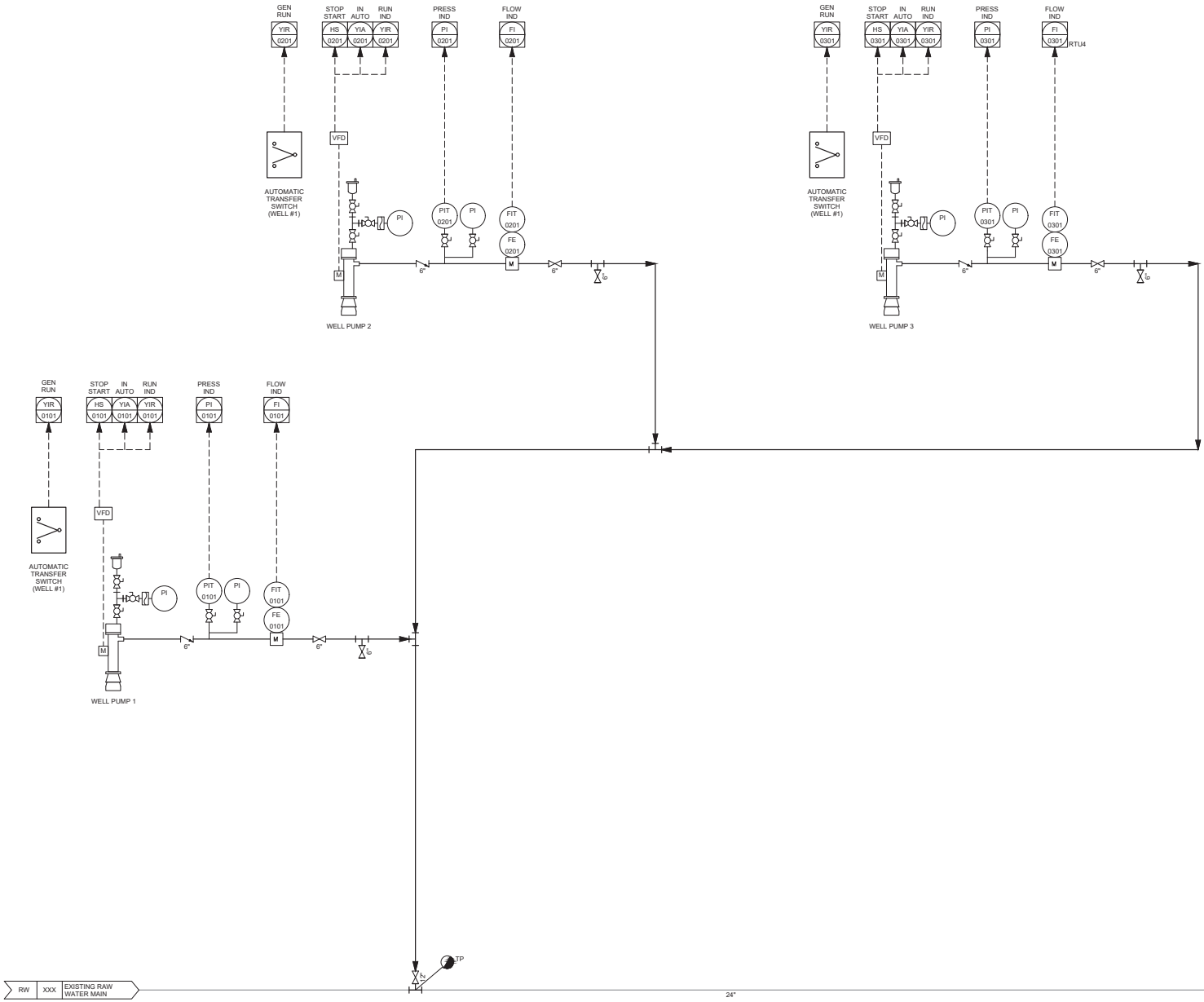
11/27/23	90% PLANS
12/15/23	PERMITTING
03/29/24	100% PLANS

M&H NO.: 1000714-212249.01
DATE: MAY 2024
DESIGNED BY: JK
DRAWN BY: WKM
CHECKED BY: JK
DO NOT SCALE DRAWINGS

SHEET CONTENTS
LEGEND AND NOTES

SHEET NO.
I-001

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Mead & Hunt
Mead and Hunt, Inc.
4401 Eastport Parkway
Port Orange, FL 32127
phone: 386-761-6810
meadhunt.com
FL Cert. #26730

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CITY OF ORMOND BEACH
HUDSON WELLFIELD EXPANSION

AIRPORT ROAD
ORMOND BEACH, FL

ISSUED

11/27/23	90% PLANS
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CHECKED BY: JK
DO NOT SCALE DRAWINGS

SHEET CONTENTS
P&ID WELLS

SHEET NO.
I-101

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PROJECT MANUAL

HUDSON WELLFIELD EXPANSION

BID 2024-22

Mead & Hunt, Inc.
Project # 1000714-212249.01

Prepared for:

City of Ormond Beach

June 2024

Mead&Hunt
4401 Eastport Parkway
Port Orange, FL 32127
Phone: 813-210-8740
www.meadhunt.com

TABLE OF CONTENTS
CITY OF ORMOND BEACH
HUDSON WELLFIELD EXPANSION
BID #2024-22

Section	Title
	BIDDING REQUIREMENTS
00030	Advertisement for Bid
00100	Instruction to Bidders
00300	Bid
00410	Bid Bond
	CONTRACT FORMS
00500	Form of Agreement
00610	Performance Bond
00615	Payment Bond
00670	Opinion of Attorney
	CONDITIONS OF CONTRACT
00700	General Conditions
00800	Supplementary Conditions
	DIVISION 1 – GENERAL REQUIREMENTS
01 00 00	General Requirements
01 11 00	Summary of Work
01 14 13	Access to Site
01 20 00	Price and Payment Procedures
01 25 00	Substitution Procedures
01 29 73	Schedule of Values
01 30 00	Administrative Requirements
01 31 19	Project Meetings
01 32 16	Construction Progress Schedules
01 32 33	Photographic Documentation
01 33 23	Shop Drawings, Product Data and Samples
01 35 13	Special Project Procedures
01 45 29	Testing Laboratory Services
01 50 00	Temporary Facilities and Controls
01 54 00	Construction Aids
01 57 13	Temporary Erosion and Sedimentation Controls
01 60 00	Product Requirements

01 71 13 Mobilization
01 71 33 Protection of Adjacent Construction
01 75 16 Startup Procedures
01 77 00 Closeout Procedures
01 78 23 Operation and Maintenance Data
01 78 33 Bonds
01 78 36 Warranties
01 78 39 Project Record Documents

DIVISION 3 – CONCRETE

03 30 00 Cast in Place Concrete
03 40 00 Precast Concrete
03 60 00 Grouting

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

07 72 33 Roof Hatches

DIVISION 26 – ELECTRICAL

26 05 00 Common Work Results for Electrical
26 05 19 Low-Voltage Electrical Power Conductors
26 05 26 Grounding and Bonding for Electrical Systems
26 05 33 Raceways and Boxes for Electrical Systems
26 05 43 Underground Ducts and Raceways for Electrical Systems
26 05 53 Identification for Electrical Systems
26 24 16 Panelboards
26 28 16 Enclosed Switches and Circuit Breakers
26 29 23 Variable Frequency Motor Controllers
26 32 13 Engine Generators
26 36 00 Transfer Switches
26 41 13 Lightning Protection for Structures

DIVISION 27 – COMMUNICATIONS

27 13 23 Communications Optical Fiber Backbone Cabling

DIVISION 31 – EARTHWORK

31 11 00 Clearing and Grubbing
31 22 00 Grading
31 23 00 Excavation and Fill
31 23 13 Subgrade Preparation
31 23 19 Dewatering
31 23 33 Trenching, Backfilling, and Compaction

DIVISION 32 – EXTERIOR IMPROVEMENTS

32 10 00	Bases, Ballasts, and Paving
32 31 13	Chain Link Fences and Gates
32 92 00	Turf and Grasses
32 92 23	Sodding

DIVISION 33 – UTILITIES

33 00 00	Utilities
33 01 00	Operation and Maintenance of Utilities
33 01 12	Inspection and Testing of Water Utilities
33 05 05.31	Hydrostatic Testing
33 05 07.23	Boring and Jacking
33 05 33.23	Polyethylene Pressure Piping and Tubing
33 10 11	Pumps General
33 11 13	Production Well Construction and Testing
33 11 20	Submersible Well Pumps

DIVISION 40 – PROCESS INTERCONNECTIONS

40 61 13	Process Control System General Provisions
40 67 00	Process Control Panels and Hardware
40 70 00	Instrumentation for Process Systems

END TABLE OF CONTENTS

SECTION 00030
ADVERTISEMENT FOR BIDS

Sealed bids for furnishing all labor, materials, and equipment necessary for constructing ***The City of Ormond Beach Hudson Wellfield Expansion,*** Bid No. 2024-22 for the City of Ormond Beach, Florida, will be received at the Office of the Purchasing Coordinator, City Hall, Ormond Beach, Florida, until 2:00 p.m. on Wednesday, October 2, 2024, at which time bids will be opened and publicly read aloud in the Training Room located in the breezeway between City Hall and the Public Library. Bids received after the above time and date will be returned unopened.

Work includes installation of three new wellheads (Wells no. 42H, 43H and 44H) in precast concrete well houses, three new generators, associated electrical and appurtenances. Installation of approximately 1,600 linear feet of 6-inch raw water pipeline, 750 linear feet of 8-inch raw water pipeline and 1,000 linear feet of 12-inch raw water pipeline. Construction of access roads from Airport Road to the three well sites.

The work is shown on the Drawings and specified in the Project Manual. The project Drawings, Specifications and related Bidding documents are available on-line at **www.demandstar.com**, or by calling DemandStar at (206) 940-0305. If you have difficulty obtaining these documents, please contact the City's purchasing office at (386) 676-3223.

A **pre-bid conference** to discuss the details and requirements of the contract will be held Wednesday, September 11, 2024 at 10:00 a.m. in the Training Room at City Hall. All prospective bidders are strongly encouraged to attend.

The deadline for submitting questions is September 27, 2024 at 4:00 p.m.

END OF SECTION

SECTION 00100
INSTRUCTION TO BIDDERS

00101. Defined Terms

Terms used in these Instructions to Bidders are defined in the General Conditions of the Construction Contract and have the meanings assigned to them in the General Conditions. The term "Successful Bidder" means the lowest, qualified, responsible Bidder to whom OWNER (on the basis of OWNER's evaluation as hereinafter provided) makes an award.

The OWNER for this project is:

The City of Ormond Beach
22 South Beach Street
Ormond Beach, Florida 32174

The ENGINEER for this project is:

Mead & Hunt, Inc.
4401 Eastport Park Way
Port Orange, FL 32127

00102. Copies of Bidding Documents

2.1 The City uses the services of DemandStar (www.demandstar.com) to advertise/distribute its bids and RFP's via the internet.

2.2 Complete sets of the Bidding Documents may be obtained from the issuing office designated in the Advertisement for Bids.

2.3 Complete sets of Bidding Documents shall be used in preparing Bids; neither OWNER nor ENGINEER assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2.4 OWNER and ENGINEER in making copies of Bidding Documents available, on the above terms, do so only for the purpose of obtaining Bids on the Work and do not confer a license or grant for any other use.

00102.1 COMPLIANCE WITH FLORIDA PUBLIC RECORDS LAW

Contractor expressly agrees that it shall comply with the public records law provided in Florida Statutes, Chapter 119, and specifically to:

(a) Keep and maintain public records required by the City to perform the contracted service.

(b) Upon request from the City Clerk, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes, or as otherwise provided by law.

(c) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the contractor does not transfer the records to the City.

(d) Upon completion of the contract, transfer at no cost, to the City all public records in possession of the contractor or keep and maintain public records required by the City to perform the service. If the contractor transfers all public records to the City upon completion of the contract, the contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the contractor keeps and maintains public records upon the completion of the contract, the contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City Clerk, in a format that is compatible with the information technology systems of the City.

(e) Failure of the Contractor to comply with Public Records Law as provided by Florida Statutes, Chapter 119, shall subject the Contractor to penalties under Chapter 119.10 and subject this Agreement to termination for cause by the City.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

CITY CLERK
22 SOUTH BEACH STREET
ORMOND BEACH, FLORIDA 32174 (386) 676-3297
CITYCLERK@ORMONDBEACH.ORG

Ref: Fla. Stat. §119.0701(2016)

00102.2 Public Records/Non-Confidentiality of Bids

The City of Ormond Beach cannot and does not warrant the confidentiality of any information submitted in response to this bid solicitation. Florida law provides that municipal records shall at all times be open for personal inspection by any person, Section 119, F.S., the Public Records Act. Information and materials received by the City of Ormond Beach in connection with responsive bids shall be deemed to be public records subject to public inspection upon award, recommendation of award, or 30 days after bid opening, whichever occurs first.

00103. Qualifications of Bidders

To demonstrate qualifications to perform the Work, each Bidder must be prepared to submit, within seven days after the OWNER's request, written evidence of his ability to perform the work, such as financial data, previous experience, and evidence of authority to conduct business in the jurisdiction where the Project is located. Each Bid must contain evidence of Bidder's qualification to do business in the state where the Project is located or covenant to obtain such qualification prior to award of the contract.

00104. Public Entity Crimes:

A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a Proposal on a contract to provide any goods or services to a public entity, may not submit a Proposal on a contract with a public entity for the construction or repair of a public building or public work, may not submit Proposals on leases or real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.

4.1 Discrimination Pursuant to Section 287.134(2)(a), Florida Statutes, an entity or affiliate who has been placed on the discriminatory vendor list may not submit a bid on a contract to provide any goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity.

00105. Examination of Contract Documents and Site

5.1 Before submitting a Bid, each Bidder must (a) examine the Contract Documents thoroughly, (b) visit the site to familiarize himself with local conditions that may in any manner affect cost, progress or performance of the Work, (c) familiarize himself with federal, state and local laws, ordinances, rules and regulations that may in any manner affect cost, progress or performance of the Work; and (d) study and carefully correlate Bidder's observations with the Contract Documents.

5.2 Reference is made to the Supplementary Conditions for the identification of those reports of investigations and tests for subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the Work which have been relied upon by ENGINEER in preparing the Drawings and Specifications. OWNER will make such reports available for inspection to any Bidder or copies may be obtained from the ENGINEER by the Bidder at reproduction cost. These reports are not guaranteed as to accuracy or completeness, nor are they part of the Contract Documents. Before submitting his Bid each Bidder will, at his own expense, make such additional investigations and tests as the Bidder may deem necessary to determine his Bid for performance of

the Work in accordance with the time, price and other terms and conditions of the Contract Documents.

5.3 On request OWNER will provide each Bidder access to the site to conduct such investigations and tests as each Bidder deems necessary for submission of his Bid. Bidders making such investigations shall return site to original condition and shall pay for any damages resulting therefrom.

5.4 The lands upon which the Work is to be performed, rights-of-way for access thereto and other lands designated for use by CONTRACTOR in performing the Work are identified in the Supplementary Conditions, General Requirements, or Drawings.

5.5 The submission of a Bid will constitute an incontrovertible representation by the Bidder that he has complied with every requirement of this Article 4 and that the Contract Documents are sufficient in Scope and detail to indicate and convey understanding of all terms and conditions for performance of the Work.

00106. Clarification/Correction of Proposal

The City of Ormond Beach reserves the right to allow for the clarification of questionable entries and for the correction of obvious mistakes.

00107. Interpretations

All questions about the meaning or intent of the Contract Documents shall be submitted in writing to the Purchasing Coordinator via email to Rob.Hart@ormondbeach.org. Replies will be issued by Addenda mailed or delivered to all parties recorded by ENGINEER as having received the Bidding Documents. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

00108. Minority Policies

The City of Ormond Beach, Florida, encourages the full participation of Disadvantaged and Women Business Enterprises (D&WBE) in the provision of goods and services.

00109. Bid Security

9.1 Bids shall be accompanied by a Bid Security. The Security shall be made payable to OWNER, in the amount of five percent (5%) of the total bid, and in the form of a certified or cashier's check or a Bid Bond issued by a Surety meeting the requirements of paragraph 5.1 of the General Conditions. The Bid Security shall be irrevocable after the time and date set for the opening of bids, and for a period of ninety (90) days thereafter.

9.2 The Bid Security of the Successful Bidder will be retained until such Bidder has executed the Agreement and furnished the required Contract Security, whereupon it will be returned; if the successful Bidder fails to execute and deliver the Agreement and furnish the required Contract

Security within fifteen (15) days of the Notice of Award, OWNER may annul the Notice of Award and the Bid Security of that Bidder will be forfeited. The Bid Security of any Bidder whom OWNER believes to have a reasonable chance of receiving the award may be retained by OWNER until the seventh day after the "effective date of the Agreement" or the first day after the expiration of the period that Bids are specified to remain open in the Advertisement for Bids. Bid Security of other Bidders will be returned within seven (7) days of the Bid opening.

00110. Contract Time

The number of days within which, or the date by which, the Work is to be completed (the Contract Time) is set forth in the Bid Form and will be included in the Agreement.

00111. Liquidated Damages

Provisions for liquidated damages, if any, are set forth in the Bid Form and Agreement.

00112. Subcontractors

12.1 If the Supplementary Conditions, Bid Form and/or Specifications require the identity of certain subcontractors to be submitted to the OWNER with the bid, the bidder will list in his bid all subcontractors proposed for those portions of the work for which such identification is so required. When requested, an experience statement, pertinent information as to similar projects satisfactorily completed and other evidence of qualifications for each listed subcontractor shall be submitted within seven (7) days after the bid. If the OWNER after due investigation has reasonable objection to any proposed subcontractor, OWNER may before giving the Notice of Award request the apparent low bidder to submit an acceptable substitute without an increase in his bid price. If the apparent Successful Bidder declines to make any such substitution, the contract shall not be awarded to such Bidder, but his declining to make any such substitution will not constitute grounds for sacrificing his Bid Security. Any Subcontractor so listed and to whom OWNER does not make written objection prior to the giving of the Notice of Award will be deemed acceptable to OWNER.

12.2 In contracts where the Contract Price is on the basis of Cost-of-the-Work Plus a Fee, the apparent Successful Bidder, prior to the Notice of Award, shall identify in writing to OWNER those portions of the Work that such Bidder proposes to subcontract and after the Notice of Award may only subcontract other portions of the Work with OWNER's written consent.

00113. Material and Equipment List (Manufacturers)

If the Supplementary Conditions, Bid Form and/or Specifications require the identity of certain material and equipment manufacturers be submitted to the OWNER with the bid, the bidder will list in his bid all material and equipment manufacturers proposed for those portions of the work for which such identification is so required. Such list shall be supplemented by product descriptions for each listed material and equipment item. Supplemental information will be submitted with the bid unless it has been prefiled with the ENGINEER. In this latter case, the bid shall state that the information has been prefiled. Equipment manufacturers/suppliers must agree to OWNER'S terms of purchase. In no event will OWNER accept terms of sale that limit OWNER'S ability to

reasonably recover in the event of equipment failure/defect such as, but not limited to; mandatory arbitration clauses, venue of court proceedings and applicable law outside of Volusia County, Florida, or damage limitations that preclude recovery for failed or defective equipment that would be less than full compensation for OWNER's loss. If the OWNER after due investigation has reasonable objection to any proposed material or equipment item, OWNER may before giving the Notice of Award request the apparent low bidder to submit an acceptable substitute without an increase in his bid price. If the apparent Successful Bidder declines to make any such substitution, the contract may not be awarded to such Bidder, but his declining to make any such substitution will not constitute grounds for sacrificing his Bid Security. Any material or equipment manufacturer so listed and to whom OWNER does not make written objection prior to the giving of the Notice of Award will be deemed acceptable to OWNER. This acceptance of a material or equipment manufacturer does not relieve the CONTRACTOR from the responsibility of submitting shop drawings in accordance with Section 01300 before incorporating said material and/or equipment into the Work.

00114. Material and Equipment Substitutions

Excluding items called for in the bidders Equipment and Subcontractors List in the Bid, Section 00300, whenever it is indicated on the Drawings or specified in the Specifications that a substitute or "or equivalent" item of material or equipment may be furnished or used by CONTRACTOR if acceptable to ENGINEER, application for such acceptance will not be considered by ENGINEER until after the "effective date of the Agreement". The procedure for submittal of any such application by CONTRACTOR and consideration by ENGINEER is set forth in Section 01630 - Substitutions and Product Options.

00115. Bid Form

15.1 Bids shall be submitted on standard forms which are furnished in this Project Manual.

15.2 Bid Forms must be completed in ink or by typewriter. All blank spaces must be filled. Where indicated on the Bid Form, the Bid price of each item on the form must be stated in words and numerals; in case of a conflict, words will take precedence.

15.3 The estimate of the various quantities of work applicable to unit price items as shown on the Bid Form is approximate and is intended solely to provide the basis of comparison upon which the award of contract is made. Final payment will be made on the basis of the actual completed quantities of each item.

15.4 Bids by corporations must be executed in the corporate name by the president or a vice president (or other corporate officer accompanied by evidence of authority to sign) and the corporate seal must be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown below the signature.

15.5 Bids by partnerships must be executed in the partnership name and signed by a partner, whose title must appear under the signature and the official address of the partnership must be shown below the signature.

15.6 Bids by a Joint Venture must be executed by all individuals, Partners, or Corporations interested in the Joint Venture in the same manner that bids by these separate entities are required to be executed.

15.7 All names must be typed or printed below the signature.

15.8 The Bid shall contain an acknowledgment of receipt of all Addenda (the numbers of which shall be filled in on the Bid Form).

15.9 The address to which communications regarding the Bid are to be directed must be shown.

15.10 Only one bid from any individual, firm, partnership or corporation under the same or different names, will be considered. Should it appear to the OWNER that any Bidder is interested in more than one bid, all bids in which such Bidder is interested will be rejected.

00116. Submission of Bids

Bids shall be submitted at the time and place indicated in the Advertisement for Bids and shall be included in an opaque sealed envelope, marked with the Bid Number, Project Title, and Bidder's Name and Address, accompanied by the Bid Security and other required documents. Include one (1) original bid form and (1) electronic file (thumb/flash drive or CD). If the Bid is sent through the mail or other delivery system, the sealed Bid shall be sent in a separate envelope with the notation "BID ENCLOSED" as well as the Bid Number, Project Title, and Bid Opening Date clearly displayed on the shipping envelope/package.

Submit bids to:

City of Ormond Beach
Purchasing Coordinator
22 South Beach Street, Room 102
Ormond Beach, FL 32174

00117. Modification and Withdrawal of Bids

Bids may be modified or withdrawn by an appropriate document duly executed (in the manner that a Bid must be executed) and delivered to the place where Bids are to be submitted at any time prior to the opening of Bids.

00118. Opening of Bids

Bids will be opened publicly and read aloud and an abstract of the amounts of the base Bids and major alternates (if any) will be made available after the opening of Bids.

00119. Bids to Remain Open

All Bids shall remain open for ninety (90) days after the day of the Bid opening, but OWNER may, in his sole discretion, release any Bid and return the Bid Security prior to that date.

00120. Award of Contract

20.1 OWNER reserves the right to reject any and all Bids, to waive any and all informalities and to negotiate contract terms with the Successful Bidder, and the right to disregard all nonconforming, nonresponsive or conditional Bids. Discrepancies between words and figures will be resolved in favor of words. Discrepancies between the indicated product of quantities and unit prices and the correct product thereof will be resolved in favor of the correct product. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

20.2 In evaluating Bids, OWNER shall consider the qualifications of the Bidders, whether or not the Bids comply with the prescribed requirements, and alternates and unit prices if requested in the Bid forms. It is OWNER's intent to accept alternates (if any are accepted) in the order in which they are listed in the Bid form but OWNER may accept them in any order or combination.

20.3 OWNER may consider the qualifications and experience of Subcontractors and other persons and organizations (including those who are to furnish the principal items or material or equipment) proposed for those portions of the Work as to which the identity of Subcontractors and other persons and organizations must be submitted as provided in the Supplementary Conditions. Operating costs, maintenance considerations, performance data and guarantees of materials and equipment may also be considered by OWNER.

20.4 Irregular bids may be rejected. Irregular bids are defined as those containing serious omissions, unauthorized alternative bids, incomplete bids or unbalanced bids. Failure to provide all of the information required to accompany the bid will be considered to be a serious omission.

20.5 OWNER may conduct such investigations as he deems necessary to assist in the evaluation of any Bid.

20.6 OWNER reserves the right to reject the Bid of any Bidder who does not pass any such evaluation to OWNER's satisfaction.

20.7 If the contract is to be awarded it will be awarded to the lowest responsible Bidder whose evaluation by OWNER indicates that the award will be in the best interests of the Project. Pursuant to the provisions of Florida Statutes Chapter 287.05701, the City does not request, or consider, a Vendor’s social, political, or ideological interests in making a responsibility determination. The low bid will be based on the total cost of the Base Bid and, when applicable, any Additive or Deductive Alternates that are to be included in the Contract, as decided by the OWNER.

20.8 If the contract is to be awarded, OWNER will give the Successful Bidder a Notice of Award within the number of days after the day of the Bid opening specified in the Advertisement for Bids to remain open.

00121. Performance and Other Bonds

Paragraph 5.1 of the General Conditions and the Supplementary Conditions set forth OWNER's requirements as to performance and other Bonds. When the Successful Bidder delivers the executed Agreement to OWNER it shall be accompanied by the required Contract Security.

00122. Signing of Agreement

When OWNER gives a Notice of Award to the Successful Bidder, it will be accompanied by at least two (2) unsigned counterparts of the Agreement and all other Contract Documents. Within fifteen (15) days thereafter CONTRACTOR shall sign all and deliver at least two (2) counterparts of the Agreement to OWNER with other Contract Documents attached. Within fifteen (15) days thereafter OWNER will deliver fully signed counterparts to CONTRACTOR.

00123. Special Requirements

23.1 Financing. Funds will be available for payment of estimate draws as they become due.

23.2 Prohibited Interests. No official of the OWNER who is authorized in such capacity, and on behalf of the OWNER to negotiate, make, accept or approve, or to take part in negotiating, making, accepting, or approving any architectural, engineering, inspection, construction or material supply contract or any subcontract in connection with the construction of the project shall become directly or indirectly interested, personally, in this Contract or in any part thereof. No officer, employee, architect, attorney, engineer, or inspector of or for the OWNER who is authorized in such capacity and on behalf of the OWNER to exercise legislative, executive, supervisory, or other similar functions in connection with the construction of the project, shall become directly or indirectly interested personally, in this Contract or in any part thereof, any material supply contract, subcontract, insurance contract, or any other contract pertaining to the project.

23.3 Performance of Work by CONTRACTOR:

Contract Assignment. The successful Bidder (or Bidders) will be required to perform the work as a prime contractor.

The CONTRACTOR shall not sublet, sell, transfer, assign or otherwise dispose of the contract or any portion thereof, or of his right, title or interest therein, without written consent of the OWNER.

END OF INSTRUCTION TO BIDDERS

SECTION 00300
BID

CONTRACTORS NAME _____ LICENSE NO._____

PROJECT IDENTIFICATION: ***Hudson Wellfield Expansion***

CONTRACT IDENTIFICATION AND NUMBER: Bid No. 2024-22

THIS BID IS SUBMITTED TO:
(Name and Address of Owner)

City of Ormond Beach
22 South Beach Street
Ormond Beach, Florida 32174

1. The undersigned BIDDER proposes and agrees, if this Bid is accepted, to enter into an Agreement with OWNER in the form included in the Contract Documents to complete all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in this Bid and in accordance with the Contract Documents.

2. BIDDER certifies that he has investigated the requirements to do business in the jurisdiction where the project is located, and that he is either qualified to do business or will obtain such prequalification prior to award of the contract.

3. BIDDER accepts all of the terms and conditions of the Instructions to Bidders (Section 00100) including, without limitation, those dealing with the disposition of Bid Security, Public Entity Crimes, and Minority Policies. This Bid will remain open for 90 days after the day of Bid opening. BIDDER will sign the Agreement and submit the Contract security and other documents required by the Contract Documents within ten (10) days after the date of OWNER'S Notice of Award.

4. In submitting this Bid, BIDDER represents, as more fully set forth in the Agreement, that:

(a) BIDDER has examined copies of all the Contract Documents and of the following addenda:

Date	Number
_____	_____
_____	_____
_____	_____
_____	_____

(receipt of all of which is hereby acknowledged) and also copies of the Advertisement to Bid and the Instructions to Bidders;

(b) BIDDER has examined the site and locality where the Work is to be performed, the legal requirements (federal, state and local laws, ordinances, rules and regulations) and the conditions affecting cost, progress or performance of the Work and has made such independent investigations as BIDDER deems necessary.

(c) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; BIDDER has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; BIDDER has not solicited or induced any person, firm or a corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for himself any advantage over any other Bidder or over OWNER; and

5. BIDDER will complete the Work for the following price(s):

BID SCHEDULE

Item	Description	Qty	Unit	Unit Cost	Total Cost
1	Mobilization / Demobilization	1	LS		
2	Pre-Construction Video	1	LS		
3	Field Locate and Expose Existing Utilities	1	LS		
4	Survey Layout/As-Builts	1	LS		
5	Clearing and Grubbing	1	LS		
6	Erosion and Turbidity Control / NPDES Permit Requirements	1	LS		
7	Compliance with Florida “Trench Safety Act”	1	LS		
8	Maintenance of Traffic	1	LS		
9	Unsuitable Material Excavation and Replacement	5	CY		
10	Well Construction and Testing	3	EA		
11.1	Furnish and Install 6-in PVC Raw Water Main (DR18) AWWA C-900 by Open Cut	1,600	LF		
11.2	Furnish and Install 8-in PVC Raw Water Main (DR18) AWWA C-900 by Open Cut	750	LF		
11.3	Furnish and Install 12-in PVC Raw Water Main (DR18) AWWA C-900 by Open Cut	1,100	LF		
12	Jack and Bore 24” Steel Casing with 12” Carrier	155	LF		
13.1	Resilient Seated Gate Valve and Box – 6”	2	EA		
13.2	Resilient Seated Gate Valve and Box – 8”	2	EA		
13.3	Resilient Seated Gate Valve and Box – 12”	2	EA		
14	Tapping Sleeve	1	EA		
15	2” Air Release Valve Assembly	2	EA		
16	Furnish, Install and Outfit Well Pump	3	EA		
17	Furnish and Install Precast Concrete Well House and Concrete Slab	3	EA		
18	Fence Enclosures and Gates	1	LS		
19	Gravel Access Road	6,000	SY		

20	Earthwork (Excavation, Fill and Grading)	1	LS		
21	Well Entrance Driveway Apron	200	SY		
22	Remove and Replace Concrete Sidewalk	400	SY		
23	Electrical and Instrumentation (Complete)	1	LS		
24	Backup Diesel Generator	3	EA		
25	Allowances	1	LS	$50,000	$50,000
				TOTAL	

TOTAL BID $_____
(Figures)

_____
(Words)

BIDDER acknowledges that the quantities are not guaranteed and final payment will be based on actual quantities determined as provided in the Contract Documents.

BIDDER agrees that the Work will be substantially completed within **270** calendar days after the date when the Contract Time commences to run, and completed within **300** calendar days after the date when the Contract Time commences to run.

BIDDER recognizes that time is of the essence to complete this Project and that OWNER will suffer financial loss if the Work is not substantially complete within the time specified above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The BIDDER also recognize the delays, expense and difficulties involved in proving, in a legal or arbitration proceeding, the actual loss suffered by OWNER if the Work is not substantially complete on time. Accordingly, instead of requiring any such proof, OWNER has determined and BIDDER agrees to accept that as liquidated damages for delay (but not as a penalty) CONTRACTOR shall pay OWNER Five Hundred Dollars ($500) for each calendar day that expires after the time specified above for substantial completion until the Work is substantially complete. After substantial completion, if CONTRACTOR shall neglect, refuse or fail to complete the remaining Work within the time specified above for completion and readiness for final payment or any proper extension thereof granted by OWNER, CONTRACTOR shall pay the OWNER an amount equal to all actual expenses incurred by the OWNER as a direct result of the CONTRACTOR'S negligence, refusal, or failure to so complete the remaining work. In the event the CONTRACTOR is terminated or abandons the work prior to the scheduled date for final completion, the CONTRACTOR may be liable for both liquidated damages attributable to delay and for excess completion costs.

6. The following documents are attached to and made a condition of this Bid:

   (a) Required Bid Security in the form of

   (1) a certified check drawn in favor of the City of Ormond Beach in the amount of 5 percent of the total bid; or

   (2) a Bid Bond in the amount of 5 percent of the total bid.

   (b) Equipment, Material, and Subcontractors List

   (c) All information required by the Trench Safety Act (Part VI, Chapter 553, Florida Statutes).

   (d) Drug Free Workplace Certificate

   (e) Conflict, Non-Conflict of Interest, Litigation Statement

   (f) Local Vendor Preference

   (g) Verification of Employment Status Using E-Verify System

   (h) Affidavit of Compliance F.S. 287.138 Contracting With Foreign Entities of Concern

7. Communications to the BIDDER concerning this Bid shall be addressed to:

Mailing Address: _____
Street Address: _____
City, State, Zip Code: _____
Email: _____
Telephone No.: _____ Fax No.: _____

8. The terms used in this Bid which are defined in the General Conditions of the Construction Contract included as part of the Contract DOCUMENTS have the meanings assigned to them in the General Conditions.

SUBMITTED on _____, 20 ___.

If BIDDER is:

An Individual

By _____
(Individual's Name - Signature)

_____ (SEAL)
(Individual's Name - Typed or Printed)

doing business as _____

Business address: _____

_____

_____

Phone No.: _____

Fax No.: _____

If BIDDER is:

A Partnership

By _____ (SEAL)
(Firm Name)

_____
(General Partner - Signature)

_____
(General Partner - Typed or Printed)

Business Address: _____

_____

_____

Phone No.: _____

Fax No.: _____

If BIDDER is:

A Corporation

By _____
(Corporation Name)

_____
(State of Incorporation)

By _____
(Name of Person Authorized to Sign - Signature)

_____
(Name of Person Authorized to Sign - Typed or Printed)

_____
(Title)

(Corporate Seal)

Attest _____

Business address: _____

_____

_____

Phone No.: _____

Fax No.: _____

If BIDDER is:

A Joint Venture

By _____
(Name - Signature)

_____
(Name - Typed or Printed)

Address: _____

_____

_____

Phone No.: _____

Fax No.: _____

By _____
(Name - Signature)

_____
(Name - Typed or Printed)

Address: _____

_____

_____

Phone No.: _____

Fax No.: _____

(Each joint venturer must sign. The manner of signing for each individual, partnership and corporation that is a party to the joint venture should be in the manner indicated above.)

EQUIPMENT AND SUBCONTRACTORS LIST

List the names of the manufacturers whose product is proposed for use. No more than one manufacturer's name shall be inserted for each item of material and/or equipment listed. Failure to list materials and equipment supplier may result in the Bid being rejected as incomplete and nonresponsive. If any Subcontractors are proposed to be used for any portions of the Work, the names, addresses, phone numbers and work classifications of each such Subcontractor must be listed. The failure to list all Subcontractors proposed for the work may result in the Bid being rejected as incomplete and nonresponsive. If more than one manufacturer or subcontractor is listed, selection will be made by the OWNER. If none is listed, those listed as the "Basis for Design" will be used.

Materials and Equipment:

Item	Supplier
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Subcontractors:

Work Classification: _____

Name: _____

Address: _____

Phone Number: _____ Fax Number: _____

Subcontractors:

Work Classification: _____

Name: _____

Address: _____

Phone Number: _____ Fax Number: _____

Work Classification: _____

Name: _____

Address: _____

Phone Number: _____ Fax Number: _____

Work Classification: _____

Name: _____

Address: _____

Phone Number: _____ Fax Number: _____

Work Classification: _____

Name: _____

Address: _____

Phone Number: _____ Fax Number: _____

Work Classification: _____

Name: _____

Address: _____

Phone Number: _____ Fax Number: _____

Work Classification: _____

Name: _____

Address: _____

Phone Number: _____ Fax Number: _____

TRENCH SAFETY STANDARDS

If this project includes trench excavation in excess of five (5) feet in depth, the following trench safety standards will be in effect during the period of construction of the project:

The Occupational Safety and Health Administration's excavation safety standards, 29 C.F.R.s. 1926.650 Subpart P, and any regulation promulgated there under are hereby incorporated as the standard for this project.

The Bidder hereby certifies that the Contractor performing the trench excavation will comply with the applicable trench safety standards.

The Bidder further certifies that the cost (which is included in his unit cost) of compliance with applicable trench safety standards is:

ITEM	Estimated Quantity	Units	Unit Price	Total Estimated Price
1. Trench Excavation	_____	L.F.	_____	_____
2. Sheeting/Shoring	_____	S.F.	_____	_____

_____
Name (signature) Date

_____
Name (typed or printed)

_____
Title

DRUG-FREE WORKPLACE CERTIFICATION

Identical Or "Tie" Bids: Preference shall be given to businesses with drug-free workplace programs. Whenever two or more proposals which are equal in respect to price, quality, and service are received by the State or by any political subdivision for the procurement of commodities or contractual services, a bid received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. Established procedures for processing tie bids will be followed if none of the tied vendors have a drug-free workplace program. In order to have a drug-free workplace program, a business shall:

1) Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2) Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violation.

3) Give each employee that engages in providing the commodities or contractual services that are under bid a copy of the statement specified in subsection (1).

4) In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) calendar days after such conviction.

5) Impose sanctions on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.

6) Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

_____
Name (signature) Date

_____
Name (typed or printed)

_____
Title

CONFLICT, NON-CONFLICT OF INTEREST STATEMENT
LITIGATION STATEMENT

1.

[ ] To the best of our knowledge, the undersigned firm has no potential conflicts of interest due to any other clients or contracts for this project.

[ ] The undersigned firm, by attachment to this form, submits information which may be a potential conflict of interest due to other clients or contracts for this project.

2.

[ ] The undersigned firm has had no litigation on any project in the last five (5) years.

[ ] The undersigned firm, by attachment to this form, submits a summary and disposition of individual cases of litigation during the past five (5) years.

_____
COMPANY NAME

_____
AUTHORIZED SIGNATURE

_____
NAME (PRINT OR TYPE)

_____
TITLE

_____
DATE

LOCAL VENDOR PREFERENCE

The following is taken from the Code of Ordinances, City of Ormond Beach, Chapter 2, Financial Matters, Division 3, Purchasing, Article IX, Section 2-304:

Except where otherwise provided by federal or state law or other funding source restrictions, purchases of goods and services under the Purchasing Code shall give preference to local businesses as follows:

(a) Under a competitive bid solicitation, the City *may* give a local preference in the amount of three percent (3%) of the bid price or $25,000, whichever is less. The bid price shall include not only the base bid price but all alternatives which are part of the bid and actually purchased or awarded.

(b) A *local business* shall mean a vendor that has a valid occupational license issued by the City of Ormond Beach at least one year prior to bid opening, with a physical business address located within the municipal boundaries of the City of Ormond Beach from which the vendor operates or performs business on a day-to-day basis that is a substantial component of the goods or services being offered and has provided a Local Vendor Affidavit of Eligibility at the time the bid is submitted.

(c) A *Local Vendor Affidavit of Eligibility* shall accompany the bid submittal to be considered valid and shall include, but not be limited to, the following information:
   (1) A physical business and location address;
   (2) A copy of current City of Ormond Beach Local Business Tax Receipt (occupational license) to verify the business location;
   (3) Proof of payment of business tax and real property tax due to the City of Ormond Beach;
   (4) A copy of the firm's most recent annual corporation report to the Florida Division of Corporations;
   (5) Any additional information necessary to verify local status.

(d) *Exemptions:* Goods or services provided under a cooperative purchasing agreement, contracts for professional services subject to Consultants' Competitive Negotiation Act, purchases or contracts funded in whole or part by a governmental entity that does not allow local preferences, purchases made under another agency's agreements or contracts (piggybacking), purchases under emergency or sole source situations and procurements subject to formal proposals including but not limited to request for proposals (RFP) or continuing contract, and request for quotes (RFQ) versus straight competitive bids.

(e) This section shall not be deemed to require the granting of a local preference, and nothing herein prohibits the award of a contract to a non-local vendor where such award is in the public interest.

LOCAL VENDOR AFFIDAVIT OF ELIGIBILITY

I certify that my company meets all of the following qualifications to be eligible for the local vendor preference:

a. My company has a physical business address located within the municipal boundaries of the City of Ormond Beach which is used to perform business on a day-to-day basis.
b. My company holds any business (occupational) or contractor license required by the City of Ormond Beach at least one year prior to bid opening.
c. Payment of business tax and real property tax due to the City of Ormond Beach is current
d. My company is in compliance with annual reporting to the Florida Division of Corporations

Company Name: _____

Address: _____

Business or Contractor License Number: _____

Phone Number: _____ Fax Number: _____

Owner's Name: _____ Signature:_____

Sworn to before me this _____ day of _____

Notary Public for the State of _____ My Commission Expires _____

Notary Public Signature: _____

Printed Name: _____

To be approved as a local bidder and receive bid preference on an eligible local project, this affidavit of eligibility, a copy of your local business or contractor license, copy of business tax/real property tax and a copy of the firm's most recent annual corporation report must be submitted with your bonafide BID package. Bid preference is provided at the City's sole discretion.

VENDOR DO NOT COMPLETE BELOW

To be verified and completed by an authorized representative of the City of Ormond Beach's Purchasing Department:

Vendor Certified by: _____ Date: _____

VERIFICATION OF EMPLOYMENT STATUS USING E-VERIFY SYSTEM

1. Undersigned firm warrants it **IS** currently registered with the U.S. Department of Homeland Security's E-Verify system, **and** is compliant with the requirements of Sections 448.09 and 448.095, *Florida Statutes*.
2. Undersigned firm warrants it **has not** had any contracts terminated as a result of violations of Sections 448.09 or 448.095, *Florida Statutes*, that prohibit it from contracting with a public agency.
3. Undersigned firm warrants that if it enters into an agreement with a subcontractor, an express provision shall be included in all of its subcontracts requiring subcontractors, who perform work or provide services pursuant to the contract, to use the E-Verify system to verify employment eligibility of all new employees hired by the subcontractor during the contract term.
4. Undersigned firm understands that any subcontractor must provide the contractor with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, and the contractor understands it shall maintain any such affidavits for the duration of the contract, and the contract with the subcontractor must be immediately terminated if the City has a good faith belief that the subcontractor knowingly violated Section 448.09 (1), *Florida Statutes*.
5. Undersigned firm understands that in the event the City has a good faith belief that the contractor has knowingly violated Section 448.09 (1), *Florida Statutes*, the City shall terminate the contract, and the contractor may not be awarded a public contract for a period of at least one (1) year after the date of termination. The contractor may be held liable for any additional costs incurred by the City as a result of termination of the contract.

_____
COMPANY NAME

_____
AUTHORIZED SIGNATURE

_____
NAME (PRINT OR TYPE)

_____
TITLE

_____
DATE

AFFIDAVIT OF COMPLIANCE WITH SECTION 287.138, FLORIDA STATUTES CONTRACTING WITH FOREIGN ENTITIES OF CONCERN

The undersigned ("Affiant"), on behalf of the entity listed below ("Entity"), hereby attests under penalty of perjury as follows:

1. Affiant is the _____ of _____
   (Title) (Business Name)
   which does business in the State of Florida, hereinafter called the "Entity".
2. Entity is not owned by the government of a foreign country of concern, as defined in Section 287.138 (1) (c), Florida Statutes.
3. The government of a foreign country of concern does not have a controlling interest in Entity, as defined in Section 287.138 (1)(a), Florida Statutes.
4. Entity is not organized under the laws of, and does not have a principal place of business in, a foreign country of concern.
5. Entity is not owned or controlled by the government of a foreign country of concern.
6. For purposes of this affidavit, a foreign country of concern means the People's Republic of China, the Russian Federation, the Islamic Republic of Iran, the Democratic People's Republic of Korea, the Republic of Cuba, the Venezuelan regime of Nicolas Maduro, or the Syrian Arab Republic, including any agency of or any other entity of significant control of such foreign country of concern, as defined in Section 287.138(1)(c), Florida Statutes.

The undersigned is authorized to execute this affidavit on behalf of the Entity.

Date: _____, 20____ Signed: _____

Title: _____ Print Name:_____

Entity: _____

STATE OF: _____ COUNTY OF: _____

The foregoing instrument was acknowledged before me by means of ☐physical presence or

☐online notarization, this _____ day of _____, 20_____,

by_____ and who:

☐Is personally known to me; or ☐ has produced _____
as identification.

_____
Notary Public, State of Florida at Large: (seal)
Printed Name/Seal of Notary, Commission and Expiration Date:

My commission expires: _____

This page must be completed & notarized.

END OF BID

SECTION 00410

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we_____

_____
(*hereinafter called Principal*) and

_____
(hereinafter called the Surety) a corporation chartered and existing under the Laws of the State _____ of with its principal offices in the County of _____ and authorized to do business in the State of Florida, in the full and just sum of _____
_____Dollars ($_____) good and lawful money of the United States of America, to be paid upon demand of the_____, Florida, to which payment well and truly to be made we bind ourselves, our heirs, executors, administrators, and assigns, jointly and severally and firmly by these presents,

WHEREAS, the Principal is about to submit, or has submitted to the City of Ormond Beach, Florida, a bid for work to be done on the ***HUDSON WELLFIELD EXPANSION (*Bid No. 2024-22**) in, and for the City and,

WHEREAS the Principal desires to file this bond in accordance with law, in lieu of a certified or cashier's check otherwise required to accompany this Bid.

NOW, THEREFORE: the conditions of this obligation are such that if the Bid be accepted the Principal shall within ten (10) days after the receipt of notification of the acceptance thereof execute a contract in accordance with the Bid and upon the terms, conditions and unit or lump sum prices set forth therein, in the form and manner required by the Owner, and execute a sufficient and satisfactory Contract Bond payable to the Owner, in an amount not less than the total contract price, as indicated by the approximate quantities shown in the Bid, in form and with security satisfactory to the said City, then this obligation to be void; otherwise to be and remain in full force and virtue in law; and the Surety shall upon the failure of the Principal to comply with any or all of the foregoing requirements within the time specified above, immediately pay to the aforesaid City upon demand the amount hereof in good and lawful money of the United States of America, not as a penalty, but as liquidated damages.

IN TESTIMONY WHEREOF, the Principal and Surety have caused these presents to be duly signed and sealed this _____ day _____, 20 _____.

_____
(Principal)

By: _____

ATTEST:

_____
(SEAL)

_____
(Surety)

By: _____

END OF SECTION

SECTION 00500
FORM OF AGREEMENT

THIS AGREEMENT is by and between City of Ormond Beach, a Municipal Corporation in the State of Florida (hereinafter called OWNER) and

_____

(hereinafter called CONTRACTOR)

The bid for this contract was approved by the City Commission on _____, 2024.

Article 1. WORK

CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

1. Installation of three public water supply production wells
2. Installation of three new wellheads (Wells no. 42H, 43H and 44H) in well houses, three new generators, and appurtenances.
3. Installation of approximately 1,600 linear feet of 6-inch raw water pipeline, 750 linear feet of 8-inch raw water pipeline and 1,000 linear feet of 12-inch raw water pipeline.
4. Construction of access roads from Airport Road to the three well sites.
5. Associated electrical and other miscellaneous improvements

The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

HUDSON WELLFIELD EXPANSION
BID NUMBER 2024-22

Article 2. ENGINEER

The Project has been designed by *Mead & Hunt, P.O. Box 290247 Port Orange, Florida* employed by OWNER who is hereinafter called ENGINEER and who will assume all duties and responsibilities and will have the rights and authority assigned to ENGINEER in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

Article 3. CONTRACT TIME

3.1 The Work will be substantially completed within 270 calendar days after the date when the Contract Time commences to run as provided in paragraph 2.3 of the General Conditions and completed and ready for final payment in accordance with paragraph 14.10 of the General Conditions within 300 calendar days after the date when the Contract Time commences to run.

3.2 Liquidated Damages. OWNER and CONTRACTOR recognize that time is of the essence of this Agreement and that OWNER will suffer financial loss if the Work is not substantially complete within the time specified in paragraph 3.1 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. They also recognize the delays, expense and difficulties involved in proving in a legal or arbitration proceeding the

actual loss suffered by OWNER if the Work is not substantially complete on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty) CONTRACTOR shall pay OWNER Five Hundred Dollars ($ 500.00) for each calendar day that expires after the time specified in paragraph 3.1 for Substantial Completion until the Work is substantially complete. After Substantial Completion, if CONTRACTOR shall neglect, refuse or fail to complete the remaining Work within the time specified in paragraph 3.1 for completion and readiness for final payment or any proper extension thereof granted by OWNER, CONTRACTOR shall pay the OWNER an amount equal to all actual expenses incurred by the OWNER as a direct result of the CONTRACTOR'S negligence, refusal, or failure to so complete the remaining work. In the event the Contractor is terminated or abandons the Work prior to the scheduled date for final completion, the Contractor may be liable for both liquidated damages attributable to delay and for excess completion costs.

Article 4. CONTRACT PRICE

OWNER shall pay CONTRACTOR for completion of the Work, in accordance with the Contract Documents, an amount in current funds equal to the unit price TOTAL BID of $_____, as listed in the Bid Form. Payment shall be for the actual completed work, as specified in the Measurement and Payment section of the project Manual and in accordance with Article 14 of the General Conditions.

Article 5. PAYMENT PROCEDURES

CONTRACTOR shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by ENGINEER as provided in the General Conditions.

5.1 Progress Payments. OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR'S Applications for Payment as recommended by ENGINEER, on or about the 15th day of each month during construction as provided below, provided Applications for Payment are timely delivered pursuant to Article 14.1 of the General Conditions. All progress payments will be on the basis of the progress of the Work measured by the schedule of values provided for in paragraph 14.1 of the General Conditions.

5.1.1 When applicable, all progress payments shall be in an amount equal to:

Ninety-Five percent (95%) of the Work completed.

Ninety-Five percent (95%) of materials and equipment not incorporated in the Work but delivered and suitably stored, less in each case the aggregate of payments previously made and less such amounts as ENGINEER shall determine in accordance with paragraph 14.4 of the General Conditions.

5.2 Final Payment. Upon final completion and acceptance of the Work in accordance with paragraph 14.10 of the General Conditions, OWNER shall pay the remainder of the Contract Price as recommended by ENGINEER as provided in said paragraph 14.10.

Article 6. CONTRACTOR'S REPRESENTATIONS

In order to induce OWNER to enter into this Agreement CONTRACTOR makes the following representations:

6.1 CONTRACTOR has familiarized himself with the nature and extent of the Contract Documents, Work, locality, and with all local conditions and federal, state and local laws, ordinances, rules and regulations that in any manner may affect cost, progress or performance of the Work.

6.2 CONTRACTOR has studied carefully all reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the Work which were relied upon by ENGINEER in the preparation of the Drawings and Specifications and which have been identified in the Supplementary Conditions.

6.3 CONTRACTOR has made or caused to be made examinations, investigations and tests and studies of such reports and related data in addition to those referred to in paragraph 6.2 as he deems necessary for the performance of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents, and no additional examinations, investigations, tests, reports or similar data are or will be required by CONTRACTOR for such purposes.

6.4 CONTRACTOR has correlated the results of all such observations, examinations, investigations, tests, reports and data with the terms and conditions of the Contract Documents.

6.5 CONTRACTOR has given ENGINEER written notice of all conflicts, errors or discrepancies that he has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR.

Article 7. CONTRACT DOCUMENTS

The Contract Documents which comprise the entire agreement between OWNER and CONTRACTOR are attached to this Agreement, made a part hereof and consists of the following:

7.1 This Agreement (pages 1 to 5 , inclusive).

7.2 Exhibits to this Agreement (pages ___ to ___ , inclusive).

7.3 Performance and other Bonds, identified as exhibits 00610 AND 00615 and consisting of 4 pages.

7.4 Notice of Award.

7.5 General Conditions (pages 1 to 34 , inclusive).

7.6 Supplementary Conditions (pages 1 to 7 , inclusive).

7.7 Specifications bearing the title: Hudson Wellfield Expansion and consisting of 16 divisions, as listed in table of contents thereof.

7.8 Drawings, consisting of 40 sheets numbered G-001 to I-101, inclusive and bearing the following general title: Hudson Wellfield Expansion

7.9 Addenda numbers ___ to ____ , inclusive.

7.10 CONTRACTOR'S Bid (pages 1 to 16 , inclusive) marked exhibit _____ (Attach Bid Form only in special circumstances).

7.11 Documentation submitted by CONTRACTOR prior to Notice of Award (pages ____ to ____ , inclusive).

7.12 Any Modification, including Change Orders, duly delivered after execution of Agreement.

There are no Contract Documents other than those listed above in this Article 7. The Contract Documents may only be altered, amended or repealed by a Modification (as defined in Section 1 of the General Conditions).

Article 8. MISCELLANEOUS

8.1 Terms used in this Agreement which are defined in Article 1 of the General Conditions shall have the meanings indicated in the General Conditions.

8.2 No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

8.3 OWNER and CONTRACTOR each binds himself, his partners, successors, assigns and legal representatives to the other party hereto, his partners, successors, assigns and legal representatives in respect to all covenants, agreements and obligations contained in the Contract Documents.

IN WITNESS WHEREOF, the parties hereto have signed this Agreement. One counterpart each has been delivered to OWNER and CONTRACTOR, and to ENGINEER as applicable. All portions of the Contract Documents have been signed by OWNER and CONTRACTOR or identified by ENGINEER on their behalf.

This Agreement will be effective on _____, 2024

OWNER City of Ormond Beach

By _____

Bill Partington
Mayor

[CITY SEAL]

Attest _____

Joyce A. Shanahan
City Manager

Address for giving notices:

City of Ormond Beach

PO Box 277

Ormond Beach, FL 32175-0277

CONTRACTOR _____

By _____

_____
(Title)

[SEAL]

Attest _____

_____
(Title)

Address for giving notices:

_____

_____

_____

License No. _____

Registered Agent for service process:

_____

(Name)

_____

(Title)

END OF AGREEMENT

SECTION 00610
PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

_____
(Name of Contractor)

_____
(Address of Contractor)

a(n) _____ , hereinafter called Principal, and
(Corporation, Partnership or Individual)

_____
(Name of Surety)

_____
(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

_____
(Name of Owner)

_____
(Address of Owner)

hereinafter called OWNER, in the penal sum of

_____

_____ Dollars, ($_____) in lawful money of the United States, for the payment of which sum will and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with OWNER, dated _____ day of _____, 20____, for the construction of:

CITY OF ORMOND BEACH HUDSON WLLFIELD EXPANSION
BID NUMBER 2024-22

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the OWNER, with or without notice to the Surety and during the one-year guaranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS The Surety agrees that modifications and changes to the terms and conditions of the Contract that increase the total amount to

be paid the Principal shall automatically increase the obligation of the Surety on this bond and notice to Surety is not required for such increased obligation.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts, each one of which shall be
(number)
deemed an original, this _____ day of _____, 20_____.

ATTEST:

_____
Principal

_____ By _____ (s)
(Principal) Secretary

(SEAL)

_____ _____
(Witness to Principal) *(Address)*

_____ _____
(Address)

_____ _____
(Surety)

ATTEST:

_____
(Surety) Secretary

(SEAL)

_____ _____
Witness to Surety *Attorney-In-Fact*

_____ _____
(Address) *(Address)*

_____ _____

NOTE: Date of BOND must not be prior to date of Contract. If CONTRACTOR is Partnership, all partners should execute BOND. All BONDS signed by an agent must be accompanied by a certified copy of the authority to act.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the PROJECT is located.

END OF SECTION

SECTION 00615
PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

_____
(Name of Contractor)

_____
(Address of Contractor)

a(n) _____ , hereinafter called Principal, and
(Corporation, Partnership or Individual)

_____
(Name of Surety)

_____
(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

_____
(Name of Owner)

_____
(Address of Owner)

hereinafter called OWNER, in the penal sum of

_____

_____ Dollars, ($_____) in lawful money of the United States, for the payment of which sum will and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with OWNER, dated _____ day of _____, 20____, for the construction of:

CITY OF ORMOND BEACH HUDSON WELLFIELD EXPANSION
BID NUMBER 2024-22

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, SUBCONTRACTORS, and corporations furnishing materials for or performing labor in the prosecution of the WORK provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such WORK, and all insurance premiums on said WORK, and for all labor, performed in such WORK whether by SUBCONTRACTOR or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS. The Surety agrees that modifications and changes to the terms and conditions of the Contract that increase the total amount to be paid the Principal shall automatically increase the obligation of the Surety on this bond and notice to Surety is not required for such increased obligation.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts, each one of which shall be
(number)
deemed an original, this _____ day of _____, 20_____.

ATTEST: _____
Principal

_____ By _____ (s)
(Principal) Secretary

(SEAL)

_____ _____
(Witness to Principal) *(Address)*

_____ _____
(Address)

_____ _____
(Surety)

ATTEST:

_____
(Surety) Secretary

(SEAL)

_____ _____
Witness to Surety *Attorney-In-Fact*

_____ _____
(Address) *(Address)*

_____ _____

NOTE: Date of BOND must not be prior to date of Contract. If CONTRACTOR is Partnership, all partners should execute BOND. All BONDS signed by an agent must be accompanied by a certified copy of the authority to act.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the PROJECT is located.

END OF SECTION

SECTION 00670

OPINION OF ATTORNEY

This is to certify that I have examined the attached Contract Documents, and that I am of the opinion that such documents conform to the Laws of the State of Florida, and that the execution of the Contract is in due and proper form, and that the foregoing agreements constitute valid and binding obligations on such parties.

_____

Attorney for Owner

This the _____ day of _____, 20___.

END OF SECTION

SECTION 00700
GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

ARTICLE 1 - DEFINITIONS

Whenever used in these General Conditions or in the other Contract Documents, the following terms have the meanings indicated which are applicable to both the singular and plural thereof.

1.01. Addenda -Written or graphic instruments issued prior to the opening of Bids which clarify, correct or change the bidding documents of the Contract Documents.

1.02. Agreement - The written agreement between OWNER and CONTRACTOR covering the Work to be performed; other Contract Documents are attached to the Agreement and made a part thereof as provided therein.

1.03. Application for Payment - The form accepted by ENGINEER which is to be used by CONTRACTOR in requesting progress or final payment and which is to include such supporting documentation as required by the Contract Documents.

1.04. Approve - The word approve is defined to mean review of the material, equipment or methods for general compliance with the design concepts and with the information given in the Contract Documents. It does not imply a responsibility on the part of the ENGINEER to verify in every detail conformance with the Drawings and Specifications.

1.05. Bid -The offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

1.06. Bonds - Bid, Performance and Payment Bonds and other instruments of security.

1.07. Change Order - A written order to CONTRACTOR signed by OWNER authorizing an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Time issued after the effective date of the Agreement.

1.08. Contract - The Agreement.

1.09. Contract Documents - The Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR's Bid (including documentation accompanying the bid and any post-Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, Notice of Award, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, any other exhibits identified in the Agreement, together with all Modifications issued after the execution of the Agreement.

1.10. Contract Price - The Contract Price constitutes the total compensation (subject to authorized adjustments) payable by OWNER to CONTRACTOR for performing the Work.

1.11. Contract Time - The number of days (computed as provided in paragraph 16.2) or the date stated in the Agreement for the completion of the Work.

1.12. CONTRACTOR - The person, firm or corporation with whom OWNER has entered into the Agreement.

1.13. Day - A calendar day of twenty-four hours measured from midnight to the next midnight.

1.14. Defective - Work that is unsatisfactory, faulty or deficient, or does not conform to the Contract Documents or does not meet the requirements of any inspection, test or approval referred to in the Contract Documents, or has been damaged prior to ENGINEER's recommendation of final payment.

1.15. Drawings - The drawings, which will be identified in the Agreement, which show the character and scope of the Work to be performed and which have been prepared or approved by ENGINEER and are referred to in the Contract Documents.

1.16. Effective Date of the Agreement - The date indicated in the Agreement on which it becomes effective, but if no such date is indicated it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

1.17. ENGINEER - The City Engineer of the City of Ormond Beach, Florida, or the designee of such Engineer.

1.18. Engineering Order - A written request issued by ENGINEER to CONTRACTOR requesting a cost for certain modifications to the Work. An Engineering Order is not an authorization to perform the modifications.

1.19. Field Order - A written order issued by ENGINEER which clarifies or interprets the Contract Documents or orders minor changes in the Work in accordance with paragraph 10.2, but which does not involve a change in the Contract Price or the Contract Time.

1.20. Furnish - The words "furnish", "furnish and install", "install", and "provide" or words with similar meaning shall be interpreted, unless otherwise specifically stated, to mean "furnish and install complete in place and ready for service".

1.21. General Requirements - Sections of Division 1 of the Specifications.

1.22. Inspection - The term "Inspection" and the act of inspecting as used in these Contract Documents is defined to mean examination of construction to ensure that it conforms to the design concept expressed in the Drawings and Specifications. These terms shall not be construed to mean supervision, superintending and/or overseeing.

1.23. Modification - (a) A written amendment of the Contract Documents signed by both parties, (b) a Change Order, or (c) a Field Order. A modification may only be issued after the effective date of the Agreement and must be in writing to be effective.

1.24. Notice of Award - The written notice by OWNER to the apparent successful Bidder stating that upon compliance by the apparent successful Bidder with the condition's precedent enumerated therein, within the time specified, OWNER will sign and deliver the Agreement.

1.25. Notice to Proceed - A written notice given by OWNER to CONTRACTOR (with a copy to ENGINEER) fixing the date on which the Contract Time will commence to run and on which CONTRACTOR shall start to perform his obligation under the Contract Documents.

1.26. OWNER - The City of Ormond Beach, Florida.

1.27. Product - Materials, systems, and equipment provided by the CONTRACTOR.

1.28. Project - The total construction of which the Work to be provided under the Contract Documents may be the whole, or a part as indicated elsewhere in the Contract Documents.

1.29. Project Manual - The term "Project Manual" includes Bidding Requirements, Conditions of the Contract, Specifications, and Drawings.

1.30. Project Representative - The authorized representative of ENGINEER who is assigned to the site or any part thereof.

1.31. Shop Drawings - All drawings, diagrams, illustrations, schedules and other data which are specifically prepared by CONTRACTOR, a Subcontractor, manufacturer, fabricator, supplier or distributor to illustrate some portion of the Work and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams and other information prepared by a manufacturer, fabricator, supplier or distributor and submitted by CONTRACTOR to illustrate material or equipment for some portion of the Work.

1.32. Specifications - Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work and certain administrative details applicable thereto.

1.33. Subcontractor - An individual, firm or corporation having a contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the site.

1.34. Substantial Completion - The point reached when the Work (or a specified part thereof), in the opinion of ENGINEER as evidenced by his final certificate of Substantial Completion, is sufficiently complete, in accordance with the Contract Documents, so that the Work (or specified part) can be utilized for the purposes for which it was intended; or if there be no such certificate issued, when final payment is due in accordance with paragraph 14.10. The terms "substantially complete" and "substantially completed" as applied to any Work refer to Substantial Completion thereof.

1.35. Surety - Any person, firm or corporation which is bound with CONTRACTOR, and which engages to be responsible for CONTRACTOR and his acceptable performance of the Work by a Performance or Payment Bond, or by a Public Construction Bond.

1.36. Work - The entire completed construction or the various separately identifiable parts thereof required to be furnished under the Contract Documents. Work is the result of performing services, furnishing labor and furnishing and incorporating materials and equipment into the construction, all as required by the Contract Documents.

ARTICLE 2 - PRELIMINARY MATTERS

Delivery of Bonds:

2.1. When CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER such Bonds as CONTRACTOR may be required to furnish in accordance with paragraph 5.1.

Copies of Documents:

2.2. OWNER shall furnish to CONTRACTOR, at OWNER's expense, up to three copies of the Contract Documents. Additional copies will be furnished, upon request, at the cost of reproduction.

Commencement of Contract Time; Notice to Proceed:

2.3. The Contract Time will commence on the day indicated in the Notice to Proceed.

Starting the Project:

2.4. CONTRACTOR shall start to perform the work on the date when the Contract Time commences to run, but no work shall be done at the site prior to the date on which the Contract Time commences to run, and no work shall be done at the site before the Payment and Performance Bond is executed, delivered to the OWNER, and recorded in the public records of Volusia County, Florida.

Before Starting Construction:

2.5. Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. CONTRACTOR shall promptly report in writing to ENGINEER any conflict, error or discrepancy which CONTRACTOR may discover; however, CONTRACTOR shall not be liable to OWNER for failure to report any conflict, error or discrepancy in the Drawings or Specifications, unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof. No verbal agreement or conversation with any officer, agent or employee of OWNER, either before or after the execution of this Contract, shall affect or modify any of the terms or obligations herein contained.

2.6. Before any Work at the site is started, CONTRACTOR shall deliver to OWNER certificates (and other evidence of insurance requested by OWNER) which CONTRACTOR is required to purchase and maintain in accordance with paragraphs 5.3, 5.4, 5.6 and 5.7.

2.7. CONTRACTOR shall not allow any on-site Subcontractor to commence work on his subcontract until insurance required of the Subcontractor has been obtained and approved by the CONTRACTOR. Failure to obtain this insurance will be the sole responsibility of the CONTRACTOR.

ARTICLE 3 - CONTRACT DOCUMENTS INTENT AND REUSE

3.1. The Contract Documents comprise the entire Agreement between OWNER and CONTRACTOR concerning the Work. They may be altered only by a Modification.

3.2. The Contract Documents are complementary; a requirement contained in one is applicable to all. If, during the performance of the Work, CONTRACTOR finds a conflict, error or discrepancy in the Contract Documents, he shall report it to ENGINEER in writing at once and before proceeding with the Work affected thereby; however, CONTRACTOR shall not be liable to OWNER for failure to report any conflict, error or discrepancy in the Specifications or Drawings unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof. The various Contract Documents shall be given precedence, in case of conflict, error or discrepancy, as follows: Modifications, Agreement, Addenda, Supplementary Conditions, General Conditions, Drawings and Specifications. In a series of Modifications or Addenda the latest will govern.

3.3. It is the intent of the Specifications and Drawings to describe a complete project (or part thereof) to be constructed in accordance with the Contract Documents. Any Work that may reasonably be inferred from the Specifications or Drawings as being required to produce the intended results shall be supplied whether or not it is specifically called for. When words which have well-known technical, or trade meaning are used to describe Work, materials or equipment such words shall be interpreted in accordance with such meaning. Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the code of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual or code in effect at the time of opening of Bids (or, on the effective date of the Agreement if there were no Bids), except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall change the duties and responsibilities of OWNER, CONTRACTOR or ENGINEER, or any of their agents or employees from those set forth in the Contract Documents. Clarifications and interpretations of the Contract Documents shall be issued by ENGINEER as provided for in paragraph 9.2.

3.4. The Contract Documents will be governed by the law of the State of Florida, and venue for any action brought thereunder shall lie solely and exclusively in the Circuit Court in and for Volusia County, Florida.

Reuse of Documents:

3.5. Neither CONTRACTOR nor any Subcontractor, manufacturer, fabricator, supplier or distributor shall have or acquire any title to or ownership rights in any of the Drawings, Specifications or other documents (or copies of any thereof) prepared by or bearing the seal of ENGINEER; and they shall not reuse any of them on extensions of the Project or any other project without written consent of OWNER and ENGINEER and specific written verification or adaptation by ENGINEER.

ARTICLE 4 - AVAILABILITY OF LANDS; PHYSICAL CONDITIONS; REFERENCE POINTS

4.1. OWNER shall furnish, as indicated in the Contract Documents, the lands upon which the Work is to be performed, rights-of-way for access thereto, and such other lands which are designated for the use of CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by OWNER, unless otherwise provided in the Contract Documents. If CONTRACTOR believes that any delay in OWNER's furnishing these lands or easements entitles him to an extension of the Contract Time, CONTRACTOR may make a claim therefor as provided in Article 12. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

Physical Conditions - Investigations and Reports:

4.2. Reference is made to the Supplementary Conditions for identification of those reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the Work which have been relied upon by ENGINEER in preparation of the Drawings and Specifications. Such reports are not guaranteed as to accuracy or completeness and are not part of the Contract Documents.

Unforeseen Physical Conditions:

4.3. CONTRACTOR shall promptly, after becoming aware of and before further disturbing conditions affected thereby or performing any work in connection therewith, notify ENGINEER in writing of any subsurface or latent physical conditions at the site or in an existing structure differing materially from those indicated or referred to in the Contract Documents. CONTRACTOR, upon discovering and notifying OWNER of such subsurface or latent conditions, shall not perform work in the affected area until authorized to do so by OWNER. ENGINEER will promptly review those conditions and determine if further investigation or tests are necessary. If so determined by the ENGINEER, OWNER shall promptly obtain the necessary additional investigations and tests and furnish copies to CONTRACTOR. If ENGINEER finds that the results of such investigations or tests indicate that there are subsurface or latent physical conditions which differ materially from those intended in the Contract Documents, and which could not reasonably have been anticipated by CONTRACTOR, a Change Order authorizing CONTRACTOR to perform the additional work may be issued incorporating the necessary revisions.

Reference Points:

4.4. OWNER shall provide engineering surveys for construction to establish reference points which in his judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for laying out the Work (unless otherwise specified in the General Requirements), shall protect and preserve the established reference points and shall make no changes or relocations without the prior written approval of OWNER. CONTRACTOR shall report to ENGINEER whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for replacement or relocation of such reference points by professionally qualified personnel.

ARTICLE 5 - BONDS AND INSURANCE

Performance and Other Bonds:

5.1. CONTRACTOR shall furnish Performance and Payment Bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all CONTRACTOR's obligations under the Contract Documents. The City will record the bonds in the public records at the CONTRACTOR's expense. These Bonds shall remain in effect at least until one (1) year after the date of final payment, except as otherwise provided by law. All bonds shall be deemed to contain all of the Conditions of Section 255.05, Florida Statutes, even if such language is not directly contained within the bond. CONTRACTOR shall also furnish such other Bonds as are required by the Supplementary Conditions. All Bonds shall be in the forms prescribed by the bidding documents or Supplementary Conditions and be executed by such Sureties as (i) are licensed to conduct business in the State of Florida, and (ii) are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Audit Staff Bureau of Accounts, U.S. Treasury Department. All Bonds signed by an agent must be accompanied by a certified copy of the authority to act.

5.2. If the Surety on any Bond furnished by CONTRACTOR is declared bankrupt or becomes insolvent or its right to do business is terminated in the State of Florida or it ceases to meet the requirements of clauses (i) and (ii) of paragraph 5.1, CONTRACTOR shall within five (5) days after notice thereof, substitute another Bond and Surety, both of which shall meet the requirements of clauses (i) and (ii) of paragraph 5.1.

CONTRACTOR's Liability Insurance:

5.3. CONTRACTOR and on-site Subcontractors shall purchase and maintain such Commercial General Liability and other insurance as will provide protection from claims set forth below which may arise out of or result from CONTRACTOR's performance of the Work and CONTRACTOR's other obligations under the Contract Documents, whether such performance is by CONTRACTOR, by any Subcontractor, by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable;

5.3.1. Claims under workers' compensation, disability benefits and other similar employee benefit acts;

5.3.2. Claims for damages because of bodily injury, occupational sickness or disease, or death of CONTRACTOR's employees;

5.3.3. Claims for damages because of bodily injury, sickness or disease, or death of any person other than CONTRACTOR's employees.

5.3.4. Claims for damages insured by personal injury liability coverage which are sustained (i) by any person as a result of an offense directly or indirectly related to the employment of such person by CONTRACTOR, or (ii) by any other person for any other reason.

5.3.5. Claims for damages, other than to the Work itself, because of injury to or destruction of

tangible property, including loss of use resulting therefrom; and

5.3.6. Claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

The insurance required by this paragraph 5.3 shall include the specific coverages and be written for not less than the limits of liability and coverages provided in the **Supplementary Conditions**, or required by law, whichever is greater. The Commercial General Liability insurance shall include completed operations insurance. All such insurance shall contain a provision that the coverage afforded will not be canceled, materially changed or renewal refused until at least **sixty** (60) days prior written notice of such cancellation, non-renewal or change (except for nonpayment of premium, which shall be fifteen (15) days) has been given to OWNER. All such insurance shall remain in effect until final payment and at all times thereafter when CONTRACTOR may be correcting, removing or replacing defective Work in accordance with paragraph 13.12. In addition, CONTRACTOR shall maintain such completed operations insurance for at least two years after final payment and furnish OWNER with evidence of continuation of such insurance at final payment and one year thereafter.

Contractual Liability Insurance:

5.4. The Commercial General Liability insurance required by paragraph 5.3 will include contractual liability insurance applicable to CONTRACTOR's obligations under paragraphs 6.15 and 6.16. The OWNER shall be named as "Additionally Insured" under the CONTRACTOR's Commercial General Liability insurance policy.

Owner's Liability Insurance:

5.5. OWNER may, at its option, purchase and maintain its own liability insurance and, at its option, may purchase and maintain such insurance as will protect OWNER against claims which may arise from operations under the Contract Documents.

Property Insurance:

5.6. CONTRACTOR shall purchase and maintain property insurance upon the Work at the site to the full insurable value thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by law). This insurance shall include the interests of OWNER, CONTRACTOR, and Subcontractors in the Work, shall insure against the perils of fire and extended coverage and shall include "all risk" insurance for physical loss and damage including theft, vandalism and malicious mischief, collapse and water damage, and such other perils as may be provided in the Supplementary Conditions, and shall include damages, losses and expenses arising out of or resulting from any insured loss or incurred in the repair or replacement of any insured property (including fees and charges of engineers, architects, attorneys and other professionals). If not covered under the "all risk" insurance or otherwise provided in the Supplementary Conditions, CONTRACTOR shall purchase and maintain similar property insurance on portions of the Work stored on and off the site or in transit when such portions of the Work are to be included in the Application for Payment. The policies of insurance required to be purchased and maintained by CONTRACTOR in accordance with paragraphs 5.6 and 5.7 shall contain provisions that the coverage afforded will not be canceled or materially changed until at

least **sixty** (60) days prior written notice has been given to OWNER.

5.7. CONTRACTOR shall purchase and maintain such boiler and machinery insurance as may be required by the Supplementary Conditions or by law. This insurance shall include the interests of OWNER, CONTRACTOR and Subcontractors in the Work.

5.8. OWNER shall not be responsible for purchasing and maintaining any property insurance to protect the interests of CONTRACTOR or Subcontractors in the Work to the extent of any deductible amounts that are provided in the Supplementary Conditions. If CONTRACTOR wishes property insurance coverage within the limits of such amounts, CONTRACTOR may purchase and maintain it at his own expense.

5.9. If CONTRACTOR requests in writing that other special insurance be included in the property insurance policy, OWNER shall, if possible, include such insurance, and the cost thereof shall be charged to CONTRACTOR by appropriate Change Order. Prior to commencement of the Work at the site, OWNER shall in writing advise CONTRACTOR whether or not such other insurance has been procured by OWNER.

Waiver of Rights:

5.10. OWNER and CONTRACTOR waive all rights against each other and the Subcontractors and their agents and employees and separate contractors (if any) and their subcontractors' agents and employees, for damages caused by fire or other perils to the extent covered by insurance provided under paragraphs 5.6 and 5.7, inclusive, or any other property insurance applicable to the Work, except such rights as they may have to the proceeds of such insurance held by OWNER as trustee. OWNER shall require similar written waivers from each separate contractor, and CONTRACTOR shall require similar written waivers from each Subcontractor (in accordance with paragraph 6.8 as applicable); each such waiver will be in favor of all other parties enumerated in this paragraph 5.10.

Receipt and Application of Proceeds:

5.11. Any insured loss under the policies of insurance required by paragraphs 5.6 and 5.7 shall be adjusted with CONTRACTOR and made payable to CONTRACTOR as trustee for the insured, as their interests may appear, subject to the requirements of paragraph 5.12. CONTRACTOR shall deposit in a separate account any money so received, and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof and the Work and the cost thereof covered by an appropriate Change Order.

5.12. CONTRACTOR as trustee shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within fifteen days after the occurrence of loss to CONTRACTOR’s exercise of this power. If such objection be made, CONTRACTOR as trustee shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If required in writing by any party in interest, CONTRACTOR as trustee shall upon the occurrence of an insured loss, give bond for the proper performance of his duties.

Acceptance of Bonds and Insurance:

5.13. If OWNER has any objection to the coverage afforded by or other provisions of the Bonds or Insurance required to be purchased and maintained by CONTRACTOR in accordance with Article 5 on the basis of non-conformance with the Contract Documents, OWNER shall so notify CONTRACTOR in writing within ten days after receipt of the certificates (or other evidence requested) required by paragraph 2.6. CONTRACTOR shall provide to OWNER such additional information in respect of insurance provided as OWNER may reasonably request. If CONTRACTOR does not purchase or maintain all of the Bonds and Insurance required of CONTRACTOR by the Contract Documents, CONTRACTOR shall notify OWNER in writing of such failure to purchase prior to the start of the Work, or such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, OWNER may elect to obtain equivalent Bonds or Insurance to protect OWNER's interests at the expense of CONTRACTOR, and a Change Order shall be issued to adjust the Contract Price accordingly.

Partial Utilization - Property Insurance:

5.14. If OWNER finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, such use or occupancy may be accomplished in accordance with paragraph 14.7; provided that no such use or occupancy shall commence before the insurers providing the property insurance have acknowledged notice thereof and in writing effected the changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies that the property insurance shall not be canceled or lapse on account of any such partial use of occupancy.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

Supervision and Superintendence:

6.1. CONTRACTOR shall supervise and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences and procedures of construction. CONTRACTOR shall be responsible to see that the finished Work complies accurately with the Contract Documents.

6.2. CONTRACTOR shall keep on the Work at all times during its progress a competent resident superintendent, who shall not be replaced without written notice to OWNER except under extraordinary circumstances. The superintendent will be CONTRACTOR's representative at the site and shall have authority to act on behalf of CONTRACTOR. All communications given to the superintendent shall be as binding as if given to CONTRACTOR.

Materials and Equipment:

6.3. All materials and equipment installed in the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment.

Equipment manufacturers/suppliers must agree to OWNER'S terms of purchase. In no event will OWNER accept terms of sale that limit OWNER'S ability to reasonably recover in the event of equipment failure/defect such as, but not limited to; mandatory arbitration clauses, venue of court proceedings and applicable law outside of Volusia County, Florida, or damage limitations that preclude recovery for failed or defective equipment that would be less than full compensation for OWNER's loss.

6.4. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable manufacturer, fabricator, supplier or distributor, except as otherwise provided in the Contract Documents.

Concerning Subcontractors:

6.5. CONTRACTOR shall not employ any Subcontractor or other person or organization (including those who are to furnish the principal items of materials or equipment), whether initially or as a substitute, to which OWNER may have any reasonable objection. CONTRACTOR shall submit with his Bid in writing the names, mailing addresses, and work classifications of all Subcontractors proposed for the Work. The failure to list all Subcontractors proposed for the Work may result in the Bid being rejected as incomplete and nonresponsive. A Subcontractor or other person or organization identified in writing to OWNER by CONTRACTOR prior to the Notice of Award and not objected to in writing by OWNER prior to the Notice of Award will be deemed acceptable to OWNER. Acceptance of any Subcontractor, other person or organization of OWNER shall not constitute a waiver of any right of OWNER to reject defective Work. If OWNER after due investigation has reasonable objection to any Subcontractor, other person or organization proposed by CONTRACTOR after the Notice of Award because the qualifications and experience of the Subcontractor, other person or organization indicate that he cannot perform or provide work, materials or equipment which will perform the specified functions, CONTRACTOR shall submit an acceptable substitute and the Contract Price shall be increased or decreased by the difference in cost occasioned by such substitution, and an appropriate Change Order may be issued. CONTRACTOR shall not be required to employ any Subcontractor, other person or organization to which CONTRACTOR has any reasonable objection. Whether objections are reasonable shall be determined as specified in paragraph 9.8.

6.6. CONTRACTOR shall be fully responsible for all acts and omissions of his Subcontractors and of persons and organizations directly or indirectly employed by them and of persons and organizations for whose acts any of them may be liable to the same extent that CONTRACTOR is responsible for the acts and omissions of persons directly employed by CONTRACTOR. Nothing in the Contract Documents shall create any contractual relationship between OWNER and any Subcontractor or other person or organization having a direct contact with CONTRACTOR, nor shall it create any obligation on the part of OWNER to pay or to see to the payment of any moneys due any Subcontractor or other person or organization, except as may otherwise be required by law. OWNER may furnish to any Subcontractor or other person or organization, to the extent practicable, evidence of amounts paid to CONTRACTOR on account of specific Work done.

6.7. The divisions and sections of the Specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing the Work among Subcontractors or delineating the Work to be performed by any specific trade.

6.8. All Work performed for CONTRACTOR by a Subcontractor will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor which specifically binds the Subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and contains waiver provisions as required by paragraph 5.10. CONTRACTOR shall pay each Subcontractor an appropriate share of any insurance proceeds received by CONTRACTOR on account of losses under policies issued pursuant to paragraphs 5.6 through 5.8.

6.9. Neither the OWNER nor the ENGINEER will undertake to settle any differences between CONTRACTOR and his Subcontractors or between Subcontractors.

Patent Fees and Royalties:

6.10. CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of OWNER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by OWNER in the Contract Documents. CONTRACTOR shall **indemnify** and **hold harmless** OWNER and anyone directly or indirectly employed by either of them from and against all claims, damages, losses and expenses (including attorneys' fees) arising out of any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product or device not specified in the Contract Documents, and shall defend all such claims in connection with any alleged infringement of such rights. OWNER will promptly notify CONTRACTOR of any such allegation of infringement of such rights.

Safety and Protection:

6.11. Precaution shall be exercised at all times by the CONTRACTOR for the protection of all persons, including employees, and property. The CONTRACTOR shall comply with all laws, regulations or ordinances related to safety and health, shall make special effort to detect hazardous conditions, and shall take prompt action where loss control/safety measures are reasonably expected. The OWNER may order work to be stopped if conditions exist that present on immediate danger to persons or property. The CONTRACTOR acknowledges that such stoppage will not shift responsibility for any damages from the CONTRACTOR to the OWNER.

6.12. CONTRACTOR be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

6.12.1. All employees on the Work and other persons who may be affected thereby.

6.12.2. All the Work and all materials or equipment to be incorporated therein, whether in storage on or off the site, and

6.12.3. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

CONTRACTOR shall comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property and utilities when prosecution of the Work may affect them. All damage, injury or loss to any property referred to in paragraph 6.12.2 or 6.12.3 caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR. CONTRACTOR's duties and responsibilities for the safety and protection of the Work shall continue until such time as all the Work is completed and ENGINEER has issued a notice to OWNER and CONTRACTOR in accordance with paragraph 14.12 that the Work is acceptable.

6.13. CONTRACTOR shall designate a responsible member of his organization at the site whose duty shall be the prevention of accidents. This person shall be CONTRACTOR's superintendent unless otherwise designated in writing by CONTRACTOR to OWNER.

Emergencies:

6.14. In emergencies affecting the safety or protection of persons or the Work or property at the site or adjacent thereto, CONTRACTOR, without special instruction or authorization from OWNER, is obligated to act to prevent threatened damage, injury or loss. CONTRACTOR shall give OWNER prompt written notice of any significant changes in the Work or deviations from the Contract Documents caused thereby.

Indemnification/Hold Harmless:

6.15 The parties recognize that the CONTRACTOR is an independent contractor. The CONTRACTOR agrees to assume liability for and indemnify, hold harmless, and defend the CITY, its commissioners, mayor, officers, employees, agents, and attorneys of, from, and against all liability and expense, including reasonable attorney's fees, in connection with any and all claims, demands, damages, actions, causes of action, and suits in equity of whatever kind or nature, including claims for personal injury, property damage, equitable relief, or loss of use, to the extent caused by the negligence, recklessness, or intentionally wrongful conduct of the CONTRACTOR, its agents, officers, contractors, subcontractors, employees, or anyone else utilized by the CONTRACTOR in the performance of this Agreement. The CONTRACTOR's liability hereunder shall include all attorney's fees and costs incurred by the CITY in the enforcement of this indemnification provision. This includes claims made by the employees of the CONTRACTOR against the CITY and the CONTRACTOR hereby waives its entitlement, if any, to immunity under Section 440.11, Florida Statutes. Such obligations contained in this provision

shall survive termination of this Agreement and shall not be limited by the amount of any insurance required to be obtained or maintained under this Agreement.

In the event of any claim arising out of the paragraph above, the CITY will elect, in its sole discretion, that either:

1) The CONTRACTOR assume control of the defense of any claim asserted by a third party against the CITY and, in connection with such defense, shall appoint lead counsel, in each case at the CONTRACTOR's expense. The CITY shall have the right, at its option, to participate in the defense of any third party claim, without relieving CONTRACTOR of any of its obligations hereunder. If the CONTRACTOR assumes control of the defense of any third party claim in accordance with this paragraph, the CONTRACTOR shall obtain the prior written consent of the CITY before entering into any settlement of such claim. If the CONTRACTOR assumes control of the defense and the CONTRACTOR has failed or is failing to prosecute or defend vigorously the third party claim, the CITY may assume the control of the defense as provided by sub (2); or

2) The CITY will assume control of the defense of any third party claim, but CONTRACTOR shall pay the fees of counsel retained by the CITY and all expenses, including experts' fees.

Each party shall cooperate, and cause its agents to cooperate, in the defense or prosecution of any third party claim and shall furnish or cause to be furnished such records and information, and attend such conferences, discovery proceedings, hearings, trials, or appeals, as may be reasonably requested in connection therewith. It is further the specific intent and agreement of said parties that all the Contract Documents on this Project are hereby amended to include the foregoing indemnification. CONTRACTOR expressly agrees that it will not claim, and waives any claim, that this indemnification violates Section 725.06, Florida Statutes or is unenforceable pursuant to Section 725.06, Florida Statutes.

Nothing contained in the foregoing indemnification shall be construed as a waiver of any immunity or limitation of liability the CITY may have under the doctrine of sovereign immunity or Section 768.28, Florida Statutes.

Precaution shall be exercised at all times by the CONTRACTOR for the protection of all persons, including employees and property. The CONTRACTOR shall comply with all applicable laws, regulation and ordinances related to safety and health, shall make special efforts to detect hazardous conditions, and shall take prompt action with loss control/safety measures as are reasonably necessary. The CITY may order work to be stopped if conditions exist that present an immediate danger to persons or property. The CONTRACTOR acknowledges that such work stoppage will not shift responsibility for any damages from the CONTRACTOR to the CITY.

Payment on Behalf of OWNER:

6.16. The CONTRACTOR agrees to pay on behalf of the OWNER, and to pay the cost of the OWNER's legal defense, as may be selected by the OWNER, for all claims described in 6.15 Indemnification/Hold Harmless. Such payment on behalf of the OWNER shall be in addition to any and all other legal remedies available to the OWNER and shall not be considered to be the

OWNER's exclusive remedy.

ARTICLE 7 - WORK BY OTHERS

7.1. OWNER may perform additional work related to the Project by itself, or have additional work performed by utility service companies, or let other direct contracts therefor which shall contain General Conditions similar to these. CONTRACTOR shall afford the utility service companies and the other contractors who are parties to such direct contracts (or OWNER, if OWNER is performing the additional work with OWNER's employees) reasonable opportunity for the introduction and storage of materials and equipment and the execution of work, and shall properly connect and coordinate his Work with theirs.

7.2. If any part of CONTRACTOR's Work depends for proper execution or results upon the work of any such other contractor or utility service company (or OWNER), CONTRACTOR shall inspect and promptly report to ENGINEER in writing any patent or apparent defects or deficiencies in such work that render it unsuitable for such proper execution and results. CONTRACTOR's failure so to report shall constitute an acceptance of the work as fit and proper for integration with CONTRACTOR's Work except for latent or non-apparent defects and deficiencies in the other work.

7.3. If the performance of additional work by other contractors or utility service companies or OWNER was not noted in the Contract Documents, written notice thereof shall be given to CONTRACTOR prior to starting any such additional work. If CONTRACTOR believes that the performance of such additional work by OWNER or others involves additional expense to CONTRACTOR or requires an extension of the Contract Time, CONTRACTOR may make a claim therefor as provided in Articles 11 and 12.

7.4. Should any other contractor having, or who shall hereafter have, a contract with OWNER for the performance of work upon the site of the Work to be performed hereunder sustain any damage through any act or omission of CONTRACTOR hereunder or through any act or omission of any Sub-contractor of CONTRACTOR, CONTRACTOR agrees to reimburse such other contractor for all such damages and to indemnify, defend and hold OWNER harmless from all such claims.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

8.1. OWNER shall issue all communications to CONTRACTOR through ENGINEER.

8.2. OWNER shall furnish the data required of OWNER under the Contract Documents promptly and shall make payments to CONTRACTOR promptly after they are due as provided in paragraphs 14.3 and 14.10.

8.3. OWNER's duties with respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.1 and 4.4. Paragraph 4.2 refers to OWNER's identifying and making available to CONTRACTOR copies of reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting performance of the Work which have been relied upon by ENGINEER in preparing the Drawings and Specifications.

8.4. OWNER's responsibilities with respect to the purchase and maintenance of liability insurance are set forth in paragraph 5.5.

8.5. In connection with OWNER's rights to request changes in the Work in accordance with Article 10, OWNER (especially in certain instances as provided in paragraph 10.4) may execute Change Orders.

8.6. OWNER's responsibility with respect to certain inspections, tests and approvals is set forth in paragraph 13.4.

8.7. The provisions relative to the OWNER's right to stop Work or suspend Work are set forth in paragraphs 6.11, 13.10 and 15.1.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

9.1. ENGINEER will be OWNER's representative during the construction period. The authority of ENGINEER shall, under no circumstances, relieve CONTRACTOR from CONTRACTOR's responsibilities to perform the Work in accordance with this Contract.

Clarifications and Interpretations:

9.2. ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the Contract Documents (in the form of Drawings or otherwise) as ENGINEER may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents. If CONTRACTOR believes that a written clarification or interpretation justifies an increase in the Contract Price or Contract Time, CONTRACTOR may make a claim therefor as provided in Article 11 or Article 12.

Rejecting Defective Work:

9.3. ENGINEER will have authority to disapprove or reject WORK which is defective, and will also have authority to require special inspection or testing of the Work as provided in paragraph 13.9, whether or not the Work is fabricated, installed or completed.

Change Orders and Payments:

9.4. In connection with ENGINEER's responsibilities as to Change Orders, see Articles 10, 11 and 12.

9.5 In connection with ENGINEER's responsibilities as to Applications for Payment, etc., see Article 14.

Project Representation:

9.6. ENGINEER may designate a Project Representative to assist ENGINEER in inspecting the performance of the Work. The duties, responsibilities and limitations of authority of any such Project Representative and assistants will be as provided in paragraphs 9.6.1 through 9.6.3.

9.6.1. General: Project Representative is ENGINEER's Agent. He shall have the authority to do anything which the ENGINEER could do. His dealings in matters pertaining to the on-site work will in general be only with OWNER, ENGINEER and CONTRACTOR. His dealings with subcontractors will only be through or with the full knowledge of CONTRACTOR or his superintendent.

9.6.2. Duties and Responsibilities: Project Representative shall:

9.6.2.1. Schedules: Review the progress schedule, schedule of Shop Drawing submissions, schedule of values and other schedules prepared by CONTRACTOR and consult with ENGINEER concerning their acceptability.

9.6.2.2. Conferences: Attend preconstruction conferences.

9.6.2.3. Liaison: Serve as ENGINEER's liaison with CONTRACTOR, working principally through CONTRACTOR's superintendent, and assist him in understanding the intent of the Contract Documents. Assist in obtaining from OWNER additional details or information, when required at the job site for proper execution of the Work.

9.6.2.4. Shop Drawings and Samples: Receive and record date of receipt of Shop Drawings and samples which have been furnished by CONTRACTOR. Review the Shop Drawings for conformance with the information given in the Contract Documents. Provide office review and approval of Shop Drawings (as that term is defined in Article 1) and samples, the results of tests and inspections and other data which any contractor is required to submit, but only for conformance with the design concept of the project and compliance with the information given in the Contract Documents; determine the acceptability of substitute materials and equipment proposed by CONTRACTOR(S); and receive and review (for general content as required by the Specifications) maintenance and operating instructions, schedules, guarantees, bonds and certificates of inspection which are to be assembled by CONTRACTOR(S) in accordance with the Contract Documents.

9.6.2.5. Review of Work, Rejection of Defective Work, Inspections and Tests: Conduct on-site inspections of the Work in progress to assist ENGINEER in determining that the Project is proceeding in accordance with the Contract Documents and that completed Work will conform to the Contract Documents. Report to ENGINEER whenever he believes that any Work is unsatisfactory, faulty or defective or does not conform to the Contract Documents, or has been damaged, or does not meet the requirements of any inspections, tests or approvals required to be made; and advise ENGINEER when he believes Work should be corrected or rejected or should be uncovered for observation, or requires special testing or inspection. Verify that tests, equipment and systems start-ups and operating and maintenance instructions are conducted as required by the Contract Documents and in the presence of the required personnel, and that CONTRACTOR maintains adequate records thereof; observe, record and report appropriate details relative to the test procedures and start-ups.

9.6.2.6. Modifications: Consider and evaluate CONTRACTOR's suggestions for modifications in Drawings or Specifications and report them to ENGINEER with recommendations. Prepare change orders as required; he may, as OWNER's representative, require special inspection or testing of the work; he shall act as interpreter of the requirements of the Contract Documents, judge

of the performance thereunder by the parties thereto, and transmitter of clarification and interpretation of the Contract Documents. Process contract change orders to reflect final measured contract quantities and to reflect changes in the contract Drawings and Specifications.

9.6.2.7. Payment Requisitions: Based on his on-site observations and on his review of CONTRACTOR(S) applications for payment and the accompanying data and schedules, determine the amounts owed the CONTRACTOR(S). The ENGINEER will then approve in writing payments to CONTRACTOR(S) in such amounts; such approvals of payment will constitute a presentation to OWNER, based on such observations and review, that the Work has progressed to the point indicated and that, to the best of his knowledge, information and belief, the quality of the Work is in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning Project upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, and to any qualifications stated in his approval).

9.6.2.8. Guarantees, Certificates, Maintenance and Operation Manuals: During the course of the Work verify that guarantees, certificates, maintenance and operation manuals and other data required to be assembled and furnished by CONTRACTOR are applicable to the items actually installed; and deliver this data to ENGINEER for his review prior to final acceptance of the Project.

9.6.2.9. Completion: Before ENGINEER issues a Certificate of Substantial Completion, submit to CONTRACTOR a list of observed items requiring correction. Conduct final inspection in the company of CONTRACTOR and prepare a final list of items to be corrected. Verify that all items on final list have been corrected and make recommendations to ENGINEER concerning acceptance.

9.6.3. Limitations of Authority: The Project Representative; shall not undertake any of the responsibilities of CONTRACTOR, subcontractors or CONTRACTOR's superintendent; shall not expedite Work for CONTRACTOR; shall not advise on or issue directions as to safety precautions and programs in connection with the Work; and shall not assist CONTRACTOR in maintaining up-to-date copies of Record Drawings.

Decisions on Disagreements:

9.7. ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating to the acceptability of the Work or the interpretation of the requirements of the Contract Documents pertaining to the execution and progress of the Work shall be referred initially to ENGINEER in writing with a request for a formal decision in accordance with this paragraph, which ENGINEER will render in writing within a reasonable time. Written notice of each such claim, dispute and other matter shall be delivered by the claimant to ENGINEER and the other party to the Agreement within fifteen days of the occurrence of the event giving rise thereto, and written supporting data will be submitted to ENGINEER and the other party within forty-five days of such occurrence unless ENGINEER allows an additional period of time to ascertain more accurate data. Failure to give the required notice constitutes a waiver of the claim.

9.8. The rendering of a decision by ENGINEER pursuant to paragraph 9.7 with respect to any such claim, dispute or other matter (except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.13) will be a condition precedent to any

exercise by OWNER or CONTRACTOR of such rights or remedies as either may otherwise have under the Contract Documents or at law in respect of any such claim, dispute or other matter. If the Owner agrees to pay all or part of a claim for which notice was not timely made, such agreement shall not be deemed a waiver of the right to enforce notice requirements in connection with any other claim.

Limitations on ENGINEER's Responsibilities:

9.9. Neither ENGINEER's authority to act under this Article 9 or elsewhere in the Contract Documents nor any decision made by ENGINEER in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of ENGINEER to CONTRACTOR, any Subcontractor, any manufacturer, fabricator, supplier or distributor, or any of their agents or employees or any other person performing any of the Work.

9.10. Whenever in the Contract Documents the terms "as ordered", "as directed", "as required", "as allowed" or terms of like effect or import are used, or the adjective "reasonable", "suitable" , "acceptable", "proper" or "satisfactory" or adjectives of like effect or import are used, to describe requirements, decision, review or judgment of ENGINEER as to the Work, it is intended that such requirement, direction, review or judgment will be solely to evaluate the Work for compliance with the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective never indicates that ENGINEER shall have authority to supervise or direct performance of the Work or authority to undertake responsibility contrary to the provisions of paragraphs 9.11 or 9.12.

9.11. ENGINEER will not be responsible for CONTRACTOR's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, and ENGINEER will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.

9.12. ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractors, or of the agents or employees of any CONTRACTOR or Subcontractor, or of any other persons at the site or otherwise performing any of the Work.

ARTICLE 10 - CHANGES IN THE WORK

10.1. Without invalidating the Agreement, OWNER may, at any time or from time to time, order additions, deletions or revisions in the Work; these will be authorized by Change Orders. Upon receipt of a Change Order, CONTRACTOR shall proceed with the Work involved. All such Work shall be executed under the applicable conditions of the Contract Documents. If any Change Order causes an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, an equitable adjustment will be made as provided in Article 11 or Article 12 on the basis of a claim made by either party.

10.2. ENGINEER may authorize minor changes in the Work not involving an adjustment in the Contract Price of the Contract Time, which are consistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order and shall be binding on OWNER, and also on CONTRACTOR who shall perform the change promptly. If CONTRACTOR believes that a Field Order justifies an increase in the Contract Price or Contract Time, CONTRACTOR may

make a claim therefor as provided in Article 11 or Article 12.

10.3. Additional Work performed without authorization of a Change Order will not entitle CONTRACTOR to an increase in the Contract Price or an extension of the Contract Time, except in the case of an emergency as provided in paragraph 6.14 and except as provided in paragraphs 10.2 and 13.9.

10.4. OWNER may execute appropriate Change Orders covering changes in the Work which are required by OWNER, or required because of unforeseen physical conditions or emergencies, or because of uncovering Work found not to be defective or as provided in paragraph 11.9, or because of any other claim of CONTRACTOR for a change in the Contract Time or the Contract Price which is recommended by ENGINEER.

10.5. If notice of any change affecting the general scope of the Work or change in the Contract Price is required by the provisions of any Bond to be given to the Surety, it will be CONTRACTOR's responsibility to so notify the Surety, and the amount of each applicable Bond shall be adjusted accordingly. CONTRACTOR shall furnish proof of such adjustment to OWNER.

ARTICLE 11 - CHANGE OF CONTRACT PRICE

11.1. The Contract Price constitutes the total compensation (subject to authorized adjustments) payable by OWNER to CONTRACTOR for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by CONTRACTOR shall be at his expense without change in the Contract Price.

11.2. The Contract Price may only be changed by a Change Order. Any claim for an increase in the Contract Price shall be based on written notice delivered to ENGINEER within fifteen days of the occurrence of the event giving rise to the claim. Notice of the amount of the claim with supporting data shall be delivered within forty-five days of such occurrence unless ENGINEER allows an additional period of time to ascertain accurate cost data.

11.3. The value of any Work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:

11.3.1. Where the Work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of the items involved (subject to the provisions of paragraph 11.9).

11.3.2. By mutual acceptance of a lump sum.

11.3.3. On the basis of the Cost of the Work (determined as provided in paragraphs 11.4 and 11.5) plus a Contractor’s Fee for overhead and profit (determined as provided in paragraph 11.6).

Cost of the Work:

11.4. The term Cost of the Work means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. Except as otherwise may be agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality

of the Project, shall include only the following items and shall not include any of the costs itemized in paragraph 11.5:

11.4.1. Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon in advance by OWNER and CONTRACTOR. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis for their time spent on the Work. Payroll cost shall include, but not be limited to, salaries and wages plus the cost of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, workers' compensation, health and retirement benefits, sick leave, vacation and holiday pay applicable thereto. Such employees shall include superintendents and foremen at the site.

11.4.2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and manufacturers' field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to OWNER. All trade discounts, rebates and refunds, and all returns from sale of surplus materials and equipment shall accrue to OWNER and CONTRACTOR shall make provisions so that they may be obtained.

11.4.3. Payments made by CONTRACTOR to the Subcontractors for Work performed by Subcontractors. CONTRACTOR shall obtain competitive bids from Subcontractors acceptable to CONTRACTOR and shall deliver such bids to OWNER who will then determine which bids will be accepted. If a subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work Plus a Fee, the Subcontractor's Cost of the Work shall be determined in the same manner as CONTRACTOR's Cost of the Work. All subcontracts shall be subject to the other provisions of the Contract Documents insofar as applicable.

11.4.4. Costs of special consultants (including, but not limited to, engineers, architects, testing laboratories, surveyors, lawyers and accountants) employed for services specifically related to the Work. Any such special consultants covered by the Consultants' Competitive Negotiations Act (Section 287.055, Florida Statutes), shall be selected in accordance with such Act.

11.4.5. Supplemental costs including the following:

11.4.5.1. The proportion of necessary transportation, travel and subsistence expenses of CONTRACTOR's employees incurred in discharge of duties connected with the Work.

11.4.5.2. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the site and hand tools not owned by the workmen, which are consumed in the performance of the Work, and cost less market value of such items used but not consumed which remain the property of CONTRACTOR.

11.4.5.3. Rentals of all construction equipment and machinery and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements approved by OWNER, and the costs of transportation, loading, unloading, installation, dismantling and removal thereof - all in accordance with terms of said rental agreements. The rental of any such equipment, machinery or parts shall cease when the use thereof is no longer necessary for the Work.

11.4.5.4. Sales, use or similar taxes related to the Work, and for which CONTRACTOR is liable, imposed by any government authority.

11.4.5.5. Deposits lost for causes other than CONTRACTOR's negligence, royalty payments and fees for permits and licenses.

11.4.5.6. Losses and damages (and related expenses), not compensated by insurance or otherwise, to the Work or otherwise sustained by CONTRACTOR in connection with the execution of the Work, provided they have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's Fee. If, however, any such loss or damage requires construction and CONTRACTOR is placed in charge thereof, CONTRACTOR shall be paid for services a fee proportionate to that stated in paragraph 11.6.2.

11.4.5.7. The cost of utilities, fuel and sanitary facilities at the site.

11.4.5.8. Minor expenses such as telegrams, long distance telephone calls, telephone service at the site, expressage and similar petty cash items in connection with the Work.

11.4.5.9. Cost of premiums for additional Bonds and insurance required because of changes in the Work.

11.5. The term Cost of the Work shall not include any of the following:

11.5.1. Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnership and estimators, lawyers, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks and other personnel employed by CONTRACTOR whether at the site or in his principal or a branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in subparagraph 11.4.1. - all of which are to be considered administrative costs covered by the Contractor's Fee.

11.5.2. Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the site.

11.5.3. Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the Work and charges against CONTRACTOR for delinquent payments.

11.5.4. Cost of premiums for all Bonds and for all insurance whether or not CONTRACTOR is required by the Contract Documents to purchase and maintain the same (except for additional Bonds and insurance required because of changes in the Work).

11.5.5. Costs, including damages, due to the negligence of intentional acts of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of

materials or equipment wrongly supplied and making good any damage to property.

11.5.6. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraph 11.4.

Contractor's Fee:

11.6. The Contractor's Fee allowed to CONTRACTOR for overhead and profit shall be determined as follows:

11.6.1. A mutually acceptable fixed fee; or if none can be agreed upon,

11.6.2. A fee based on the following percentages of the various portions of the Cost of the Work;

11.6.2.1. For costs incurred under paragraphs 11.4.1. and 11.4.2., the Contractor's Fee shall be ten percent,

11.6.2.2. For costs incurred under paragraph 11.4.3., the Contractor's Fee shall be five percent; and if a subcontract is on the basis of Cost of the Work Plus a Fee, the maximum allowable to the Subcontractor as a fee for overhead and profit shall be ten percent, and

11.6.2.3. No fee shall be payable on the basis of costs itemized under paragraphs 11.4.4., 11.4.5. and 11.5.

11.7. The amount of credit to be allowed by CONTRACTOR to OWNER for any such change which results in a net decrease in costs, will be the amount of the actual net decrease. When both additions and credits are involved in any one change, the combined overhead and profit shall be figured on the basis of the net increase, if any.

Adjustment of Unit Prices:

11.8. Whenever the cost of any Work is to be determined pursuant to paragraphs 11.4. and 11.5., CONTRACTOR will submit in form acceptable to ENGINEER an itemized cost breakdown together with supporting data.

11.9. Where the quantity of Work with respect to any item that is covered by a unit price differs materially and significantly from the quantity of such Work indicated in the Contract Documents, an appropriate Change Order may be issued on recommendation of ENGINEER to adjust the unit price.

ARTICLE 12 - CHANGE OF THE CONTRACT TIME

12.1. The Contract Time may only be changed by a written Change Order. Any claim for an extension in the Contract Time shall be based on written notice delivered to ENGINEER within fifteen days of the occurrence of the event giving rise to the claim. Notice of the extent of the claim with supporting data shall be delivered within forty-five days of such occurrence unless ENGINEER allows an additional period of time to ascertain more accurate data. All claims for

adjustment in the Contract Time shall be determined by ENGINEER if OWNER and CONTRACTOR cannot otherwise agree. Any change in the Contract Time resulting from any such claim shall be incorporated in a written Change Order.

12.2. The Contract Time will be extended in an amount equal to time lost due to delays beyond the control of CONTRACTOR if a claim is made therefor as provided in paragraph 12.1. Such delays shall include, but not be limited to, acts or neglect by OWNER or others performing additional Work as contemplated by Article 7, or fires, floods, labor disputes, epidemics, abnormal weather conditions, or acts of God.

12.3. All time limits stated in the Contract Documents are of the essence of the Agreement. The CONTRACTOR shall not be entitled to any claim for damages on account of hindrances or delays from any cause whatsoever, but if occasioned by an act of God, or by any act or omission on the part of the Owner, such act, hindrance or delay may entitle the CONTRACTOR to an extension of time in which to complete the work which shall be determined by the ENGINEER, provided that the CONTRACTOR will give notice in writing of the cause of such act, hindrance or delay within ten (10) days after its occurrence.

ARTICLE 13 - WARRANTY AND GUARANTEE; TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

Warranty and Guarantee:

13.1. CONTRACTOR warrants and guarantees to OWNER that all Work will be in accordance with the Contract Documents and will not be defective. Prompt notice of all defects shall be given to CONTRACTOR. All defective Work, whether or not in place, may be rejected, corrected or accepted as provided in this Article 13.

Access to Work:

13.2. ENGINEER and ENGINEER's representatives, other representatives of OWNER, testing agencies and governmental agencies with jurisdictional interests will have access to the Work at reasonable times for their observation, inspection and testing. CONTRACTOR shall provide proper and safe conditions for such access.

Tests and Inspections:

13.3. CONTRACTOR shall give ENGINEER timely notice of readiness of the Work for all required inspections, tests or approvals.

13.4. If any law, ordinance, rule, regulation, code, or order of any public body having jurisdiction requires any Work (or part thereof) to specifically be inspected, tested or approved, CONTRACTOR shall assume full responsibility therefor, pay all costs in connection therewith and furnish ENGINEER the required certificates of inspection, testing or approval. CONTRACTOR shall also be responsible for and shall pay all costs in connection with any inspection or testing required in connection with OWNER's acceptance of a manufacturer, fabricator, supplier, or distributor of materials or equipment proposed to be incorporated in the Work, or of materials or equipment submitted for approval prior to CONTRACTOR's purchase

thereof for incorporation in the Work. The cost of all other inspections, tests and approvals required by the Contract Documents shall be paid by OWNER (unless otherwise specified).

13.5. All inspections, tests or approvals other than those required by law, ordinance, rule, regulation, code or order of any public body having jurisdiction shall be performed by organizations acceptable to OWNER and CONTRACTOR.

13.6. If any Work that is to be inspected, tested or approved is covered without written concurrence of ENGINEER, it must, if requested by ENGINEER, be uncovered for observation. Such uncovering shall be at CONTRACTOR's expense unless CONTRACTOR has given ENGINEER timely notice of CONTRACTOR's intention to cover such Work and ENGINEER has not acted with reasonable promptness in response to such notice.

13.7. Neither observations by ENGINEER, nor inspections, tests or approvals by others shall relieve CONTRACTOR from his obligations to perform the Work in accordance with the Contract Documents, and in all events in no less than a workmanlike manner.

Uncovering Work:

13.8. If any Work is covered contrary to the written request of ENGINEER, it must, if requested by ENGINEER, be uncovered for ENGINEER's observation and replaced at CONTRACTOR's expense.

13.9. If ENGINEER considers it necessary or advisable that covered Work be observed by ENGINEER or inspected or tested by others, CONTRACTOR, at ENGINEER's request, shall uncover, expose or otherwise make available for observation, inspection or testing as ENGINEER may require, that portion of the Work in question, furnishing all necessary labor, material and equipment. If it is found that such Work is defective, CONTRACTOR shall bear all the expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction, including compensation for additional professional services, and an appropriate deductive Change Order shall be issued. If, however, such Work is not found to be defective, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction if he makes a claim therefor as provided in Articles 11 and 12.

Owner May Stop the Work:

13.10. If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workmen or suitable materials or equipment, OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause of such order has been eliminated; however, this right of OWNER to stop the Work shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR or any other party.

Correction or Removal of Defective Work:

13.11. If required by ENGINEER, CONTRACTOR shall promptly, without cost to OWNER and as specified by ENGINEER, either correct any defective Work, whether or not fabricated, installed or completed, or, if the Work has been rejected by ENGINEER, remove it from the site

and replace it with nondefective Work.

One Year Correction Period:

13.12. If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents, any Work is found to be defective, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER's written instructions, either correct such defective Work, or, if it has been rejected by OWNER, remove it from the site and replace it with nondefective Work. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the defective Work corrected or the rejected Work removed and replaced, and all direct and indirect costs of such removal and replacement, including compensation for additional professional services, shall be paid by CONTRACTOR.

Acceptance of Defective Work:

13.13. If, instead of requiring correction or removal and replacement of defective Work, OWNER prefers to accept it, OWNER may do so. In such case, if acceptance occurs prior to ENGINEER's recommendation of final payment, a Change Order shall be issued incorporating the necessary revisions in the Contract Documents, including appropriate reduction in the Contract Price; or, if the acceptance occurs after such recommendation, an appropriate amount shall be paid by CONTRACTOR to OWNER.

OWNER May Correct Defective Work:

13.14. If CONTRACTOR fails, within a reasonable time after written notice of ENGINEER to proceed, to correct and to correct defective Work or to remove and replace rejected Work as required by ENGINEER in accordance with paragraph 13.11., or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents (including any requirements of the progress schedule), OWNER may, after seven days' written notice to CONTRACTOR, correct and remedy any such deficiency. In exercising his rights under this paragraph OWNER shall proceed expeditiously. To the extent necessary to complete corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of the site, take possession of all or part of the Work, and suspend CONTRACTOR's services related thereto, take possession of CONTRACTOR's tools, appliances, construction equipment and machinery at the site and incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER's representatives, agents and employees such access to the site as may be necessary to enable OWNER to exercise his rights under this paragraph. All direct and indirect costs of OWNER in exercising such rights shall be charged against CONTRACTOR in an amount verified by ENGINEER, and a Change Order shall be issued incorporating the necessary revisions in the Contract Documents and a reduction in the Contract Price. Such direct and indirect costs shall include, in particular but without limitation, compensation for additional professional services required and all costs of repair and replacement of work of others destroyed or damaged by correction, removal or replacement of CONTRACTOR's defective Work. CONTRACTOR shall not be allowed an extension of the Contract Time because of any delay in performance of the Work attributable to the exercise by OWNER of OWNER's rights hereunder.

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

Application for Progress Payment:

14.1. At least ten days before each progress payment falls due (but not more often than once a month), CONTRACTOR shall submit to ENGINEER for review an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents and also as ENGINEER may reasonably require. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the site or at another location agreed to in writing, the Application for Payment shall also be accompanied by such data, satisfactory to OWNER, as will establish OWNER's title to the material and equipment and protect OWNER's interest therein, including applicable insurance. Each subsequent Application for Payment shall include an affidavit of CONTRACTOR stating that all previous progress payments received on account of the Work have been applied to discharge in full all of CONTRACTOR's obligations reflected in prior Applications for Payment. The amount of retainage with respect to progress payments will be as stipulated in the Form of Agreement, Article 5.

CONTRACTOR's Warranty of Title:

14.2. CONTRACTOR warrants and guarantees that title to all Work, materials and equipment covered by an Application for Payment, whether incorporated in the project or not, will pass to OWNER at the time of payment free and clear of all liens, claims, security interests and encumbrances (hereafter in these General Conditions referred to as "Liens").

Review of Applications for Progress Payment:

14.3. ENGINEER will, within ten days after receipt of each Application for Payment, either indicate in writing a recommendation of payment, or return the Application to CONTRACTOR indicating in writing ENGINEER's reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application. OWNER shall, within ten days of presentation to him of the ENGINEER's recommendation of payment, pay CONTRACTOR the amount recommended.

14.4. ENGINEER may refuse to recommend the whole or any part of any payment if, in his opinion, it would be incorrect to make such representations to OWNER. He may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended to such extent as may be necessary in ENGINEER's opinion to protect OWNER from loss because:

14.4.1. The Work is defective, or completed Work has been damaged requiring correction or replacement;

14.4.2. Written claims have been made against OWNER or Liens have been filed in connection with the Work;

14.4.3. The Contract Price has been reduced because of Modifications;

14.4.4. OWNER has been required to correct defective Work or complete the Work in accordance with paragraph 13.14;

14.4.5. Of CONTRACTOR's unsatisfactory prosecution of the Work in accordance with the Contract Documents, including failure to clean up;

14.4.6. Of liquidated damages payable by CONTRACTOR; or

14.4.7. CONTRACTOR's failure to make payment to Subcontractors, or for labor, materials or equipment.

Substantial Completion:

14.5. When CONTRACTOR considers the entire Work ready for its intended use CONTRACTOR shall, in writing to ENGINEER, certify that the entire Work is substantially complete and request that ENGINEER issue a certificate of Substantial Completion. Within a reasonable time thereafter, CONTRACTOR and ENGINEER shall make an inspection of the Work to determine the status of completion. If ENGINEER does not consider the Work substantially complete, ENGINEER will notify CONTRACTOR in writing giving his reasons therefor. If ENGINEER considers the Work substantially complete, ENGINEER will prepare a certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a list of items to be completed or corrected before final payment.

14.6. OWNER shall have the right to exclude CONTRACTOR from the Work after the date of Substantial Completion, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the list.

Partial Utilization:

14.7. Use by OWNER of completed portions of the Work may be accomplished prior to Substantial Completion of all the Work subject to the following:

14.7.1. OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any part of the Work which OWNER believes to be substantially complete and which may be so used without significant interference with construction of the other parts of the Work. If CONTRACTOR agrees, CONTRACTOR will certify to ENGINEER that said part of the Work is substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time thereafter CONTRACTOR and ENGINEER shall make an inspection of that part of the Work to determine its status of completion. If ENGINEER does not consider that part of the Work to be substantially complete, ENGINEER will notify CONTRACTOR in writing giving his reasons therefor. If ENGINEER considers that part of the Work to be substantially complete, ENGINEER will execute and deliver to CONTRACTOR a certificate to that effect, fixing the date of Substantial Completion as to that part of the Work, attaching thereto a list of items to be completed or corrected before final payment. OWNER shall have the right to exclude CONTRACTOR from any part of the Work which ENGINEER has so certified to be substantially complete, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the list.

14.7.2. In lieu of the issuance of a certificate of Substantial Completion as to part of the Work, OWNER may take over operation of a facility constituting part of the Work whether or not it is substantially complete if such facility is functionally and separately usable; provided that prior to any such takeover, OWNER and CONTRACTOR have agreed as to the division of responsibilities between OWNER and CONTRACTOR for security, operation, safety, maintenance, correction period, heat, utilities and insurance with respect to such facility.

14.7.3. No occupancy of part of the Work or taking over of operations of a facility will be accomplished prior to compliance with the requirements of paragraph 5.14 with regard to property insurance.

Final Inspection:

14.8. Upon written notice from CONTRACTOR that the work is complete, ENGINEER will make a final inspection with CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to remedy such deficiencies.

Final Application for Payment:

14.9. After CONTRACTOR has completed all such corrections to the satisfaction of ENGINEER and delivered all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, marked-up record documents and other documents - all as required by the Contract Documents, and after ENGINEER has indicated that the Work is acceptable (subject to the provisions of paragraph 14.13), CONTRACTOR may make application for final payment following the procedure for progress payments. The final Application for Payment shall be accompanied by all documentation called for in the Contract Documents and such other data and schedules as ENGINEER may reasonably require, together with complete and legally effective releases or waivers (satisfactory to OWNER) of all Liens arising out of or filed in connection with the Work. In lieu thereof and as approved by OWNER, CONTRACTOR may furnish receipts or releases in full; an affidavit of CONTRACTOR that the releases and receipts include all labor, services, material and equipment for which a Lien could be filed, and that all payrolls, material and equipment bills, and other indebtedness connected with the Work for which OWNER or his property might in any way be responsible, have been paid or otherwise satisfied; and consent of the Surety, if any, to final payment. If any Subcontractor, manufacturer, fabricator, supplier or distributor fails to furnish a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Lien.

Final Payment and Acceptance:

14.10. If, on the basis of ENGINEER's observation of the Work during construction and final inspection, and ENGINEER's review of the final Application for Payment and accompanying documentation - all as required by the Contract Documents, ENGINEER is satisfied that the Work has been completed and CONTRACTOR has fulfilled all of his obligations under the Contract Documents, ENGINEER will, within ten days after receipt of the final Application for Payment, indicate in writing his recommendation of payment and present the Application for payment.

Thereupon ENGINEER will give written notice to CONTRACTOR that the Work is acceptable subject to the provisions of paragraph 14.13. Otherwise, ENGINEER will return the Application to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application. If the Application and accompanying documentation are appropriate as to form and substance, OWNER shall, within thirty days after receipt thereof pay CONTRACTOR the amount recommended by ENGINEER.

14.11. If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed and if ENGINEER so confirms, OWNER shall, upon receipt of CONTRACTOR's final Application for Payment and recommendation of ENGINEER, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by OWNER for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 5.1, the written consent of the Surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to ENGINEER with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

CONTRACTOR's Continuing Obligation:

14.12. CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. Neither recommendation of any progress or final payment by ENGINEER, nor the issuance of a certificate of Substantial Completion, nor any payment by OWNER to CONTRACTOR under the Contract Documents, nor any use or occupancy of the Work or any part thereof by OWNER, nor any act of acceptance by OWNER nor any failure to do so, nor the issuance of a notice of acceptability by ENGINEER pursuant to paragraph 14.10, nor any correction of defective Work by OWNER shall constitute an acceptance of Work not in accordance with the Contract Documents or a release of CONTRACTOR's obligation to perform the Work in accordance with the Contract Documents.

Waiver of Claims:

14.13. The making and acceptance of final payment shall constitute:

14.13.1. A waiver of all claims by OWNER against CONTRACTOR, except claims arising from unsettled or unfiled Liens, from defective Work appearing after final inspection pursuant to paragraph 14.8 or from failure to comply with the Contract Documents or the terms of any special guarantees specified therein; however, it shall not constitute a waiver by OWNER of any rights in respect of CONTRACTOR's continuing obligations under the Contract Documents; and

14.13.2. A waiver of all claims by CONTRACTOR against OWNER other than those previously made in writing and still unsettled or unfiled.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

Owner May Suspend Work:

15.1. OWNER may, at any time and without cause, suspend the Work or any portion thereof for a period of not more than ninety days by notice in writing to CONTRACTOR and Surety which shall fix the date on which Work shall be resumed. CONTRACTOR shall resume the Work on the date so fixed. CONTRACTOR may be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension of work at OWNER's request if he makes a claim therefor as provided in Articles 11 and 12.

Owner May Terminate:

15.2. Upon the occurrence of any one or more of the following events:

15.2.1. If CONTRACTOR is adjudged a bankrupt or insolvent;

15.2.2. If CONTRACTOR makes a general assignment for the benefit of creditors;

15.2.3. If a trustee or receiver is appointed for CONTRACTOR or for any of CONTRACTOR's property;

15.2.4. If CONTRACTOR files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or similar laws;

15.2.5. If CONTRACTOR repeatedly fails to supply sufficient skilled workmen or suitable materials or equipment;

15.2.6. If CONTRACTOR repeatedly fails to make prompt payments to Subcontractors or for labor, materials or equipment;

15.2.7. If CONTRACTOR violates any laws, ordinances, rules, regulations or orders of any public body having jurisdiction;

15.2.8. If CONTRACTOR disregards the authority of ENGINEER; or

15.2.9. If CONTRACTOR otherwise violates in any substantial way any provisions of the Contract Documents.

OWNER may after giving CONTRACTOR and his Surety seven (7) days' written notice, terminate the services of CONTRACTOR, exclude CONTRACTOR from the site and take possession of the Work and of all CONTRACTOR's tools, appliances, construction equipment and machinery at the site and demand the Surety to finish the Work by whatever methods he may deem expedient but subject to the approval of OWNER. The Surety shall use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work as OWNER may require. In such case CONTRACTOR shall not be entitled to receive any further

payment until the Work is finished. If the unpaid balance of the Contract Price exceeds the direct and indirect costs of completing the Work, including compensation for additional professional services, such excess shall be paid to CONTRACTOR. If such costs exceed such unpaid balance, CONTRACTOR and the Surety shall be jointly and severely liable to pay the difference to OWNER. Such costs incurred by OWNER shall be incorporated in a Change Order, but in finishing the Work OWNER shall not be required to accept the lowest figure for the Work to be performed by the Surety.

15.3. Where CONTRACTOR's services have been so terminated by OWNER, the termination shall not affect any rights of OWNER against CONTRACTOR or the Surety then existing or which may thereafter accrue. Any retention or payment of moneys due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

15.4. Upon seven (7) days' written notice to CONTRACTOR and Surety, OWNER may, without cause and without prejudice to any other right or remedy, elect to abandon the Work and terminate the Agreement. In such case, CONTRACTOR shall be paid for all Work executed, any expense sustained plus reasonable termination expenses.

CONTRACTOR May Stop Work or Terminate:

15.5. If, through no act or fault of CONTRACTOR, the Work is suspended for a period of more than ninety (90) days by OWNER or under an order of court or other public authority, or ENGINEER fails to act on any Application for Payment within thirty (30) days after it is submitted, or OWNER fails for thirty days to pay CONTRACTOR any sum finally determined to be due, the CONTRACTOR may, upon seven (7) days' written notice to OWNER, terminate the Agreement and recover from OWNER payment for all Work executed and any expense sustained plus reasonable termination expenses. In addition and in lieu of terminating the Agreement, if ENGINEER has failed to act on an Application for Payment or OWNER has failed to make any payment as aforesaid, CONTRACTOR may upon seven (7) days' notice to OWNER stop the Work until payment of all amounts then due. The provisions of this paragraph shall not relieve CONTRACTOR of his obligations to carry on the Work in accordance with the progress schedule and without delay during disputes and disagreements with OWNER.

ARTICLE 16 - MISCELLANEOUS

Giving Notice:

16.1. Whenever any provision of the Contract Documents requires the giving of written notice it shall be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

Computation of Time:

16.2. When any period of time is referred to in the Contract Documents by days, it shall be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable

jurisdiction, such day shall be omitted from the computation.

General:

16.3. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon CONTRACTOR by paragraphs 6.15, 13.1, 13.11, 13.14, 14.2, and 15.2, and all of the rights and remedies available to OWNER thereunder, shall be in addition to, and not in limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by law or contractor, by special warranty or guarantee or by other provisions of the Contract Documents, and the provisions of this paragraph shall be as effective as if repeated specifically in the contract Documents in connection with each particular duty, obligation, right and remedy to which they apply. All representations, warranties and guarantees made in the Contract Documents shall survive final payment and termination or completion of this Agreement.

Liquidated Damages:

16.4. OWNER and CONTRACTOR recognize that time is of the essence to complete this Project and that OWNER will suffer financial loss if the Work is not substantially complete within the time specified in Agreement, plus any extensions thereof allowed in accordance with Article 12. They also recognize the delays, expense and difficulties involved in proving in a legal proceeding the actual loss suffered by OWNER if the Work is not substantially complete on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty) CONTRACTOR shall pay OWNER the amount stated in the Contract for each day that expires after the time specified in the Contract for Substantial Completion until the Work is substantially complete. After Substantial Completion, if CONTRACTOR shall neglect, refuse or fail to complete the remaining Work within the time specified in the Contract or any proper extension thereof granted by OWNER, CONTRACTOR shall pay the OWNER an amount equal to all actual expenses incurred by the OWNER as a direct result of the CONTRACTOR'S negligence, refusal, or failure to so complete the remaining Work. In the event the CONTRACTOR is terminated or abandons the Work prior to the scheduled date for final completion, the CONTRACTOR may be liable for both liquidated damages attributable to delay and for excess completion costs.

Reports of Investigations and Tests of Subsurface and Latent Physical Conditions:

16.5. Reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the work which have been relied upon by ENGINEER in preparing the Drawings and Specifications are as listed in the Supplementary Conditions. OWNER will make such reports available for inspection to any Bidder or copies may be obtained from the ENGINEER by the Bidder at reproduction cost. These reports are not guaranteed as to accuracy or completeness, nor are they part of the Contract Documents.

Performance of Work by CONTRACTOR:

16.6. Contract Assignment. The successful bidder (or bidders) will be required to perform the work as a prime contractor. CONTRACTOR shall not sublet, sell, transfer, assign or otherwise

dispose of the contract or any portion thereof, or of his right, title, or interest therein. CONTRACTOR shall perform on the site and with his own organization work equivalent to not less than fifty (50%) percent of the total dollar value of the work to be performed under this contract except that work designated in the Supplementary Conditions as specialty work may be performed by subcontractors and the cost of any such specialty work so performed by subcontracts may be deducted from the total contract amount before computing the amount of work required to be performed by CONTRACTOR with his own organization.

Limitation of Remedy and Liability:

16.7 Contractor and Owner expressly waive any claim for consequential damages against the other including but not limited to, a waiver of claims for diminished bonding capacity, loss of financing, loss of business reputation, lost profits on other projects or other lost opportunity damage claims.

Contractor expressly agrees that any claim (tort, contract, claim in equity, or otherwise) by Contractor for damages against Owner shall not exceed the total amount of the contract price, less any amounts actually paid to the Contractor by the Owner (or by an insurer of the Owner).

All liability of the City allegedly resulting from, arising out of or connected with this Agreement, or from the performance or breach thereof, shall terminate three years from the termination of this Agreement.

Waiver of Right to Jury Trial:

16.8 THE PARTIES HEREBY KNOWINGLY, VOLUNTARILY AND INTENTIONALLY WAIVE ANY RIGHT WHICH ANY PARTY MAY HAVE TO TRIAL BY JURY IN RESPECT OF ANY PROCEEDING, LITIGATION OR COUNTERCLAIM BASED ON, OR ARISING OUT OF, UNDER OR IN CONNECTION WITH THIS AGREEMENT OR ANY COURSE OF CONDUCT, COURSE OF DEALING, STATEMENTS (WHETHER VERBAL OR WRITTEN) OR ACTIONS OF ANY PARTY. IF THE SUBJECT MATTER OF ANY LAWSUIT IS ONE IN WHICH THE WAIVER OF JURY TRIAL IS PROHIBITED, NO PARTY TO THIS AGREEMENT SHALL PRESENT AS A NON-COMPULSORY COUNTERCLAIM IN ANY SUCH LAWSUIT ANY CLAIM BASED ON, OR ARISING OUT OF, UNDER OR IN CONNECTION WITH THIS AGREEMENT. FURTHERMORE, NO PARTY TO THIS AGREEMENT SHALL SEEK TO CONSOLIDATE ANY SUCH ACTION IN WHICH A JURY TRIAL CANNOT BE WAIVED.

END OF SECTION

SECTION 00800
SUPPLEMENTARY CONDITIONS

The following supplements modify, change, delete from, or add to the General Conditions of the Construction Contract (Section 00700). Where any article of the General Conditions is modified or any paragraph, subparagraph or clause thereof is modified or deleted by these supplements, the unaltered provisions of that article, paragraph, subparagraph or clause shall remain in effect.

ARTICLE 16 - MISCELLANEOUS

Section 16.5 – Reports of Investigations and Test of Subsurface and Latent Physical Conditions

Add the following subparagraph:

16.5.1 The list of reports of investigations and tests of subsurface and latent physical conditions as referred to in General Conditions Section 16.5 are as follows:

None

Add the following:

16.7 Minimum Requirements for the provision and maintenance of Payment and Performance Bonds, and Contractor's Insurance

In accordance with Resolution 2021-144 as it presently exists or may hereafter change, or applicable state, federal or local law, whichever is stricter, the following minimum requirements have been established:

A. Payment and Performance Bonds

1. Except as otherwise provided herein, the Contractor shall, prior to beginning performance, deliver to the City, and the City shall record in the public records of Volusia County, Florida, the Contractor's Payment and Performance Bond in an amount equal to the full amount of the Contract.

2. **(a)** Payment and Performance Bonds shall not be required for any contract except those which are for the construction of a public building, for the prosecution and completion of a public work (as described in Section 180.06, **Florida Statutes,** as amended from time to time) or for repairs upon a public building or public work (as described in Section 180.06, **Florida Statutes**, as amended from time to time).

(b) With respect to those Contracts for which Payment and Performance Bonds are otherwise required:

i. Unless the City Manager, or designee, determines such Bond to be necessary to protect the interests of the City, no Contractor shall be

required to provide a Payment and Performance Bond for any Contract which is for $25,000.00 or less.

ii. Upon the request of the contractor, good cause shown by the Contractor, and a determination that the public health, safety and welfare will be sufficiently protected, the City Commission may exempt the contractor from the requirement of providing a Payment and Performance Bond for any Contract which is for more than $25,000.00 but is less than $200,000.00.

3. The Payment and Performance Bond shall list the Contractor as Principal and be issued by a surety insurer authorized to do business in Florida as a surety and listed as an acceptable surety in the Federal Register.

4. The Payment and Performance Bond shall be executed pursuant to Section 255.05, **Florida Statutes**, and be in a form substantially similar to the form set forth in Section 255.05(3), **Florida Statutes**.

5. The Payment and Performance Bond shall specifically provide coverage for delay damages due to a default by the Contractor.

6. The Payment and Performance Bond shall not make the Contract part of the Bond agreement.

7. In lieu of the Payment and Performance Bond, the Contractor may file with the Finance Director of the City, in an amount equal to the full amount of the Contract, cash, a money order, a certified check, a cashier's check, an irrevocable letter of credit, or a security of a type listed in Part II, Chapter 625, **Florida Statutes**.

8. In the event the surety on any Payment and Performance Bond furnished by the Contractor is declared bankrupt or becomes insolvent, or its right to do business in the State of Florida is terminated, the Contractor shall, within five (5) working days thereafter, substitute another Payment and Performance Bond and surety acceptable to the City.

9. The Contractor is totally and solely responsible for keeping its surety informed as to the Base Contract Price as bid, significant changes in the Project Scope, and the overall progress and completion of the Project for the entire life of the Contract.

10. The payment and performance bond requirements stated herein above shall not be applicable to service-related contracts unless otherwise determined by the City Manager in order to protect the health, safety and welfare of the general public.

B. Contractual Provisions Relative to Risk Management

All contracts for any public works to be performed, and service-related contracts, for or on behalf of the City shall include at a minimum, the following, or substantially similar, provisions:

1. Hold Harmless and Indemnity

The Contractor agrees to assume liability for and indemnify, hold harmless, and defend the City, its commissioners, mayor, officers, employees, agents, and attorneys of, from, and against all liability and expense, including reasonable attorney's fees, in connection with any and all claims, demands, damages, actions, causes of action, and suits in equity of whatever kind or nature, including claims for personal injury, property damage, equitable relief, or loss of use, to the extent caused by the negligence, recklessness, or intentionally wrongful conduct of the Contractor, its agents, officers, contractors, subcontractors, employees, or anyone else employed or utilized by the Contractor in the performance of this Contract. The Contractor's liability hereunder shall include all attorney's fees and costs incurred by the City in the enforcement of this provision.

2. Payment on Behalf of City

The Contractor shall pay all costs of the City's legal defense, as may be selected by the City, for all claims described in the Hold Harmless paragraph.

Such payment on behalf of the City shall be in addition to any and all other legal remedies available to the City and shall not be considered to be the City's exclusive remedy.

3. Loss Control/Safety

Precaution shall be exercised at all times by the Contractor for the protection of all persons, including employees and property. The Contractor shall comply with all applicable laws, regulations and ordinances related to safety and health, shall make special efforts to detect hazardous conditions, and shall take prompt action when loss control/safety measures are reasonably necessary.

The City may order work to be stopped if conditions exist that present an immediate danger to persons or property. The Contractor acknowledges that such work stoppage will not shift responsibility for any damages from the Contractor to the City.

4. Service Bond

For Service-related contracts only, the City may require the Contractor to secure a service bond with a minimum $25,000 coverage limit for the period of the service agreement. The service bond covers dishonest acts of the contractor's employees against the City. A copy of the bond shall be provided to the City when the agreement commences.

Service-related contracts include and are not limited to businesses providing janitorial, pest control, general repair, security, carpet cleaning, locksmith, temporary employment, painting, moving services or other contracts as determined in the discretion of the Risk Manager as necessary to minimize loss.

C. Contractor's Insurance

1. General

The Contractor, including service-related contractors, shall purchase and maintain for the entire life of the Project, including any and all approved time extensions, until its final acceptance by the City, such insurance as will protect the Contractor from claims under Workers' Compensation, disability benefit laws or other similar employee benefit laws; from claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees; from claims insured by usual or unusual injury liability coverage; from claims or injury to or destruction of tangible property and from claims insured by usual Commercial General Liability coverage. This includes loss of use resulting therefrom, any or all of which may arise out of the Contractor's operations under the Contract Documents, whether such operations be by the Contractor, by any Subcontractor, or by anyone directly or indirectly employed by any of them or for whose acts any of them may be legally liable. The Contractor's deductibles/self-insured retentions shall be disclosed to the City and may be disapproved by the City, and may be reduced or eliminated at the sole discretion of the City. The Contractor is responsible for the amount of any deductible or self-insured retention.

2. Types of Insurance and Limits of Liability

The insurance required herein shall be written for not less than any limits of liability specified and incorporated as part of the Contract Documents or as required by law, whichever is greater, and shall include and not limited to the following:

(a) Workers' Compensation Insurance in statutory limits for the State of Florida with Coverage B - Employer's Liability limits of not less than:

$100,000 Each Accident Bodily Injury by Accident
$100,000 Each Employee Bodily Injury by Disease
$500,000 Policy Limit Bodily Injury by Disease

Certificate of Exemptions. If the contractor has a State-issued Certificate of Exemption, the contractor may provide a copy in place of the requirement for coverage. However, if the contractor subcontracts or retains any other person or entity to perform under the contract, that person or entity must provide proof of workers' compensation insurance as required by law or provide a Certificate of Exemption.

It is the intent of the City that any individual who either contracts directly with the city or performs any work on behalf of any such contractor be covered by workers' compensation insurance or have a valid exemption from said coverage.

(If applicable to the Project, the policy must include benefits under the United States Longshoremen's and Harbor Workers' Act and the Jones Act coverage--all maritime coverage.)

(b) Commercial General Liability Insurance shall be written on a coverage form as broad as Insurance Services Office (ISO) Form CG 00 01 11 85, or its successor form, including but not limited to the following coverage (any deviation shall be noted on the Certificates of Insurance):

a. Premises, Operations, Products and Completed Operations
b. Owners' & Contractors' Protective
c. Products & Completed Operation
d. Explosion, Collapse & Underground Conditions
e. Blanket Contractual Liability
f. Personal Injury Liability
g. Broad Form Property Damage Endorsement, including Completed Operations
h. Independent Contractors
i. Watercraft--Owned and Non-Owned (if applicable, endorsement must be included in General Liability policy or a separate Protection & Indemnity Policy must be written)
j. Pollution Liability (if applicable)
k. Asbestos Abatement (if applicable)
l. Fire Damage Liability

Certain coverage outlined above may not be required if they do not relate to the Project, as may be determined at the sole discretion of the City.

Commercial General Liability Coverage shall be written on an occurrence basis and the limits shall be no less and not limited to the following amounts:

Limits (not less than)

$1 Million Each Occurrence
$2 Million General Aggregate
$1 Million Aggregate Products & Completed Operations

NOTE: Commercial General Liability Coverage must be purchased on either a project basis (separate policy per contract) or an endorsement allocating an aggregate limit per location or specified project.

(c) Automobile Liability Insurance is required if an Automobile(s) is used in the performance of the contract.

ISO Symbol 1 (Any Auto), or alternatively a combination of Symbol 2 (Owned Autos), Symbol 8 (Hired Autos), and Symbol 9 (Non-Owned Autos), and limits shall be no less than:

$1 Million	Combined Single Limit for Bodily Injury and Property Damage

(d) Excess Liability

For contracts $250,000 or greater an Excess Liability Policy of at least but not limited to $1,000,000 in addition to the scheduled underlying policies for Commercial General Liability, Automobile Liability and Employers' Liability, the Contractor shall also provide an Excess Liability Policy with a maximum self-insured retention not to exceed $25,0000 per occurrence.

(e) Builder's Risk

Contractor shall purchase Builder's Risk Insurance for any contracts that are deemed to be vertical construction on an All-Risk policy, and shall also include coverage for wind, hail, and named storm. Limits of coverage shall be at least and not limited to the value of the project.

(f) Professional Liability, Malpractice and/or Errors and Omissions (N/A for construction contracts)

The Contractor shall purchase and maintain professional liability, malpractice, or errors or omissions insurance with minimum limits of $1,000,000 per occurrence. If a claims made form of coverage is provided, the retroactive date of coverage shall be no later than the inception date of claims made coverage, unless the prior policy was extended indefinitely to cover prior acts. Coverage shall be extended beyond the policy year either by a supplemental extended reporting period (ERP) of as great a duration as is available, and with no less coverage and with reinstated aggregate limits, or by requiring that any new policy provides a retroactive date no later than the inception date of claims made coverage.

D. Requirements for Certificates of Insurance

1. With the execution of the Contract Documents, the Contractor, including service-related contractors, shall provide certificates of such insurance acceptable to the City. These certificates and insurance policies shall contain an endorsement that the coverage under the policies will not be canceled, non-renewed or materially changed until at least thirty (30) days' prior written notice of such cancellation, non-renewal or change (except for nonpayment of premium, which shall be ten (10) days) and a copy of the cancellation endorsement signed by an authorized representative of the insurer, be given to the City. The contractor shall be required to replace any expired or canceled policies in like amount and coverage to the satisfaction of the City. The Certificate of Insurance shall be the ACORD FORM

25-S (7/90), or its successor form, and shall be made a part of the Contract Documents.

2. New certificates of insurance shall be provided to the City at least fifteen (15) days prior to coverage renewals.

3. If requested by the City, the contractor shall immediately furnish complete copies of the Contractor's insurance policies, forms and endorsements.

4. For Commercial General Liability coverage the Contractor shall, at the option of the City, provide an indication of the amount of claims payments or reserves chargeable to the aggregate amount of liability coverage. If the Commercial General Liability form of coverage includes an annual aggregate limitation on the amount of insurance provided, a separate project aggregate limit may be required by the City for the given contract.

5. If the Contractor fails to obtain and maintain for the life of the Project the insurance required hereby or to replace any such expired or canceled policy, the City may obtain and maintain such insurance with such company as it deems satisfactory. Any amounts expended by the City in payment of premiums for such insurance shall be deducted by the City form the amount due the Contractor for the work covered by the Contract.

E. Policies of Insurance

1. Except as otherwise provided in this Exhibit, all insurance policies shall be issued by insurers licensed to do business in the State of Florida on an admitted basis or which is an eligible surplus lines insurer in the State of Florida, and any such insuring company is required to have a minimum financial rating of (A-), in the latest edition of "Best's Key Rating Guide", published by A. M. Best Co., Inc., or some similarly nationally recognized rating authority, including Standard and Poors and Demotech.

2. For Workers' Compensation coverage only, self-insurance programs are acceptable with a minimum A- rated reinsurance carrier; written confirmation is required.

3. All policies of insurance or certificates thereof referred to in this Exhibit shall be deposited with the City Clerk.

4. The City shall be named an Additional Insured on General Liability including products and completed operations and Automobile Liability policies of insurance and certificates thereof.

END OF SECTION

SECTION 01 00 00
GENERAL REQUIREMENTS

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work: The Work to be done consists of the furnishing of all labor, materials and equipment, and the performance of all Work included in this Contract. The summary of the Work is presented in Section 01 11 00: Summary of Work.

B. Work Included:

1. The Contractor shall furnish all labor, superintendence, materials, plant power, light, heat, fuel, water, tools, appliances, equipment, supplies, and means of construction necessary for proper performance and completion of the Work. The Contractor shall obtain and pay for all necessary local building permits. The Contractor shall perform and complete the work in the manner best calculated to promote rapid construction consistent with safety of life and property and to the satisfaction of the Engineer, and in strict accordance with the Contract Documents. The Contractor shall clean up the Work and maintain it during and after construction, until accepted, and shall do all Work and pay all costs incidental thereto. He shall repair or restore all structures and property that may be damaged or disturbed during performance of the Work.

2. The cost of incidental work described in these Project Requirements, for which there are no specific Contract Items, shall be considered as part of the general cost of doing the Work and shall be included in the prices for the various Contract Items. No additional payment will be made therefore.

3. The Contractor shall provide and maintain such modern plant, tools, and equipment as may be necessary, in the opinion of the Engineer, to perform in a satisfactory and acceptable manner all the Work required by this Contract. Only equipment of established reputation and proven efficiency shall be used. The Contractor shall be solely responsible for the adequacy of his workmanship, materials, and equipment, prior approval of the Engineer notwithstanding.

C. Public Utility Installations and Structures:

1. Public utility installations and structures shall be understood to include all poles, tracks, pipes, wires, conduits, vaults, manholes, and all other appurtenances and facilities pertaining thereto whether owned or controlled by the Owner, other governmental bodies, or privately owned by individuals, firms, or corporations,

used to serve the public with transportation, traffic control, gas, electricity, telephone, sewerage, drainage, water, or other public or private property which may be affected by the Work shall be deemed included hereunder.

2. The Contract Documents contain data relative to existing public utility installations and structures above and below the ground surface. These data are not guaranteed as to their completeness or accuracy and it is the responsibility of the Contractor to make his own investigations to inform himself fully of the character, condition, and extent of all such installations and structures as may be encountered and as may affect the construction operations.

3. The Contractor shall protect all public utility installations and structures from damage during the Work. Access across any buried public utility installation or structure shall be made to avoid any damage to these facilities. All required protective devices and construction shall be provided by the Contractor at his expense. All existing public utilities damaged by the Contractor shall be repaired by the Contractor, at his expense. No separate payment shall be made for such protection or repairs to public utility installations or structures.

4. Public utility installations or structures owned or controlled by the Owner or other governmental body which are shown on the Drawings to be removed, relocated, replaced, or rebuilt by the Contractor shall be considered as a part of the general cost of doing the Work and shall be included in the prices bid for the various Contract Items; therefore, no separate payment shall be made.

5. Where public utility installations of structures owned or controlled by the Owner or other governmental body are encountered during the course of the Work, and are not indicated on the Drawings or in the Specifications, and when, in the opinion of the Engineer, removal, relocation, replacement, or rebuilding is necessary to complete the Work under this Contract, such Work shall be accomplished by the utility having jurisdiction, or such Work may be ordered, in writing by the Engineer, for the Contractor to accomplish. If such work is accomplished by the utility having jurisdiction it will be carried out expeditiously, and the Contractor shall give full cooperation to permit the utility to complete the removal, relocation, replacement, or rebuilding as required. If such work is accomplished by the Contractor, it will be paid for as extra work as provided in the Agreement.

6. The Contractor shall, at all times in performance of the Work, employ acceptable methods and exercise reasonable care and skill so as to avoid unnecessary delay, injury, damage, or destruction of public utility installations and structures; and shall, at all times in the performance of the Work, avoid unnecessary interference with, or interruption of, public utility services, and shall cooperate fully with the owners thereof to that end.

7. The Contractor shall give written notice to Owner and other governmental utility departments and other owners of public utilities of the location of his proposed construction operations, at least forty-eight (48) hours in advance of breaking ground in any area or on any unit of the Work.

8. The maintenance, repair, removal, relocation, or rebuilding of public utility installations and structures, when accomplished by the Contractor as herein provided, shall be done by methods approved by the owners of such utilities.

1.02 DRAWINGS AND PROJECT MANUAL

A. Drawings: When obtaining data and information from the Drawings, figures shall be used in preference to scaled dimensions, and large-scale drawings in preference to small-scale drawings.

B. Supplementary Drawings:

1. When, in the opinion of the Engineer, it becomes necessary to explain more fully the Work to be done or to illustrate the Work further or to show any changes which may be required, drawings known as Supplementary Drawings, with specifications pertaining thereto, will be prepared by the Engineer, and the Contractor will be furnished an electronic copy of the plans and project manual.

2. The Supplementary Drawings shall be binding upon the Contractor with the same force as the Contract Drawings. Where such Supplementary Drawings require either less or more than the estimated quantities of Work, credit to the Owner or compensation therefore to the Contractor shall be subject to the terms of the Agreement.

C. Contractor to Check Drawings and Data:

1. The Contractor shall verify all dimensions, quantities, and details shown on the Drawings, Supplementary Drawings, schedules, Specifications, or other data received from the Engineer, and shall notify him of all errors, omissions, conflicts, and discrepancies found therein. Failure to discover or correct errors, omissions, conflicts, or discrepancies shall not relieve the Contractor of full responsibility for unsatisfactory work, faulty construction, or improper operation resulting there from, nor from rectifying such conditions at his own expense. He will not be allowed to take advantage of any errors or omissions, as full instructions will be furnished by the Engineer, should such errors or omissions be discovered.

2. All schedules are given for the convenience of the Engineer and the Contractor and are not guaranteed to be complete. The Contractor shall assume all responsibility or the making of estimates of the size, kind, and quality of materials and equipment included in work to be done under the Contract.

D. Specifications: The Technical Specifications consist of three (3) parts: General, Products, and Execution. The General part of a Specification contains General Requirements which govern the Work. The Products and Execution parts modify and supplement the General Requirements by detailed requirements for the Work and shall always govern whenever there appears to be a conflict.

E. Intent:

1. All Work called for in the Specifications applicable to this Contract, but not shown on the Drawings in their present form, or vice versa, shall be of like effect as if shown or mentioned in both. Work not specified in either the Drawings or in the Specifications but involved in carrying out their intent or in the complete and proper execution of the Work, is required and shall be performed by the Contractor as though it were specifically delineated or described.

2. The apparent silence of the Specifications as to any detail, or the apparent omission from them of a detailed description concerning any work to be done and materials to be furnished, shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of the best quality is to be used, the interpretation of these Specifications shall be made upon that basis.

1.03 MATERIALS AND EQUIPMENT

A. Manufacturer:

1. All transactions with the manufacturers or subcontractors shall be through the Contractor, unless the Contractor shall request and at the Engineer's option, that the manufacturer or subcontractor deal directly with the Engineer. Any such transactions shall not in any way release the Contractor from his full responsibility under this Contract.

2. Any two (2) or more pieces of material or equipment of the same kind, type, or classification, and being used for identical types of service, shall be made by the same manufacturer.

B. Delivery:

1. The Contractor shall deliver materials in ample quantities to ensure the most speedy and uninterrupted progress of the Work so as to complete the Work within the allotted time.

2. The Contractor shall also coordinate deliveries in order to avoid delay in, or impediment of, the progress of the work of any related Contractor.

C. Tools and Accessories:

1. The Contractor shall, unless otherwise stated in the Contract Documents, furnish with each type, kind, or size of equipment, one (1) complete set of suitably marked high grade special tools and appliances which may be needed to adjust, operate, maintain, or repair the equipment. Such tools and appliances shall be furnished in approved painted steel cases, properly labeled, and equipped with good grade cylinder locks and duplicate keys.

2. Spare parts shall be furnished as specified herein and as recommended by the manufacturer necessary for the operation of the equipment, not including materials required for routine maintenance.

3. Each piece of equipment shall be provided with a substantial nameplate, securely fastened in place and clearly inscribed with the manufacturer's name, year of manufacture, serial number, weight, and principal rate data.

D. Service of Manufacturer's Engineer:

1. The Contract Prices for equipment shall include the cost of furnishing a competent and experienced Engineer or superintendent who shall represent the manufacturer and shall assist the Contractor, when required, to install, adjust, test, and place in operation, the equipment in conformity with the Contract Documents.

2. After the equipment is placed in permanent operation by the Owner, such Engineer or superintendent shall make all adjustments and tests required by the Engineer to prove that such equipment is in proper and satisfactory operating condition, and shall instruct such personnel as may be designated by the Owner in the proper operation and maintenance of such equipment.

1.04 INSPECTION AND TESTING

A. General:

1. For tests specified to be made by the Contractor, the testing personnel shall make the necessary inspections and tests, and the reports thereof shall be in such form as will facilitate checking to determine compliance with the Contract Documents. One (1) original and one (1) electronic copy of the reports shall be submitted, and authoritative certification thereof must be furnished to the Engineer as a prerequisite for the acceptance of any material or equipment.

2. If, in the making of any test of any material or equipment, it is ascertained by the Engineer that the material or equipment does not comply with the Contract Documents, the Contractor will be notified thereof, and he will be directed to refrain from delivering said material or equipment, or to remove it promptly from the site or from the Work and replace it with acceptable material, without cost to the Owner.

3. Tests of electrical and mechanical equipment and appliances shall be conducted in accordance with the recognized test codes of the ANSI, ASME, or the IEEE, except as may otherwise be stated herein.

4. The Contractor shall be fully responsible for the proper operation of equipment during testing and instruction periods and shall neither have nor make any claim for damage which may occur to equipment prior to the time when the Owner formally takes over the operation thereof.

B. Costs:

1. All inspection and testing of materials furnished under this Contract will be provided by the Contractor, unless otherwise expressly specified.

2. The cost of shop and field tests of equipment and of certain other tests specifically called for in the Contract Documents shall be borne by the Contractor, and such costs shall be deemed to be included in the Contract Price.

3. Materials and equipment submitted by the Contractor as the equivalent to those specifically named in the Contract may be tested by the Owner for compliance. The Contractor shall reimburse the Owner for the expenditures incurred in making such tests of materials and equipment which are rejected for non-compliance.

C. Certificate of Manufacture:

1. Contractor shall furnish to Engineer authoritative evidence in the form of a certificate of manufacture that the materials to be used in the Work have been manufactured and tested in conformity with the Contract Documents.

2. These certificates shall be notarized and shall include copies of the results of physical tests and chemical analyses, where necessary, that have been made directly on the product or on similar products of the manufacturer.

D. Shop Tests:

1. Each piece of equipment for which pressure, duty, capacity, rating, efficiency, performance, function, or special requirements are specified shall be tested in the shop of the maker in a manner which shall conclusively prove that its characteristics comply fully with the requirements of the Contract Documents.

2. Five (5) copies of the manufacturer's actual test data and interpreted results thereof, accompanied by a certificate of authenticity sworn to by a responsible official of the manufacturing company and/or independent laboratory, shall be submitted to the Engineer for approval.

3. The cost of shop tests and of furnishing manufacturer's preliminary and shop test data of operating equipment shall be borne by the Contractor.

E. Start-up Tests:

1. As soon as conditions permit, the Contractor shall furnish all labor, materials, and instruments and shall make start-up tests of equipment.

2. If the start-up tests disclose any equipment furnished under this Contract which does not comply with the requirements of the Contract Documents, the Contractor shall, prior to demonstration tests, make all changes, adjustments, and replacements required. The furnishing Contractor shall assist in the start-up tests as applicable.

F. Demonstration Tests:

1. Prior to Contractor's request for a Substantial Completion inspection, all equipment and piping installed under this Contract shall be subjected to demonstration tests as specified or required to prove compliance with the Contract Documents.

2. The Contractor shall furnish labor, fuel, energy, water, and all other materials, equipment, and instruments necessary for all demonstration tests, at no additional cost to the Owner. Contractor shall assist in the demonstration tests as applicable.

1.05 LINES AND GRADES

A. Grade:

1. All work under this Contract shall be constructed in accordance with the lines and grades shown on the Drawings, or as given by the Engineer. The full responsibility for keeping alignment and grade shall rest upon the Contractor.

2. The vertical benchmarks provided is USGS “Public Records” monumentation and the horizontal control is the monumentation on plats contained in the “Public Records of Volusia County.”

B. Surveys:

1. The Contractor shall furnish and maintain, at his own expense, stakes, and other such materials.

2. The Contractor shall check such reference marks by such means as he may deem necessary and, before using them, shall call the Engineer's attention to any inaccuracies.

3. The Contractor shall, at his own expense, establish all working or construction lines and grades as required from the reference marks set by the Engineer, and shall be solely responsible for the accuracy thereof. He shall, however, be subject to the check and review by the Engineer.

C. Safeguarding Marks:

1. The Contractor shall safeguard all points, stakes, grade marks, monuments, and bench marks made or established on the Work, bear the cost of re-establishing them if disturbed, and bear the entire expense of rectifying work improperly installed due to not maintaining or protecting or to removing without authorization such established points, stakes, and marks.

2. The Contractor shall safeguard all existing and known property corners, monuments, and marks adjacent to but not related to the Work and shall bear the cost of re-establishing them if disturbed or destroyed.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 11 00
SUMMARY OF WORK

PART 1 - GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS

A. This Contract is for the construction of the **HUDSON WELLFIELD EXPANSION.** The work consists of furnishing all labor, equipment, and materials for the construction of the facilities consisting of, but not limited to, the following:

1. Installation of three public water supply production wells
2. Installation of three new wellheads (Wells no. 42H, 43H and 44H) in well houses, three new generators, and appurtenances.
3. Installation of approximately 1,600 linear feet of 6-inch raw water pipeline, 750 linear feet of 8-inch raw water pipeline and 1,000 linear feet of 12-inch raw water pipeline.
4. Construction of access roads from Airport Road to the three well sites.
5. Associated electrical and other miscellaneous improvements.

B. The Contractor shall furnish all labor, equipment, tools, services and incidentals to complete all Work required by these Specifications and as shown on the Drawings.

C. The Contractor shall perform the Work complete, in place, and ready for continuous service, and shall include repairs, testing, permits, cleanup, replacements and restoration required as a result of damages caused during this construction.

D. All materials, equipment, skills, tools and labor which is reasonably and properly inferable and necessary for the proper completion of the Work in a substantial manner and in compliance with the requirements stated or implied by these Specification or Drawings shall be furnished and installed by the Contractor without additional compensation, whether specifically indicated in the Contract Documents or not.

E. The Contractor shall comply with all City, County, State, Federal, and other codes which are applicable to this Project.

1.02 CONTRACTOR'S USE OF PREMISES

A. The Contractor shall assume full responsibility for the protection and safekeeping of products and materials at the job site. If additional storage or work areas are required, they shall be obtained by the Contractor at no additional cost to the Owner.

1.03 PROJECT SEQUENCE

A. The Contractor shall establish his work sequence based on the use of crews to facilitate completion of construction and testing within the specified Contract time.

END OF SECTION

SECTION 01 14 13
ACCESS TO SITE

PART 1 – GENERAL

1.01 STREET AND PARKING AREAS

A. Street and Parking Use: Nothing herein shall be construed to entitle the Contractor to the exclusive use of any public street, alleyway, or parking area during transportation and performance of the Work hereunder, and it shall so conduct its operations as not to interfere unnecessarily with the authorized use and transportation of public in such streets, alleyways, or parking areas. No area shall be closed to the public without first obtaining permission from the CITY and proper governmental authority.

1.02 TRAFFIC CONTROL AND MONITORING

A. For the protection of traffic in waterways, public or private streets, parking and storage areas, the Contractor shall provide, place, and maintain all necessary buoys, barricades, traffic cones, warning signs, lights, and other safety devices in accordance with the requirements of the United States Coast Guards and Manual of Uniform Traffic Control Devices. The Contractor shall take all necessary precautions for the protection of the Work area and the safety of the public. All areas of use shall be secured, including the Island. If required by the permit conditions, the Contractor shall station such guards or flaggers and shall conform to such special safety regulations relating to traffic control as may be required by the public authorities within their respective jurisdictions. All signs, signals, and barricades shall conform to the requirements of the OSHA Safety and Health Standards for Construction.

1.03 CONTRACTOR'S WORK AND STORAGE AREAS

A. Storage areas shall be coordinated with the City. Responsibility for protection and safekeeping of equipment and materials at or near the sites shall be solely that of the Contractor and no claim shall be made against the City by reasons of any loss or any act of an employee or trespasser. Should an occasion arise necessitating access to an area occupied by stored equipment and/or materials, the Contractor shall immediately move them. No equipment or materials shall be placed upon the City's property until it is acceptable to the City.

B. If the Contractor requires additional staging area then the Contractor shall obtain such areas from off-site sources. The Contractor shall pay for any off site area he requires.

C. Upon completion of the Contract, the Contractor shall remove from the storage areas all of their equipment, temporary fencing, surplus materials, rubbish, etc., and restore the areas back to existing conditions.

1.04 SAFETY AND SECURITY

A. The Contractor shall be responsible for the safety and security and may choose to employ watchmen and security guards to protect the job site against vandalism, burglary, theft, trespassing, etc. The Contractor shall care for and protect against loss or damage of all material to be incorporated in the construction for the duration of the project and shall repair or replace damaged or lost materials and damage to structures.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

END OF SECTION

SECTION 01 20 00
PRICE AND PAYMENT PROCEDURES

PART 1 – GENERAL

1.01 SCOPE

A. Separate payment will be made only for the items of work described herein and listed on the Bid Form. Any related work not specifically listed, but required for satisfactory completion of the work, shall be considered to be included in the scope of the appropriate listed work items.

B. The Contractor's attention is called to the fact that cleanup is considered a part of the work of construction. No payment will be made until cleanup is essentially complete.

C. No separate payment will be made for the following items and the cost of such work shall be included in the applicable pay items of work if not shown as a separate pay item.

1. Clearing and grubbing.
2. Excavation, including necessary pavement base removal.
3. Shoring and sheeting.
4. Dewatering and disposal of surplus water.
5. Structural fill.
6. Backfill.
7. Grading.
8. Replacement of unpaved roadways, grass, and shrubbery plots.
9. Cleanup.
10. Testing and placing system in operation.
11. Any material and equipment required to be installed and utilized for the test.
12. Pipe, structures, pavement replacement and/or appurtenances included within the limits of lump sum work.
13. Maintaining the existing quality of service during construction.
14. Appurtenant work as required for a complete and operable system.
15. Maintaining or detouring or traffic.

D. No payment shall be made for work constructed outside the authorized limits of work.

PART 2 - PRODUCTS

2.01 Mobilization/Demobilization **Bid Item 1**

The lump sum to complete this item shall be full compensation for the preparatory work and operations in mobilizing for beginning work on the Project including, but not limited to, those operations necessary for the movement of personnel, equipment, supplies and incidentals to the

project site, and for the establishment of field office, building, safety equipment and first aid supplies, sanitary and other facilities, as required by these Specifications, and state and local laws and regulations; the cost of bonds, required insurance, permits (see Section 01 71 13), and any other pre-construction expense necessary for the start of Work; the cost of field engineering including disposal of cleared and grubbed material and debris, permits and fees, construction schedules, project signs, shop drawings, temporary facilities, laydown storage area, construction aids, erosion control, work associated with Contractor support during Owner/Engineer reviews and inspection, re-inspections, and any other re-work resulting from same, cleaning, operation and maintenance data, and for all other work required for demobilization. Five percent (5%) for the cost of mobilization and demobilization will be withheld until acceptance and final payment.

2.02 Pre-Construction Video **Bid Item 2**

The contract lump sum price shall be full compensation for all materials and work necessary to complete the professional videotaping in accordance with the project specifications. Construction work shall not start until DVD's are delivered and approved by the project representative. The full lump sum payment will be made based on delivery to the City of two copies with documentation of the video.

2.03 Field Locate and Expose Existing Utilities (w/ Conflict Sketches) **Bid Item 3**

Payment will be made at the contract lump sum price for field locating, exposing and identifying all utilities in advance of pipe installation. The unit price shall be full compensation for all coordination, equipment, labor and all other incidental items necessary to complete the work. After exposing and identifying utilities (and prior to construction), any potential conflicts with the proposed project work shall be identified and submitted in the form of a Conflict Sketch. The sketch shall include the Contractor's proposed solution to avoid the conflict. The solution must be reviewed and approved by the City's project representative prior to the Contractor implementing it.

Payment shall be based on the percentage of the lump sum price (stated in the Schedule of Unit Prices) equal to the percentage complete of the overall project work.

2.04 Survey Layout / As-Builts **Bid Item 4**

Payment will be made at the contract lump sum price for professional survey layout of the proposed improvements and "as-built" drawings. As-built drawing requirements are set forth in specification Section 01 78 39. Two (2) copies of preliminary as-builts signed & sealed by the Contractor's surveyor shall be submitted with each monthly progress pay request. These preliminary as-built drawings shall be up to date and include all work for which the contractor is asking to be paid for in the respective pay period. Pay requests submitted without updated as-builts shall be a basis for rejection of the pay request until such time as the as-builts are brought up to date. Final as-built

requirements and deliverables are outlined in specification Section 01 78 39. No final payment will be made without acceptable completion of final as-built drawings meeting the specifications.

Payment shall be based on the percentage of the lump sum price (stated in the Schedule of Unit Prices) equal to the percentage complete of the overall project work.

2.05 Clearing and Grubbing **Bid Item 5**

The contract lump sum price shall be full compensation for all clearing and grubbing. Payment shall include all costs associated with clearing and grubbing the pipeline route and well site locations and removing trees and vegetation scheduled for removal in accordance with the City of Ormond Beach and Volusia County Standards. The cost of all equipment, labor, hauling and tree protection requirements is included in this unit price. This item also includes surface restoration and the proper disposal of all cleared and grubbed materials.

Payment shall be based on the percentage of the lump sum price (stated in the Schedule of Unit Prices) equal to the percentage complete of the clearing and grubbing work.

2.06 Erosion and Turbidity Control / NPDES Permit Requirements **Bid Item 6**

Payment will be made at the contract lump sum price for implementation and maintenance of erosion and turbidity control measures as shown on the plans, described in the specifications and/or directed in the field. This price includes all silt fencing, staked & floating turbidity barriers, sediment traps, inlet protection devices, synthetic bales, temporary sodding, equipment, labor and all other incidental items. This pay item also includes the cost of obtaining coverage under the NPDES Construction Generic Permit and preparation of a Stormwater Pollution Prevention Plan (SWPPP) if required.

Payment shall be based on the percentage of the lump sum price (stated in the Schedule of Unit Prices) equal to the percentage complete of the overall project work.

2.07 Compliance with Florida “Trench Safety Act” **Bid Item 7**

Payment will be made at the contract lump sum payment for the contractor’s full and complete compliance with the State of Florida Trench Safety Act.

2.08 Maintenance of Traffic **Bid Item 8**

Payment will be made at the contract lump sum price for maintenance and control of traffic within the project area and adjacent roadways throughout the duration of the project construction work. This price includes the preparation, submittal and costs involved in obtaining approvals/permits for

all site-specific traffic control plans as required by FDOT, Volusia County and City of Ormond Beach. The price also includes the full cost of implementing the traffic control plans including all traffic control devices, signage, barricades, variable message boards, flagmen, temporary striping/removal, equipment, labor and all other incidental items.

Payment shall be based on the percentage of the lump sum price (stated in the Schedule of Unit Prices) equal to the percentage complete of the overall project work.

2.09 Unsuitable Material Excavation and Replacement Bid Item 9

Payment will be made at the Contract Unit Price for removal and replacement of any unsuitable material or muck encountered during trench excavations. Unsuitable material or muck shall be as determined by the Engineer and replacement shall be made utilizing clean, suitable fill material. The unit price shall be full compensation for removal and disposal of unsuitable material and include all materials, labor and equipment necessary to install and compact the suitable replacement material.

Payment shall be based on the number of cubic yards (in situ) of unsuitable material that is removed and replaced with suitable material at the unit price stated in the Schedule of Unit Prices.

2.10 Well Construction and Testing Bid Item 10

Payment will be made at the Contract Unit Price for complete construction and testing of each well. The contract unit price will be full compensation for all materials and work necessary to complete the construction and testing in accordance with the drawings and specifications. Payment shall include all required testing for final acceptance. The unit price shall be full compensation for furnishing and installing pit casing pipes, drilling the pilot hole to the specified diameter and specified depths below land surface, geophysical logging, reaming the pilot hole to the specified diameter and depth below land surface, cement grouting for the casings, fluid containment system and disposal of cuttings/mud, well development by airlift, well development by over pumping, back plugging the pilot hole, step drawdown pumping test, constant rate pumping test, water sampling and testing, well disinfection, permitting, equipment, labor and all other incidental items necessary to complete the construction and testing of the wells as shown on the plans.

Payment shall be based on the percentage of the lump sum price (state in the Schedule of Unit Prices) equal to the percentage complete of the overall project work.

2.11 Furnish and Install PVC Raw Water Main (DR18) AWWA C-900 by Open Cut Bid Item 11

Payment will be made at the Contract Unit Price for furnishing and installing AWWA C-900 PVC raw water main as shown on the plans and described in the specifications. The unit price shall be full compensation for all excavation, removal of existing pipe, sheeting & shoring, pipe materials, fittings, restraining devices, couplings, sleeves, identification tape, tracer wire, dewatering,

bedding, backfill, compaction, density testing, hydrostatic testing, disinfection, clearance, irrigation system restoration, surface restoration, sodding (in-kind), equipment, labor and all other incidental items necessary to complete the installation as shown on the plans.

Payment shall be based on the measured number of linear feet of pipe (of the various sizes) installed, tested, cleared and accepted at the unit prices stated in the Schedule of Unit Prices.

2.12 Jack and Bore 24" Steel Casing with 12" Carrier **Bid Item 12**

Payment will be made at the contract unit price for boring and jacking a 28-inch steel casing under SR 40. The price shall be full compensation for all layout, coordination, equipment, labor, pit excavation, sheeting, shoring, steel casing, carrier pipe, fittings, welding, casing spacers, end seals, concrete, backfill, compaction, testing, surface restoration and all other incidental items necessary to complete the installation as shown on the plans. This item includes the installation of a 12-inch PVC carrier pipe within the casing.

2.13 Resilient Seated Gate Valve and Box **Bid Item 13**

Payment will be made on each installation at the Contract Unit Price for the installation of each resilient seated gate valve and valve box as shown on the plans. The contract unit price will be full compensation for all materials and work necessary to complete the installation in accordance with the drawings and specifications including adjustment of valve box to final grade and shall include restrained joint attachment of valve to adjacent fittings as part of this unit price.

Payment shall be based on the number of gate valves (of the various sizes) installed, tested, cleared, and accepted at the unit prices stated in the Schedule of Unit Prices.

2.14 Tapping Sleeve **Bid Item 14**

Payment will be made at the Contract Unit Price for the installation of each tapping sleeve as shown on the plans. The contract unit price will be full compensation for all materials and work necessary to complete the installation in accordance with the drawings and specifications. Payment shall include all required testing for final acceptance. The unit price shall be full compensation for all dewatering, excavation, backfill, compaction & testing, materials, restrained joints, equipment, labor, marker tape, tracer wire, successful hydrostatic testing, right-of-way restoration (including sodding of disturbed areas), and all items (if not paid for separately as a Bid Item, i.e., driveways) necessary to complete installation of the tapping sleeve as shown on the plans and specifications.

2.15 2" Air Release Valve Assembly **Bid Item 15**

Payment will be made at the Contract Unit Price for furnishing and installing each air-release valve assembly as shown on the plans and described in the specifications. The unit price shall be full compensation for all excavation, sheeting & shoring, air-release valves, tubing, fittings, saddles,

enclosures, concrete slabs, surface restoration, equipment, labor and all other incidental items necessary to complete the installation as shown on the plans.

Payment shall be based on the number of 2" air release valve assemblies completed and accepted at the unit prices stated in the Schedule of Unit Prices.

2.16 Furnish, Install and Outfit Well Pump **Bid Item 16**

Lump sum payment will be made for furnishing, installing, and outfitting the well pump and associated appurtenances upon acceptance of the well. Price shall include pump, gauges, pressure transmitters, above-grade piping, fittings, valves, restraints, pipe supports, testing, disinfection, clearance, etc. Pump selection shall be per plans and specifications and verified utilizing performance testing data (performed by others). Payment shall be full compensation for each complete and operable system.

2.17 Furnish and Install Precast Concrete Well House and Concrete Slab **Bid Item 17**

Payment will be made at the Contract Unit Price for furnishing and installing precast concrete well house and a concrete slab at each well site as shown on the plans and described in the specifications. The unit price shall be full compensation for all labor, equipment and materials, install suitable base and subgrade materials, compaction, testing, hatches, well house doors, surface restoration and all other incidental items necessary to complete the installation as shown on the plans.

Payment shall be based on the percentage of the lump sum price (stated in the Schedule of Unit Prices) equal to the percentage complete of the overall project work.

2.18 Fence Enclosures and Gates **Bid Item 18**

Lump sum payment will be made at the for the fence enclosure, gates, and site improvements at the well locations. Price shall include the fencing, barbed wire, razor wire, opaque screen, rock, geotextile fabric, fill, grading, site work, etc. for the well enclosures. Payment shall be full compensation for a complete fence enclosure of the wells as shown on the plans.

2.19 Gravel Access Road **Bid Item 19**

Payment of the applicable Contract Unit Price per square yard (SY) shall be full compensation for furnishing all labor, materials, and equipment to install the gravel access road as shown on the plans. Pay item includes all stone gravel, geopavers, geotextile liner, compacted subgrade, and testing, as shown on the plans. No separate payment shall be made for incidental restoration items not paid for under other items.

2.20 Earthwork (Excavation, Fill and Grading) **Bid Item 20**

Lump sum payment will be made for all earthwork activities proposed for the wellfield site. Payment shall include all costs associated with excavation, providing, and placing suitable fill material and grading the site to meet the proposed finished contours and grades shown on the plans. This pay item includes all excavation, fill material, compaction, shaping, fine grading, hauling, disposal, testing, equipment, labor and all other incidental items necessary to complete the work. Restoration, sodding of disturbed areas and removal and disposal of excess material are included in this pay item. Clearing and grubbing of the site is included in a separate pay item.

Payment shall be based on the percentage of the lump sum price (stated in the Schedule of Unit Prices) equal to the percentage complete of the overall earthwork required.

2.21 Well Entrance Driveway Apron **Bid Item 21**

Payment will be made at the Contract Unit Price per square yard (SY) for installation of a new concrete driveway apron as shown on the plans. Driveways shall be six inches (6") thick 3,000 psi (min.) fiber mesh concrete. The applicable unit price shall be full compensation for all labor, equipment, and materials necessary to saw cut, remove and dispose of existing concrete, install suitable base and subgrade materials, recompact, and complete new concrete work in accordance with the plans and specifications.

2.22 Remove and Replace Concrete Sidewalk **Bid Item 22**

Payment will be made at the contract unit price for removal and replacement of concrete sidewalks as shown on the plans and described in the specifications. Then unit price shall be full compensation for removal and disposal of existing concrete, grading, formwork, compaction, cement, water, reinforcement, jointing, scoring, finishing, testing, equipment, labor, and all other incidental items necessary to complete the construction as shown in the plans.

Payment shall be based on the number of square yards of sidewalk (of required thickness) constructed and accepted at the unit prices stated in the Schedule of Unit Prices.

2.24 Electrical and Instrumentation (Complete) **Bid Item 23**

Lump sum payment shall be made for all labor, equipment and materials provided and installed for a complete electrical and instrumentation & control (I&C) system. Payment to include costs associated with procuring and installing all electrical and instrumentation components and services as shown in the plans. This includes all general conditions, overhead, and profit for this work as required for the general contractor. The lump sum price includes all site electrical work, power distribution equipment, lighting, raceways, wiring, instrumentation, integration, and SCADA/HMI programing, including coordination between the general PICS and subcontractors to construct a complete and operable system in accordance with the plans and specifications.

2.25 Backup Diesel Generator **Bid Item 24**

Payment will be made for furnishing, installing, and outfitting the backup diesel generators and associated appurtenances as shown and specified. Price shall include all electrical and I&C components included with the generator system. Payment shall be full compensation for each complete and operable system.

2.26 Permit Allowance **Bid Item 25**

An allowance is established to reimburse costs associated with Building Permit fees, inspections, and City authorized expenses. The Contractor will be reimbursed at actual cost for invoices associated with this item, at the City's discretion and prior authorization.

END OF SECTION

SECTION 01 25 00
SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.01 REQUESTS FOR REVIEW

A. Requests to review substitute items of material and equipment will not be accepted by the Engineer from anyone other than the Contractor. If the Contractor wishes to furnish or use a substitute or equivalent item of material or equipment, the Contractor shall make written application to the Engineer for acceptance, certifying that the proposed substitute will perform adequately the functions called for by the general design, be similar and of equivalent substance to that specified and be suited to the same use and capable of performing the same function as that specified. The application will state whether or not acceptance of the substitute for use in the work will require a change in Drawings or Specifications to adapt the design to the substitute and whether or not incorporation or use of the substitute in connection with the work is subject to payment of any license fee or royalty. All variations of the proposed substitute from that specified shall be identified in the application and available maintenance, repair and replacement service will be indicated. The application will also contain an itemized estimate of all costs that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which shall be considered by the Engineer in evaluating the proposed substitute. The Engineer may require the Contractor to furnish at the Contractor's expense additional data about the proposed substitute. The Engineer will be the sole judge of acceptability, and no substitute will be ordered or installed without the Engineer's prior written acceptance. The Owner may require the Contractor to furnish at the Contractor's expense, a special performance guarantee or other surety with respect to any substitute.

1.02 SUBSTITUTION AFTER EXECUTION OF AGREEMENT

A. After execution of the Agreement, substitution of materials or equipment supplied by manufacturers or suppliers other than those listed, will be considered only if it is demonstrated by the Contractor that:

1. The material or equipment proposed for substitution is superior in design, construction and/or efficiency to that of the listed manufacturer or supplier;

2. The material proposed for substitution is in every way equal to that of the listed supplier, and that availability and/or delivery of listed materials within the time frame scheduled cannot be met; or

3. The material proposed for substitution is in every way equal to that of the listed supplier and is available at a lower cost. In the event such a substitution is allowed, the Contractor shall accept and execute a Change Order reducing the Contract Price by an amount equal to the cost differential.

1.03 EQUIVALENT MATERIALS AND EQUIPMENT

A. Whenever materials or equipment are specified or described in the Drawings or Specifications by using the name of a proprietary item or the name of a particular manufacturer, fabricator, supplier or distributor, the naming of the item is intended to establish the type, function, and quality required. Unless the name is followed by words indicating that no substitution is permitted, materials or equipment of other manufacturers, fabricators, suppliers, or distributors may be accepted by the Engineer. If it is determined that the material or equipment proposed is equivalent to that named.

B. It is not the intent of the Contract Documents to function as proprietary specifications. Where a particular manufacturer make and model are cited and specifically required for interchangeability of parts and/or match existing equipment, this has been so stated in the Specifications.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION

SECTION 01 29 73
SCHEDULE OF VALUES

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. Submit to the Engineer a Schedule of Values allocated to the various lump sum portions of the Work, at the Pre-Construction Conference, and as otherwise specified or requested to be submitted earlier as evidence of the Apparent Low Bidder's qualifications.

2. Upon request of the Engineer support the values with data which will substantiate their correctness. The data shall include, but not be limited to quantity of materials, all sub-elements of the activity, and their units of measure.

3. The Schedule of Values shall establish the actual value for each activity of the Work to be completed taken from the approved Critical Path Method (CPM) Construction Schedule and shall be used as the basis for the Contractor's Applications for Payment.

B. Related Requirements Described Elsewhere:

1. Conditions of the Construction Contract.

1.02 FORM AND CONTENT OF SCHEDULE OF VALUES

A. Identify schedule with:

1. Title of project and location.
2. Owner and purchase order number.
3. Engineer and project number.
4. Name and address of Contractor.
5. Contract designation.
6. Date of submission.

B. Schedule shall list the installed value of the component parts of the Work in sufficient detail to serve as a basis for computing item prices for progress payments during construction.

C. Identify each line item with the number and the title of the respective section of the Specifications.

D. For each major item of the Work, list sub-values of major products or operations under the major item.

E. For the various portions of the Work:

1. The amount for each item shall reflect a total installed cost including a directly proportional amount of the Contractor's overhead and profit.

2. For items on which progress payments will be requested for stored materials, break down the value into:

a. The cost of the materials delivered and unloaded, with taxes paid. Paid invoices are required for materials. Payment for materials shall be limited to the invoiced amount only.

b. The total installed value.

F. Round off figures to nearest dollar amount.

G. The sum of the costs of all items listed in the schedule shall equal the total Contract Price.

H. For each item which has an installed value of more than $15,000, provide a breakdown of costs to list major products or operations under each item.

1.03 SUB-SCHEDULE OF UNIT MATERIAL VALUES

A. Submit a separate schedule of unit prices for materials to be stored on site and for those materials incorporated into the Work for which progress payments will be requested.

B. The unit values for the materials shall be broken down into:

1. Cost of the material, delivered, and unloaded at the site, with taxes paid.

2. Copies of paid invoices for component material shall be included with the payment request in which the material first appears.

C. Only materials unique to the project may be billed when stored on site. Materials of standard use such as conduit, wire, small-diameter pipe, steel, etc., shall not be accepted for payment.

D. The installed unit value multiplied by the quantity listed shall equal the cost of that item in the Schedule of Values.

1.04 REVIEW AND RESUBMITTAL

A. After review by Engineer, revise and resubmit Schedule of Values and Schedule of Unit Material Values as required.

B. Resubmit revised schedules in same manner.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 30 00
ADMINISTRATIVE REQUIREMENTS

PART 1 - GENERAL

1.01 The Contractor shall not have any right in property in any materials taken from any excavation and he shall not remove any earth, sand, or other material from the lines of the work before the excavation is refilled except upon direction of the Engineer. The provisions of this paragraph shall not be construed as relieving the Contractor of any kind of his obligations to remove and dispose of any of the material excavated, with or without rehandling, at his cost and expense as provided in these specifications.

1.02 From investigations, including surveys made at the site, it is assumed that physical conditions are approximately as indicated on the drawings, but the nature of the materials below the surface, the depth to satisfactory foundations, or the stability of beds or banks or quantity of groundwater are not guaranteed.

1.03 Where reference is made within these documents to government specifications, or those of well-known organizations such as ASTM, ASA, ASME, etc., the latest editions shall be used, any or all references in these documents to earlier stated editions notwithstanding.

1.04 The Contractor shall take all necessary precautions to prevent damage to existing City utilities which are to remain in service during any of his construction operations. Should such utilities be damaged by the Contractor, he shall be required to replace, or repair same, to the satisfaction of the Engineer, at no additional cost to the Owner.

1.05 Certain information regarding the reputed presence, size, character, and location of existing underground structure, pipes and conduits has been shown on the contract drawings. The location of underground structures shown may be inaccurate and other obstructions than those shown may be encountered. The Contractor distinctly agrees that the Engineer and the Owner are not responsible for the correctness or sufficiency of the information given; that in no event is this information to be considered as a part of the Contract; that he shall have no claim for delay or extra compensation on account of incorrectness of information given; or on account of insufficiency or absence of information regarding obstructions either revealed or not revealed by the drawings; and that he shall have no claim for relief from any obligation or responsibility under this Contract, in case the location, size or character of any pipe or other underground structure is encountered that is not shown on the drawings.

1.06 The Contractor agrees that the work shall be started not later than the date indicated in the Notice to Proceed, and that the construction schedule shall be Substantial Completion **270** calendar days, Final Completion 300 calendar days after Notice to Proceed (NTP).

1.07 The City shall provide reference points as shown on the plans. Contractor shall be responsible for having a land surveyor registered in the State of Florida and approved by the Engineer lay out the work, shall protect and preserve the established reference points and shall make no changes or relocations without the prior written approval of the Engineer. Contractor shall report to Engineer whenever such reference point is lost or destroyed or required location because of necessary changes in grades or locations, and the Contractor shall be responsible for replacement or relocation of such reference points by professionally qualified personnel, registered in the State of Florida and approved by the Engineer.

1.08 All dewatering and pumping necessary to accomplish the work of this Contract shall be performed by the Contractor at no extra or additional cost to the Owner. Any permits required shall be the responsibility of the Contractor.

1.09 Before submitting a Bid each Contractor must:

A. Examine the Contract Documents thoroughly.

B. Visit the site to familiarize himself with local conditions that may in any manner affect cost, progress or performance of the work.

C. Familiarize himself with federal, state and local laws, ordinance, rules and regulations that may in any manner affect cost, progress or performance of the work.

D. Study and carefully correlate Bidder's observations with the Contract Documents.

1.10 Attention is directed to the requirements of the following agencies with regard to permits and construction of utilities within their rights of way or jurisdiction.

A. City of Ormond Beach.

B. DEP Application for a Specific Permit to Construct PWS Components.

C. FDOT Utility Permit.

D. St. Johns River Water Management District Permit.

E. Volusia County

F. NPDES Stormwater (by Contractor).

G. The Owner will make necessary application for permits to construct such utilities. It shall be, however, the responsibility of the Contractor to construct the utilities in strict accordance

with the requirements of the above-mentioned agencies, and no extra or additional payments will be made by the Owner for this work.

1.11 Construction shall be limited to weekday day light working hours. No weekend, night time, or holiday work shall be performed without obtaining permission in advance from the Project Engineer. Certain non-essential items such as clean up, seeding and mulching, sodding, some well pointing operations, saw cutting of pavement, etc. may be performed by the Contractor during the above times by giving the Project Engineer advance notice of such operations.

1.12 Contract Insurance Requirements. The insurance requirements in Section 00800 represent the minimum insurance requirements for contract with the Owner.

1.13 The Contractor shall provide an English speaking full time superintendent to supervise sub-contractors and provide direction to field crews. The Engineer's representative shall not be responsible for providing direction to sub-contractor or field crews. The Contractor's superintendent shall not be verbally or physically abusive to citizens or other project personnel. Use of foul language in the presence of or belligerence towards citizens or project representatives shall be grounds for immediate replacement of the superintendent at no cost to the Owner.

1.14 The Contractor acknowledges that he is responsible for complying with all aspects of the Florida Trench Safety Act (90-96, Laws of Fla.) effective October 1, 1990. He assumes all responsibility and costs entailed.

1.15 The proposed pipe alignments indicated on the project plans may require adjustment in the field due to conflicts or field conditions. Field changes shall be paid for at the contact unit price.

1.16 The Contractor is responsible for obtaining a Water Management District Permit for (dewatering) consumptive use if the Contractor's means or methods trip the Agency's thresholds requiring permits. No separate payment or contract time extension for the Contractor obtaining the permit shall be granted by the City.

1.17 Land disturbed shall have hay bales or turbidity curtains installed around the perimeter to control erosion and sediment runoff where it is likely to occur during construction at no extra cost to the Owner.

1.18 The Contractor shall submit an executed Consent of Surety for Final Payment form, copy of which is included with the Contract Documents, prior to submitting a final request for payment.

1.19 All unit pricing shall remain valid for the duration of the contract.

1.20 Florida Sales Tax on materials, as well as all other customary taxes on construction activities, shall be paid for by the Contractor at no additional expense to the Owner.

1.21 The Contractor shall provide suitable, accurate pressure gauges for conducting hydrostatic pressure tests at all pipe branch/blow-off locations or as a minimum at each end of each section of the line tested between valves. No separate payment will be made for this work. Payment shall be included in the applicable unit price entitled Hydrostatic Testing.

1.22 No thrust blocking shall be used unless specifically authorized by the Engineer. Restrained joint pipe fittings and joint shall be utilized.

1.23 All water main installed under this contract shall be buried with the appropriate marking tape to indicate the service designation. The tape shall be laid directly over the pipe at a depth of 24 inches below proposed finished ground elevation.

1.24 The Contractor shall not sublet, sell, transfer, assign or otherwise dispose of the utility portion thereof, or his right, title, or interest therein, without written consent of the Owner.

1.25 Limitations on the Engineer's Responsibilities

A. Neither the Engineer's authority to act under this Paragraph nor any decision made by the Engineer in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of the Engineer to the Contractor, any Subcontractor, any of their agents or employees or any other person performing any of the work.

B. The Engineer will not be responsible for the construction means, methods, techniques, sequences or procedures, or the safety precautions and programs incident thereto, and will not be responsible for the Contractor's failure to perform the work in accordance with the Contract Documents.

C. The Engineer will not be responsible for the acts or omissions of the Contractor, any subcontractors, or any of their agents or employees, or any other persons performing any of the work.

1.26 The City subject to availability will make available reasonable amounts of water for Contractor compaction requirements and potable water for flushing and testing requirements at no cost to the Contractor. Abnormally high usage (gross wastage) of provided water by the Contractor's organization shall be subject to City back-charges to the Contractor at established City rates.

1.27 All PVC potable water pipe installed under this contract shall be extruded blue in color to differentiate this pipe from other service designations. Pipe shall be NSF approved AWWA C-900 Class 150.

1.28 Reasonable care shall be taken during construction to avoid damage to vegetation. Ornamental shrubbery and tree branches shall be temporarily tied back, where appropriate, to minimize

damage. Trees which receive damage to branches shall be trimmed of those branches to improve the appearance of the tree. Tree trunks receiving damage from equipment shall be treated with a tree dressing.

1.29 Project and completion is defined as pipe materials in place tested, certified for use, paving and right-of-way restoration as well as fencing complete.

1.30 The Contractor's forces shall be required to and dig and expose all existing utilities including telephone cables, T.V. cables (both public and private), gas lines, if present, raw water mains, potable water mains, force mains, sewer services, water services and private sprinklers a minimum of twenty four (24) hours in advance of the pipe laying operation. City forces and other utilities will mark the approximate location of their utilities when contacted. City crew will not be responsible for hand digging the location of City services. Separate lump sum payment shall be made for this work.

1.31 All existing improved areas disturbed by construction shall be sodded with the same type of sod as the existing variety of sod encountered. Separate unit price payment or lump sum payment will be made for this work.

1.32 The Contractor shall utilize restrained joint for bends and required fittings for all pressure pipes shown on the project plans. The restrained PVC pipe lengths shall be in accordance with DIPRA Thrust Resistant Design for Ductile Iron Pipe utilizing laying condition 2 with polyethylene wrap with the type soils and soil depth encountered. Restrained joint pipe specifications shall be strictly adhered to. Piping drawings indicating restraining lengths and calculations shall be submitted to the Engineer for record purposes prior to construction. Responsibility for the adequacy for the restrained joint calculations shall remain with the Contractor and the supplier.

1.33 A City Standard sign shall be provided as shown in the specifications for each area under construction. The sign shall be placed in plain view at a designated location.

1.34 The Contractor shall make his own provisions for materials security. Any City provided work areas shall be returned to its original or better condition upon the completion of the project. Sodding of any disturbed areas utilized by the Contractor for work area will be accomplished by the Contractor at no additional cost to the City. Separate payment for this work will not be made and shall be included in the appropriate contract work items by the Contractor in the bid proposal.

1.35 Attached if issued are the project permits the Contractor shall comply with at no additional cost to the Owner.

1.36 Burning or burying of land clearing debris shall not be permitted. All organic matter and other debris shall be disposed of by the Contractor at an approved landfill.

END OF SECTION

SECTION 01 31 19
PROJECT MEETINGS

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. The Contractor shall coordinate with the Engineer to schedule and administer the preconstruction meeting, resident meeting, utility coordination, periodic progress meetings, and specifically called meetings throughout the progress of the Work.

2. The Engineer shall:

a. Prepare agenda for meetings.
b. Make physical arrangements for meetings.
c. Preside at meetings.
d. Take and distribute meeting minutes.

3. The Contractor shall:

a. Attend all meetings along with pertinent subcontractors and suppliers.
b. Appoint attendees who are qualified and authorized to act on behalf of the entity each represents.
c. Provide requested information at meetings.

4. The Owner shall:

a. Attend meetings to ascertain that the Work is expedited consistent with Contract Documents and construction schedules.

1.02 PRECONSTRUCTION MEETING

A. Purpose: To initiate coordination of contractual requirements prior to start of work.

B. Scheduling: Engineer will schedule a preconstruction meeting after execution of the Contract. Invites shall be sent via electronic mail.

C. Location: A local site, convenient for all parties, designated by the Engineer.

D. Attendance:

1. Owner's representative.
2. Engineer

3. Resident project representative.
4. Contractor and their superintendent.
5. Major subcontractors.
6. Representatives of major suppliers and manufacturers, as appropriate.
7. Governmental and franchised utility representatives, as appropriate.
8. Permit agency representatives, as appropriate.
9. Funding agency representatives, as appropriate.
10. Others as requested by the Contractor, Owner, and Engineer.

E. Suggested Agenda:

1. Introductions and Roles
2. Contract Execution and Dates

    a. Contracts
    b. Contract Time/Dates
    c. Copies of Conformed Documents

3. Communications

    a. Lines of Communication
    b. Coordination Meetings
    c. Contact List
    d. Requests for Information (RFIs)

4. Preconstruction Matters

    a. Submittals
    b. Material Acquisition
    c. Mobilization
    d. Permitting

5. Construction/Coordination

    a. Working Days/Hours
    b. Change Orders
    c. Locating Existing Facilities
    d. Demolition
    e. Testing
    f. Updated Schedules

6. Pay Requests

    a. Process
    b. Schedule of Values

c. Stored Materials
d. Preliminary As-Builts

7. Contract Closeout

a. Substantial Completion
b. Punch-list
c. Final Acceptance
d. Warranty
e. Final Payment

1.03 RESIDENT MEETING(S)

A. Purpose: To present construction approach to affected residents and to allow residents to ask questions concerning such.

B. Scheduling: Engineer/Owner will schedule resident meeting(s) after preconstruction meeting is held, but before construction begins. Invites shall be distributed via electronic mail and hard copy flyers. Contractor shall assist in the distribution of flyers.

C. Location: A local site, convenient for all parties, designated by the Engineer/Owner.

D. Attendance:

1. Owner's representative.
2. Engineer.
3. Resident project representative.
4. Contractor and his superintendent.
5. Major subcontractors, as appropriate.
6. Residents.

E. Suggested Agenda: To be determined by Engineer/Owner

1.04 UTILITY COORDINATION MEETING(S)

A. Purpose: To discuss the coordination of the construction with existing and proposed utilities.

B. Scheduling: Engineer will schedule utility coordination meeting(s) as needed. These meetings may be held in conjunction with Progress Meetings. Invites shall be distributed via electronic mail.

C. Location: A local site, convenient for all parties, designated by the Engineer.

D. Attendance:

1. Owner's representative.
2. Engineer.
3. Resident project representative.
4. Contractor and their superintendent.
5. Major subcontractors, as appropriate.
6. Utility representatives.

E. Suggested Agenda: To be determined by Engineer.

1.05 PROGRESS MEETINGS

A. Purpose: To discuss the progress of the construction and projected work activities.

B. Scheduling: Engineer will schedule progress meetings on a regular basis at a maximum frequency of once per week or less frequently, i.e. once per month, depending on the level of communication required for the project. Invites shall be distributed via electronic mail.

C. Location: A local site, convenient for all parties, designated by the Engineer.

D. Attendance:

1. Owner's representative.
2. Engineer and sub-consultants, as appropriate.
3. Resident project representative.
4. Contractor and his superintendent.
5. Major subcontractors, as appropriate.
6. Utility representatives, as appropriate.
7. Permit agency representatives, as appropriate.
8. Funding agency representatives, as appropriate.

E. Suggested Agenda:

1. Work progress since last meeting
2. Work scheduled this period
3. Field observations, problems, and conflicts.
4. Construction schedule

    a. Status of current schedule
    b. Issues impacting schedule
    c. Fabrication and delivery schedules
    d. Corrective measures to regain projected schedule

5. Submittals
6. RFIs

7. Pending Changes and Substitutions
8. Quality Control
9. Pay Requests
10. Other Business

PART 2- PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 32 16
CONSTRUCTION PROGRESS SCHEDULES

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. Promptly after award of the Contract, prepare and submit to the Engineer estimated construction progress schedules demonstrating complete fulfillment of all Contract requirements utilizing a Critical Path Method (hereinafter referred to as CPM) in planning, coordinating, and performing the Work under this Contract (including all activities of subcontractors, equipment vendors, and suppliers). The principles and definition of CPM terms used herein shall be as set forth in the Associated General Contractors of America (AGC) publication, The Use of CPM in Construction, A Manual for General Contractors and the Construction Industry, latest edition, but the provisions of this Specification shall govern the planning, coordinating, and performance of the Work.

2. Submit revised progress schedules on a monthly basis. No partial payments shall be approved until there is an approved construction progress schedule on hand.

B. Related Requirements Described Elsewhere:

1. Conditions of the Contract.
2. Section 01 33 23 - Shop Drawings, Project Data, and Samples

1.02 QUALIFICATIONS

A. A statement of computerized CPM capability shall be submitted in writing prior to the award of the Contract and shall verify that either Contractor's organization has in-house capability to use the CPM technique or that Contractor will employ a CPM consultant who is so qualified.

B. In-house capability shall be verified by description of construction projects to which Contractor or Contractor's consultant has successfully applied computerized CPM and shall include at least two (2) projects valued at least half the expected value of this project.

1.03 FORM OF SCHEDULES

A. Prepare schedules in the form of a horizontal bar chart.

1. Provide a separate horizontal bar for each trade or operation within each structure or item.

2. Horizontal time scale:

   a. Show starting and completion dates for each activity in terms of the number of days after Notice to Proceed. All completion dates shown shall be within the period specified for contract completion.

   b. Identify the first workday of each month.

3. Scale and Spacing: Sufficient to allow space for notations and future revisions.

4. Maximum Sheet Size: 24 inches by 36 inches.

B. Format of Listings: The chronological order of the start of each item of work for each structure.

C. Identification of Listings: By major specification section numbers as applicable and by utility.

D. Construction Progress Schedules shall be computer generated using software offered by Primavera or approved equal.

1.04 CONTENT OF SCHEDULES

A. Construction Progress Schedule:

1. Show the complete sequence of construction by activity and by structure.

2. Show the dates for the beginning and completion of each major element of construction in no more than a two (2) week increment scale. Specifically, list, but do not limit to:

   a. Shop Drawing Schedule.
   b. Installation of temporary facilities.
   c. Clearing.
   d. Demolition
   e. Subcontractor work
   f. Utility Installations
   g. Paving
   h. Start-Up
   i. Project closeout

3. Show projected percentage of completion for each item, as of the first day of each month.

4. Show projected dollar cash flow requirements for each month of construction and for each activity as indicated by the approved Schedule of Values.

B. Submittals for construction progress schedules shall be in accordance with Section 01 33 23: Shop Drawings, Product Data, and Samples. Indicate on the schedule the following:

1. The dates for Contractor's submittals.
2. The date submittals will be required for Owner-furnished products, if applicable.
3. The date approved submittals will be required from the Engineer.

C. A typewritten list of all long lead items (equipment, materials, etc.).

D. To the extent that the progress schedule or any revised progress schedule shows anything not jointly agreed upon or fails to show anything jointly agreed upon, it shall not be deemed to have been approved by the Engineer. Failure to include any element of work required for the performance of this Contract shall not excuse the Contractor from completing all work required within any applicable completion date, notwithstanding the Engineer's approval of the progress schedule.

E. Scheduling Constraints: The work within Owner's property must be completed within the maximum number of days start to finish, as indicated in the Contract. Additionally, work must proceed on a continuous basis, without stoppages, except for nights and weekends. There shall be no lapses between phases of construction.

1.05 PROGRESS REVISIONS

A. Indicate progress of each activity to date of submission.

B. Show changes occurring since previous submission of schedule:

1. Major changes in scope.
2. Activities modified since previous submission.
3. Revised projections of progress and completion.
4. Other identifiable changes.

C. Provide a narrative report as needed to define:

1. Problem areas, anticipated delays, and the impact on the schedule.

2. Corrective action recommended, and its effect.
3. The effect of changes on schedules of other prime contractors.

D. If the Work falls behind the critical path schedule by two (2) weeks or more, the Contractor shall prepare a recovery schedule.

1.06 SUBMISSIONS

A. Submittal Requirements.

1. Logic network and/or time-phased bar chart, computer generated.

2. Computerized network analysis:

a. Sort by early start
b. Sort by float
c. Sort by predecessor/successor

3. Narrative description of the logic and reasoning of the schedule.

B. Time of Submittals.

Within ten (10) working days after Notice to Proceed, Contractor shall submit a network diagram describing the activities to be accomplished in the project and their dependency relationships, (predecessor/successor) as well as a tabulated schedule as herein defined. The total length of time indicated on the initial CPM schedule shall equal the exact number of days in the Contract Time as defined in Agreement. The schedule produced and submitted shall also indicate calendar dates, including project starting and completion dates, based on the Contract Commencement and completion dates indicated in the Notice to Proceed. The Engineer will complete the review of the complete schedule within fifteen (15) working days after receipt. During the review process, the Engineer may meet with a representative of Contractor to review the proposed plan and schedule to discuss any clarifications that may be necessary.

C. Within ten (10) working days after the conclusion of the Engineer's review period, Contractor shall revise the network diagram as required and resubmit the network diagram and a tabulated schedule produced therefrom. The revised network diagram and tabulated schedule shall be reviewed and accepted or rejected by the Engineer within fifteen (15) working days after receipt. The network diagram and tabulated schedule, when accepted by the Engineer, shall constitute the project work schedule unless a revised schedule is required due to substantial changes in the Work, a change in Contract Time or a recovery schedule is required and requested.

D. Acceptance. The finalized schedule will be acceptable to the Engineer when, in the opinion of the Engineer, it demonstrates an orderly progression of the Work to completion in accordance with the Contract Documents. Such acceptance will neither impose on the Engineer responsibility for the progress or scheduling of the Work nor relieve Contractor from full responsibility, therefore. The finalized schedule of shop drawing submittals will be acceptable to the Engineer when, in the opinion of the Engineer, it demonstrates a workable arrangement for processing the submittals in accordance with the requirements. The finalized Schedule of Values (lump sum price breakdown), as applicable, will be acceptable to the Engineer as to form and content when, in the opinion of the Engineer, it demonstrates a substantial basis for equitably distributing the Contract Price. When the network diagram and tabulated schedule have been accepted, the Contractor shall submit to the Engineer six (6) copies of the time-scaled network diagram, six (6) copies of a computerized tabulated schedule in which the activities have been sequenced by numbers, six (6) copies of a computerized tabulated schedule in which the activities have been sequenced by early starting date, and six (6) copies of a computerized, tabulated schedule in which activities have been sequenced by total float, and six (6) copies sorted by predecessor/successor.

E. Revised Work Schedules. Contractor, if requested by the Engineer, shall provide a revised work schedule if, at any time, the Engineer considers the completion date to be in jeopardy because of "activities behind schedule." The revised work schedule shall include a new diagram and tabulated schedule conforming to the requirements of Paragraph 1.09 herein, designed to show how Contractor intends to accomplish the Work to meet the completion date. The form and method employed by Contractor shall be the same as for the original work schedule. No payment will be made if activities fall more than two (2) weeks behind schedule and a revised work schedule is not furnished.

F. Schedule Revisions. The Engineer may require Contractor to modify any portions of the work schedule that become infeasible because of "activities behind schedule" or for any other valid reason. An activity that cannot be completed by its original latest completion date shall be deemed to be behind schedule. No change may be made to the sequence, duration, or relationships of any activity without approval of the Engineer.

1.07 DISTRIBUTION

A. Distribute copies of the reviewed schedules to:

1. Engineer.
2. Jobsite file.
3. Subcontractors.
4. Other concerned parties.
5. Owner (two copies).

B. Instruct recipients to report promptly to the Contractor, in writing, any problems anticipated by the projections shown in the schedules.

1.08 CHANGE ORDERS

A. Upon approval of a change order, the approved changes shall be reflected in the next scheduled revision or update submittal of the construction progress schedule by the Contractor.

1.09 CPM STANDARDS

A. CPM, as required by this Section, shall be interpreted to be generally as outlined in the Associated General Contractors (AGC) publication, The Use of CPM in Construction, A Manual for General Contractors and the Construction Industry, Copyright 1976.

B. Work schedules shall include a graphic network and computerized, tabulated schedules as described below. To be acceptable the schedule must demonstrate the following:

1. A logical succession of work from start to finish.

2. Definition of each activity. Activities shall be identified by major specification section numbers, as applicable, and by major utility.

3. A logical flow of work crews/equipment (crews are to be defined by manpower category and man-hours; equipment by type and hours).

4. Show all work activities and interfaces including submittals as well as major material and equipment deliveries.

C. Networks.

1. The CPM network, or diagram, shall be in the form of a time-scaled diagram of the customary activity-on-type and may be divided into a number of separate pages with suitable notation relating the interface points among the pages. Notation on each activity line shall include a brief work description and duration, as described in Paragraph 1.09, D. herein.

2. All construction activities and procurement shall be indicted in a time-scaled format, and a calendar shall be shown on all sheets along the entire sheet length. Each activity arrow shall be plotted so the beginning and completion dates of said activity can be determined graphically by comparison with the calendar scale. All activities shall be shown using the symbols that clearly distinguish between critical path activities, non-critical path activities, and float for each non-critical activity. All

non-critical path activities shall show estimated performances time and float time in scaled form.

D. The duration indicated for each activity shall be in calendar days and shall represent the single best time considering the scope of the work and resources planned for the activity including time for inclement weather. Except for certain non-labor activities, such as curing concrete or delivering materials, activity durations shall not exceed fourteen (14) days nor be less than one (1) day unless otherwise accepted by the Engineer.

E. Tabulated Schedules. The initial schedule shall include the following minimum data for each activity:

1. Activity Beginning and Ending Numbers (i-j numbers) (single activity numbers may be used).
2. Duration.
3. Activity Description.
4. Early Start Date (Calendar Dated).
5. Late Start Date (Calendar Dated).
6. Early Finish Date (Calendar Dated).
7. Late Finish Date (Calendar Dated).
8. Identified Critical Path.
9. Total Float (Note: No activity may show more than 20 days float).
10. Cost of Activity.
11. Equipment Hours, by type; Man-Power Hours, by crew or trade.

F. Project Information. Each tabulation shall be prefaced with the following summary data:

1. Project Name.
2. Contractor.
3. Type of Tabulation (Initial or Updated).
4. Project Duration.
5. Project Scheduled Completion Date.
6. Effective or Starting Date of the Schedule.
7. New Project Completion Date and Project Status (if an updated or revised schedule).
8. Actual Start Date and Actual Finish Date (for all updated schedules.)

1.10 SCHEDULE MONITORING

A. At not less than monthly intervals or when specifically requested by Engineer, Contractor shall submit to the Engineer a computer printout of an updated schedule for those activities that remain to be completed. Typically, the updated schedule will be submitted with the application for payment as specified below.

B. The updated schedule shall be submitted in the form, sequence, and number of copies requested for the initial schedule.

1.11 PROGRESS MEETINGS

A. For the monthly progress meeting, Contractor shall submit a revised CPM schedule and a three-week look-ahead schedule, showing all activities completed, in progress, uncompleted, or scheduled to be worked during the weeks. The three weeks include the current week plus the next two weeks. All activities shall be from the approved CPM and must be as shown on the CPM unless behind or ahead of schedule. One copy of the revised CPM schedule shall be submitted with each copy of that month's application for payment, electronically in color.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 32 33
PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Scope of Work: The Contractor shall employ a competent photographer to take construction record photographs and video recording prior to start of the Work, periodically during the course of the Work, and following the completion of the Work.

B. Summary: This Section includes administrative and procedural requirements for the following:

1. Preconstruction photographs.
2. Preconstruction video recordings.
3. Periodic Construction ground and aerial photographs.
4. Periodic Construction video recordings.
5. Completion construction photographs.
6. Web-based construction photographic documentation.

C. Related Requirements Described Elsewhere:

1. Section 01 00 00 - General Requirements
2. Section 01 11 00 - Summary of Work
3. Section 01 30 00 - Administrative Requirements
4. Section 01 78 39 - Project Record Documents

D. Photographs and videos shall be taken in conformance with this Section and shall be furnished to the Engineer with each pay request. Failure to comply will result in rejection of pay request.

1.02 INFORMATIONAL SUBMITTALS

A. Key Plan: Submit key plan of the Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include the same information as corresponding photographic documentation.

B. Digital Photographs: Submit image files within three (3) days of taking photographs

1. Digital Camera: Minimum sensor resolution of 8 megapixels.

2. Format: Minimum 3200 by 2400 pixels, in unaltered original files, with same aspect ratio as the sensor, uncropped, date and time stamped, in folder named by date of photograph accompanied by key plan file.
3. Identification: Provide the following information with each image description in file metadata tag:

    a. Name of Project.
    b. Name and contact information for photographer.
    c. Name of Engineer.
    d. Name of Contractor.
    e. Date photograph was taken.
    f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
    g. Unique sequential identifier keyed to accompanying key plan.

C. Construction Photographs: Submit two (2) prints of each photographic view within seven (7) days of taking photographs.

1. Format: Electronic submittal to Engineer.
2. Identification: With each submittal, provide the following information:

    a. Name of Project.
    b. Name and contact information for photographer.
    c. Name of Engineer and Construction Manager.
    d. Name of Contractor.
    e. Date photograph was taken if not date stamped by camera.
    f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
    g. Unique sequential identifier keyed to accompanying key plan.

D. Video Recordings: Submit video recordings within seven (7) days of recording.

1. Submit video recordings in digital video disc format acceptable to Engineer by posting to Web-based photographic documentation service provider’s Web site.
2. Identification: With each submittal, provide the following information:

    a. Name of Project.
    b. Name and address of photographer.
    c. Name of Engineer and Construction Manager.
    d. Name of Contractor.
    e. Date video recording was recorded.
    f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.

g. Weather conditions at time of recording.

E. Web-Based Photographic Documentation: Submit time-lapse sequence video recordings simultaneously with recording within seven (7) days of recording.

1. Submit time-lapse sequence video recordings by posting to Web-based photographic documentation service provider's Web Site, identify the posting location. A digital video disc is required monthly.
2. Identification: For each recording, provide the following information:

a. Name of Project.
b. Name and contact information for photographer.
c. Name of Engineer and Construction Manager.
d. Name of Contractor.
e. Date(s) and time(s) video recording was recorded.
f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
g. Weather conditions at time of recording.

1.03 COST OF PHOTOGRAPHY

A. The Contractor shall pay costs for specified ground and aerial photography, videography, and web-based documentation.

1.04 QUALITY ASSURANCE

A. Photographer Qualifications: An individual who has been regularly engaged as a professional photographer of construction projects for not less than three (3) years.

B. Digital photographs may be taken by the Contractor's personnel but must be of professional quality as herein specified. Photographs which are deemed unsatisfactory will be rejected and retakes will be required.

C. Web-Based Photographic Documentation Service Provider: A firm specializing in providing photographic equipment, Web-based software, and related services for construction projects with record of providing satisfactory services similar to those required for the Project.

1.05 USAGE RIGHTS

A. Obtain and transfer copyright usage rights from the Photographer to the Owner for unlimited reproduction of photographic documentation.

PART 2 - PRODUCTS

2.01 PHOTOGRAPHIC MEDIA

A. Digital Images: Provide images in JPG format, produced by a digital camera with minimum sensor size of 8 megapixels, and at an image resolution of not less than 3200 by 2400 pixels.

B. Digital Video Recordings: Provide high- resolution digital video disc in format acceptable to Engineer.

2.02 WEB-BASED PHOTOGRAPHIC DOCUMENTATION

A. Project Camera: Provide fixed exterior camera installation, mounted to provide unobstructed view of construction site from location approved by Engineer.

1. Provide **(Insert Number)** fixed-location camera(s), with the following characteristics:

a. Static View, remotely controllable view with mouse click user navigation for horizontal pan, vertical tile and optical zoom of 500 percent minimum.
b. Capable of producing minimum 3.0-megapixel pictures.
c. Provide power supply, active high-speed data connection to service provider’s network, and static IP address for each camera.

B. Wireless Hand-Held Cameras: Provide portable camera system capable of producing images complying with requirements in this Section, with wireless transmission to service provider’s network enabling a live image stream viewable by multiple parties.

1. Provide battery charger, spare battery pack, base station hub, and base station connections in a number and distribution adequate to enable wireless camera operation throughout Project site.
2. Provide power supply, active high-speed data connection to service provider’s network, and static public IP address at base station hub and base station connections.

C. Web-Based Image Access: Password-protected access for Project team administered by Contractor, providing current image access and archival image access by date and time, with images downloadable to viewer’s device.

1. Provide public viewer open access to most recent project camera image.

PART 3 - EXECUTION

3.01 CONSTRUCTION PHOTOGRAPHS

A. Photographer: Engage a qualified photographer to take construction photographs.

B. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.

1. Maintain key plan with each set of construction photographs that identifies each photographic location.

C. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.

1. Date and Time: Include date and time in file name for each image.
2. Field Office Images: Maintain one (1) set of images accessible in the field office at Project site, available always for reference. Identify images in the same manner as those submitted to Engineer and Construction Manager.

D. Preconstruction Photographs: Before starting construction, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Engineer and Construction Manager.

1. Flag excavation areas and construction limits before taking construction photographs.
2. Take twenty (20) photographs to show existing conditions adjacent to property before starting the Work.
3. Take twenty (20) photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.

E. Periodic Construction Photographs: Take twenty (20) photographs weekly, with timing each month adjusted to coincide with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.

F. Engineer and Construction Manager - Directed Construction Photographs: From time to time, Engineer and Construction Manager will instruct photographer about number and frequency of photographs and general directions on vantage points. Select actual vantage points and take photographs to show the status of construction and progress since last photographs were taken.

G. Time-Lapse Sequence Construction Photographs: Take twenty (20) photographs as indicated, to show status of construction and progress since last photographs were taken.

1. Frequency: Take photographs weekly, with timing each month adjusted to coincide with the cutoff date associated with each Application for Payment.
2. Vantage Points: Following suggestions by Engineer and Construction Manager and Contractor, photographer to select vantage points. During each of the following construction phases, take not less than two of the required shots from same vantage point each time to create a time-lapse sequence as follows:

    a. Commencement of the Work, through completion of subgrade construction.
    b. Above-grade structural framing.
    c. Exterior building enclosure.
    d. Interior Work, through date of Substantial Completion.

H. Final Completion Construction Photographs: Take twenty (20) color photographs after date of Substantial Completion for submission as project record documents. Engineer and Construction Manager will inform photographer of desired vantage points.

1. Do not include date stamp.

I. Additional Photographs: Engineer or Construction Manager may request photographs in addition to periodic photographs specified. Additional photographs will be paid for by Change Order and are not included in the Contract Sum.

1. Three (3) days' notice will be given, where feasible.
2. In emergency situations, take additional photographs within 24 hours of request.
3. Circumstances that could require additional photographs include, but are not limited to, the following:

    a. Special events planned at Project site.
    b. Immediate follow-up when on-site events result in construction damage or losses.
    c. Photographs to be taken at fabrication locations away from Project site. These photographs are not subject to unit prices or unit-cost allowances.
    d. Substantial Completion of a major phase or component of the Work.
    e. Extra record photographs at time of final acceptance.
    f. Owner's request for special publicity photographs.

J. Periodic Aerial Construction Photographs: Provide at least two (2) aerial photographs monthly, coinciding with the cutoff date associated with each Application for Payment.

Select vantage points to show status of construction and progress since last photographs were taken.

3.02 CONSTRUCTION VIDEO RECORDINGS

A. Video Recording Photographer: Engage a qualified videographer to record construction video recordings. Time must be accurate and continuously generated.

B. Recording: Mount camera on tripod before starting recording unless otherwise necessary to show area of construction. Display continuous running time and date. At start of each video recording, record weather conditions from local newspaper or television and the actual temperature reading at Project site.

C. Narration: Describe scenes on video recording by dubbing audio narration off-site after video recording is recorded. Include description of items being viewed, recent events, and planned activities. At each change in location, describe vantage point, location, direction (by compass point), and elevation or story of construction.

1. Confirm date and time at beginning and end of recording.
2. Begin each video recording with name of Project, Contractor's name, videographer's name, and Project location.

D. Transcript: Provide a typewritten transcript of the narration. Display images and running time captured from video recording opposite the corresponding narration segment.

E. Preconstruction Video Recording: Before starting construction, record video recording of Project site and surrounding properties from different vantage points, as directed by Engineer and Construction Manager.

1. Flag excavation areas and construction limits before recording construction video recordings.
2. Show existing conditions adjacent to Project site before starting the Work.
3. Show existing buildings either on or adjoining Project site to accurately record physical conditions at the start of construction.
4. Show protection efforts by Contractor.

F. Periodic Construction Video Recordings: Record video recording monthly, coinciding weekly, with timing each month adjusted to coincide with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last video recordings were recorded. Minimum recording time shall be thirty (30) minutes.

G. Time-Lapse Sequence Construction Video Recordings: Record video recording to show status of construction and progress.

1. Frequency: During each of the following construction phases, set up video recorder to automatically record one frame of video recording every five (5) minutes, from same vantage point each time, to create a time-lapse sequence of thirty (30) minutes in length as follows:

a. Commencement of the Work, through completion of subgrade construction.
b. Above-grade structural framing.
c. Exterior building enclosure.

Timer: Provide timer to automatically start and stop video recorder so recording occurs only during daylight construction work hours.

2. Vantage points: Following suggestions by Engineer and Construction Manager and Contractor, photographer shall select vantage points.

3.03 WEB-BASED CONSTRUCTION PHOTOGRAPHIC DOCUMENTATION

A. Live Streaming Construction Site Images: Provide Web-accessible image of current site image from fixed, viewer-controlled, location camera(s), updated at fifteen (15) minute intervals during daytime operation.

B. Time-Lapse Sequence Construction Site Recordings: Provide video recording from a fixed location camera to show status of construction and progress.

1. Frequency: Record one (1) frame of video recording every fifteen (15) minutes, from same vantage point each time, to create a time-lapse sequence of construction activities.

2. Timer: Provide timer to automatically start and stop video recorder so recording occurs only during daylight construction work hours.

C. Maintain cameras and Web-based access in good working order according to Web-based construction photographic documentation service provider's written instructions until final completion. Provide for service of cameras and related networking devices and software.

3.04 DELIVERY OF PHOTOGRAPHS AND VIDEOS

A. Photographs and videos will be delivered electronically following specifications above with a coordinating log, to the Engineer as attachment to Application for Payment.

B. Distribution of construction photographs, as soon as processed, is anticipated to be as follows:

1. Engineer one (1) set.
2. Project record file one (1) set to be stored by Contractor until the end of the project which shall then be delivered with Project Record Documents as specified in Section 01 78 39.
3. Contractor one (1) set.

END OF SECTION

SECTION 01 33 23
SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

A. The Contractor shall submit to the Engineer for review and approval, such working drawings, shop drawings, test reports and data on materials and equipment, and material samples materials list, certificates, and affidavits as are required for the proper control of work, including but not limited to those working drawings, shop drawings, data and samples for materials and equipment specified elsewhere in the Specifications and in the Contract Drawings.

B. Within twenty (20) calendar days after the Effective Date of the Agreement, the Contractor shall submit to the Engineer a complete materials list of preliminary data on items for which Shop Drawings are to be submitted. Included in this materials list shall be the names of all proposed manufacturers furnishing specified items. Review of this list by the Engineer shall in no way be expressed or implied relief to the Contractor from submitting complete Shop Drawings and providing material, equipment, etc., fully in accordance with the Specifications. This procedure is required in order to expedite final review of Shop Drawings.

C. The Contractor shall maintain an accurate updated submittal log and will bring this log to each scheduled progress meeting with the Owner and the Engineer. This log shall include the following items:

1. Submittal Description and Number assigned.
2. Date submitted to Engineer
3. Date returned to Contractor (from Engineer).
4. Status of Submittal (Approved, Approved as Noted, Not Approved/Resubmit).
5. Date of Resubmittal and Return (as applicable).
6. Date of material release (for fabrication).
7. Projected date of fabrication.
8. Projected date of delivery to site.
9. Status of O&M manuals submitted.
10. Specification Section.
11. Drawings Sheet Number.

D. Related Work Specified Elsewhere

1. Section 01 60 00: Product Requirements

1.02 CONTRACTOR'S RESPONSIBILITY

A. It is the duty of the Contractor to check all drawings, data and samples prepared by or for him before submitting them to the Engineer for review. Each and every copy of the drawings and data shall bear Contractor's stamp and signature showing that they have been so checked. Shop drawings submitted to the Engineer without the Contractor's stamp and signature will be returned to the Contractor for conformance with this requirement. Shop drawings shall indicate any deviations in the submittal from requirements of the Contract Documents. If the Contractor takes exception to the specifications, the Contractor shall note the exception in the letter of transmittal to the Engineer. Shop drawings submittals shall not be used as a vehicle for requesting approval of substitute or alternative equipment and materials. Substitution requests will be considered only when submitted in accordance with the applicable provisions of Section 01 60 00.

B. Determine and Verify:

1. Field measurements.
2. Field construction criteria.
3. Catalog numbers and similar data.
4. Conformance with Specifications.

C. The Contractor shall furnish the Engineer a schedule of Shop Drawings submittals fixing the respective dates for the submission of shop and working drawings, the beginning of manufacture, testing and installation of materials, supplies and equipment. This schedule shall indicate those that are critical to the progress schedule.

D. The Contractor shall not begin any of the work covered by a drawing, data, or a sample returned for correction until a revision or correction thereof has been reviewed and returned to him, by the Engineer, with approval.

E. The Contractor shall submit to the Engineer all drawings and schedules sufficiently in advance of construction requirements to provide no less than thirty (30) calendar days for checking and appropriate action from the time the Engineer receives them.

F. All submittals shall be accompanied by a transmittal letter prepared in duplicate containing the following information:

1. Date.
2. Project Title and Number.
3. Contractor's name and address.
4. Notification of deviations from Contract Documents.
5. Submittal Log Number conforming to Specification Section Numbers.

G. The Contractor shall submit descriptive or product data submittals/drawings electronically to the Engineer. The Engineer will review the submittals/drawings and return marked-up submittals/drawings with appropriate review comments electronically to the Contractor.

H. Once submittals/drawings are approved, they are to be distributed electronically to the Owner, Engineer, and Contractor.

I. The Contractor shall be responsible for and bear all costs of damages which may result from the ordering of any material or from proceeding with any part of work prior to the completion of the review by Engineer of the necessary shop drawings.

J. The Contractor shall be fully responsible for observing the need for and making any changes in the arrangement of piping, connections, wiring, manner of installation, etc., which may be required by the materials/equipment he proposed to supply both as pertaining to his own work and any work affected under other parts, headings, or divisions of Drawings and Specifications.

1.03. ENGINEER'S REVIEW OF SHOP DRAWINGS

A. The Engineer's review of drawings, data and samples submitted by the Contractor will cover only general conformity to the Specifications, external connections, and dimensions which affect the installation. The Engineer's review and exceptions, if any, will not constitute an approval of dimensions, quantities, and details of the material, equipment, device, or item shown.

B. The review of drawings and schedules will be general, and shall not be construed:

1. As permitting any departure from the Contract requirements;

2. As relieving the Contractor of responsibility of any errors, including details, dimensions, and materials;

3. As approving departures from details furnished by the Engineer, except as otherwise provided herein.

C. If the drawings or schedules as submitted describe variations and show a departure from the Contract requirements which Engineer finds to be in the interest of the Owner and to be so minor as not to involve a change in Contract Price or time for performance, the Engineer may return the reviewed drawings, without noting an exception.

D. When reviewed by the Engineer, each of the Shop Drawings will be identified as having received such review, being so stamped, and dated. Shop Drawings stamped "NOT

APPROVED/RESUBMIT" and with required corrections shown will be returned to the Contractor for correction and re-submittal.

E. Resubmittals will be handled in the same manner as first submittals. On Resubmittals the Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, to revisions other than the corrections requested by the Engineer on previous submissions. The Contractor shall make any corrections required by the Engineer.

F. If the Contractor considers any correction indicated on the drawings to constitute a change to the Contract Drawings or Specifications, the Contractor shall give written notice thereof to the Engineer.

G. Shop Drawings and submittal data shall be reviewed by the Engineer for each original submittal and first Resubmittal; thereafter review time for subsequent Resubmittals shall be charged to the Contractor in accordance with the terms of the Engineer's Agreement with the Owner.

H. When the Shop Drawings have been completed to the satisfaction of the Engineer, the Contractor shall carry out the construction in accordance therewith and shall make no further changes therein except upon written instructions from the Engineer.

I. No partial submittals will be reviewed. Submittals not complete will be returned to the Contractor for Resubmittal. Unless otherwise specifically permitted by the Engineer, make all submittals in groups containing all associated items for:

1. Systems

2. Processes

3. As indicated in Specifications Sections, all drawings, schematics, manufacturer's product data, certifications and other shop drawing submittals required by a system specification shall be submitted at one time as a package to facilitate interface checking.

1.04 SHOP DRAWINGS

A. When used in the Contract Documents, the term "Shop Drawings" shall be considered to mean Contractor's plans for materials and equipment which become an integral part of the Project. These drawings shall be completed and detailed. Shop Drawings shall consist of fabrication, erection and setting drawings and schedule drawings, manufacturer's scale drawing, and wiring and control diagrams. Cuts, catalogs, pamphlets, descriptive literature, and performance and test data shall be considered only as supportive to required shop drawings as defined above. As used herein, the term "manufactured" applied to standard

units usually mass-produced; and "fabricate" means items specifically assembled or made out of selected materials to meet individual design requirements.

B. Manufacturer's catalog sheets, brochures, diagrams, illustrations, and other standard descriptive data shall be clearly marked to identify pertinent materials, product or models. Delete information which is not applicable to the Work by striking or cross-hatching.

C. Drawings and schedules shall be checked and coordinated with the work of all trades involved, before they are submitted for review by the Engineer and shall bear the Contractor's stamp of approval as evidence of such checking and coordination. Drawings or schedules submitted without this stamp of approval shall be returned to the Contractor for resubmission.

D. Each Shop Drawing shall have a transmittal sheet. The transmittal sheet shall display the following:

1. Project title and number.
2. Name of project building or structure.
3. Number and title of the shop drawing.
4. Date of shop drawing or revision.
5. Name of Contractor and subcontractor submitting drawing.
6. Supplier/manufacturer.
7. Separate detailer when pertinent.
8. Specification number.
9. Drawing number.

A Letter of Transmittal Excel document shall be provided to the Contractor per request.

[Contractor Company Logo]		[Contractor Company Name] [Address] [Address] [Phone #]		**LETTER OF TRANSMITTAL**
TO:	Mead & Hunt		**DATE:**	
ATTN:			**M&H PROJECT NO.**	
			COUNTY BID NO.	
		-	**RE:**	
		-		

SUBMITTAL #	**SPEC SECTION(S) #**	**SHEET(S) #**	**SUBMITTAL DESCRIPTION**

	SUPPLIER/MANUFACTURER

Notification of deviations from Contract Documents:

I hereby certify that the Contractor has satisfied Contractor's obligations under the Contract Documents relative to Contractor's review and approval of this submittal.

Signed:	
Type Name:	

E. If drawings show variations from Contract requirements because of standard shop practice or for other reasons, the Contractor shall describe such variations in his letter of transmittal. If acceptable, proper adjustment in the Contract shall be implemented where appropriate. If the Contractor fails to describe such variations, he shall not be relieved of the responsibility for executing the work in accordance with the Contract, even though such drawings have been reviewed.

F. Data on materials and equipment include, without limitation, materials and equipment lists, catalog data sheets, cuts, performance curves, diagrams, materials of construction and similar descriptive material. Materials and equipment lists shall give, for each item thereon, the name and location of the supplier or manufacturer, trade name, catalog reference, size, finish and all other pertinent data.

G. For all mechanical and electrical equipment furnished, the Contractor shall provide a list including the equipment name, address and telephone number of the manufacturer's representative and service company so that service and/or spare parts can be readily obtained.

H. All manufacturers or equipment suppliers who are proposed to furnish equipment or products shall submit an installation list to the Engineer along with the required shop drawings. The installation list shall include at least five (5) installations where identical equipment has been installed and has been in operation for a period of at least one (1) year.

I. Only the Engineer will utilize the color "red" in marking shop drawing submittals.

1.05 WORKING DRAWINGS

A. When used in the Contract Documents, the term "working drawings" shall be considered to mean the Contractor's plan for temporary structures such as temporary bulkheads, support of open cut excavation, support of utilities, ground water control systems, forming and false work; for underpinning; and for such other work as may be required for construction but does not become an integral part of the project.

B. Copies of working drawings as noted in paragraph 1.05 A. above, shall be submitted to the Engineer where required by the Contract Documents or requested by the Engineer, and shall be submitted at least thirty (30) calendar days (unless otherwise specified by the Engineer) in advance of their being required for work.

C. Working drawings shall be signed by a registered Professional Engineer, currently licensed to practice in the State of Florida and shall convey, or be accompanied by, calculation or other sufficient information to completely explain the structure, machine, or system

described and its intended manner of use. Review of working drawings by the Engineer will not relieve the Contractor in any way from his responsibility with regard to the fulfillment of the terms of the Contract. All risks of error are assumed by the Contractor; the Owner and Engineer shall have no responsibility, therefore.

1.06 SAMPLES

A. The Contractor shall furnish, for the approval of the Engineer, samples required by the Contract Documents or requested by the Engineer. Samples shall be delivered to the Engineer as specified or directed. The Contractor shall prepay all shipping charges on samples. Materials or equipment for which samples are required shall not be used in work until approved by the Engineer.

B. Samples shall be of sufficient size and quantity to clearly illustrate:

1. Functional characteristics of the product, with integrally related parts and attachment devices.

2. Full range of color, texture, and pattern.

3. A minimum of two (2) samples of each item shall be submitted.

C. Each sample shall have a label indicating:

1. Name of project.
2. Name of Contractor and subcontractor.
3. Material or equipment represented.
4. Place of origin.
5. Name of producer and brand (if any).
6. Location in project.
7. Submittal Number.

(Samples of finished materials shall have additional marking that will identify them under the finish schedules).

D. The Contractor shall prepare a transmittal letter in triplicate for each shipment of samples containing the information required in paragraph 1.06 B. above. He shall enclose a copy of this letter with the shipment and send a copy of this letter to the Engineer. Approval of a sample shall be only for the characteristics or use names in such approval and shall not be construed to change or modify any Contract requirements.

E. Approved samples not destroyed in testing shall be sent to the Engineer or stored at the site of work. Approved samples of the hardware in good condition will be marked for

identification and may be used in the work. Materials and equipment incorporated in work shall match the approved samples. Samples which failed testing or were not approved will be returned to the Contractor at his expense, if so, requested at time of submission.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 35 13
SPECIAL PROJECT PROCEDURES

PART 1 - GENERAL

1.01 PUBLIC NUISANCE

A. The Contractor shall not create a public nuisance including, but not limited to, encroachment on adjacent lands, flooding of adjacent lands, or excessive noise.

B. Sound levels measured by the Engineer shall not exceed 50 dBA from 7 P.M. to 7 A.M. or 60 dBA 7 A.M. to 7 P.M. This sound level shall be measured at the exterior of the nearest exterior wall of the nearest residence. Levels at the equipment shall not exceed 85 dBA at any time. Sound levels in excess of these values are sufficient cause to have the Work halted until equipment can be quieted to these levels. Work stoppage by the Engineer or Owner for excessive noise shall not relieve the Contractor of the other portions of this Specification including, but not limited to, completion dates and bid amounts.

C. No extra charge may be made for time lost due to work stoppage resulting from the creation of a public nuisance.

1.02 JURISDICTIONAL DISPUTES

A. It shall be the responsibility of the Contractor to pay all costs that may be required to perform any of the Work shown on the Drawings or specified herein in order to avoid any work stoppages due to jurisdictional disputes. The basis for subletting Work in question, if any, shall conform to precedent agreements and decisions on record with the Building and Construction Trades Department, AFL-CIO, dated June 1973, including any amendments thereto.

1.03 EXCAVATION AROUND AND CONNECTION TO EXISTING UTILITIES

A. It is essential that the Contractor understand that the existing Owner’s facilities must be kept in operation with minimal impact and shut downs. To this end, the Contractor shall coordinate and consult with the Owner's operating personnel before excavating around or cutting into existing utilities on the site. Existing utilities of major concern are raw water, potable water, sanitary sewer, electrical power conduits, phone and television cables, instrumentation conduits, and cables.

B. Some areas within the construction site may require hand excavation due to the congestion of underground piping systems and/or due to the criticality of piping systems that may be damaged unavoidably during machine excavation.

C. Cover for underground piping shall not be less than that indicated on the Drawings, up to a minimum of 30 inches of cover where obtainable. In areas where other piping conflicts preclude the minimum cover desired, the piping shall be laid to provide the maximum cover obtainable.

D. All connections to existing piping systems shall be made as shown or indicated on the Drawings after consultation, cooperation, and coordination with the Owner's management personnel. Some such connections may have to be made during off-peak hours (late night or early morning hours). The Contractor shall give a minimum of three (3) working days' notice to the Owner when tie-ins with the existing plant utilities are required.

E. For major utility pipeline tie-ins and relocations, the Contractor shall submit a detailed Plan of Action for review and approval by the Owner and the Engineer. No major utility relocation or tie-ins shall proceed until the Plan of Action for that Work is approved.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 45 29
TESTING LABORATORY SERVICES

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. Contractor will employ and pay for services of an Independent testing Laboratory to perform testing specifically indicated on the Contract Documents or specified in the Specifications herein and may at any other time elect to have materials and equipment tested for conformity with the Contract Documents.

2. Contractor shall cooperate with the laboratory to facilitate the execution of its required services.

3. Contractor shall provide Engineer with all test results as indicated herein within five (5) days of receipt.

B. Related Requirements Described Elsewhere:

1. Testing laboratory inspection, sampling and testing is required for, but not limited to the following:

a. Section 33 05 05.31 - Hydrostatic Testing

C. The following schedule defines the responsibility for various tests.

Test	Notes	Paid for By
Soil Compaction	Pipe Work: every 300 ft. at each lift of compaction minimum. Beneath Structures: each 500 sq. ft. lift of compaction minimum and each lift around structures.	Contractor
Pressure	As specified in Section 33 05 05.31	Contractor
Bacteriological	As required by local and state agencies.	Contractor
LBR	Each 1500 SF of pavement (minimum).	Contractor

Concrete	Slump test each delivery and compression test five cylinders every 50 C.Y. (minimum).	Contractor

D. Additional Tests: The Contractor shall pay for first tests as specified herein. In the event that first test samples do not meet the applicable material specification, the Contractor shall take measures to conform the material and equipment to the Specifications. All subsequent tests shall be paid for by the Contractor.

1.02 LABORATORY TESTS

A. The materials listed below shall require advance and periodic laboratory tests as indicated and shall be sampled in accordance with the methods of the A.S.T.M. and as directed by the Engineer. With the exception of concrete test cylinders and mixing water, duplicate advance samples of all materials requiring laboratory tests shall be submitted to the Engineer, one of which will be certified by the Engineer for submission to the testing laboratory and the other retained on the job site in suitable storage provided by the Contractor. Except as noted below, preliminary samples of materials for advance laboratory tests shall be submitted at least two (2) weeks prior to starting delivery of such materials to the site of the project. The testing laboratory shall furnish both the Engineer and the Contractor with two (2) copies of the reports showing the results of such tests, and the reports shall be considered as sufficient evidence of the acceptance or rejection of the quality of the materials tested. The specifications for, and the method of testing, will be found under the detailed specifications for the particular material involved. All samples shall be properly packed and clearly marked as to source and intended use.

MATERIALS	**TEST FREQUENCY**	**SAMPLE SIZE**	**SHIPPING CONTAINER**
Fine Aggregate	Advance, first shipment then each 100 tons	100 lbs.	Canvas Sack
Coarse Aggregate	Advance, first shipment then each 200 tons	Stone or Gravel 200 lbs.	Strong Sack
Concrete	Advance test using approved materials	4 cylinders per mix, 2 broken at 7 days, 2 at 28 days	
Concrete (b) Air Entrainment	Advance test on trial mix air entraining agent is used. Test as specified under Article 405 (e)		

1.03 TESTS

A. The materials listed below shall be tested at the shop or plant of, and by, the producer. Each manufacturer of such materials shall be fully equipped to carry out the tests herein

designated. Upon demand of the Engineer, the manufacturer shall perform such additional number of tests as the Engineer may deem necessary to establish the quality of the material offered for use. The Engineer shall be furnished with the certified records of reports of the results of all tests, such reports of records to contain a sworn statement that the tests have been made as specified.

MATERIAL	TEST METHOD
Cement	ASTM C114
Ductile Iron Pipe (Centrifugally Cast)	As required under ANSI A21.51-1176
Brick	ASTM C-32
Reinforcement	ASTM A-15 & A-305

1.04 FIELD TESTS

A. All sewers, water lines, piping and equipment shall be tested in the field in the presence of the Engineer or his authorized assistant, in the manner prescribed in the sections of these specifications pertaining to such installations. The Engineer may also perform or have performed any other field tests necessary to determine compliance with the Contract requirements. The Contractor shall furnish all necessary labor, equipment, and materials for such tests and, with the exception of the Engineer's expenses, shall bear all the cost thereof.

1.05 PAVING TESTS

A. The following tests will be made, unless otherwise stipulated by the Engineer, by a testing laboratory approved by the Engineer:

Material	Test or Test Method	Frequency
Subbase	1) AASHO T-180 (Modified Proctor Minimum 98% Density)	Every 300 LF
	2) Lime rock Bearing Ratio 40	Every 300 LF
Base	(Soil Cement) (1) Mix Design 350 psi @ 28 days. Mix design required 7 days in advance.	Prior to Mixing Base
	(2) Optimum Moisture content and Maximum Density (AASHTO T-134)	Every 300 LF
	(3) LBR 100	Every 1500 sf
	(4) Depth (6-inch minimum)	Every 300 feet
Paving	(1) Job Mix Formula. Required 7 days in advance and submit to Engineer	Each Job
	(2) Bitumen Content of Mix	Every 2500 SY or fraction thereof
	(3) In Place Density	Every 300' (left, right & center)
	(4) Marshall Field Stability Index	Every 1500 SY or fraction thereof
	(5) Thickness Cores	Every 300' (left, right, & center)

1.06 Basis of Payment

A. All shop tests and mill inspection shall be included in the price of the manufactured article, and no separate or extra payment will be made for such tests and inspection.

B. All laboratory and field tests will be paid for by the Contractor; he shall furnish all necessary labor, equipment and materials for such tests and, with the exception of the Engineer's expenses, shall bear all the costs thereof.

1.07 LABORATORY DUTIES: LIMITATIONS OF AUTHORITY

A. Cooperate with Engineer and Contractor; provide qualified personnel promptly on notice.

B. Perform specified inspections, sampling and testing of materials and methods of construction:

1. Comply with specific standards; ASTM, other recognized authorities, and as specified.

2. Determine and report on compliance with requirements of Contract Documents.

C. Promptly notify the Engineer and Contractor of material or operations which do not meet the specifications.

D. Promptly submit one (1) original and (1) electronic copy of reports of inspections and tests to the Engineer including:

1. Date issued.
2. Project title and Engineer’s job number.
3. Testing Laboratory name and address.
4. Name and signature of inspector.
5. Date of inspection of inspector.
6. Date of inspection or sampling.
7. Date of test.
8. Identification of product and Specification section.
9. Location in project.
10. Type of inspection or test.
11. Compliance with Contract Documents or not.

E. Laboratory is not authorized to:

1. Release, revoke, alter, or enlarge on requirements of Contract Documents.

2. Approve or reject any portion of work.

3. Perform any duties of the Contractor.

1.08 CONTRACTOR’S RESPONSIBILITIES

A. Cooperate with laboratory personnel; provide access to Work and manufacture’s operations.

B. Secure and deliver to the laboratory adequate representational samples of materials purposed to be used and which require testing.

C. Provide to the laboratory the preliminary design mix proposed to be for concrete, and other materials mixes which require control by the testing laboratory.

D. Materials and equipment used in the performance of work under this Contract are subject to inspection and testing at the point of manufacturer of fabrication. Standard specifications for quality and workmanship are indicated in the Contract Documents. The Engineer may require the Contractor to provide statements or certificates from the manufacturers and fabricators that in full accordance with the standard specifications for quality and workmanship indicated in the Contract Documents. All costs of this testing and providing statements and certificates shall be a subsidiary obligation of the Contractor, and no extra charge to the Owner shall be allowed on account of such testing and certification.

E. Furnish incidental labor and facilities:

1. To provide access to Work to be tested.

2. To obtain and handle samples at the Project site or at the source of the product to be tested.

3. To facilitate inspections and tests.

4. For storage and curing of test samples.

5. Notify laboratory sufficiently in advance of operations to allow for laboratory assignment of personnel and scheduling of tests.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 50 00
TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

This section specifies the minimum requirements for temporary facilities, utilities to be brought to the site, refuse/waste collection and control required to enable the construction of the project to progress adequately. The providing of adequate facilities at every stage of performing the work is the Contractor's sole responsibility, and is not limited by the requirement of this section.

Except as otherwise indicated, the Contractor may, at his option, provide stand-alone utility plants to provide needed services, in lieu of connected services from available public utilities, provided such stand-along plant facilities comply with governing regulations. Prior to availability of temporary utility services, provide trucked-in/trucked-out containerized or unitized services for startup of construction operations at the site.

Except as otherwise indicated, the costs of providing and using temporary utility services are included in the Contract Sum.

1.02 TEMPORARY FACILITIES

The types of utility services required for general temporary use at the project site include the following (other specific services may be required for specific construction methods or operations):

Electrical Power Service
Water Service (potable for certain uses)
Sanitary
Storm Sewer or Open Drainage/Run-off Control
Refuse/Waste Collection

Temporary Electricity:

The Contractor shall make necessary applications and arrangements and pay all fees and charges for electrical energy for power and light necessary for proper completion of the work and during its entire progress up to time of final acceptance by the Owner. The Contractor shall provide and pay for all temporary switches, connections and meters.

Temporary Water:

The Contractor shall make all necessary application and arrangements, and pay all fees and charges for water necessary for the proper completion of the project up to the time of final acceptance. The Contractor shall provide and pay for any temporary piping and connections.

Temporary Sanitary Facilities:

The Contractor shall provide adequate sanitary facilities for the use of those employed on the work. Such facilities shall be made available when the first employees arrive on the site of the work, shall be properly secluded from public observation, and shall be constructed and maintained during the progress of the work in suitable numbers and at such points and in such manner as may be required or approved.

The Contractor shall provide these portable sanitary facilities "on-site" for use by workers. Transporting workers to the nearest "public" sanitary facility will not be considered an acceptable alternative to these requirements.

The Contractor shall maintain the sanitary facilities in a satisfactory and sanitary condition at all times and shall enforce their use. He shall rigorously prohibit the committing of nuisances on the site of the work, on the lands of the Owner, or on adjacent property. The cost of providing these sanitary facilities shall be included in the Contractor's applicable pay items of work and no separate payment shall be made thereof.

Temporary Refuse/Waste Collection

The Contractor shall provide for adequate refuse/waste collection and disposal. City Ordinance requires that all rental open-top rolloff container units or rental cubic-yard container units must be procured from one of the City's franchised construction and demolition debris providers. For a list of the City's current Franchised Providers, please call Public Works at 386-676-3220.

It will be the Contractor's responsibility to make all necessary arrangements for refuse/waste collection and disposal. The cost of providing for such refuse/waste collection and disposal shall be included in the Contractor's applicable pay items of work and no separate payment shall be made thereof.

Termination and Removal:

At the time the need for temporary utility service or a substantial portion thereof has ended, or when its service has been replaced by use of permanent services, or not later than the time of substantial completion, promptly remove the installation unless requested by the Engineer to retain it for a longer period. Complete and restore work which may have been delayed or affected by the installation and use of the temporary utility, including repairs to construction and grades and restoration and cleaning of exposed surfaces. Replace work damaged beyond acceptable restoration.

1.03 TEMPORARY CONTROLS

Noise Control:

The Contractor shall provide adequate protection against objectionable noise levels caused by the operation of construction equipment.

Dust Control:

The Contractor shall provide for adequate protection against raising objectionable dust clouds caused by moving construction equipment, high winds or any other cause.

Water Control:

The Contractor shall provide for satisfactory disposal of surplus water and shall submit a plan to the Engineer for his review prior to initiation and implementation of the plan. Prior approval shall be obtained from the proper authorities for the use of public or private lands or facilities for such disposal.

Pollution Control:

The Contractor shall provide for adequate protection against polluting any public or private lands, lakes, ponds, rivers, streams, creeks, and other such areas, by the disposal of surplus material in the form of solids, liquids, or gases or from any other cause. The Contractor shall provide for adequate refuse/waste collection and disposal as described in Part 1, paragraph 1.02 of this Section.

The Contractor shall evaluate and assess the impact of any adverse effects on the natural environment which may result from construction operations and shall operate to minimize pollution of air, ground or surface waters vegetation, and afford the neighboring community the maximum protection during and up to completion of the construction project.

The Contractor shall take sufficient precautions to prevent pollution of streams, lakes and reservoirs with fuels, oils, bitumens, calcium chloride or other harmful materials. He shall conduct and schedule his operations so as to avoid or otherwise prevent pollution of siltation of streams, lakes and reservoirs and to avoid interference with movement of migratory fish.

All chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant or of other classification, must show approval of either EPA or USDA. Use of all such chemicals and disposal of residues shall be in strict conformance with instructions.

Erosion Control:

The Contractor shall not expose, by construction operations, a larger area of erosive land at any one time than the minimum necessary for efficient construction operations, and the duration of exposure of the uncompleted construction to the elements shall be as short as practicable.

Erosion control features shall be constructed concurrently with other work and at the earliest practicable time.

1.04 STORAGE FACILITIES

All products, materials and equipment shall be stored in accordance with the manufacturer's instructions, with seals and labels intact and legible. Products subject to damage by the elements shall be stored in weathertight enclosures. Temperature and humidity shall be maintained within the ranges required by the manufacturer's instructions. Fabricated products shall be stored above the

ground on blocking or skids. Products which are subject to deterioration shall be covered with impervious coatings with adequate ventilation to avoid condensation. Loose granular materials shall be stored in a well-drained area on solid surfaces to prevent mixing with foreign matter. Any products which will come in contact with potable water shall be stored off the ground so as to prevent contamination.

Storage shall be arranged in such a manner to provide easy access for inspection. Periodic inspections shall be made of all stored products to assure that they are maintained under specified conditions, and free from damage or deterioration.
After installation, Contractor shall provide substantial coverings as necessary to installed products to protect from damage from traffic and subsequent construction operations. Coverings shall be removed when no longer needed.

1.05 PRESERVATION OF PROPERTY

Preserve from damage all property along the line of the work, or which is in the vicinity of or in any wise affected by the work, the removal or destruction of which is not called for by the plans. Wherever such property is damaged due to the activities of the Contractor, it shall be immediately restored to its original condition by the Contractor at no cost to the Owner.

In case of failure on the part of the Contractor to restore such property, or make good such damage or injury, the Owner may, after 48 hours notice to the Contractor, proceed to repair, rebuild or otherwise restore such property as may be deemed necessary and the cost thereof will be deducted from any monies due, or which may become due the Contractor under this Contract.

The Contractor shall be responsible for the protection of property, in the areas in the vicinity of the project; and for the protection of his equipment, supplies, materials and work, against any damage resulting from the elements, such as flooding, by rainstorm, wind damage, or other elemental cause resulting from the project configuration. The Contractor shall take all precautions against any such damage occurrence, and shall be responsible for damage resulting from same. The Contractor shall provide adequate drainage facilities, tie-downs, or other protection, throughout the Contract period, for the protection of his, the Owner's, and other properties from such damage.

1.06 TRAFFIC REGULATION

Signs, marking barricades and procedures shall conform to the requirements of the Florida Department of Transportation Manual on Traffic Controls and Safe Practices for Street and Highway Construction, Maintenance and Utility Operations.

The Contractor shall maintain one-lane, two-way traffic at all times and maintain customer access to local businesses at all times throughout the course of the work.

The Contractor shall provide and maintain adequate barricades, construction signs, torches, flashers, guards and flagmen as required in pedestrian and vehicular traffic areas. Regulations of local authorities shall be complied with.

The contractor shall provide suitable crossings at street intersections and driveways, and supply such aid as may be required for pedestrians and motorists, including delivery vehicles, to safely negotiate the construction areas.

The Contractor shall carry on the work in a manner that will cause the least interruption in traffic. Closing to through travel of more than two consecutive blocks, including the cross streets intersected will not be permitted without specific authorization from the local authorities. Where traffic must cross open trenches, the Contractor shall provide suitable bridges at street intersections and driveways and provide adequate ingress and egress to dwellings, business facilities, utilities and services. At any time the streets are required to be closed, the Contractor shall notify, in writing, law enforcement agencies, fire departments, and parties operating emergency vehicles before the street is closed and again as soon as it is opened. Access to fire hydrants and other fire extinguishing equipment shall be provided and maintained at all times. Refer to Section 01010 of these Specifications for "Notification of Construction" and "Notification of Street Closure" requirements.

On completion of work, the Contractor shall remove all debris, excess materials, barricades and temporary work leaving walkways and road clear of obstructions.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION

SECTION 01 54 00
CONSTRUCTION AIDS

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work: Furnish, install, and maintain required construction aids, remove on completion of Work.

B. Comply with applicable requirements specified in Sections of Division 2 through 46.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Materials may be new or used, suitable for the intended purpose, but must not violate requirements of applicable codes and standards.

2.02 CONSTRUCTION AIDS

A. Provide construction aids and equipment required by personnel and to facilitate execution of the Work: scaffolds, staging, ladders, stairs, ramps, runways, platforms, railings, hoists, cranes, chutes and other such facilities and equipment such as temporary valves and fittings. Refer to respective Sections for particular requirements for each trade.

B. When permanent stair framing is in place, provide temporary treads, platforms, and railings, for use by construction personnel.

C. Maintain facilities and equipment in first-class condition.

PART 3 - EXECUTION

3.01 PREPARATION

A. Consult with the Engineer, review site conditions and factors which affect construction procedures and construction aids, which may be affected by execution of the Work.

3.02 GENERAL

A. Comply with applicable requirements specified in sections of Division 2 through 46.

B. Relocate construction aids as required by progress of construction, by storage of work requirements of Owner and other Contractors employed at the site.

3.03 REMOVAL

A. Completely remove temporary materials, equipment, and services:

1. When construction needs can be met by use of permanent construction.

2. At completion of work.

B. Clean and restore areas damaged by installation by use of temporary facilities.

1. Remove foundations and underground installations for construction aids.

2. Grade and grass areas of site affected by temporary installations to required elevations, slopes, ground cover and clean the area.

C. Restore permanent facilities used for temporary purposes to specified condition or in kind if not specified.

END OF SECTION

SECTION 01 57 13
TEMPORARY EROSION AND SEDIMENTATION CONTROLS

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. The Work specified in this Section consists of designing, providing, maintaining, and removing temporary erosion and sedimentation controls for construction activities impacting **less** than one acre, as required by Rules and Regulations and permit conditions.

a. If activity impact should **exceed** one acre:

i. The Contractor must apply for a NPDES permit with the Florida Department of Environmental Protection (FDEP), accessible through the provided link below.

1. https://floridadep.gov/sites/default/files/CGP%20NOI%2062-621.300_4b_0.pdf

ii. The Contractor must create a Stormwater Pollution Prevention Plan (SWPPP) and provide its location in the NPDES permit, requirements and guidelines are accessible through the provided links below.

1. http://www.swppps.org/requirements
2. https://floridadep.gov/sites/default/files/ConstructionSWPPP_0.pdf

iii. The Contractor must create a weekly inspection schedule.

1. Additional inspections are required after rainfall exceeding 0.5 inches.

iv. The Contractor must provide a Certified Person for contact.

1. Certified Person(s) must have Erosion and Sedimentation Control training.

b. All aforementioned requirements shall be provided to the Engineer.

i. NPDES permit receipt given upon approval by the FDEP must be provided.

2. Temporary erosion controls include, but are not limited to, grassing, mulching, setting, watering and re-seeding on-site surfaces, soil and borrow area surfaces, providing interceptor ditches at ends of berms and at those locations which will ensure that erosion during construction will be either eliminated or maintained within acceptable limits as established by the Owner.

3. Temporary sedimentation controls include, but are not limited to silt dams, traps, barriers, and appurtenances at the foot of sloped surfaces which will ensure that sedimentation pollution will be either eliminated or maintained within acceptable limits as established by the Owner.

4. Temporary dust controls include, but are not limited to mulching, establishing temporary vegetation, water spraying, surface roughening through tilling, barriers, and spray on adhesives which will ensure minimal dust deposition into water bodies and reduce airborne dust that may cause low visibility or respiratory hazards.

5. Contractor is responsible for designing, providing, maintaining and removing effective temporary erosion, sediment and dust control measures during construction or until final controls become effective.

B. Related Work Described Elsewhere:

1. Section 31 23 00 - Excavation and Fill

2. Section 32 92 00 - Turf and Grasses

C. Reference Standards:

1. Florida Department of Agriculture and Consumer Services (FDACS).

2. Florida Department of Environmental Protection (FDEP).

a. FDEP (SESCIM) -- FDEP Florida Stormwater, Erosion and Sedimentation Control Inspector’s Manual.

3. Florida Department of Transportation (FDOT):

a. FDOT Design Standards for Design, Construction, Maintenance and Utility Operations on the State Highway System.

i. FDOT Index No. 102 -- Temporary Erosion and Sediment Control.

b. FDOT Standard Specifications for Road and Bridge Construction.

i. FDOT Section 104 -- Prevention, Control, and Abatement of Erosion and Water Pollution.
ii. FDOT Section 570 -- Performance Turf.
iii. FDOT Section 901 -- Coarse Aggregate.
iv. FDOT Section 981 -- Turf Materials.
v. FDOT Section 985 -- Geotextile Fabrics.
vi. FDOT Section 987 -- Prepared Soil Layer Materials.

4. U.S. Environmental Protection Agency (EPA):

a. EPA (NPDES) -- National Pollutant Discharge Elimination System.

PART 2 - PRODUCTS

2.01 EROSION CONTROL

A. Sodding, mulching, grassing and seeding are specified in Section 32 92 00.

B. Backfill is specified in Section 31 23 00.

C. Netting shall be fabricated of material acceptable to the Owner.

2.02 SEDIMENTATION CONTROL

A. Netting shall be fabricated of material acceptable to the Owner.

B. Filter stone shall be crushed stone which conforms to Florida Department of Transportation (FDOT) specifications.

C. Concrete block shall be hollow, non-load bearing type.

D. Concrete shall be exterior grade not less than one-inch thick.

E. Sediment Fence.

2.03 DUST CONTROL

A. Sodding, mulching, grassing, seeding and tilling are specified in Section 32 92 00.

2.04 BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROL

NAME	APPLICATION	MAX DRAINAGE AREA	USEFUL LIFE	COMMENT
Block & Gravel	Inlet protection	<1 acre	3-6 Months	Routine Maintenance Required
Brush Barrier	Perimeter Control	Unspecified	3-6 Months	Routine Maintenance Required
Check Dam / Hay Bale	Control Water Velocity	10 Acres	< 3 Months	Replace as Needed
Check Dam / Rock (Gravel)	Control Water Velocity	10 Acres	18 Months	Max Height 2 feet
Check Dam / Silt Fence	Control Water Velocity	10 Acres	6 Months	Replace as Needed
Construction Road Stabilization	Road Stabilization	Unspecified	Project Life	Routine Maintenance Required
Curb and Gutter Sediment Barrier	Inlet Protection	< 1 Acre	> 6 Months	Routine Maintenance Required
Drain field Pipe Inlet Protection	Inlet Protection	< 1 Acre	> 6 Months	Routine Maintenance Required
Floating Turbidity Barrier	Silt/Sediment Containment	Unspecified	> 18 Months	Use in Low Flow Water Body
GeoHay Curb Inlet Protection	Inlet Protection	< 1 Acre	> 6 Months	Routine Maintenance Required
Gravel and Wire Mesh	Inlet Protection	<1 Acre	3-6 Months	Routine Maintenance Required
Silt Fence	Perimeter Control	< ¼ Acre per 100 ft of length	3 Months	Trench In & Compact
Silt Fence (Filter Fabric)	Inlet Protection	< 1 Acre	3 Months	Routine Maintenance Required
Sod	Inlet Protection	< 1 Acre	> 6 Months	Routine Maintenance Required
Temporary Diversion Dike	Slope Protection	5 Acres	> 18 Months	Compact / Stabilize Slopes
Temporary Fill Diversion	Slope Protection	5 Acres	1 Day – 1 Week	Rebuild as Needed

Temporary Gravel Construction Entrance	Entrance	Unspecified	Project Life	Routine Maintenance Required
Temporary Sediment Basin	Sediment Removal	> 5 Acres	18 Months	Engineer Must Design
Temporary Sediment Trap	Sediment Removal	5 Acres	18 Months	Stabilize Interior/Exterior Slopes
Temporary Slope Drain	Slope Protection	5 Acres	3-6 Months	Stabilize Outfall
Temporary Right-Of-Way Diversion	Shorten Flow Length	< 5 Acres	3-6 Months	Inspect Weekly or After Rain

PART 3 – EXECUTION

3.01 PREPARATION AND INSTALLATION

A. No clearing or rough cutting shall be permitted until temporary erosion, sediment and dust control systems are in place, unless permitted directly by the City Engineer.

B. Installation of erosion and sediment control materials shall be per manufacturer recommendations and in accordance with FDOT standards.

C. Any damage caused by construction traffic to temporary erosion, sediment and dust controls systems shall be repaired immediately by the Contractor.

D. The Contractor shall be responsible for collecting, storing, hauling and disposing of soil, silt, and waste materials as specified in this or other Specifications and in compliance with relevant federal, state, and local rules and regulations.

E. Contractor shall make a visual inspection of all sedimentation and erosion control devices (including turbidity barriers) on a daily basis and promptly after every rainstorm. If such inspection reveals that additional measures are needed to prevent movement of sediment beyond the barrier limits, the Contractor shall promptly install additional devices as needed. Sediment controls shall be promptly repaired and maintained, as needed. The Contractor shall keep a log of all inspections indicating the following:

1. Date and time of inspection.
2. Inspector.
3. Amount of rainfall.
4. Erosion and sediment control devices inspected.
5. Condition of sediment and erosion control devices.

6. Repairs or maintenance needed.
7. Date repair or maintenance is completed.

3.02 EROSION CONTROL

A. Minimum procedures for grassing are:

1. Scarify slopes to a depth of not less than six inches and remove large clods, rock, stumps, roots larger than 1/2-inch in diameter and debris.

2. Sow seed within twenty-four (24) hours after the ground is scarified with either mechanical seed drills or rotary hand seeders.

3. Apply mulch loosely and to a thickness of between 3/4 inch and 1-1/2 inches.

4. Apply netting over mulched areas on sloped surfaces.

5. Roll and water seeded areas in a manner which will encourage sprouting of seeds and growing of grass. Reseed areas which exhibit unsatisfactory growth. Backfill and seed eroded areas.

3.03 SEDIMENTATION CONTROL

A. Install and maintain silt dams, traps, barriers, and appurtenances as shown on the approved descriptions and working drawings. Hay bales which deteriorate and filter stone which is dislodged shall be replaced.

3.04 DUST CONTROL

A. The dust control product chosen shall be appropriate for to the site conditions (topography and soils).

B. Grade and/or smooth the surfaces to be treated as needed and prescribed by the product guidance before the dust control product is applied.

3.05 PERFORMANCE

A. Should any of the temporary erosion and sediment control measures employed by the Contractor fail to produce results which comply with the requirements of the State of Florida, the Owner or Engineer, the Contractor shall immediately take whatever steps are necessary to correct the deficiency at his own expense.

END OF SECTION

SECTION 01 60 00
PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. Conform to applicable specifications and standards.

2. Comply with size, make, type and quality specified, or as specifically approved in writing by Engineer.

3. Manufactured and fabricated products:

a. Design, fabricate and assemble in accordance with the best engineering and shop practices.

b. Manufacture like parts of duplicate units to standard sizes and gauges, to be interchangeable.

c. Two or more items of the same kind shall be identical, by the same manufacturer.

d. Products shall be suitable for service conditions.

e. Equipment capacities, sizes and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.

4. Do not use material or equipment for any purpose other than that for which it is designed or is specified.

1.02 APPROVAL OF MATERIALS

A. Only new materials and equipment shall be incorporated in the work. All materials and equipment furnished by Contractor shall be subject to the inspection and approval of Engineer. No material shall be delivered to the work without prior approval of Engineer.

B. Within twenty (20) days after the Effective Date of the Agreement, Contractor shall submit to Engineer, data relating to materials and equipment he proposes to furnish for the work. Such data shall be in sufficient detail to enable Engineer to identify the particular product to form an opinion as to its conformity to the specifications.

C. Facilities and labor for handling and inspection of all materials and equipment shall be furnished by Contractor. If Engineer requires, either prior to beginning or during progress of the work, Contractor shall submit samples of materials for such special tests as may be necessary to demonstrate that they conform to the specifications. Such samples shall be furnished, stored, packed and shipped as directed at Contractor's expense. Except as otherwise noted, Contractor shall make arrangements for and pay for the tests.

D. Contractor shall submit data and samples sufficiently early to permit consideration and approval before materials are necessary for incorporation in the work. Any delay of approval resulting from Contractor's failure to submit samples or data promptly shall not be used as a basis of claim against Owner or Engineer.

E. In order to demonstrate the proficiency of workers or to facilitate the choice among several textures, types, finishes and surfaces, Contractor shall provide such samples of workmanship or finish as may be required.

F. The materials and equipment used on the work shall correspond to the approved samples or other data.

1.03 SUBSTITUTIONS AND PRODUCT OPTIONS

A. The substitution requirements of this Section are in addition to the requirements of the General Conditions and Supplementary Conditions.

B. The intent of these Specifications is to provide Owner with a quality facility without discouraging competitive bidding. Substitutions may be submitted and will be evaluated as specified herein.

C. A Request for Substitution of Product may be submitted after the Contractor:

1. Has investigated the proposed product and determined that it is equal to or superior to specified product, furnishes a certification to that effect and waives all rights to additional payment or time that may subsequently become necessary due to the failure of the substituted product to perform adequately.

2. Agrees to provide same warranties or bonds for product substitution as for product specified.

3. Agrees to be responsible for coordinating and paying for any necessary changes to other work required by approved substitutions or product options which he selects and shall pay all such costs including the costs of the services of the design professional to revise the Contract Documents, if such revisions are required.

4. Waives all claims for additional costs due to substitution which may subsequently become apparent.

5. Is offering either a substantial credit to the Owner for acceptance of the substitution or a convincing justification that the product to be provided as the substitution is substantially superior in quality, performance, compatibility with adjacent products, durability, vandal-resistance or in other important ways.

D. Engineer's Action:

1. Engineer will consider written requests for product substitution for a period of forty-five (45) calendar days after the effective date of the Agreement. Engineer will review requests for substitutions and notify Contractor in writing of Owner's decision to accept or reject requested substitutions within ten (10) working days of receiving request. Only the Owner may accept a substitution.

2. Substitution requests made by means of Shop Drawings or product data submittal will not be considered.

3. After the period of forty-five (45) days has elapsed, the only substitution requests which will be considered are those which are made necessary by the removal of the specified products from the market or by other similar, unavoidable circumstances beyond the control of the Contractor.

1.04 MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION

A. When Contract Documents require that installation of work shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions to parties involved in the installation, including electronic copies to Engineer.

1. Maintain one set of complete instructions at the job site during installation and until completion.

B. Handle, install, correct, clean, condition and adjust products in strict accord with such instructions and in conformity with specified requirements.

1. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with Engineer for further instructions.
2. Do not proceed with work without clear instructions.

C. Perform work in accordance with manufacturer's instructions. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by Contract Documents.

1.05 TRANSPORTATION AND HANDLING

A. Arrange deliveries of products in accordance with construction schedules, coordinate to avoid conflict with work and conditions at the site.

1. Deliver products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.

2. Immediately on delivery, inspect shipments to assure compliance with requirements of Contract Documents and approved submittals, and that products are properly protected and undamaged.

B. Provide equipment and personnel to handle products by methods to prevent soiling or damage to products or packaging.

1.06 STORAGE AND PROTECTION

A. The Contractor shall furnish a covered, weather-protected storage structure providing a clean, dry, noncorrosive environment for all mechanical equipment, valves, architectural items, electrical and instrumentation equipment, and special equipment to be incorporated into this project. Storage of equipment shall be in strict accordance with the "instructions for storage" of each equipment supplier and manufacturer including connection of heaters, placing of storage lubricants in equipment, etc. Corroded, damaged or deteriorated equipment and parts shall be replaced before acceptance of the project. Equipment and materials not properly stored will not be included in a payment estimate.

B. Store products in accordance with manufacturer's instructions, with seals and labels intact and legible.

1. Store products subject to damage by the elements in weathertight enclosures such as buildings or trailers which have a concrete or wooden floor, a roof and fully closed walls on all sides.

2. Maintain temperature and humidity within the ranges required by manufacturer's instructions (i.e., electrical and instrumentation equipment).

3. Protect mechanical and electrical equipment from being contaminated by dust, dirt, and moisture.

4. Store fabricated products above the ground, on blocking or skids prevent soiling and staining. Cover products which are subject to deterioration with impervious sheet coverings, provided adequate ventilation to avoid condensation.

5. Provide heated storage space for material which would be damaged by freezing.

6. Store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter.

7. Prior to the installation or equipment, it shall be stored at locations designated and approved by the Engineer.

C. All materials and equipment to be incorporated in the work shall be handled and stored by Contractor before, during and after shipment in a manner to prevent warping, twisting, bending, breaking, chipping, rusting, and any injury, theft, or damage of any kind whatsoever to the material or equipment.

D. Cement, sand and lime shall be stored under a roof and off the ground and shall be kept completely dry at all times. All structural and miscellaneous steel and reinforcing steel shall be stored of off the ground or otherwise to prevent accumulations of dirt or grease, and in a position to prevent accumulations of standing water and to minimize rusting. Beams shall be stored with the webs vertical. Precast concrete beams shall be handled and stored in a manner to prevent accumulations of dirt, standing water, staining, chipping, or cracking. Brick, block and similar masonry products shall be handled and stored in a manner to reduce breakage, chipping, cracking and spalling to a minimum.

E. All materials which, in the opinion of Engineer, have become so damaged as to be unfit for the use intended or specified shall be promptly removed from the site of the work, and Contractor shall receive no compensation for the damaged material or its removal.

F. Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored materials and equipment to assure that products are maintained under specified conditions, and free from damage or deterioration.

G. Protection After Installation: Provide substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations. Remove covering when no longer needed.

H. The Contractor shall be responsible for all material, equipment, and supplies delivered to Owner under this Contract until final inspection of the work and acceptance thereof by Owner. In the event any such material, equipment and supplies are lost, stolen, damaged or destroyed prior to final inspection and acceptance, Contractor shall replace same without additional cost to Owner.

I. Should Contractor fail to take proper action on storage and handling of equipment supplied under the Contract within seven (7) days after written notice to do so has been given, Owner retains the right to correct all deficiencies noted in previously transmitted written notice and deduct the cost associated with these corrections from Contractor's Contract. These costs may be comprised of expenditures for labor, equipment usage, administrative, clerical, engineering and any other costs associated with making the necessary corrections.

1.07 SPECIAL TOOLS

A. Manufacturers of equipment and machinery shall furnish any special tools (including grease guns or other lubricating devices) required for normal adjustment, operations, and maintenance, together with instructions for their use. Contractor shall preserve and deliver to Owner these tools and instructions in good order no later than upon completion of the Contract.

1.08 STORAGE AND HANDLING OF EQUIPMENT ON SITE.

A. Attention shall be given to the storage and handling of equipment on site. As a minimum, the procedure outlined below shall be followed:

1. Equipment shall not be shipped until approved by Engineer. The intent of this requirement is to reduce on-site storage time prior to installation and/or operation. Under no circumstances shall equipment be delivered to the site more than one month prior to installation without written authorization from Engineer. Equipment shipped to the site shall be stored in accordance with Paragraph 1.06, herein. Operation and maintenance data shall be submitted to Engineer for review prior to shipment of equipment.

2. All equipment having moving parts such as gears, electric motors, etc. and/or instruments shall be stored in a temperature and humidity-controlled building approved by Engineer, until such time as the equipment is to be installed.

3. All equipment shall be stored fully lubricated with oil, grease, etc. unless otherwise instructed by the manufacturer.

4. Manufacturer's storage instructions shall be carefully studied by Contractor and reviewed with Engineer by him. These instructions shall be carefully followed and a written record of this kept by the Contractor.

5. Moving parts shall be rotated a minimum of once weekly to ensure proper lubrication and to avoid metal-to-metal "welding". Upon installation of the equipment, Contractor shall start the equipment, at least half load, once weekly for an adequate period of time to ensure that the equipment does not deteriorate from lack of use.

6. Lubricants shall be changed upon completion of installation and as frequently as required thereafter during the period between installation and acceptance. Mechanical equipment to be used in the work, if stored for longer than ninety (90) days, shall have the bearings cleaned, flushed and lubricated prior to testing and startup, at no extra cost to Owner.

7. Prior to acceptance to the equipment, Contractor shall have the manufacturer inspect the equipment and certify that its condition has not been detrimentally affected by the long storage period. Such certifications by the manufacturer shall be deemed to mean that the equipment is judged by the manufacturer to be in a condition equal to that of equipment that has been shipped, installed, tested and accepted in a minimum time period. As such, the manufacturer will guarantee the equipment equally in both instances. If such a certification is not given, the equipment shall be judged to be defective. It shall be removed and replaced at Contractor's expense.

1.09 WARRANTY

A. For all major pieces of equipment, submit a warranty from the equipment manufacturer as specified. The manufacturer's warranty period shall be concurrent with the Contractor's for one (1) year after the time of acceptance.

1.10 SPARE PARTS

A. Spare parts for certain equipment have been specified in the pertinent sections of the Specifications. Contractor shall collect and store all spare parts so required in an area to be designated by Engineer. In addition, Contractor shall furnish Engineer an inventory listing all spare parts, the equipment they are associated with, the name and address of the supplier, and the delivered cost of each item. Spare parts shall be turned over in conjunction with the "Spare Parts List" as shown. Copies of actual invoices for each item shall be furnished with the inventory to substantiate the delivered cost.

1.11 GREASE, OIL AND FUEL

A. All grease, oil and fuel required for testing of equipment shall be furnished with the respective equipment. Owner shall be furnished with a year's supply of required lubricants including grease and oil of the type recommended by manufacturer with each item of equipment supplied.

B. Contractor shall be responsible for changing the oil in all drives and intermediate drives of each mechanical equipment after initial break-in of the equipment, which in no event shall be any longer than three (3) weeks of operation.

END OF SECTION

SECTION 01 71 13
MOBILIZATION

PART 1 - GENERAL

1.01 DEFINITION AND SCOPE

A. Mobilization shall include the obtaining of all permits, insurance, and bonds; moving onto the site of all plant and equipment; furnishing and erecting plants, temporary buildings, and other construction facilities; all as required for the proper performance and completion of the Work. Mobilization shall include, but not be limited to, the following principal items.

1. Move onto the site all Contractors' plant and equipment required for first month operations.

2. Install temporary construction power, wiring, and lighting facilities.

3. Establish fire protection plan and safety program.

4. Secure construction water supply.

5. Provide field office trailers for Contractor and as may be specified for Owner and Engineer.

6. Provide on-site sanitary facilities and potable water facilities as specified.

7. Arrange for and erect Contractor's work and storage yard and employee's parking facilities.

8. Submit all required insurance certificates and bonds.

9. Obtain all required permits.

10. Post all OSHA, EPA, Department of Labor, and all other required notices.

11. Have Contractor's superintendent at the job site full time.

12. Submit a detailed construction CPM schedule acceptable to the Engineer as specified.

13. Submit a schedule of values of the Work.

14. Submit a schedule of submittals.

1.02 DEMOBILIZATION

A. Demobilization is the timely and proper removal of all Contractor-owned material, equipment, or plant, from the job site and the proper restoration or completion of work necessary to bring the site into full compliance with the contract documents.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 71 33
PROTECTION OF ADJACENT CONSTRUCTION

PART 1 - GENERAL

1.01 GENERAL

A. The Contractor shall protect all existing facilities, including all utilities and improvements not designated for removal, and shall restore damaged or temporarily relocated utilities and improvements to a condition equal to or better than prior to such damage or temporary relocation, all in accordance with the Contract Documents.

1.02 EXISTING UTILITIES AND IMPROVEMENTS

A. General: The Contractor shall protect both aboveground and underground utilities and other improvements which may be impaired during construction operations, regardless of whether or not the utilities are indicated on the Drawings. The Contractor shall take all possible precautions for the protection of unforeseen utility lines to provide for uninterrupted service and to provide such special protection as may be necessary.

B. Except where the Drawings indicate utilities have been field located during design or certain utility locations shall be exposed as part of the Work, the Contractor shall be responsible for exploratory excavations as it deems necessary to determine the exact locations and depths of utilities which may interfere with its work. All such exploratory excavations shall be performed as soon as practicable after Notice to Proceed and, in any event, a sufficient time in advance of construction to avoid possible delays to the Contractor's progress. When such exploratory excavations show the utility location as shown on the Drawings to be in error, the Contractor shall so notify the Engineer.

C. The number of exploratory excavations required shall be that number which is sufficient to determine the alignment and grade of the utility.

D. Utilities to be Moved: In case it shall be necessary to move the property of any public utility or franchise holder, such utility company or franchise holder will, upon request of the Contractor, be notified by the Owner to move such property within a specified reasonable time. When utility lines that are to be removed are encountered within the area of operations, the Contractor shall notify the Engineer a sufficient time in advance for the necessary measures to be taken to prevent interruption of service.

E. Utilities to be Removed: Where the proper completion of the Work requires the temporary or permanent removal and/or relocation of an existing utility or other improvement which is indicated, the Contractor shall remove and, without unnecessary delay, temporarily replace

or relocate such utility or improvement in a manner satisfactory to the Engineer and the Owner of the facility. In all cases of such temporary removal or relocation, restoration to the former location shall be accomplished by the Contractor in a manner that will restore or replace the utility or improvement as nearly as possible to its former locations and to as good or better condition than found prior to removal.

F. Owner's Right of Access: The right is reserved to the Owner and to the owners of public utilities and franchises to enter at any time upon any public street, alley, right-of-way, or easement for the purpose of making changes in their property made necessary by the Work of this Contract.

G. Underground Utilities Indicated: Existing utility lines that are indicated or the locations of which are made known to the Contractor prior to excavation and that are to be retained, and all utility lines that are constructed during excavation operations shall be protected from damage during excavation and backfilling and, if damaged, shall be immediately repaired or replaced by the Contractor, unless otherwise repaired by the owner of the damaged utility. If the owner of the damaged facility performs its own repairs, the Contractor shall reimburse said owner for the costs of repair.

H. Underground Utilities Not Indicated: In the event that the Contractor damages existing utility lines that are not indicated or the locations of which are not made known to the Contractor prior to excavation, a verbal report of such damage shall be made immediately to the Engineer and a written report thereof shall be made promptly thereafter. The Engineer will immediately notify the Owner of the damaged utility. If the Engineer is not immediately available, the Contractor shall notify the utility owner of the damage. If directed by the Engineer, repairs shall be made by the Contractor under the provisions for changes and extra work contained in Articles 10, 11, and 12 of the General Conditions.

I. Costs of locating and repairing damage not due to failure of the Contractor to exercise reasonable care, and removing or relocating such utility facilities not indicated in the Contract Documents with reasonable accuracy, and for equipment on the project which was actually working on that portion of the Work which was interrupted or idled by removal or relocation of such utility facilities, and which was necessarily idled during such Work will be paid for as extra Work in accordance with the Contract Documents.

J. Approval of Repairs: All repairs to a damaged utility or improvement are subject to inspection and approval by an authorized representative of the utility or improvement owner before being concealed by backfill or other Work.

K. Maintaining in Service: Unless indicated otherwise, oil and gasoline pipelines, power, and telephone or the communication cable ducts, gas and water mains, irrigation lines, sewer lines, storm drain lines, poles, and overhead power and communication wires and cables encountered along the line of the Work shall remain continuously in service during all the

operations under the Contract, unless other arrangements satisfactory to the Engineer are made with the owner of said pipelines, duct, main, irrigation line, sewer, storm drain, pole, or wire or cable. The Contractor shall be responsible for and shall repair all damage due to its operations, and the provisions of this Section shall not be abated even in the event such damage occurs after backfilling or is not discovered until after completion of the backfilling.

1.03 LAWN AREAS

A. Lawn or landscaped areas damaged during construction shall be repaired to match the pre-construction condition to the satisfaction of the land owner and the Owner.

1.04 NOTIFICATION BY THE CONTRACTOR

A. The Contractor must contact “Sunshine State One Call” at (800) 432-4770 a minimum of 48 business hours prior to excavation. The Contractor shall provide the Sunshine State One Call verification number for the project to the Owner.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 75 16
STARTUP PROCEDURES

PART 1 - GENERAL

1.01 DESCRIPTION

A. The Work may be segmented into several phases of construction in a logical order to meet the project schedule. Portions of the Work may be utilized prior to Substantial Completion of all the Work. Also, certain items of equipment are to be temporarily utilized in a phased segment of the Work and then relocated in a subsequent phase in a permanent installation.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 PRELIMINARY MATTERS

A. Start-up Certification: Prior to start-up, successfully complete all testing required of the individual components of work in the presence of the Engineer or their representative.

B. Demonstrate to the Engineer that all temporary jumpers and/or bypass have been removed and that all components are operating under their own controls as designated.

C. Coordinate start-up activities with equipment suppliers, subcontractors, and the Owner's operating personnel at the site and with the Engineer prior to commencing system start-up. All coordination is the responsibility of the Contractor.

3.02 START-UP

A. Confirm that all equipment is properly installed and that the flow path through the new work is unobstructed.

B. Make adjustments as necessary.

3.03 START-UP DEMONSTRATION AND TESTING

A. After all Work components have been constructed, field tested and started up in accordance with the individual specifications, perform the start-up demonstration and testing in the presence of the Engineer and the Owner. The demonstration shall be held upon completion of all systems at a date to be agreed upon in writing with the Owner.

B. Acceptability of the Work's performance will be based on the Work performing as specified, under these actual and simulated operating conditions as defined in the Contract Documents. The intent of the start-up demonstration and testing is for the Contractor to demonstrate to the Owner and the Engineer the Work will function as a complete and operable system under normal operating conditions and is ready for acceptance.

C. Certificate of Completed Demonstration: Submit five (5) copies of Demonstration Certification memo signed by the Contractor, Subcontractor and Owner and insert one (1) copy in each Operation and Maintenance Manual.

EQUIPMENT TRAINING & STARTUP CHECKLIST

PROJECT:_____
OWNER:_____
Engineer:_____
CONTRACTOR:_____
DATE:_____
STRUCTURE:_____
EQUIPMENT DESCRIPTION:
_____
VENDOR:_____

REPRESENTATIVE:_____ INIT.:_____

# of training days required:_____ # received:

STARTUP/TRAINING DESCRIPTION:
COMMENTS:

ACCEPTABLE:___ PARTIALLY ACCEPTABLE:___ NON-ACCEPTABLE:

ATTENDEES:

NAME	AFFILIATION	DATE
_____	_____	
_____	_____	
_____	_____	
_____	_____	
_____	_____	

END OF SECTION

SECTION 01 77 00
CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work: Comply with requirement stated in Conditions of the Contract and in Specifications for administrative procedures in closing out the Work.

B. Related Requirements Described Elsewhere:

1. Startup Procedures: Section 01 75 16
2. Operation and Maintenance Data: Section 01 78 23
3. Bonds: Section 01 78 33
4. Warranties: Section 01 78 36
5. Project Record Documents: Section 01 78 39

1.02 SUBSTANTIAL COMPLETION

A. The Work will not be substantially complete, and Contractor may not request substantial completion inspection unless the following submittals and work is completed:

1. All Operation and Maintenance manuals have been submitted and approved to the requirements of Section 01 78 23.

2. All equipment has been checked-out by the equipment manufacturer and Certificates of Manufacturer's Check-Out has been submitted as required by Section 01 75 16.

3. All start-up and demonstration testing completed, and Certificates of Completed Demonstration submitted to the requirements of Section 01 75 16.

4. Project Record Documents are complete and have been submitted and reviewed to the requirements of Section 01 78 39.

5. All training of Owner's personnel completed.

6. All areas to be used and occupied are safe, operable in automatic and complete.

7. All building occupancy certificates have been issued by the appropriate building permitting agency.

8. All painting, finishes, fencing, cleanup, final grading, grassing, planting, sidewalk construction, and paving shall have been completed and ready for inspection.

9. All deficiencies noted on inspection reports or nonconformances are corrected or the correction plan approved.

B. When the conditions of paragraph 1.02 A. are met the Contractor shall submit to the Engineer:

1. A written notice that he considers the Work, or portion thereof, is substantially complete, and requests an inspection.

2. A punchlist of items to be corrected. (Uncompleted work which is not related to the safe, effective, efficient use of the Project may be allowed on the punch list with the Engineer's approval.)

C. Within ten (10) working days after receipt of such notice, the Engineer will make an inspection to determine the status of completion.

D. Should the Engineer determine that the Work is not substantially complete:

1. The Engineer will promptly notify the Contractor in writing, giving the reasons, therefore.

2. Contractor shall remedy the deficiencies in the Work and send another written notice of substantial completion to the Engineer.

3. The Engineer will, within ten (10) working days, reinspect the Work. The Contractor will be liable for reinspection fees as described in paragraph 1.04, herein.

E. When the Engineer finds that the Work is substantially complete, he will:

1. Schedule a walk-through of the facility to include the Owner. Engineer shall determine the completeness of the punch list and readiness of the facility for occupancy by the Owner.

2. Prepare and deliver to Owner a tentative Certificate of Substantial Completion with the tentative punch list of items to be completed or corrected before final inspection.

3. After consideration of any objections made by the Owner as provided in Conditions of the Contract, and when the Engineer considers the Work substantially complete, he will execute and deliver to the Owner and the Contractor a definite Certificate of Substantial Completion with a revised tentative list of items to be completed or corrected. Any incomplete work allowed on a punch list must be reinspected upon completion and any deficiencies found will be added to the punch list.

1.03 FINAL INSPECTION

A. Prior to Contractor's request for a final inspection the following submittals and work must be complete:

1. Project Record Documents must be approved.

2. All spare parts and maintenance materials must be suitably delivered to the Owner per the requirements of the Technical Sections of the Specifications.

3. Contractor to submit evidence of compliance with requirements of governing authorities.

B. After satisfying the requirements of paragraph 1.03 A. and when Contractor considers the Work complete, he shall submit written certification that:

1. Contract Document requirements have been met.

2. Work has been inspected for compliance with Contract Documents.

3. Work has been completed in accordance with Contract Documents.

4. Equipment and systems have been tested in the presence of the Owner's representative and are operational.

5. All punch list items have been corrected or completed and the Work is ready for final inspection.

C. The Engineer will, within ten (10) working days, make an inspection to verify the status of completion after receipt of such certification.

D. Should the Engineer consider that the Work is incomplete or defective:

1. The Engineer will promptly notify the Contractor in writing, listing the incomplete or defective work.

2. Contractor shall take immediate steps to remedy the stated deficiencies and send another written certification to the Engineer that the Work is complete.

3. The Engineer will, within ten (10) working days, reinspect the Work and the Contractor shall be liable for reinspection fees as described in paragraph 1.04, herein.

E. When the Engineer finds that the Work is acceptable under the Contract Documents, the Contractor may make closeout submittals.

1.04 REINSPECTION FEES

A. Should the Engineer perform reinspection's due to failure of the Work to comply with the claims of status of completion made by the Contractor:

1. Contractor will compensate the Owner for such additional services.

2. Owner will deduct the amount of such compensation from the final payment to the Contractor.

1.05 CONTRACTOR'S CLOSEOUT SUBMITTALS

A. Warranties and Bonds: To requirements of Sections 01 78 36 and 01 78 33.

B. Evidence of Payment and Release of Liens: To requirements of General and Supplementary Conditions.

C. Certificate of Insurance for Products and Completed Operations.

1.06 FINAL ADJUSTMENT OF ACCOUNTS

A. Submit a final statement of accounting to the Engineer.

B. Statement shall reflect all adjustments to the Contract Sum:

1. The original Contract Sum.

2. Additions and deductions resulting from:

a. Previous change orders or written amendment.
b. Allowances.
c. Unit prices.
d. Deductions for uncorrected work.

e. Penalties and bonuses.
f. Deductions for liquidated damages.
g. Deductions for reinspection payments
h. Other adjustments.

3. Total Contract Sum, as adjusted.

4. Previous payments.

5. Sum remaining due.

C. Engineer will prepare a final Change Order, reflecting approved adjustments to the Contract Sum which were not previously made by Change Orders.

1.07 FINAL APPLICATION FOR PAYMENT

A. Contractor shall submit the final Application for Payment in accordance with procedures and requirements stated in the Conditions of the Contract.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 78 23
OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. Compile product data and related information appropriate for Owner's maintenance and operation of products furnished under Contract.

2. Prepare operating and maintenance data as specified in this Section and as referenced in other pertinent sections of the Specifications.

3. Instruct Owner's personnel in maintenance of products and in operation of equipment and systems.

1.02 QUALITY ASSURANCE

A. Preparation of data shall be done by personnel:

1. Trained and experienced in maintenance and operation of described products.
2. Familiar with requirements of this Section.
3. Skilled as a technical writer to the extent required to communicate essential data.
4. Skilled as draftsman competent to prepare required drawings.

1.03 FORM OF SUBMITTALS

A. Prepare data in form of an instructional manual for use by Owner's personnel.

B. Hard Copy Format:

1. Size: 8½” x 11 inches
2. Paper: 20 pound minimum, white, for typed pages.
3. Text: Manufacturer's printed data, or neatly typewritten
4. Drawings:

a. Provide reinforced punched binder tab, bind in with text.

b. Reduce larger drawings and fold to size of text pages but not larger than 14 inches x 17 inches.

5. Provide flyleaf for each separate product, or each piece of operating equipment.

   a. Provide typed description of products and major component parts of equipment.

   b. Provide indexed tabs.

6. Cover: Identify each volume with typed or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS". List:

   a. Title of project.

   b. Identity of separate structure as applicable.

   c. Identity of general subject matter covered in the manual.

7. Binders:

   a. Commercial quality three-post binders with durable and cleanable plastic covers.

   b. Maximum post width: 2 inches.

   c. When multiple binders are used, correlate the data into related consistent groupings.

C. Electronic Format Copy

1. Provide electronic copy of operation and maintenance data on CD/DVD or portable storage device. File(s) should be organized/named to correspond with hard copy.

1.04 CONTENT OF MANUAL

A. Neatly typewritten table of contents for each volume, arranged in systematic order.

1. Contractor, name of responsible principal, address, and telephone number.

2. A list of each product required to be included, indexed to content of the volume.

3. List, with each product, name, address, and telephone number of:

   a. Subcontractor or installer.

   b. A list of each product required to be included, indexed to content of the volume.

c. Identify area of responsibility of each.

d. Local source of supply for parts and replacement.

4. Identify each product by product name and other identifying symbols as set forth in Contract Documents.

B. Product Data:

1. Include only those sheets which are pertinent to the specified product.

2. Annotate each sheet to:

a. Clearly identify specific product or part installed.

b. Clearly identify data applicable to installation.

c. Delete references to inapplicable information.

C. Drawings:

1. Supplement product data with drawings as necessary to clearly illustrate:

a. Relations of component parts of equipment and systems.

2. Coordinate drawings with information in Project Record Documents to assure correct illustration of completed installation.

3. Do not use Project Record Documents as maintenance drawings.

D. Written text, as required to supplement product data for the particular installation:

1. Organize in consistent format under separate headings for different procedures.

2. Provide logical sequence of instructions of each procedure.

E. Copy of each warranty, bond and service contract issued.

1. Provide information sheet for Owner's personnel, give:

a. Proper procedures in event of failure.
b. Instances which might affect validity of warranties or bonds.

1.05 MANUAL FOR MATERIALS AND FINISHES

A. Submit four copies of the complete manual in final form.

B. Content: for architectural products, applied materials and finishes:

1. Manufacturer's data, giving full information on products

a. Catalog number, size, and composition.

b. Color and texture designations.

c. Information required for reordering special manufactured products.

2. Instructions for care and maintenance

a. Manufacturer's recommendation for types of cleaning agents and methods.

b. Cautions against cleaning agents and methods which are detrimental to product.

c. Recommend schedule for cleaning and maintenance.

C. Content, for moisture protection and weather-exposed products:

1. Manufacturer's data, giving full information on products.

a. Applicable standards.

b. Chemical composition.

c. Details of installation.

2. Instructions for inspection, maintenance, and repair.

D. Additional requirements for maintenance data: Applicable sections of the Specifications.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 78 33
BONDS

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. Compile specified bonds as specified in these Specifications.
2. Co-execute submittals when so specified.
3. Review submittals to verify compliance with Contract Documents.
4. Submit to Engineer for review and transmittal to Owner.

B. Related Work Described Elsewhere:

1. Instructions to Bidders: Bid Bonds
2. Performance Bond and Payment Bond
3. Labor and Material Payment Bond: Section 00645

1.02 SUBMITTAL REQUIREMENTS

A. Assembly bonds and service and maintenance contracts, executed by each of the respective manufacturers, suppliers, and subcontractors.

B. Number of original signed copies required: Two (2) each.

C. Table of Contents: Neatly typed, in orderly sequence. Provide complete information for each item.

1. Product of work item.
2. Firm, with name of principal, address and telephone number.
3. Scope.
4. Date of beginning of bond or service and maintenance contract.
5. Duration of bond or service maintenance contract.
6. Provide information for Owner's personnel:

a. Proper procedure in case of failure.
b. Instances which might affect the validity of warranty or bond.

7. Contractor, name of responsible principal, address and telephone numbers.

D. Bonds are required to be recorded with the County Clerk of Court.

1.03 FORM OF SUBMITTALS

A. Prepare in duplicate packets.

B. Format:

1. Size 8 ½" x 11 inches, punch sheets for standard three-post binder.
   a. Fold larger sheets to fit into binders.

2. Cover: Identify each packet with typed or printed title "BONDS". List:
   a. Title of Project.
   b. Name of Contractor.

C. Binders: Commercial quality, three-post binder, with durable and cleanable plastic covers and maximum post width of two inches.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 78 36
WARRANTIES

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. Compile specified warranties as specified in these Specifications.

2. Co-execute submittals when so specified.

3. Review submittals to verify compliance with Contract Documents.

4. Submit to Engineer for review and transmittal to Owner.

5. Resubmittals to Engineer for review and transmittal to Owner when required.

1.02 SUBMITTAL REQUIREMENTS

A. Assembly warranties and service and maintenance contracts, executed and certified by each of the respective manufacturers, suppliers, and subcontractors. Organize by specification section number and the name of the product, work item, or subcontractor.

B. Table of Contents: Neatly typed, in orderly sequence. Provide complete information for each item.

1. Product of work item.
2. Supplier and manufacturer firm, point of contact, address and telephone number.
3. Scope.
4. Date of beginning of warranty or service and maintenance contract.
5. Duration of warranty or service maintenance contract.
6. Provide information for Owner's personnel:

   a. Proper procedure in case of failure.
   b. Instances which might affect the validity of warranty.

7. Contractor, name of responsible principal, email address, mailing address and telephone numbers.

1.03 FORM OF SUBMITTALS

A. Electronic copy in PDF format.

B. Final warranty shall be provided as required by Section 01 78 23 Operations and Maintenance Data.

1.04 WARRANTY SUBMITTALS REQUIREMENTS

A. For all major pieces of equipment, submit a warranty issued from the equipment manufacturer. Manufacturer's warranty period shall be concurrent with Contractor's for one (1) year, unless otherwise specified, commencing at the time of final acceptance by Owner.

B. Contractor shall be responsible for obtaining certificates for equipment warranty for all major equipment which has at least a 1 hp motor or which lists for more than $2,500. Engineer reserves the right to request warranties for equipment not classified as major. Contractor shall still warrant equipment not considered to be "major" in the Contractor's warranty period even though certificates of warranty may not be required.

C. In the event that the equipment manufacturer or supplier is unwilling to provide a one-year warranty commencing at the time of Owner final acceptance, the Contractor shall obtain from the manufacturer a two (2) year warranty commencing at the time of equipment delivery to the job site. This two (2) year warranty from the manufacturer shall not relieve the Contractor of the one-year warranty starting at the time of Owner acceptance of the equipment.

D. Owner shall incur no labor or equipment cost during the guarantee period.

E. Guarantee shall cover all necessary labor, equipment and replacement parts resulting from faulty or inadequate design, improper assembly or erection, defective workmanship and materials, leakage, breakage or other failure of all equipment and components furnished by manufacturer.

F. Warranties specified for materials and equipment shall be in addition to, and run concurrent with, both Contractor's general warranty and the correction period requirements.

G. Disclaimers and limitations in specific materials and equipment warranties do not limit Contractor's general warranty, nor does such affect or limit Contractor's performance obligations under the correction period.

1.05 WARRANTY WORK

A. Reinstatement of warranty

1. When work covered by a warranty has failed and has been corrected by replacement or rebuilding, the Contractor shall reinstate the warranty by written endorsement.

a. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.

1.06 IMPLIED WARRANTIES

A. Warranty of title and intellectual rights:

1. Except as may be otherwise indicated in the Contract Documents, implied warranty of title required by Laws and Regulations is applicable to the Work and to materials and equipment incorporated therein.

2. Provisions on intellectual rights, including patent fees and royalties, are in the General Conditions, as may be modified by the Supplementary Conditions.

B. Implied warranties: Duration in accordance with Laws and Regulations.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 78 39
PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

A. Maintain at the site for the Owner one record copy of:

1. Drawings.
2. Specifications.
3. Addenda.
4. Change Orders and other modifications of the contract.
5. Engineer's Field Orders or written instructions.
6. Approved Shop Drawings.
7. Field Test records.
8. Construction photographs, preconstruction videos, and pipeline videos.
9. Preliminary as-built drawings.

B. Related Work Specified Elsewhere

1. Section 00 80 00: Supplementary Conditions

1.02 MAINTENANCE OF DOCUMENTS AND SAMPLES

A. Store documents and samples in Contractor's field office apart from documents used for construction.

1. Provide files and racks for storage of documents.
2. Provide locked cabinet or secure storage space for storage of samples.

B. File documents and samples in accordance with CSI format with section numbers as provided herein.

C. Maintain documents in a clean, dry, legible, condition and in good order. Do not use record documents for construction purposes.

D. Make documents and samples available at all times for inspection by the Engineer.

E. As a prerequisite for monthly progress payments, the Contractor shall provide the currently updated "Record Documents" for review by the Engineer and Owner.

1.03 MARKING DEVICES

A. Provide felt tip marking pens for recording information in the color code designated by the Engineer.

1.04 RECORDING

A. Label each document. "PROJECT RECORD" in neat large printed letters.

B. Record information concurrently with construction progress. Do not conceal any work until required information is recorded.

C. Drawings: Legibly mark to record actual construction:

1. Depths of various elements of foundation in relation to finish first floor datum.

2. All underground piping with elevations and dimensions. Change to piping location. Horizontal and vertical locations of underground utilities and appurtenances referenced to permanent surface improvements. Actual installed pipe materials, class, etc.

3. Location of internal utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.

4. Field changes of dimensional and detail.

5. Changes made by Field Order or by Change Order.

6. Details not on original contract drawings.

7. Equipment and piping relocations.

8. Major architectural and structural changes including relocation of doors, windows, etc.

9. Architectural schedule changes according to Contractor's records or shop drawings.

a. Contractor shall provide copies of all such recordings to the Contractor’s surveyor for incorporation into the preliminary and final as-builts drawings.

D. Specifications and Addenda: Legibly mark each section to record:

1. Manufacturer, trade name, catalog number and supplier of each product and item of equipment actually installed.

2. Changes made by Field Order or by Change Order.

E. Shop Drawings (after final review and approval): Provide four (4) sets of record drawings for each process equipment, piping, electrical system and instrumentation system.

1.05 SUBMITTAL

A. Accompany each submittal with transmittal letter in duplicate, containing:

1. Date.
2. Project title and number.
3. Contractor's name and address.
4. Title and number of each Record Document.
5. Signature of Contractor of his authorized representative.

B. Preliminary As-built Drawings: The Contractor shall submit to the Engineer two (2) paper copies of preliminary as-built drawings prepared and signed/sealed by the Contractor's surveyor with each monthly progress payment request. Preliminary as-built drawings shall conform to the requirements of final as-built drawings and shall represent the completed work to date. Preliminary as-built drawings shall include all work which the Contractor is requesting to be paid for.

C. Final As-built Drawings: Upon project closeout and as a prerequisite to the final pay request, the Contractor shall submit to the Engineer final as-built drawings Administrative Code, pursuant to Section 472.027 of the Florida Statutes. The Engineer shall supply the Contractor copies of AutoCAD files for the Contractor's use in the as-built drawing preparation. Final as-built drawings shall include all work which the Contractor is requesting to be paid for. The final as-built drawing submittal shall include:

1. Two (2) sets of paper plans signed and sealed by a professional land surveyor licensed in the State of Florida and CD(s) or other media containing AutoCAD, version 2015 or higher, drawing files.

2. AutoCAD drawing files shall include as-built information on layers separate from the original drawing layers and shall be named descriptively to represent the as-built features. (i.e. - Layer "wat ab" and "wat ab txt" for water as-built line work and text, respectively.) Drawing entities are to be shown on the correct layer. All as-

built entities shall have color and line type set “by-layer”. Text sizes shall be relative to the plotted scale. Additional details or exploded views shall be include to accurately and fully represent the as-built conditions.

3. Certification by surveyor that the as-built information shown is accurate and that all improvements shown were constructed within or on public rights-of-way, easements or property specifically owned by the Owner. Certification shall be to the Owner, Engineer and St. Johns River Water Management (if applicable.)

4. No line work and text shall be erased from the original design (construction) drawings during the as-built drawing preparation. Original line work or text shall be circled if accurate or stricken (not erased) if not with the accurate information noted/shown. New line work and text shall be provided to accurately show the as-built information for the constructed improvements. Revisions to design dimensions alone will not be permitted.

5. Pressure Pipeline and Utility Conduit Improvements: For utility improvement projects, horizontal locations of the constructed pipelines with respect to the right-of-way lines or other readily visible, permanent features at 100-foot minimum intervals and at critical locations such as road intersections shall be shown. For treatment plant and pump station improvements, horizontal locations shall be provided at 20-foot intervals. Vertical locations of the constructed pipelines by elevation of centerline of pipe for above ground/exposed pipe or with respect to finished grade over buried pipe shall be shown at 100 feet minimum intervals. (i.e. final cover) For underground piping, all valves, blow-offs, stub-outs, pigging stations, fire hydrants, backflow preventers and services shall be located horizontally in relation to readily visible, permanent features with three-way horizontal dimensions less than 100 feet, each. Three-way dimensions to all buried fittings on treatment plant and pump station improvement projects shall be provided. If adequate features are not available, a station and offset dimensioning system can be used if prior approval is obtained from the Engineer. For above ground/exposed pipe, as-built dimensions between fittings or flanges shall be provided. Separations between “sanitary hazards” to potable water and reclaimed water mains per FDEP shall be shown.

6. Gravity Pipeline Improvements: Show elevations for all inverts, manhole tops, inlet throats/weirs, grate tops, etc. Show size and type of each structure. As-built length, size and type of pipes between the structures shall be shown. All service laterals and cleanouts shall be located horizontally to readily visible, permanent features with three-way horizontal dimensions less than 100 feet, each. If adequate features are not available, a station and offset dimensioning system can be used if prior approval is obtained from the Engineer. A labeling and dimension table scheme is recommended for the three way or station/offset dimensioning.

(i.e. - constructed feature labeled as “A”, permanent feature labeled as “B”, “A”-“B” dimension shown in table for distance measured between the two. Use continuous labeling and complete single table per plan sheet.) Separations between gravity “sanitary hazards” to potable water and reclaimed water mains per FDEP shall be shown.

7. Roadway Improvements: Elevation, size and location of swales, ditches, gutter flowlines, edge of pavement, and road crown on both sides of the road if applicable shall be provided at 100-foot minimum intervals and at critical areas such as intersections and inlets/flumes. As-built points of curvature, tangent and vertical intersection, along with radii of road alignment, intersecting streets and driveways and other alignment information shall be provided.

8. Stormwater Improvements: The limits, slopes and bottom depths of stormwater ponds, swales and other retention areas shall be provided. All stormwater piping information shall conform to the Gravity Pipeline Improvement requirements. Size, type, material, and elevations of all stormwater structures, including appurtenances such as weirs, orifices, skimmer plates, etc. shall be shown. As-built information shall conform to St. Johns River Water Management District requirements.

9. Treatment Facility Improvements: Location, size, number, and type of treatment equipment and structures shall be shown. Applicable requirements of as-built information listed herein for similar improvements shall be required.

10. Building Improvements: Finished floor elevations, ceiling heights, building locations, wall opening dimensions, equipment (electrical, mechanical, plumbing) locations, etc. shall be provided. Change of material shall be specifically noted as such.

11. Landscaping Improvements: Number, type, size, and general location of installed plant material shall be provided. Change of material shall be specifically noted as such. Location of irrigation meters, services, manual valves, automatic valves, controllers, rain shut off switches, etc. shall be shown. Changes to the designed irrigation system shall be shown.

12. Other Improvements: Changes from the original design of other improvements such as electrical, mechanical and structural improvements shall be noted as such on the as-built drawings with the size, number, type and location of the constructed/installed improvements noted.

13. Contractor may be required to reimburse the Owner for services rendered by the Engineer for review of multiple resubmittals.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 03 30 00

CAST IN PLACE CONCRETE

PART 1. GENERAL

1.01 WORK INCLUDED

A. The work included under this section consists of furnishing all materials, forms, transportation, and equipment, and performing all necessary labor to do all the plain and reinforced concrete work shown on the Drawings, or incidental to the proper execution of the work, or as herein specified.

B. Composition: Concrete shall be composed of cement, fine aggregate, coarse aggregate, and water so proportioned and mixed as to produce a plastic workable mixture in accordance with all requirements under this section suitable to the specific conditions of placement.

1.02 SUBMITTALS

A. All materials specified shall be certified by the producer or manufacturer that the furnished material meets the specific requirements of the specifications. Concrete mix designs shall be submitted for approval prior to placement.

1.03 CODES AND STANDARDS

A. ACI 301 "Specifications for Structural Concrete for Buildings", ACI 318” Building Code Requirements for Structural Concrete”, ACI 347 "Recommended Practice for Concrete Formwork"; ACI 304 "Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete"; comply with applicable provisions except as otherwise indicated.

1.04 TESTING

A. Air content shall be in accordance with American Society for Testing Materials Standard Methods C 173, one for each set of compressive strength specimens.

B. Sampling of freshly mixed concrete shall be in accordance with ASTM C172.

C. Slump: ASTM C-143

D. Test results will be reported in writing to Engineer, Contractor, Owner and Concrete producer on same day tests are made.

E. Laboratory Reports: Submit two (2) copies of laboratory test or evaluation reports for concrete materials and mix designs.

PART 2. PRODUCTS

2.01 PORTLAND CEMENT

A. Shall comply with the standard specifications for Portland Cement, A.S.T.M. designation C-150, Type II, or Type III (high-early), where indicated on drawings.

2.02 CONCRETE AGGREGATE

A. Shall conform to standard specifications for concrete aggregate, A.S.T.M. Designation C-33 or to ASTM C-330. Maximum size of aggregate shall not exceed one-fifth of the narrowest dimension between reinforcing bars.

B. Fine Aggregate - Fine aggregate shall be clean, hard, strong, durable, uncoated particles of natural sand known as Lake Wales, Interlachen, or approved equal. The source, composition, quality, and gradation of the fine aggregate shall be subject aid the approval of the Engineer. Samples of the sand shall be furnished, together with certified copies of the gradation and analysis from the recognized testing laboratory.

1. The weight of extraneous or deleterious substances shall not exceed the following percentages:

Loss by Decantation	3%
Shale	1%
Clay Lumps	1%
Coal and Lignite	1%

2. The fine aggregate shall be reasonable well graded from coarse to fine and when tested by means of laboratory sieves shall meet the following requirements in percent of total weight:

Total Retained On	Percent Retained
No. 4 Sieve	0 – 5
No. 10 Sieve	3 – 30
No. 30 Sieve	30 – 70
No. 50 Sieve	65 – 95
No. 100 Sieve	95 – 100

C. Deficiencies in the percentages of the fine aggregates passing the No. 50 and No. 100 Sieves may be remedied by the addition of pozzolanic or cementitious materials excepting Portland cement. Such materials must meet the approval of the Engineer.

D. Coarse Aggregate

1. Coarse aggregate shall consist of hard, tough, durable components free from adherent coatings and vegetable matter, and shall not contain soft, friable, thin or elongated particles in quantities considered deleterious by the Engineer. Coarse aggregate shall be properly graded from fine to coarse to produce concrete of desired strength, density, and workability. The source, composition, quality and gradation of the coarse aggregate shall be subject to the approval of the Engineers. Samples of the coarse aggregate shall be furnished together with certified copies of the gradation and analysis from a recognized testing laboratory.

2. All coarse aggregate shall be washed and shall be free from disintegrated pieces, salt, alkali, vegetable matter and adherent coatings. The total percentage of all deleterious substances shall not exceed five percent (5%) by weight. The substances designated shall not be present in excess of the following amounts.

Loss by Decantation	1%
Clay Lumps or Other Soluble Materials	3%
Soft Fragments	5%

3. Where the cover over reinforcing is 2 inches or more, the maximum size of aggregate shall be 12 inches. Where the cover over reinforcing is less than 2 inches, the maximum size of aggregate shall be 3/4 inch. The maximum size of aggregate shall not exceed one-fifth of the narrowest dimension between forms nor three-fourths of the minimum clear spacing between reinforcing bars. The grading of the coarse aggregate in the concrete shall be within the following limits.

Percent Passing:

Maximum Size Square Mesh Screen	97 – 100%
2 Maximum Size Square Mesh Screen	40 – 70%
No. 4 Sieve	0 – 6%

2.03 WATER

A. Water shall be clean and free from oil, acids, alkalis, organic materials or other injurious substances.

2.04 REINFORCEMENT

A. Reinforcing Bars: ASTM A615, Grade 60, deformed bars of USA manufacture.

B. Welded Wire Fabric: ASTM A185, gauges, spacing and dimensions as indicated.

C. Metal Bar Supports: CRSI MSP-1, Chapter 3, Class 2, Type B, Stainless Steel Protected Bar Supports, or otherwise approved by the Engineer. Use concrete supports for reinforcement in concrete placed on grade.

D. Tie Wire: 16 gauge minimum, black, soft annealed.

E. Coupler Splice Devices: Cadweld tensions couplers, capable of developing the ultimate strength of the bar as manufactured by Erico Products, Incorporated, Solon, Ohio, or equal.

F. Epoxy coated or FRP rebar shall be used for all marine applications.

2.05 FORM WORK

A. Lumber: Douglas Fir or Larch, No. 2 grade, seasoned and surfaced on four sides.

B. Plywood: Plyform, Class 1, BB-Exterior type, mill oiled, and edge sealed, with thickness not less than 3/4 inch.

C. Medium Density Overlay (MDO) Plywood Forms: PS-1, B-B High Density Concrete Form Overlay, Class I, unoiled.

1. Butt form panels, make contact surface fully flush and seal butting holes with sponge form tape. Chamfer edges of beams and ceilings.

2. Where MDO plywood is used to form beams, do not use MDO plywood that has been patched or damaged.

D. Drip Forms: Varnished ponderosa pine or equally rigid non-staining plastic, 2-inch-wide on each leg.

E. Steel Forms. Uncoated steel, 3/16-inch minimum thickness, fabricated to close tolerances, protected only by the specified release agent, braced so as not to bend, dent, or dimple under wet concrete load, vibrator impact, and tool impact. Maintain steel form in rust-free condition by use of steel wood and light grinding, followed by coats of specified release agent. Use forms that can be adjusted into true alignment without stops or ridges.

F. Glass Fiber Reinforced Plastic (FRP) Forms: Smooth coated forms, braced so as not to bend, dent or dimple under wet concrete loads, vibrator impact and tool impact, and at least 0.11 inch thick. Design forms for external bracing at piers and columns, without use of form ties.

G. Plugged Cone Form Ties: Rod type, with ends or end fasteners which can be removed without spalling the concrete and which leave a hole equal in depth to the required reinforcement clearance. Form ties shall be of a design in which the hole left by the removed end or end fastener is easily filled to match the surface of the hardened concrete. Provide removable cones 13 inches in diameter by 12 inches deep. Provide preformed mortar plugs to match the color of the concrete, recessed 3 inches, adhered with an approved two-part epoxy.

H. Weep Hole Forms: PVC polyethylene, or ABS pipe, matching color of the concrete, 4 inch inside diameter, with outlet projecting 12 inches form wall and cutoff in a plane parallel to it.

I. Circular and Elliptical Column Forms: Fabricate of two (2) pieces, clamped watertight using gaskets and without horizontal joints. Install horizontal construction joints only where indicated or as directed by the Engineer.

J. Beam Forms: Provide in one length without form joints and suitable for cambering up to 1/160 of span without distortion of profile or opening of seams.

K. Forms of Hammerhead Pier Caps: Provide in one length with adjustable soffits, bulkheads, and screens as necessary to accommodate different hammerhead beam configurations. Provide no construction joints in hammerhead pier caps. Where three or fewer identical hammerhead pier caps occur within a line section, steel braced HDO plywood forms may be substituted for steel forms if:

1. Working drawings of formwork are submitted.

2. Internal form ties are regularly spaced no less than 48 inches each way and are made watertight.

3. Form ties have removable cones, which are filled to match concrete.

4. Joints in panels are fully watertight.

5. The resulting surface matches the appearance of steel formed hammerhead caps, with no visible discoloration due to form leakage.

L. Styrofoam Board: Expanded polystyrene extruded into board form, closed cell, moisture resistant, capable of maintaining indicated clear space between concrete structures.

M. Control Joint Filler: Use epoxy joint filler equal to BurkEpoxy Joint Filler to fill voids left by saw cuts and to resist against spalling caused by vehicle traffic in concrete slabs.

N. Inserts: Galvanized cast steel or galvanized welded steel, complete with anchors to concrete and fittings such as bolts, wedges, and straps. Provide hanger inserts spaced to match grid of suspended ceilings.

O. Shoring: As designed and executed by Contractor to support all loads.

P. Chamfer Strips: Polyvinyl strips designed to be nailed in the forms to provide a 3/4-inch chamfer at exposed edges of concrete members.

Q. Form Release Agent: A blend of natural and synthetic chemicals that employs a chemical reaction to provide quick, easy and clean release of concrete from forms, and equal to

Eucoslip, by the Euclid Chemical Company, or Release #1, by The Burke Company. Use a non-staining release agent that leaves the concrete with a paintable surface.

2.06 ADMIXTURES

A. Air Entraining Admixture: ASTM C260.

B. Water Reducing and Retarding Admixture:

1. Concrete Without Superplasticizer:

a. Water Reducing Admixtures: ASTM C494, Type A, equal to Eucon WR-75 by the Euclid Company, Pozzolith 200N by Master Builders, Plastocrete 161 by Sika Chemical Corporation, and containing no calcium chloride.

b. Water Reducing and Retarding Admixtures: ASTM C494, Type D, equal to Eucon Retarder-75 by the Euclid Company, Pozzolith 100 XR by Master Builders, Plastiment by Sika Chemical Corporation, and containing no calcium chloride.

c. Accelerating Admixtures: ASTM C494, Type C or E, equal to Accelguard 80 by the Euclid Company, Darex Set Accelerator by W.R. Grace, and containing no calcium chloride.

2. Concrete with Superplasticizer:

a. Water Reducing, High Range Admixtures: ASTM C494, Type F or G, equal to Eucon 37 by the Euclid Company, Rheobild 716 by Master Builders, Daracem 100 by W.R. Grace, Sikament by Sika Chemical Corporation, and consisting of a second generation admixture, free of chlorides and alkalis (except for those attributable to water) composed of a synthesized sulfonated complex polymer, enabling the concrete to maintain its rheoplastic state in excess of two (2) hours if necessary.

b. Manufacturer's Job Site Representation: Provide the services of a competent field service representative from the manufacturer of each of the admixtures selected for use to provide at the job site advice and consultation on the use of the admixture materials, including the effect on the concrete in place, including recommending maximum discharge time for superplasticizer method and procedure to induce superplasticizer into mixer, quantities of admixtures to be used if variations are required because of temperature/humidity, wind or other environmental considerations, and to be available on short call at any time requested by the Owner, Contractor, or concrete producer.

3. Concrete used in Marine Applications:

a. Micro Silica admixtures shall be used for concrete installed in marine and coastal applications. Concrete designs shall meet the appropriate requirements of EN206-1, BS 8500 and BS 5075. Contractor shall provide plant certification for all mix designs used in marine and coastal applications.

2.07 GROUT

A. Nonshrink, Nonmetallic Grout: The Burke Company's Non-Ferrous, Non-Shrink Grout, Sauereisen F-100 Level Fill, Master Builders Masterflow 713, Euclid NS Grout, or equal pre-mixed type.

B. Nonshrink Metallic Grout: The Burke Company's Metallic Spec Grout, Master Builders Embeco 636 Grout pre-mixed type, or equal.

C. Epoxy Grout: Sikadur 42 Grout-Pak, or equal, for grouting sleeves for anchor bolts, etc.

D. Clarifier Basin Grout: Class B concrete of coarse aggregate shall pass the 3/4 inch sieve.

2.08 MEMBRANE CURING COMPOUND

A. Membrane curing compound shall be wax-free, pigmented, 100 percent resin base compound such as A.C. Horn's "Horncure 30 C", Hunt Process Corporation: Southern's "All-Resin", or equal.

2.09 BONDING AGENT

A. Bonding agent shall be Colma Fix, as manufactured by Sika Chemical Corporation, of Passaic, New Jersey or equal. To be considered equal, the material must be a two-component epoxy-polysulphide resin system, and it must have a demonstrated record of strong adhesion to both wet and dry concrete in either the hardened or the plastic state. It must also be of equal strength.

2.10 ACCESSORIES

A. Precast Concrete Block Supports for Reinforcing Bars: Comply with ACI 315. Provide blocks with No. 4 dowels bent 90° to support top bars.

B. Membrane: 6 mil polyethylene film.

C. Water Stops: Polyvinyl chloride meeting all requirements of U.S. Army Corps of Engineer's Specification CRD-C-572 and equal to Burke Water Stops as manufactured by The Burke Company. Provide flat dumbbell type and center bulb type, 9 inches x 3/8 inch at wall thickness of 12 inches or greater, and 6 inches x 3/8 inches at wall thickness less than 12

inches. Provide 6-inch split-ribbed with center bulb type at connections of new concrete structures with existing concrete. Provide water stops as indicated on the Drawings.

D. Preformed Expansion Joint Filler:

1. Bituminous type conforming to the requirements of ASTM D994.

2. Nonextruding type, self-expanding cork, ¾-inch thick or as otherwise shown on the Drawings, conforming to the requirements of ASTM D1752, Type III, and compatible with the specified joint sealant compound.

E. Joint Sealant: A multipart gray polyurethane sealant, meeting U.S. Federal Specification TT-S-00227E (3) Type 1, Class A self-leveling for horizontal joints, and Type II, Class A, non-sag for vertical joints, and recommended by the manufacturer for continuous immersion in water. Provide sealants as manufactured by Products Research and Chemical Corporation, Mameco International, The Burke Company, W.R. Meadows, or equal.

F. Tongue and Groove Joint Forms: 24-gauge steel forms complete with steel stakes and splice plates, designed for joints not to receive a poured seal, and equal to Burke Keyed Kold Joint as manufactured by The Burke Company.

G. Inserts: Galvanized steel to fit the proposed hanger or support.

H. Mortar for Repair of Concrete: Same materials as used for concrete, except omit coarse aggregate and use not more than one-part cement to two and one-half parts sand by damp loose volume. Use no more mixing water than is necessary for handling and placing.

I. Burlap Mats: Conform to AASHTO Specification M182.

J. Epoxy Bonding Agent: Euco #452, BurkEpoxy MV, Sikadur Hi Mod, Concresive 1001-LPL, or equal.

K. Powered Epoxy Coating for Anchor Bolts: Powdered epoxy resin as manufactured by the 3M Company, Scotchkote No. 213, Armstrong No. R349.

2.11 CONDUITS AND PIPES EMBEDDED IN CONCRETE

A. Conduits, pipes and sleeves of any material not harmful to concrete shall be permitted to be embedded in concrete with approval of the Engineer, provided they are not considered to replace structurally the displaced concrete.

B. Conduits and pipes of aluminum shall not be embedded in structural concrete unless effectively coated or covered to prevent electrolytic action between aluminum and steel.

C. Conduits and pipes, with their fittings, embedded within a column shall not displace more than four percent (4%) of the area of cross section on which strength is calculated or which is required for fire protections.

D. Conduits, pipes, sleeves passing through a slab, wall or beam shall not impair significantly the strength of the construction.

E. Except when plans for conduits and pipes are approved by the Engineer, conduits and pipes embedded within a slab, wall, or beam shall satisfy the following:

1. They shall not be larger in outside dimension than one-third overall thickness of slab, wall, or beam in which they are embedded.

2. They shall not be spaced closer than three diameters or widths on center.

2.12 PIPES CONTAINING LIQUID, GAS, OR VAPOR

A. Pipes that will contain liquid, gas or vapor may be embedded in structural concrete under the following conditions:

1. Pipes and fittings shall be designed to resist effects of the material, pressure, and temperature to which they will be subjected.

2. No liquid, gas, or vapor, except water not exceeding 90°F (32C) nor 50 psi (345 kPa) pressure, shall be placed in the pipes until the concrete has attained its design strength.

3. Concrete cover for pipes, conduits and fittings shall be not less than 12 inches (38 mm) for concrete exposed to earth or weather or in contact with ground.

4. Reinforcement with an area of not less than 0.002 times area of concrete section shall be provided normal to piping.

5. Piping and conduit shall be so fabricated and installed that cutting, bending or displacement of reinforced from its proper location will not be required.

PART 3. EXECUTION

3.01 PROPORTIONING

A. The proportions of aggregate to cement shall be such as to produce a thoroughly plastic mixture which will work readily into the corners and angles of the forms and around the reinforcement but without permitting the materials to segregate or excess free water to collect on the surface. The percentage of sand shall not be less than thirty percent (30%) nor more than fifty percent (50%) of the total weight of the aggregate.

B. The total content, including the surface water contained in the aggregate, shall not exceed 5.7 gallons per sack of cement. The slump shall not exceed 4 inches. Air entraining admixture shall be Darex AEA as manufactured by the Dewey and Almy Chemical Company.

C. The amount of air entrained in the freshly mixed concrete shall not be less than three percent (3%) nor more than six percent (6%). The minimum cement content in sacks per cubic yard of concrete shall not be less than 6 sacks per cubic yard for Class "A" concrete.

D. Concrete materials shall be accurately measured by weight. Measurement of materials for ready mixed concrete shall conform to the "Standard Specifications for Ready Mixed Concrete", (A.S.T.M. designation C 94).

1. Class "A" concrete for all structures shall have minimum compressive strength of 4000 psi at 28 days.

2. Class "B" concrete for sidewalks shall have minimum compressive strength of 3000 psi at 28 days.

3. All concrete shall be Class "A" unless otherwise shown on the drawings.

3.02 MIXING AND PLACING

A. Concrete shall be mixed, conveyed, and deposited in accordance with the "A.C.I. Building Code" (A.C.I. 318).

B. Prior to placing any concrete, the Contractor shall submit for the Engineer's approval a design mix, calculated by a recognized testing laboratory, and using the approved aggregates to produce a workable mix of the desired strength, together with certified copies of 7 days and 28 day tests of cylinders taken from concrete made according to the design mix. The mixes shall be designed to secure concrete having a minimum compressive strength at age 28 days.

C. Ready mixed concrete delivered shall be accompanied by delivery tickets showing the following:

1. Date and time leaving plant — Additives (if any)

2. Type of cement and weight — Site arrival time

3. Quantity of water and time added — Site leaving time

D. Concrete

1. Ready mixed concrete shall be used. All mixing requirements specified herein shall be enforced, and the Owner's laboratory representative and the Engineer shall have free access to the mixing plant at all times.

2. Except for materials and/or procedures otherwise specified herein, ready mixed concrete shall be mixed and delivered in accordance with the requirements of ASTM C 94.

3. No water shall be added to the concrete after it leaves the plant except where part of the design water was purposely omitted at the plant, and then only as approved by the Engineer.

E. Mixer Speed

1. Neither the speed of any mixer nor the quantity of material loaded into any mixer shall exceed the recommendations of the manufacturer.

2. Excessive over mixing, required additions of water to preserve the required consistency, shall be cause for rejection of the batch.

3. Concrete shall not remain in a transit mixer or agitator truck more than ninety (90) minutes after the water has been introduced, and not for more than forty-five (45) minutes if any approved retarding agent is not used.

4. Minimum mixing time shall be fifty (50) revolutions of drum at rated speed.

F. Measurement

1. Equipment necessary to determine and control the actual amounts of all materials entering the concrete shall be provided by the concrete manufacturer.

2. All materials shall be measured by weight, except that water may be measured by volume calculated at 8 1/3 pounds per gallon. One bag of cement will be considered as 94 pounds in weight.

G. Mixes

1. Mix Design: Conform to ACI 318, Section 4.3. Submit data on consecutive tests and standard deviation.

2. Maximum Water-Cement Ratio:

.37 (lbs/lb) – Concrete with superplasticizer
.38 (lbs/lb) – Concrete in Marine Environments
.45 (lbs/lb) – Class A concrete without superplasticizer
.55 (lbs/lb) – Class B concrete without superplasticizer

.65 (lbs/lb) – Class C concrete without superplasticizer

3. Air Content: 5 percent plus or minus 1.5 percent (Class A and B).

4. Slump: 4 inches plus or minus 1 inch for Class A and B without superplasticizer.

7 inches plus or minus 1 inch for Class A and B with superplasticizer.
8 inches plus or minus 1 inch for tremie concrete or as specified by details.

H. Placing Concrete.

1. All concrete shall be placed in clean, damp forms that are not hot to the touch.

2. To prevent segregation, concrete shall be deposited as nearly as practicable in final position and not allowed to drop freely more than necessary and in no case more than five feet, except in an approved funnel or tremie. All concrete shall be placed during daylight unless otherwise authorized at least four (4) hours in advance. Where the reinforcing steel above the top of the concrete being placed becomes coated with laitance or partially set up concrete, all such concrete shall be removed from the reinforcing steel prior to placing concrete around the bars.

3. Concrete shall be packed carefully and tightly around pipe and other items to secure maximum adhesion.

4. Concrete shall be placed in layers not over 12 inches deep before compacting. Concrete shall be compacted by internal vibrating equipment supplemented by spading and hand rodding between reinforcing steel and form to eliminate air bubbles and honeycomb. Vibrators shall not be used to move the concrete laterally inside the forms. Duration of vibration shall be limited to the time necessary to provide satisfactory consolidation without causing segregation, not less than five and not more than 15 seconds per square foot of exposed top surface. The vibrator shall be constantly relocated and shall be placed in each specific spot only once for each layer. The Contractor shall take steps to assure that sufficient personnel are available to devote full time to operating vibrator, spading and rodding.

5. Wall concrete shall be placed in layers as indicated above, with the first lift preceded by a 1 inch minimum layer of 1:2 1/2 cement sand grout, with a 6 inch to 8 inch slump, placed on existing concrete not more than twenty (20) minutes before concrete placement. The surface of previously placed hardened concrete shall be clean and wet before grouting or shall be treated with a bonding agent as required. Puddles of water in horizontal recessed keys shall be avoided by the use of drain recesses to outside edge of concrete. Concrete in walls and deep beams shall be placed in lifts not to exceed three layers at 12 inches each for the full length of the

pour before proceeding higher. The placing of concrete shall not be delayed more than twenty (20) minutes between layers or lifts.

6. Slab forms shall be thoroughly cleaned after placing wall concrete below. Concrete in beams or walls shall be placed to bottom of floor slab. After concrete in walls below floor slab has been in place for approximately thirty (30) minutes, the concrete for the floor slab and upper portion of the beam shall be placed and vibrated.

7. When concrete is conveyed by chutes, the equipment shall be of proper size and design to ensure a continuous flow in the chute. The chutes shall be metal or metal lined, and the different portions shall have approximately the same slope. The slope shall not be less than one vertical to three horizontal or more than one vertical to two horizontal, and there shall be provision for a baffle at the discharge end of the chute to prevent segregation. If the vertical distance between the discharge end of the chute and the surface of the concrete is more than five feet, a spout shall be used. The lower end of the spout shall be kept as near the surface of the deposit as is practicable. All chutes and spouts shall be thoroughly cleaned before and after each run. All debris and water shall be discharged outside the forms.

3.03 CURING AND PROTECTION

A. Curing:

1. Immediately after surface defects have been repaired, apply a spray coat of curing compound to all exposed surfaces, including slabs, walls, beams and columns in accordance with the manufacturer's recommendations. Protect exposed steel keyways and other embedded items from the curing compound. Water cure, as specified in paragraph B hereunder, all concrete surfaces that are to be exposed to wastewater, surfaces that are to be coated with a coal tar epoxy system, and concrete floors requiring a bond for special finishes.

2. Do not apply compound during periods of rainfall. Should the film become damaged from any cause within the required curing period, immediately repair the damaged portions with additional compound. Upon removal of forms, immediately coat the newly exposed surfaces to provide a curing treatment equal to that provided for the surface.

3. Curing and Sealing Compound: Use clear compound conforming to Federal Specification TT-C-800A, thirty percent (30%) solids content minimum, having test data from an independent laboratory indicating a maximum moisture loss of 0.030 grams per sq. cm. when applied at a coverage rate of 300 sq. ft per gallon, and equal to Super Floor Coat or Super Pliocure by The Euclid Chemical Company or

Masterseal 66 by Master Builders. Furnish manufacturer's certification as required.

4. Apply specified clear curing and sealing compound to all horizontal areas so noted on the Drawings or in the Specifications. Apply immediately after final finishing. Apply this compound to non-structural construction joints of slabs on grade to act as a bond breaker prior to placement of adjacent concrete.

B. Water Curing Method: Cure all concrete that is to be water cured by either the wet burlap method, by continuous fogging or by covering with waterproof sheet.

1. Wet Burlap Method: Cover concrete surface with a double thickness of burlap, cotton mats, or other approved material, kept thoroughly saturated with water. Keep the forms wet until removed and upon removal, start the curing specified herein immediately. Cure the concrete for a period of seven (7) days for normal Portland cement or four (4) days for high early strength cement. Do not submerge concrete poured in the dry until it has attained sufficient strength to adequately sustain the stress involved and do not subject it to flowing water across its surface until it has cured four (4) days.

2. Continuous Fogging: Perform continuous fogging by fogging with a nozzle which so atomizes the flow of water that a mist, and not a spray, is formed. Fog the concrete surface regularly without allowing any part of the surface to become dry. Take all necessary precautions to prevent erosion of the concrete surface by the water.

3. Covering with Waterproof Sheets: Keep the entire area to be cured continuously wet by fogging, as specified in the fogging paragraph above, for at least eighteen (18) hours and then immediately cover with waterproof curing sheet conforming to ASTM C171, waterproof paper and polyethylene film, free of holes or tears. Keep sheet fully flat, without wrinkles or air bubbles, held down tautly at all edges. Do not use this method on slabs which will be exposed to view.

3.04 PLACING REINFORCEMENT

A. All reinforcement shall be detailed, fabricated and erected in accordance with the A.C.I. "Manual of Standard Practice for Detailing Reinforced Concrete Structure", (A.C.I. 315), including bar supports and spacers. At splices all reinforcing bars shall be lapped a minimum of 24 bar diameters but not less than 12 inches.

B. The reinforcing shall be fabricated to the shapes and dimensions shown and shall be placed where indicated on the drawing. Before placing, all reinforced steel shall be thoroughly cleaned of rust, mill scale or coatings, which would reduce or destroy the bond.

Reinforcing bars shall conform to the requirements of the latest editions of the A.C.I. Code and the CRSI Manuals.

C. Wire mesh, unless otherwise shown on the drawings or specified, shall be 6" x 6" No. 10 woven or electrically welded wire fabric conforming to the requirements of ASTM Designation A185, latest revision.

D. Space chairs and bolsters in accordance with ACI 315 and 318 using height to furnish cover over reinforcing required. Chairs with plastic feet or stainless steel shall be used in all beams and elevated slabs. Chairs for other concrete adjacent to or on the ground may be pieces of concrete block or concrete brick compressed into subgrade with the rebars bearing directly on the pointed edge of the masonry supports, or chairs set on precast concrete pads compressed into the subgrade.

E. When placed in the forms, reinforcement shall be clean and free of all loose rust, scale, dust, dirt, paint, oil or other foreign material, and shall be accurately and securely positioned both laterally and vertically before placing concrete. Minimum clearances between the steel and face of concrete shall be maintained as shown.

F. The rebars shall be fastened together at every intersection or at intervals not greater than 24 bar diameters by wire ties or by some alternate method acceptable to the Engineer. In areas where large bars are closer together, the wire ties may be spaced not more than 30 bar diameters apart, rather than as specified above.

3.05 FORMS

A. Installation and erection shall be in accordance with ACI 347 and as specified hereinafter.

B. Forms shall conform to shape, lines and dimensions of numbers indicated, and shall be sufficiently tight to prevent leakage of mortar. They shall not deflect under dead load weight of construction as a liquid or of construction load. Forms shall be properly braced or tied together so as to maintain position and shape within specified tolerances. Construct forms so that they can be removed steadily without hammering or prying against the concrete. Forms for exposed concrete shall be carefully made and accurately placed to obtain correct shape and line.

C. Forms shall be of wood, metal, or other approved materials. Metal forms shall be of a type and manufacture acceptable to the Engineer. Plywood, fiberboard, or absorptive type form linings may be used where appropriate. Sectional forms shall produce a uniform surface and shall be assembled in a modular pattern. Pours will not be scheduled until all erection and bracing is complete. Walers, ties and braces shall be required for all forms.

Chamfer strips made from nominal dimensional 1" x 1" lumber cut on the diagonal shall be installed at the top of the forms on all exposed edges of walls, slabs, beams and other structures above grade.

D. Drip edge shall be made from wood quarter round and installed where shown. Extruded plastic fillets shall be used where detailed. Circular structures shall be formed with special care, and attention to the appearance of the finished structure. Random location of fillers, non modular sections, and excessive deviations from true circular segments shall be cause for rejection of the forms.

E. The Contractor shall be fully responsible for the adequacy of formwork in its entirety. Forms shall support required loads and shall maintain their dimensional and surface correctness to produce members required by drawings.

F. Slots, chases, recesses, or other openings as shown on the drawings or as needed for the work of any other trades shall be boxed out.

G. Box out for all temporary openings and build forms to seal them up when and as required.

H. After sealing and immediately before the placing of reinforcing, faces of all forms in contact with the concrete shall receive a thorough coating of the liquid form releasing agent, applied in compliance with the manufacturer's instructions.

I. Reused forms shall be thoroughly cleaned out of dirt, debris, concrete and foreign matter. Forms shall not be reused if they have developed defects which would affect their tightness and strength or desired surface finish. Used forms shall not be used for architectural concrete.

J. Forms shall be removed in a manner that will prevent injury to concrete. Supporting forms or shoring shall not be removed until the members have acquired sufficient strength to support their weight and any load thereon.

K. Removal shall be in sequence as approved by the Engineer. Unless test cylinders warrant another procedure, the forms shall not be removed from members prior to the time listed in the schedule hereinafter unless otherwise directed.

L. Bonding to Existing Surfaces: Clean existing concrete surfaces that are to have new concrete bonded thereto of all grease, oil, dust, dirt and loose particles and coat with an epoxy bonding agent just prior to placing of the new concrete. Apply the bonding agent as recommended by the manufacturer and allow the agent to become tacky before the new concrete is placed. Do not allow the bonding agent to overlap or be spilled on the surfaces to be exposed after the work is completed.

3.06 FORM REMOVAL

A. Maintain formwork in place for the following structural conditions until the concrete has attained the minimum percentage of indicated design compressive strength or for the period of time specified in the following table.

Note: Time periods in the table include all days except those in which the temperature falls below 40°F.

Structural Member or Condition	Normal Strength Concrete	Normal High-Early Strength Concrete	Minimum Compressive Strength for Form Removal (% Design Strength)
Cantilevers	12 days	7 days	90
Over 20 feet between supports	12 days	7 days	90
Stairway	10 days	5 days	80
Floor Slabs	5 days	3 days	70
Free standing walls, columns, and piers	5 days	3 days	70
Walls, piers columns, sides of beams, footings slabs on grade, and vertical surfaces	24-48 hours	12-24 hours	70
Front face form of curbs	6-24 hours	6 hours	70

3.07 CONCRETE FINISHINGS

A. Repair of Surface Defects:

1. General: Repair surface defects, including tie holes immediately after form removal. Dampen the area to be patched and an area at least six inches wide surrounding it to prevent absorption of water from the patching mortar. Notify the Engineer prior to commencing operations.

2. Removal of Defective Concrete: Remove all honeycombed and other defective concrete down to sound concrete. Cut edges perpendicular to the surface or slightly under cut. Sand blast surfaces to receive repair.

3. Bonding Grout: Thoroughly dampen surfaces to be patched and apply a coat of bonding grout consisting of one-part cement to one part fine sand passing a No. 30 sieve and having the consistency of thick cream.

4. Placing Patching Mortar: After the bonding grout begins to lose its water sheen, apply a premixed patching mortar, thoroughly consolidating it into place and striking it off so as to leave the patch slightly higher than the surrounding surface. Leave mortar undisturbed for one hour to permit initial shrinkage and then finally finish.

5. Tie Holes: After being cleaned and thoroughly dampened, fill the tie holes solid with patching mortar.

B. Concrete Finishes:

1. Formed Surfaces: After removal of forms, chip off all irregular projections, grind flush with adjacent surfaces and finish concrete surfaces in accordance with the following schedule:

Finish Designation	Area Applied
F-1	Exterior walls below grade not exposed to water: Repair defective concrete, fill depressions deeper than two inches, and fill tie holes.
F-2	Exterior and interior walls exposed to water: Repair defective concrete, remove fins, fill depressions 3 inches or deeper, and fill tie holes.
F-3	Walls of structures of buildings exposed to view and underside of formed floors or slabs: In addition to Finish F-2, fill depressions and airholes in mortar. Dampen surfaces and then spread a slurry consisting of one-part cement and one and one-half parts sand by damp loose volume on the surface with clean burlap pads or sponge rubber floats. Remove any surplus by scraping and then rubbing with clean burlap.
F-4	Tops of walls, beams and similar unformed surfaces occurring adjacent to formed surfaces: Strike smooth after concrete is placed and float to a texture reasonably consistent with that of formed surfaces.

2. Slab Surfaces:

a. General: After concrete has been consolidated, finish all concrete slabs with a floated finish. After floating, trowel finish all concrete slabs, except for areas to receive roofing, insulation, tile or topping, and immediately

light broom finish. Where a finish is not indicated, provide a troweled finish.

Finish Designation	Area Applied
S-1	Slabs and floors not water bearing: Smooth steel trowel finish.
S-2	Slabs and floors which are water bearing and slab surfaces on which mechanical equipment moves: Steel trowel finish free from trowel marks and all irregularities.
S-3	Slabs, floors and stair treads of structures or buildings exposed to view: Steel trowel finish without local depressions or high points and apply a light hair-broom finish. Do not use stiff bristle brooms or brushes. Leave hair-broom lines parallel to the direction of slab drainage.
S-4	Slabs and floors at slopes greater than ten percent (10%): Steel trowel finish without local depressions or high points. Apply a stiff bristle broom finish. Leave broom lines parallel to the direction of slope drainage.
S-5	Exposed edges of slabs, floors and tops of walls: Finish with a 3-inch radius edge if a chamfer is not indicated.

C. Floated Finish: After concrete has been placed, consolidated, struck off and leveled, do not work the surface further until water sheen has disappeared and the surface has hardened sufficiently to permit floating. During the first floating, check the planeness of the slab with a 10-foot straightedge applied at no less than two angles. Cut down all high spots and fill all low spots to produce a surface having the required tolerance. Then refloat the slab to a uniform sandy texture.

D. Light Broomed Finish: After floating, power trowel slabs to receive a light broomed finish to produce a smooth surface, relatively free of defects. Before the surface sets, pass a soft broom drag over the surface to produce a surface uniform in texture and appearance.

E. Troweled Finish: After floating, power trowel slabs to receive a troweled finish to produce a smooth surface, relatively free of defects. Hand trowel after the surface has hardened sufficiently. When a ringing sound is produced as the trowel is moved over the surfaces, perform final troweling by hand to produce a surface which is thoroughly consolidated, free from trowel marks, uniform in texture and appearance and plane to a tolerance of 1/8 inch in 10 feet as determined by a 10-foot straightedge placed anywhere on the slab in any direction.

F. Hardener Finish: Where indicated to receive a troweled hardener finish, water cure slabs without application of curing and sealing agent. When slab is at least twenty (20) days old and thoroughly dry, apply the hardener in accordance with the manufacturer's

recommendations. Where dry-shake hardener or slip resistant finish is required, apply the hardener or slip-resistant product prior to complete curing and finishing, in accordance with the requirements and recommendations of the product manufacturer.

G. Saw Cut Joints: Cut joints that are to be saw cut not sooner than two (2) hours after the concrete is poured and not later than eight (8) hours after the pour.

3.08 TESTS

A. Compressive strength tests shall be made by breaking standard 6 inch diameter by 12 inch high test specimens prepared, cured and broken in accordance with the American Society for Testing Materials Standard Methods C 31 and C 39, latest revision. Four (4) specimen test cylinders shall be taken from each pour of five cubic yards or more. One additional test shall be taken from each 30 cubic yards or fraction thereof in each pour in excess of 30 cubic yards.

B. Test specimens shall be taken from manhole bottom pours of less than five cubic yards as directed by the Engineer. Test specimens shall be taken in the presence of the Engineer. One cylinder from each pour shall be broken at seven (7) days, the remainder at twenty-eight (28) days. Additional test cylinders may be ordered for determining the characteristics of a new design mix or changes in equipment or methods, and under adverse weather or curing conditions.

C. Slump test shall be made in accordance with ASTM C143, latest revision, and shall be made with each load and at time of cylinders.

D. The Contractor shall supply all cylinder molds, slump cones, tools and labor for preparing specimen, and shall provide clean, moist sand or burlap for curing. Cylinder shall not be shipped to the testing laboratory until the third day following preparation and shall be protected from accidental damage at all times.

E. The test cylinders shall be tested in a recognized commercial testing laboratory at the expense of the Contractor.

3.09 EXPANSION JOINTS, CONSTRUCTION JOINTS AND WATER STOPS

A. Expansion Joints shall be places as indicated on the drawings. Joint materials for surfaces exposed to water and sewage shall conform to ASTM D175, Preformed Joint Filler, non extruding and resilient (bituminous type), thickness as shown on the drawings. Joint materials for isolation joints, slab on grade joints and wall joints not exposed to water and sewage shall conform to ASTM D994, preformed expansion joint filler for concrete (bituminous type), thickness as shown on the drawings.

B. Construction Joints shall be located in accordance with a schedule of pours which shall be prepared and submitted by the Contractor. Vertical construction joints shall be held to the minimum number consistent with good standard practice.

C. Water Stops. Material for water stops shall be 9 inch PVC multi rib center bulb type for expansion joints, and 1/4" x 4" and 1/8" x 4" structural steel sheets for construction joints. PVC joint material shall be as manufactured by The Burke Company, or approved equal.

END OF SECTION

SECTION 03 40 00
PRECAST CONCRETE

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work: The work under this Section includes the design, casting, delivery and erection of concrete structures as indicated on the Drawings.

B. Related Work Specified Elsewhere

1. Section 03 60 00: Grouting

2. Section 07 72 33: Roof Hatches

1.02 QUALITY ASSURANCE

A. Standards: Unless otherwise indicated, all materials, workmanship and practices shall be in accordance with the current editions of the following standards:

1. Standard Building.

2. ACI 318, Building Code Requirements for Reinforced Concrete.

3. PCI MNL 116, Manual for Quality Control for Plants and Production of Precast Concrete Products.

1.03 SUBMITTALS

A. The following information shall be submitted for approval. Fabrication shall not begin until submission has been approved.

1. Quality Control: Satisfactory evidence shall be submitted that plant and production methods meet the requirements of PCI MNL 116.

2. Design: Complete calculations including shear, moment, buoyancy, and camber calculations shall be submitted. All computation sheets shall bear the seal of a Professional Engineer registered in the State of Florida. Design water table shall be assumed to be at finished grade.

3. Shop Drawings: Complete fabrication and erection drawings shall be submitted. All drawings shall bear the seal of a Professional Engineer registered in the State of Florida.

B. Manufacturer's data sheets shall be submitted on the following:

1. Joint mastic and gaskets.

2. Pipe connections.

3. Grout material.

4. Hatches and manhole covers.

1.04 DELIVERY, STORAGE AND HANDLING

A. Transportation and erection shall be done by qualified personnel using proper equipment. Lifting and supporting shall be done only at points indicated on the shop drawings.

PART 2 - PRODUCTS

2.01 MATERIALS AND FABRICATION

A. Precast Concrete Structures:

1. Design loads shall consist of dead load, live load, impact, soil loads and loads due to water table, as well as other loads which may be imposed upon the structure. Wetwells and manholes shall be designed in accordance with ASTM C-478. The minimum wall thickness for wetwells up to 7 feet I.D. shall be 8 inches. The minimum wall thickness for wetwells 8 feet 0 inches to 12 feet 0 inches I.D. shall be 10 inches. The minimum wall thickness for 4 foot I.D. manholes shall be 6 inches. The minimum wall thickness for valve vaults shall be 6 inches.

2. Forms used for precast concrete shall be of metal and sufficiently designed and braced to maintain their alignment under pressures of the concrete during placing. Base and first section of precast structures shall be an integral cast.

3. Aggregates: All aggregates, fine and coarse, other than lightweight aggregate shall conform to ASTM C33. Lightweight aggregates, fine and coarse, shall conform to ASTM C330. Aggregates shall be free of deleterious substances causing reactivity with oxidized hydrogen sulfide. Both types of aggregate shall be graded in a manner so as to produce a homogenous concrete mix. All materials are to be accurately weighed at a central batching facility for mixing.

4. Cement shall be Portland cement Type II.

5. Minimum compressive strength of concrete used for precast concrete structures shall be 4000 psi at 28 days.

6. Placing. All concrete shall be handled from the mixer or transport vehicle to the place of final deposit in a continuous manner, as rapidly as practicable, and without segregation or loss of ingredients, until the approved unit is completed. Maximum elapsed time from batching to placement shall be two (2) hours. Concrete shall be placed in layers not over two feet deep. Each layer shall be compacted by mechanical internal or external vibrating equipment. Duration of the vibration cycle shall be limited to the time necessary to produce satisfactory consolidation without causing objectionable segregation.

7. Curing:

   a. For purposes of early reuse of forms, precast concrete may be steam cured after an initial set has taken place. The steam temperature shall not exceed 160°F, and the temperature shall be raised from normal ambient temperatures at a rate not to exceed 40°F per hour.

   b. The steam cured unit shall not be removed from the forms until sufficient strength is obtained for the unit to withstand any structural strain to which it may be subjected during the form stripping operation. After the stripping of forms, further curing by means of water spraying or a membrane curing compound may be used, and shall be of a clear or white type, conforming to ASTM C 309.

8. Reinforcing steel shall be sufficiently tied to withstand any displacement during the pouring operation. All bars shall be Grade 60.

9. Joints shall be tongue and groove pipe ends sealed with round or other flexible type natural rubber joint ring gaskets in conformance with ASTM C433 or by a flexible performed bitumastic sealing material equal to Ram-Nek as manufactured by R.K. Snyder and Co., Houston, Texas. If rubber joint ring gaskets are used, interior and exterior voids in the pipe joints shall be sealed with flexible sealing material specified above, installed in strict accordance with the manufacturer's printed instructions. If manhole sections are sealed with a flexible preformed bitumastic sealing material, adequate material shall be applied so that "squeeze out" occurs at the interior and exterior of the joint. Rubber joint ring gaskets and flexible preformed bitumastic sealing material shall be provided by the manhole manufacturer.

10. Eccentric precast concrete cone sections shall be manufactured of precast concrete with reinforcing and joints as specified above for straight riser.

11. Lifting holes through the structures are not permitted. Equally spaced lifting lugs, rings or non-penetrating lift inserts shall be provided.

12. Top slabs for shallow manholes, valve vaults, and pumping station wet wells may be precast or cast-in-place. Steel reinforcing shall be as required for the dead load of the slab plus an H-20 designation live load. Concrete for top slabs shall have a compressive strength of 4000 psi at 28 days. Thickness of concrete for top slabs shall be a minimum of six inches for shallow manholes and valve vaults and eight inches for pumping station wet wells.

13. Manholes inverts shall be precast into the manhole base section by the manhole manufacturer unless prior approval is obtained from the Engineer to construct inverts in the field. The drop from inlet to outlet shall be a minimum of one inch unless approved by the Engineer. The channel height of the manhole invert shall match the crown of the exit sewer. Manhole benches shall be sloped a minimum of one inch per foot from the outside periphery of the manhole to the edge of the invert channel.

B. Sealing Compound and Grout: Plastic sealing compound shall comply with Federal Specification SS-SS-00210. Mortar shall comply with ASTM C387, Type S, or use grout complying with Section 03 60 00.

C. Pipe Connections:

1. Pipe connections for wet wells and manholes shall be resilient, waterproof connections designed in accordance with ASTM C923 "Resilient Connectors Between Reinforced Concrete Manhole Structures and Pipes". Resilient pipe connectors shall either be cast into the manhole wall or installed following casting in a cored section of the manhole wall. Resilient connectors shall either be a gasket type connector equal to the A-Lok pipe to manhole seal as manufactured by Atlantic Concrete Products, Inc., or a flexible neoprene boot with stainless steel clamps equal to KOR-N-Seal System as manufactured by the Dukor Corporation. When the pipe is installed in the resilient manhole connector, the pipe shall be capable of 20 degrees minimum deflection in any direction.

2. Pipe connections for wall penetrations where resilient connectors cannot be used shall be provided with wall sleeves and link seals.

D. Frames and Covers: Cast iron manhole frames and covers shall be provided for manholes and aluminum access hatches shall be provided for wetwells and valve vaults as specified below:

1. Standard Manhole Frames and Covers: Shall be gray iron castings conforming to ASTM A48, Class 30B for Gray Iron Castings; and shall be smooth, true to pattern, free from blow holes, sand holes, projections and other harmful defects. The seating surfaces of both the frame and cover shall be machined so that the cover will not rock after it has been seated. The cover shall be provided with a precisely machined dovetail groove with a neoprene O-ring gasket to provide a self-sealing

cover. The gasket shall be glued in place at the foundry. The manhole cover shall be solid with two non-penetrating pick holes. Manholes frames and covers shall be coated on all non-machined surfaces with three coats of coal tar epoxy as specified for the Class 7 Coating System. Manhole frames and covers shall be U.S. Foundry and Manufacturing Corp. No. 38B, Ref. Cat. No. 225, Neenah Foundry Company No. R-1642 with a Type "B" cover or an equal approved by the Engineer.

a. Anchor Bolts: Anchor bolts for bolting manhole frame to precast manholes shall be 3/4-inch diameter galvanized all thread steel rods with a five-inch hook for embedment in the precast manhole top. The bolts shall be of sufficient length to provide a minimum two-inch thread projection through the flange of the manhole frame. Two (2) anchor bolts shall be cast into the precast manhole top section or slab, positioned at 180 degrees, at the time of manufacturer. Manhole frames shall be drilled to match the bolt settings prior to coating.

2. Aluminum Access Hatches: Aluminum hatches shall be provided for wetwells and valve vaults sized as indicated on the Drawings. Access hatches shall be a specified in Section 07 72 33.

E. Coatings:

1. Interior and exterior surfaces of precast structures shall be coated with a primer coat and three (3) finish coats of coal tar epoxy.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Earthwork: The Contractor shall prepare an excavation large enough to accommodate the structure and permit sealing of openings, waterproofing, and backfilling operations. Earthwork shall conform to the applicable sections of Division 31.

B. Installation of Precast Concrete Structures: Precast concrete structures shall be constructed in a workmanlike manner at the locations and dimensions indicated on the Drawings. Precast structures shall be set on foundation of crushed stone, 12 inches thick. Crushed stone material shall be a well graded crushed stone or crushed gravel meeting the requirements of ASTM C33, Gradation No. 67 (3/4 inch to No. 4 sieve). The precast structures shall be constructed such that the structure will not transmit dead or live loads to the piping. Care shall be taken to prevent earth and other material from entering precast structures.

C. Sealing and Grouting: Fill all interior and exterior joints between precast sections with a joint sealant, as recommended by the structure manufacturer.

1. Set each precast concrete unit plumb on a bed of sealant to make a watertight joint at least two inches thick with the concrete base or with a preceding unit. Point the inside joint and wipe off the excess sealant.

2. Assemble units so that the cover conforms to the elevations shown on the Drawings.

3. Pipe connections at precast structures shall be provided at the locations shown on the Drawings. Connections shall be resilient and waterproof.

4. All voids in interior and exterior manhole section joints and lift holes for manhole sections shall be filled with a non-shrinking, non-metallic grout. Grout shall be applied and cured in strict accordance with the manufacturer's recommendations. The grout shall be finished smooth and flush with the wall surface of the manhole.

D. Manhole Flow Channels and Bench Walls:

1. Unless prior approval is obtained from the Engineer, manhole flow channels (inverts) and bench walls shall be precast into the manhole base section as specified above.

2. Upon prior approval from the Engineer, manhole inverts may be constructed in the field. Invert channel bottoms shall be smooth and semicircular in shape conforming to inside of adjacent sewer sections. Changes in direction of flow shall be made with a smooth curve of as large radium as the size of manhole will permit. Changes in size and grade of channels shall be made gradually and evenly to give a smooth uninterrupted flow pattern through the manhole. Channel height shall match the crown of the connection sewer pipe exiting the manhole. Manhole bench walls shall be smooth and shall slope one inch per foot from the edge of the invert channel to the precast manhole wall. Invert channels may be constructed by forming in concrete or by building up brick and mortar to form the manhole bench walls on each side of the channel, and plastering over bricks with cement mortar with a minimum thickness of two inches. Manhole invert construction shall only be performed by experienced and qualified workmen.

3. Bricks used to construct manhole invert channels and bench walls shall be standard size (22 in. H X 4 in. W X 8 in. L) brick in conformance with ASTM C32 "Sewer and Manhole Brick (Made From Clay and Shale)", Grade MS. Mortar used for masonry work shall be prepared by thoroughly mixing: One (1) volume of Type II Portland Cement with three (3) volumes of sand and sufficient clean water to produce a rich mass of approved consistency. Mixing mortar on the ground or any paved surface shall not be permitted. Sand to be used in making mortar shall be clean, well-graded, and shall pass a standard No. 4 sieve.

E. Setting Frames and Covers:

1. Unless otherwise indicated on the Drawings, in unpaved areas the tops of manholes shall be set 0.2 feet above finished grade and the tops of wetwells and valve vaults shall be set 0.5 feet above finished grade.

2. The top of all precast manholes may be brought to proper grade for receiving manhole frame by using not more than three courses of brick or precast concrete grade rings. Bricks and mortar used for manhole top grade adjustments shall be a specified above in Paragraph 3.01.D.3. Precast concrete grade rings shall be precast with steel reinforcement in conformance with ASTM C478 and concrete with a compressive strength of 4000 psi in 28 days. Precast concrete grade rings shall be manufactured in half annular shapes for ease of handling. The grade ring dimensions shall be two inches thick with an annular width of eight inches and an inside diameter of 24 inches.

3. Masonry construction shall be performed by experienced and qualified workmen only. All work shall be laid plumb, straight, level, square and true. Brick shall be laid in full beds of mortar and shoved into place. All joints shall be full and not more than 2 inches in thickness. The Contractor shall set in place and bond in the masonry all necessary anchor bolts and miscellaneous items specified elsewhere. The masonry walls shall be plastered on the inside and outside with a one-half inch coat of Portland Cement mortar.

4. Following curing of any masonry construction required for manhole top adjustment, set manhole frame in a bed of 3 to 2 inch thick flexible bitumastic sealing material (Ram-Nek) and anchor in place with two 3/4 inch diameter anchor bolts, which shall be securely embedded in the top of the manhole. Seal the flange of the manhole ring to the top of the manhole with cement mortar.

F. Interior Lining: The interior coating system shall be applied following installation of the precast structures and any piping or equipment which will penetrate or attach to the walls. Surface preparation and application of the coating system shall be in strict accordance with the manufacturer's recommendations.

G. Backfill: After the structure and all appurtenances are in place and approved, backfill shall be placed to the original ground line or to the limits designated on the Drawings. Backfill material shall consist of sand or loose earth, free from stones, clods, or other deleterious material. It shall be placed in horizontal layers not exceeding 12 inches in depth and shall be moistened and thoroughly compacted to a minimum relative density conforming to the requirements of Division 31.

END OF SECTION

SECTION 03 60 00
GROUTING

PART 1 - GENERAL

1.01 WORK INCLUDED

A. Provide all labor, materials, tools and equipment and perform all grouting as specified hereinafter and indicated on the Drawings.

1.02 RELATED WORK

A. Section 03 30 00: Cast-In-Place Concrete

1.03 SUBMITTALS

A. Submit manufacturer's literature for review on the following items:

1. Non-shrink grout data including grout properties, mixing, surface preparation and installation instructions.

1.04 DELIVERY AND STORAGE

A. Deliver and store grouting materials in unbroken containers with seals and labels intact as packaged by the manufacturer.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Non-shrink, Nonmetallic Grout: The Burke Company's Non-Ferrous, Non-Shrink Grout, Sauereisen F-100 Level Fill, Master Builders Masterflow 713, Euclid NS Grout, or equal pre-mixed type.

B. Non-shrink Metallic Grout: The Burke Company's Metallic Spec Grout, Master Builders Embeco 636 Grout pre-mixed type, or equal.

C. Epoxy Grout: Sikadur 42 Grout-Pak, or equal, for grouting sleeves for anchor bolts, etc.

PART 3 - EXECUTION

3.01 PREPARATION

A. Clean all bonding surfaces or dust and oil.

3.02 INSTALLATION

A. Non-shrink Grout:

1. Use non-shrink, nonmetallic grout for grouting precast concrete wall panel connections, column base plates, anchor bolts, reinforcing bars, pipe sleeves, machinery supports and pump base plates. Use epoxy grout for anchor bolts, etc., where indicated on the Drawings.

2. Mix and place non-shrink grout as recommended by the manufacturer.

3. Mix grout as close to the work area as possible and transport quickly to its final position in a manner which will not permit segregation of materials.

4. Cure non-shrink grout with water saturated burlap for at least three (3) days or with an application of Super Rez Seal cure and seal compound applied immediately after grout placement.

5. Do not operate machinery set on grout pads until the grout has cured for at least twenty-four (24) hours.

END OF SECTION

SECTION 07 72 33
ROOF HATCHES

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work: This Section includes providing all labor, materials and equipment necessary to install the access hatch doors or the collection basin and the flow meter vault as indicated in the Drawings and/or specified herein.

B. Related Work Specified Elsewhere:

1. Bonds: Section 01 78 33

2. Warranties: Section 01 78 36

1.02 QUALITY ASSURANCE

A. Standards: The access doors shall meet the standards of the following:

1. Standard Building Code

2. OSHA Requirements

B. Manufacturers: Halliday Products, Orlando, Florida; The Bilco Company, New Haven, Connecticut; or approved equal.

1.03 SUBMITTALS

A. Shop Drawings: Shop drawings shall be submitted to the Engineer for approval. Shop drawings shall include manufacturer's data sheets showing all materials, connections and other required details to illustrate a complete operating access door.

1.04 WARRANTY AND GUARANTEES

A. The manufacturer shall guarantee the access door against defects in material and workmanship for a period of ten (10) years. Refer to Section 01 78 36 for requirements.

PART 2 - PRODUCTS

2.01 GENERAL REQUIREMENTS

A. The access doors, in sizes as shown on the drawings, shall be standard design of the manufacturer.

2.02 MATERIALS

A. Each hatch shall be designed according to the openings shown on the Drawings. The aluminum access frames shall be manufactured from 1/3 inch thick, one piece extruded aluminum frame. The frame shall be a self-draining channel with 1 ½ inch draining coupling located in the channel frame. The door panels shall close flush and shall be 1/3 inch thick aluminum diamond (checker) plate. The installed access doors shall be designed to withstand traffic loads, as required. Removable aluminum cross-beams shall be provided by the hatch supplier as required to accomplish the stated loadings. The doors shall have stainless steel hinges with tamper proof fasteners. All hardware shall be made of 316L stainless steel. Each door shall have spring operators, such that the maximum lifting effort is less than 25 pounds. The hatch supplier shall provide the number of doors as required to accomplish the lifting requirements. Each door shall open to 90° and lock automatically with a stainless steel, positive locking arm and a stainless steel release handle. Each door shall have a recessed stainless steel lifting handle.

B. All access doors shall be designed with a neoprene gasket on the inside lip of the frame perimeter, to form an essentially air-tight seal.

PART 3 - EXECUTION

3.01 INSTALLATION

A. The access hatches and doors shall be installed as recommended by the manufacturer and adjusted for proper operation without binding.

END OF SECTION

SECTION 26 05 00
COMMON WORK RESULTS FOR ELECTRICAL

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 DESCRIPTION

A. Work to be performed under the sections of Divisions 26, and 40 includes all labor, materials, and equipment required to install complete electrical systems as described in these specifications and as shown on the drawings. This section includes information common to two or more technical specification sections or items that are of a general nature, not conveniently fitting into other technical sections.

B. Before submitting a bid, the Contractor shall examine the drawings and specifications, visit the work site, and be informed of local conditions, all federal, state and local ordinances, regulations and all other pertinent items which may affect cost, schedule, and completion of this project.

C. Drawings accompanying these specifications are a part of these specifications. Drawings are intended to show general arrangement, design, and extent of work and are diagrammatic. Drawings are not intended to show exact locations except where dimensions are shown. Any substantial differences existing between drawings and conditions in the field shall be submitted to the Engineer for consideration before proceeding with work. Electrical work is shown on plans using standard industry symbols.

D. Before ordering materials or doing work, the Contractor shall verify all measurements pertaining to work scope and assume installation responsibility for complete and fully functional electrical systems.

E. The electrical work included in all other divisions of this specification and related documents is the responsibility of the contractor performing the Division 26 work unless specifically noted otherwise.

1.3 QUALITY ASSURANCE

A. Manufacturer references used herein are intended to establish a level of quality and performance requirements unless more explicit restrictions are stated to apply.

B. Where equipment or accessories are used which differ in arrangement, configuration, dimensions, ratings, or engineering parameters from those indicated on the contract documents, the contractor is responsible for all costs involved in integrating the equipment or accessories into the system and the assigned space and for obtaining the performance from the system into which these items are placed.

C. All materials shall be listed by and shall bear the label of an approved electrical testing laboratory. If none of the approved electrical testing laboratories has published standards for a particular item, then other national independent testing standards, subject to approval by the Engineer, shall apply and such items shall bear those labels. Where one of the approved electrical testing laboratories has an applicable system listing and label, the entire system shall be so labeled. The Contractor shall not modify new equipment in such a way as to nullify the Testing Laboratories label. All equipment and materials shall be used or installed in accordance with any instruction included in the listing by the laboratory.

1.4 DEFINITIONS

A. Activation: Nomenclature used by some manufacturers for a service fitting.

B. ARC: Aluminum rigid conduit.

C. BACnet: Networking communication protocol that complies with ASHRAE 135.

D. BAS: Building automation system.

E. BF: Ballast factor.

F. CCT: Correlated color temperature.

G. CE: Conformite Europeene (European Compliance).

H. CEC: California Energy Commission.

I. CPT: Control power transformer.

J. Direct Buried: Duct or a duct bank that is buried in the ground, without any additional casing materials such as concrete.

K. Duct: A single duct or multiple ducts. Duct may be either installed singly or as component of a duct bank.

L. Duct Bank: Two or more ducts installed in parallel, with or without additional casing materials and or multiple duct bank.

M. EMI: Electromagnetic interference.

N. EMT: Electrical metallic tubing.

O. Ethernet: Local area network based on IEEE 802.3 standards.

P. GFCI: Ground-Fault Circuit Interrupter.

Q. GRC: Galvanized rigid steel conduit.

R. IBC: International Building Code.

S. IGBT: Insulated-gate bipolar transistor.

T. IMC: Intermediate metal conduit.

U. I/O: Input/output.

V. IP: Internet protocol.

W. IR: Infrared.

X. Jacket: A continuous nonmetallic outer covering for conductors or cables.

Y. LAN: Local area network; sometimes plural as "LANs."

Z. LED: Light-emitting diode.

AA. LLF: Light loss factor, which is the product of all factors that contribute to light loss in the system.

BB. Low Voltage: As defined in NFPA 70 for circuits and equipment operating at less than 50 V or remote-control, signaling and power-limited circuits.

CC. Lumen: Measured output of lamp and luminaire, or both.

DD. Luminaire: Complete lighting fixture, including ballast housing if integral.

EE. MCCB: Molded-case circuit breaker.

FF. MCP: Motor-circuit protector.

GG. Modbus TCP/IP: An open protocol for exchange of process data.

HH. Monitoring: Acquisition, processing, communication, and display of equipment status data, metered electrical parameter values, power quality evaluation data, event and alarm signals, tabulated reports, and event logs.

II. MOV: Metal-oxide varistor; an electronic component with a significant non-ohmic current-voltage characteristic.

JJ. NC: Normally closed.

KK. NO: Normally open.

LL. OCPD: Overcurrent protective device.

MM. PCC: Point of common coupling.

NN. Pole: Luminaire support structure, including tower used for large area illumination.

OO. Protective Device: A device that senses when an abnormal current flow exists and then removes the affected portion from the system.

PP. PT: Potential transformer.

QQ. RFI: Radio-frequency interference.

RR. RMC: Rigid metal conduit.

SS. RS-232: A TIA standard for asynchronous serial data communications between terminal devices.

TT. RS-485: A serial network protocol, similar to RS-232, complying with TIA-485-A

UU. Sheath: A continuous metallic covering for conductors or cables.

VV. SPD: Surge protective device.

WW. TCP/IP: Transport control protocol/Internet protocol incorporated into Microsoft Windows.

XX. TDD: Total demand (harmonic current) distortion (also listed as "THD" in catalog data by manufacturers).

YY. THD: Total harmonic distortion.

ZZ. THD(V): Total harmonic voltage demand.

AAA. TVSS: Transient voltage surge suppressor.

BBB. UPS: Uninterrupted power supply.

CCC. UTP: Unshielded twisted pair.

DDD. VFC: Variable-frequency motor controller.

EEE. VFD – Variable frequency drive or motor controller.

1.5 REGULATORY REQUIREMENTS

A. All work and materials are to conform in every detail to applicable rules and requirements of local codes and regulations, the National Electrical Code (NFPA 70), other applicable National Fire Protection Association codes, and current manufacturing standards (including NEMA) and any additional local modifications enacted by the Local Authority Having Jurisdiction. Contractor shall be responsible to verify what if any local modifications are in place or enacted by the Local Authority Having Jurisdiction.

B. All work shall be installed in accordance with NECA standards of installation.

C. All work shall conform where applicable to the Williams-Steiger Occupational Safety and Health Act of 1970 (OSHA), Part 1910, “Occupational Safety and Health Standards.” This shall include any local or state modifications enacted by the Authority having Jurisdiction.

1.6 TEMPORARY CONSTRUCTION POWER

A. Provide temporary lighting and construction power for the project. Pay the usage charges to the serving utility for electric service associated with temporary lighting and power for construction.

1.7 OMISSIONS

A. The Contractor shall call to the attention of the Engineer any materials or apparatus the Contractor believes to be inadequate and to any necessary items of work omitted.

1.8 SUBMITTALS

A. Refer to Division 01 for Submittal requirements.

B. Submit for all equipment and systems as indicated in the respective specification sections, marking each submittal with that specification section number. Mark general catalog sheets and drawings to indicate specific items being submitted and proper identification of equipment by name or number, as indicated in the contract documents. Failure to do this may result in the submittal(s) being returned to the Contractor for correction and resubmission. Failing to follow these instructions does not relieve the Contractor from the requirement of meeting the project schedule.

C. On request, the Contractor shall furnish additional drawings, illustrations, catalog data, performance characteristics, etc. to clarify intent of construction or operations.

D. Submittals shall be grouped to include complete submittals of related systems, products, and accessories in a single submittal. Mark dimensions and values in units to match those specified. Include wiring diagrams of electrically powered equipment.

E. The submittals must be approved before fabrication.

1.9 PROJECT/SITE CONDITIONS

A. Install Work in locations shown on Drawings, unless prevented by Project conditions.

B. Prepare drawings showing proposed rearrangement of work to meet Project conditions, including changes to work specified in other Sections. Obtain written permission of Engineer before proceeding.

C. Tools, materials, and equipment shall be confined to areas designated by the Owner.

1.10 WORK SEQUENCE AND SCHEDULING

A. See the General Conditions of the Contract, Scheduling and Coordination of Work, and Time for Completion of the Project, and General Requirements, Mutual Responsibility for additional requirements.

1.11 WORK BY OTHER TRADES

A. Every attempt has been made to indicate in this trade's specifications and drawings all work required of this Contractor. However, there may be additional specific paragraphs in other trade specifications and addenda, and additional notes on drawings for other trades which pertain to this Trade's work, and thus those additional requirements are hereby made a part of these specifications and drawings.

B. Electrical details on drawings for equipment to be provided by others is based on preliminary design data only. This Contractor shall lay out the electrical work and shall be responsible for its correctness to match equipment actually provided by others.

1.12 OPERATING AND MAINTENANCE INSTRUCTIONS

A. Refer to Division 1, General Requirements, Operating and Maintenance Instructions for additional requirements.

1.13 TRAINING

A. Instruct Owner's personnel in the proper operation and maintenance of systems and equipment provided as part of this project; video record all training sessions. Use the Operating and Maintenance manuals during this instruction. Demonstrate startup and shutdown procedures for all equipment. All training to be during normal working hours.

B. The requirement for recording training sessions may be deleted on some projects but not the requirement for the training itself.

C. Refer to other sections for specific section and equipment training requirements.

1.14 RECORD DRAWINGS

A. Contractor shall provide drawings to document as-built conditions per Division 1.

B. The daily record of changes shall be the responsibility of the Contractor's field representative. No arbitrary mark-ups will be permitted.

C. The record drawing set shall be made available and may be audited periodically by the Owners' construction representative to assure the changes are being recorded.

D. At the completion of the project, the Contractor shall submit the marked-up record drawings to the Owners' construction representative prior to request for final payment.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Reference applicable sections within Divisions 26.

PART 3 – EXECUTION

3.1 WORK INCLUDED

A. The scope of work shall include all work, including all labor, materials and equipment, testing required to install a complete electrical system as indicated in the project Manual. The Project Manual consists of the bidding documents, the contract, specifications, contract drawings and all subsequent addenda and modifications. The contractor shall furnish and install all necessary materials, apparatus and devices to complete the

electrical equipment and systems installation herein specified, except such parts as are specifically exempted herein.

B. All work items shown on the drawings is within the scope of work and shall be provided as indicated. Only items that are clearly indicated as being provided by others or under a separate contract shall be out of scope.

C. In general, the specifications indicate the requirements and quality for products required and the executions for those products. Only items that are clearly indicated as being provided by others or under a separate contract shall be out of scope.

D. If there is any discrepancy between the drawings and the specifications, it is the contractor’s responsibility to notify the Engineer for resolution, prior to procuring equipment or starting work.

E. Coordinate and verify all equipment being supplied by equipment supplier and other trades. Verify equipment size, motor HP, dimensions, locations, etc. as all are subject to change.

F. Contractor shall verify all door swings and the location of all cabinets, diffusers, HVAC, plumping, process and building equipment before installing electrical equipment, fixtures, outlets and conduit.

G. All permits and inspection fees required to complete the work shall be paid for by the Contractor unless noted otherwise.

H. All electrical equipment and fixtures shall be installed in complete accordance with the manufacturers' recommendations.

I. Contractor shall provide all motor connections as shown on the drawings and as specified herein.

3.2 CONCRETE

A. All concrete work required for the proper installation of electrical equipment including transformer, switchgear and motor control center pads and other equipment pads shall be provided by the Contractor and shall conform to specifications in Division 3.

3.3 SITE WORK

A. The Contractor shall provide excavation and backfill for all electrical underground work as indicated on the drawings and as required. The Contractor shall perform this work and provide compaction as specified in Division 2. Finish grading and final restoration shall be by the General Contractor.

3.4 CONFIRMATION OF ELECTRIC SERVICE

A. Consult with Electric Utility to verify service information specified herein and shown on drawings before submitting bid.

B. The electrical service application shall be initiated by the Electrical Contractor.

3.5 PERMITS, FEES, TAXES, INSPECTIONS

A. Procure all applicable permits and licenses.

B. Abide by all laws, regulations, ordinances, and other rules of the State or Political Subdivision where the work is done, or as required by any duly constituted public authority.

C. ELECTRICAL CONTRACTOR to pay all charges for permits or licenses.

D. Pay all fees and taxes imposed by State, Municipal, and other regulatory bodies.

E. Pay all charges arising out of required inspections by an authorized body.

F. Pay all charges arising out of required contract document reviews associated with the project and as initiated by the Owner or authorized agency/consultant.

G. Where applicable, all fixtures, equipment and materials shall be listed by Underwriter's Laboratories, Inc. or a nationally recognized testing organization.

3.6 METERING

A. Consult with Electric Utility regarding service entrance requirements and metering equipment.

B. Install metering equipment and empty conduit for metering conductors to meet standards and requirements of Electric Utility.

3.7 SERVICE INSTALLATION

A. The service installation shall comply with the latest applicable standards of the utility. Refer to the current electrical service installation manuals.

B. The Contractor shall meet with the electric utility prior to rough-in to review and coordinate the installation of the electrical service and verify existing conditions and special requirements.

3.8 COORDINATION

A. The Contractor shall cooperate with other trades and the Owner's construction representative in locating work in a proper manner. Should it be necessary to raise or lower or move longitudinally any part of the electrical work to better fit the general installation, such work shall be done at no extra cost, provided such decision is reached prior to actual installation. The Contractor shall check location of electrical outlets with respect to other installations before installing.

B. The Contractor shall verify that all devices are compatible for the surfaces on which they will be used. This includes, but is not limited to, light fixtures, panelboards, devices, etc. and recessed or semi-recessed heating units installed in/on architectural surfaces.

C. Coordinate all work with other trades prior to installation. Any installed work that is not coordinated and that interferes with another trades work shall be removed or relocated at the installing contractor's expense.

3.9 HOUSEKEEPING AND CLEAN UP

A. Refer to Division 1, General Requirements, and Cleaning for additional requirements.

END OF SECTION

SECTION 26 05 19
LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Building wires and cables rated 600 V and less.
2. Connectors, splices, and terminations rated 600 V and less.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 CONDUCTORS AND CABLES

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Alpha Wire.
2. Belden Inc.
3. Encore Wire Corporation.
4. General Cable Technologies Corporation.
5. Southwire Incorporated.

B. Copper Conductors: Comply with NEMA WC 70/ICEA S-95-658.

C. Conductor Insulation: Comply with NEMA WC 70/ICEA S-95-658 for Type THHN- THWN-2.

D. Conductor sizes shown on drawings are based on 75 Degree C copper.

E. All conductors shall be rated 600 volts.

F. Branch circuit wire sizes not shown on the drawings shall be #12 AWG minimum.

G. All emergency system wiring shall be installed in raceways separate from other systems.

2.2 CONNECTORS AND SPLICES

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Hubbell Power Systems, Inc.
2. Ideal Industries, Inc.
3. Ilsco; a branch of Bardes Corporation.
4. O-Z/Gedney; a brand of the EGS Electrical Group.
5. Thomas and Betts Corp.
6. 3M; Electrical Markets Division.
7. Tyco Electronics.

B. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.

1. Split Bolt Connectors: Not acceptable.
2. Solderless Pressure Connectors: High copper alloy terminal. May be used only for cable termination to equipment pads or terminals. Not approved for splicing.
3. Spring Wire Connectors: Solderless spring type pressure connector with insulating covers for copper wire splices and taps. Use for conductor sizes 10 AWG and smaller.
4. All wire connectors used in underground or exterior pull boxes shall be gel filled twist connectors or a connector designed for damp and wet locations.
5. Mechanical Connectors: Bolted type tin-plated; high conductivity copper alloy; spacer between conductors; beveled cable entrances.
6. Compression (crimp) Connectors: Long barrel; seamless, tin-plated electrolytic copper tubing; internally beveled barrel ends. Connector shall be clearly marked with the wire size and type and proper number and location of crimps.

2.3 SYSTEM DESCRIPTION

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

PART 3 - EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

A. Feeders: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

B. Branch Circuits: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

3.2 INSTALLATION OF FEEDERS AND BRANCH CIRCUITS

A. Feeder and branch circuit routing is shown diagrammatically on the drawings and is approximate unless dimensioned. Route feeders and branch circuits as required to meet project conditions.

B. All 120- and 277-volt branch circuits shall have a dedicated neutral conductor. The neutral conductor shall be considered current-carrying conductor for wire derating. The use of multi-wire branch circuits with a common neutral is **not** permitted.

C. All power wiring shall be installed in conduit unless specifically indicated otherwise.

D. Conceal feeders and branch circuits in finished walls, ceilings, and floors, unless otherwise indicated.

E. Complete raceway installation between conductor and cable termination points according to Section 26 05 33 "Raceways and Boxes for Electrical Systems" prior to pulling conductors and cables.

F. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.

G. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips that will not damage cables or raceway.

3.3 CONNECTIONS

A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.

B. Make splices, terminations, and taps that are compatible with conductor material.

C. Wiring at Outlets: Install conductor at each outlet, with at least 6 inches (150 mm) of slack.

3.4 IDENTIFICATION

A. Identify and color-code conductors and cables according to Section 26 05 53 "Identification for Electrical Systems."

B. Identify each spare conductor at each end with identity number and location of other end of conductor and identify as spare conductor.

3.5 FIELD QUALITY CONTROL

A. Perform the following tests and inspections:

1. After installing conductors and cables and before electrical circuitry has been energized, test service entrance and feeder conductors for compliance with requirements.

2. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.

B. Test and Inspection Reports: Prepare a written report to record the following:

1. Procedures used.

2. Results that comply with requirements.

3. Results that do not comply with requirements and corrective action taken to achieve compliance with requirements.

C. Cables will be considered defective if they do not pass tests and inspections.

END OF SECTION

SECTION 26 05 26
GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes grounding and bonding systems and equipment.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

1.4 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For grounding to include in emergency, operation, and maintenance manuals.

1. In addition to items specified in Section 01, include the following:

a. Instructions for periodic testing and inspection of grounding features at test wells based on NFPA 70B.

1) Tests shall determine if ground-resistance or impedance values remain within specified maximums, and instructions shall recommend corrective action if values do not.

2) Include recommended testing intervals.

1.5 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with UL 467 for grounding and bonding materials and equipment.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Burndy; Part of Hubbell Electrical Systems.

2. ERICO International Corporation.

3. Harger Lightning and Grounding.

2.2 SYSTEM DESCRIPTION

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with UL 467 for grounding and bonding materials and equipment.

2.03 CONDUCTORS

A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.

B. Bare Copper Conductors:

1. Solid Conductors: ASTM B 3.

2. Stranded Conductors: ASTM B 8.

3. Bonding Cable: 28 kcmil, 14 strands of No. 17 AWG conductor, 1/4 inch (6 mm) in diameter.

4. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.

5. Bonding Jumper: Copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches (41 mm) wide and 1/16 inch (1.6 mm) thick.

2.04 CONNECTORS

A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction for applications in which used and for specific types, sizes, and combinations of conductors and other items connected.

B. Bolted Connectors for Conductors and Pipes: Copper or copper alloy.

C. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

D. Bus-Bar Connectors: Mechanical type, cast silicon bronze, solderless compression-type wire terminals, and long-barrel, two-bolt connection to ground bus bar.

2.05 GROUNDING ELECTRODES

A. Ground Rods: Copper-clad steel; 3/4 inch by 10 feet (19 mm by 3 m).

PART 3 - EXECUTION

3.1 APPLICATIONS

A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger unless otherwise indicated.

B. Underground Grounding Conductors: Install bare copper conductor, No. 2/0 AWG minimum.

1. Bury at least 24 inches (600 mm) below grade.

C. Conductor Terminations and Connections:

1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.

2. Underground Connections: Welded connectors except at test wells and as otherwise indicated.

3. Connections to Ground Rods at Test Wells: Bolted connectors.

4. Connections to Structural Steel: Welded connectors.

3.2 GROUNDING AT THE SERVICE

A. Equipment grounding conductors and grounding electrode conductors shall be connected to the ground bus. Install a main bonding jumper between the neutral and ground buses.

3.3 GROUNDING UNDERGROUND DISTRIBUTION SYSTEM COMPONENTS

A. Comply with IEEE C2 grounding requirements.

B. Grounding Manholes and Handholes: Install a driven ground rod through manhole or handhole floor, close to wall, and set rod depth so 4 inches (100 mm) will extend above finished floor. If necessary, install ground rod before manhole is placed and provide No. 1/0 AWG bare, copper conductor from ground rod into manhole through a waterproof sleeve in manhole wall.

C. Grounding Connections to Manhole Components: Bond exposed-metal parts such as inserts, cable racks, pulling irons, ladders, and cable shields within each manhole or handhole, to ground rod or grounding conductor. Make connections with No. 4 AWG minimum, stranded, hard-drawn copper bonding conductor. Train conductors level or plumb around corners and fasten to manhole walls. Connect to cable armor and cable shields according to written instructions by manufacturer of splicing and termination kits.

D. Pad-Mounted Transformers and Switches: Install two ground rods and ground ring around the pad. Ground pad-mounted equipment and noncurrent-carrying metal items associated with substations by connecting them to underground cable and grounding electrodes. Install tinned-copper conductor not less than No. 2 AWG for ground ring and for taps to equipment grounding terminals. Bury ground ring not less than 6 inches (150 mm) from the foundation.

3.4 EQUIPMENT GROUNDING

A. Install insulated equipment grounding conductors with all feeders and branch circuits.

B. Poles Supporting Outdoor Lighting Fixtures: Install grounding electrode and a separate insulated equipment grounding conductor in addition to grounding conductor installed with branch-circuit conductors.

C. Metallic Fences: Comply with requirements of IEEE C2.

1. Grounding Conductor: Bare, copper, not less than No. 8 AWG.

2. Gates: Shall be bonded to the grounding conductor with a flexible bonding jumper.

3. Barbed Wire: Strands shall be bonded to the grounding conductor.

3.5 INSTALLATION

A. Grounding Conductors: Route along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

B. Ground Bonding Common with Lightning Protection System: Comply with NFPA 780 and UL 96 when interconnecting with lightning protection system. Bond electrical power system ground directly to lightning protection system grounding conductor at closest point to electrical service grounding electrode. Use bonding conductor sized same as system grounding electrode conductor and install in conduit.

C. Ground Rods: Drive rods until tops are 12 inches (300 mm) below finished floor or final grade unless otherwise indicated.

1. Interconnect ground rods with grounding electrode conductor below grade and as otherwise indicated. Make connections without exposing steel or damaging coating if any.

2. For grounding electrode system, install at least two (2) rods spaced at least one-rod length from each other and located at least the same distance from other grounding electrodes, and connect to the service grounding electrode conductor.

D. Test Wells: Ground rod driven through drilled hole in bottom of handhole. Handholes are specified in Section 26 05 43 "Underground Ducts and Raceways for Electrical Systems," and shall be at least 12 inches (300 mm) deep, with cover.

1. Test Wells: Install at least one test well for each service unless otherwise indicated. Install at the ground rod electrically closest to service entrance. Set top of test well flush with finished grade or floor.

E. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance except where routed through short lengths of conduit.

1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.

2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install bonding so vibration is not transmitted to rigidly mounted equipment.

3. Use exothermic-welded connectors for outdoor locations; if a disconnect-type connection is required, use a bolted clamp.

F. Grounding and Bonding for Piping:

1. Metal Water Service Pipe: Install insulated copper grounding conductors, in conduit, from building's main service equipment, or grounding bus, to main metal water service entrances to building. Connect grounding conductors to main metal water service pipes; use a bolted clamp connector or bolt a lug-type connector to a pipe flange by using one of the lug bolts of the flange. Where a dielectric main water fitting is installed, connect grounding conductor on street side of fitting. Bond metal grounding conductor conduit or sleeve to conductor at each end.

2. Water Meter Piping: Use braided-type bonding jumpers to electrically bypass water meters. Connect to pipe with a bolted connector.

3. Bond each aboveground portion of gas piping system downstream from equipment shutoff valve.

G. Grounding for Steel Building Structure: Install a driven ground rod at base of each corner column and at intermediate exterior columns at distances not more than 60 feet (18 m) apart.

H. Ground Ring: Install a grounding conductor, electrically connected to each building structure ground rod and to each steel column, extending around the perimeter of building.

1. Bury ground ring not less than 24 inches (600 mm) from building's foundation.

3.6 FIELD QUALITY CONTROL

A. Perform tests and inspections.

B. Tests and Inspections:

1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.

2. Inspect physical and mechanical condition. Verify tightness of accessible, bolted, electrical connections with a calibrated torque wrench according to manufacturer's written instructions.

3. Test completed grounding system at each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal, at ground test wells. Make tests at ground rods before any conductors are connected.

a. Measure ground resistance no fewer than two full days after last trace of precipitation and without soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.

b. Perform tests by fall-of-potential method according to IEEE 81.

C. Grounding system will be considered defective if it does not pass tests and inspections.

D. Prepare test and inspection reports.

E. Report measured ground resistances that exceed the following values:

1. Power and Lighting Equipment or System with Capacity of 500 kVA and Less: 10 ohms.
2. Power and Lighting Equipment or System with Capacity of 500 to 1000 kVA: 5 ohms.
3. Manhole Grounds: 10 ohms.

F. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Architect promptly and include recommendations to reduce ground resistance.

END OF SECTION

SECTION 26 05 33
RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Metal conduits and fittings.
2. Nonmetallic conduits and fittings.
3. Metal wireways and auxiliary gutters.
4. Boxes, enclosures, and cabinets.

B. Related Requirements:

1. Section 260543 "Underground Ducts and Raceways for Electrical Systems" for exterior ductbanks, manholes, and underground utility construction.

1.3 ACTION SUBMITTALS

A. Product Data: For wireways and fittings, hinged-cover enclosures, and cabinets.

B. Shop Drawings: For custom enclosures and cabinets. Include plans, elevations, sections, and attachment details.

PART 2 – PRODUCTS

2.1 METAL CONDUITS AND FITTINGS

A. Metal Conduit:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. AFC Cable Systems; a part of Atkore International.
b. Allied Tube & Conduit; a part of Atkore International.
c. Southwire Company.
d. Thomas & Betts Corporation; A Member of the ABB Group.
e. Western Tube and Conduit Corporation.
f. Wheatland Tube Company.

2. Listing and Labeling: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
3. RMC: Comply with ANSI C80.1 and UL 6.
4. EMT: Comply with ANSI C80.3 and UL 797.

B. Metal Fittings:

1. Comply with NEMA FB 1 and UL 514B.
2. Listing and Labeling: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
3. Fittings, General: Listed and labeled for type of conduit, location, and use.
4. Conduit Fittings for Hazardous (Classified) Locations: Comply with UL 1203.
5. Fittings for EMT:

   a. Material: Steel.
   b. Type: Set-screw.

6. Expansion Fittings: PVC or steel to match conduit type, complying with UL 651for PVC and type XJ for steel, rated for environmental conditions were installed, and including flexible external bonding jumper.
7. Coating for Fittings for PVC-Coated Conduit: Minimum thickness of 0.040 inch (1 mm), with overlapping sleeves protecting threaded joints.

C. Joint Compound for IMC, RMC, or ARC: Approved, as defined in NFPA 70, by authorities having jurisdiction for use in conduit assemblies, and compounded for use to lubricate and protect threaded conduit joints from corrosion and to enhance their conductivity.

2.2 NONMETALLIC CONDUITS AND FITTINGS

A. Nonmetallic Conduit:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

   a. AFC Cable Systems; a part of Atkore International.
   b. Allied Tube & Conduit; a part of Atkore International.
   c. CANTEX, Inc.
   d. Kraloy
   e. Thomas & Betts Corporation; A Member of the ABB Group.
   f. United Fiberglass.

2. ENT: Comply with NEMA TC 13 and UL 1653.
3. RNC: Type EPC-40-PVC, complying with NEMA TC 2 and UL 651 unless otherwise indicated.
4. LFNC: Comply with UL 1660.
5. RTRC: Comply with UL 2515A and NEMA TC 14.

B. Nonmetallic Fittings:

1. Fittings, General: Listed and labeled for type of conduit, location, and use.
2. Fittings for ENT and RNC: Comply with NEMA TC 3; match to conduit or tubing type and material.
3. Fittings for LFNC: Comply with UL 514B.
4. Solvents and Adhesives: As recommended by conduit manufacturer.
5. Adhesive shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

2.3 METAL WIREWAYS AND AUXILIARY GUTTERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. ABB, Electrification Products Division.
2. B-line; Eaton, Electrical Sector.
3. Hoffman; nVent.
4. MonoSystems, Inc.
5. Square D; Schneider Electric USA.
6. Wiegmann; Hubbell Incorporated, Commercial and Industrial.

B. Material and Construction of Stainless Steel Wireway: Sized and shaped as indicated, 14 gauge minimum, type 304 stainless steel with stainless steel covers, NEMA **4X**.

1. Flanges shall be 10-gauge stainless steel minimum.
2. Wireway shall be constructed with continuously welded seams and with no holes or knockouts.
3. All covers and flanges shall utilize solid oil-resistant gasket covers and shall be hinged with extended screw clamps.
4. Connectors shall be flanged.
5. Fittings shall be lay-in type with removable top.

C. Fittings and Accessories: Include covers, couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.

D. Wireway Covers for Stainless Steel Wireway: Flanged-and-gasketed type.

E. Finish: Brushed stainless steel for stainless steel wireways].

2.4 BOXES, ENCLOSURES, AND CABINETS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Crouse-Hinds, an Eaton business.
2. EGS/Appleton Electric.
3. Erickson Electrical Equipment Company.
4. FSR Inc.
5. Hoffman; a brand of Pentair Equipment Protection.
6. Hubbell Incorporated.
7. Kraloy.
8. O-Z/Gedney; a brand of Emerson Industrial Automation.
9. RACO; Hubbell.
10. Thomas & Betts Corporation; A Member of the ABB Group.
11. Wiremold / Legrand.

B. General Requirements for Boxes, Enclosures, and Cabinets: Boxes, enclosures, and cabinets installed in wet locations shall be listed for use in wet locations.

C. Sheet Metal Outlet and Device Boxes: Comply with NEMA OS 1 and UL 514A.

D. Cast-Metal Outlet and Device Boxes: Comply with NEMA FB 1, deep-type, **ferrous alloy**, Type FD, with gasketed cover, threaded hubs.

E. Nonmetallic Outlet and Device Boxes: Comply with NEMA OS 2 and UL 514C.

F. Luminaire Outlet Boxes: Nonadjustable, designed for attachment of luminaire weighing 50 lb (23 kg). Outlet boxes designed for attachment of luminaires weighing more than 50 lb (23 kg) shall be listed and marked for the maximum allowable weight.

G. Sheet Metal Pull and Junction Boxes: NEMA OS 1, galvanized steel.

H. Box extensions used to accommodate new building finishes shall be of same material as recessed box.

I. Device Box Dimensions: 4 inches square by 2-1/8 inches deep (100 mm square by 60 mm deep).

J. Telecommunications and Security Device Box Dimensions: 4 11/16 inches square by 2-1/8 inches deep unless noted otherwise.

K. Gangable boxes are prohibited.

PART 3 – EXECUTION

3.1 RACEWAY SIZING

A. Size conduit as shown on the drawings and specifications. Where not indicated in the contract documents, conduit size shall be according to NEC. (Latest Edition). Conduit and conductor sizing shall be coordinated to limit conductor fill to less than 40%, maintain conductor ampere capacity as required by the National Electrical Code (to include enlarged conductor's due to temperature and quantity derating values) and to prevent excessive voltage drop and pulling tension due to long conduit/conductor lengths.

B. Minimum (Unless noted otherwise) Raceway Size 3/4-inch (21 mm) trade size. [The use of ½ inch would be allowed for installation of conduit to individual light switches, individual receptacles and individual fixture whips from junction boxes.]

C. Minimum Raceway Size Telecommunication and Security Conduit: 1 inch, unless noted otherwise in documents.

D. Minimum Raceway Size Control Conduit: 3/4-inch, unless noted otherwise in documents.

E. Minimum Raceway Size; Below Grade 5'-0" or less from Building Foundation: 1 inch, unless noted otherwise in documents.

F. Minimum Raceway Size; Below Grade more than 5'-0" from Building Foundation: 1-inch , unless noted otherwise in documents.

G. Conduit sizes shall change only at the entrance or exit to a junction box, unless specifically noted on the drawings.

3.2 RACEWAY APPLICATION

A. Outdoors: Apply raceway products as specified below unless otherwise indicated:

1. Exposed Conduit: RMC.
2. Concealed Conduit, Aboveground: RMC.

3. Underground Conduit: Refer to Section 260543.
4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFNC.
5. Boxes and Enclosures, Aboveground: NEMA 250, Type 4X.

B. Indoors: Apply raceway products as specified below unless otherwise indicated:

1. Exposed, Not Subject to Physical Damage: EMT.
2. Exposed, Not Subject to Severe Physical Damage: EMT.
3. Exposed and Subject to Physical Damage: RMC. Raceway locations include the following:
4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC, except use LFMC in damp or wet locations.
5. Flexible Metal Conduit (FMC) ¾ inch, unless otherwise noted. Lighting branch circuit wiring to an individual luminaire. Flexible metal conduit may be a manufactured, UL listed 3/8-inch flexible metal conduit and fittings with #14 AWG THHN conductors and an insulated ground wire. Maximum length of 3/8 inch FMC shall be six (6) feet.
6. Damp or Wet Locations: RMC.
7. Damp or Wet Locations and subject to Physical Damage: RMC
8. Hazardous Locations: All raceways installed in hazardous locations shall be suitable for locations as defined in the NEC Article 500.
9. Do not install aluminum conduits, boxes, or fittings in contact with concrete or earth.
10. Do not install nonmetallic conduit where ambient temperature exceeds 120 deg F (49 deg C).

C. Raceway Fittings: Compatible with raceways and suitable for use and location.

1. Rigid and Intermediate Steel Conduit: Use threaded rigid steel conduit fittings unless otherwise indicated. Comply with NEMA FB 2.10.
2. EMT: Use setscrew, steel fittings. Comply with NEMA FB 2.10.
3. Flexible Conduit: Use only fittings listed for use with flexible conduit. Comply with NEMA FB 2.20.

3.3 BOXES AND ENCLOSURES APPLICATIONS

A. Boxes and Enclosures:

1. NEMA 250, Type 1, except use NEMA 250, Type 4X SS in damp or wet locations.
2. Dirty locations: NEMA 250, Type 12, powder coated steel.
3. Hazardous Locations: All boxes and enclosures installed in hazardous locations shall be suitable for locations as defined by NEC Article 500.

3.4 INSTALLATION

A. Comply with NECA 1 and NECA 101 for installation requirements except where requirements on Drawings or in this article are stricter. Comply with NECA 102 for aluminum conduits. Comply with NFPA 70 limitations for types of raceways allowed in specific occupancies and number of floors.

B. In general, conduits shall be installed concealed in walls, in finished spaces and where possible or practical, or as noted otherwise. In unfinished spaces, mechanical and utility

areas, conduit may run either concealed or exposed as conditions dictate and as practical unless noted otherwise on drawings. Installation shall maintain headroom in exposed vicinities of pedestrian or vehicular traffic.

C. Route conduit through roof openings provided for piping and ductwork where possible. If not provided or routing through provided openings is not possible, rough through jack with pitch pocket. Coordinate roof penetrations with others.

D. Conduit runs shall be routed as shown on the large-scale drawings. Conduit routing on drawings scaled ¼" =1'-0" or less shall be considered diagrammatic, unless noted otherwise. The correct routing, when shown diagrammatically shall be chosen by the Contractor based on information provided in the contract documents, in accordance with manufacturer's written instructions, applicable coded, NECA 1 and NECA 101 and coordinated with other contractors.

E. Do not fasten conduits onto the bottom side of a metal deck roof.

F. Complete raceway installation before starting conductor installation.

G. Install temporary closures to prevent foreign matter from entering raceways.

H. Unused openings in boxes and fittings shall be plugged with suitable devices rated for the proper environment.

I. Make bends and offsets so ID is not reduced. Keep legs of bends in the same plane and keep straight legs of offsets parallel, unless otherwise indicated.

J. Arrange stub-ups so curved portions of bends are not visible above finished slab. Where rigid non-metallic conduit (RNC) conduit is used below grade, in slab, below slab, etc., a transition to rigid galvanized steel or PVC-coated steel conduit shall be installed before conduit exits the earth. The metallic conduit shall extend a minimum of 6" into the surface concealing the non-metallic conduit.

K. Install no more than the equivalent of three 90-degree bends in any conduit run except for control wiring conduits, for which fewer bends are allowed. Support within 12 inches of changes in direction and within 12 inches of enclosures to which attached to.

L. Make bends in raceway using large-radius preformed ells. Field bending shall be according to NFPA 70 minimum radii requirements. Use only equipment specifically designed for material and size involved.

M. Conceal conduit within finished walls, and ceilings, unless otherwise indicated. Install conduits parallel or perpendicular to building lines. Conduit runs installed above suspended ceilings shall be properly supported. In no case shall conduit rest on the suspended ceiling construction, nor utilize ceiling support system for conduit supports.

N. Install exposed raceways parallel or at right angles to nearby surfaces or structural members and follow surface contours as much as possible.

1. Run parallel or banked raceways together on common supports.
2. Make parallel bends in parallel or banked runs. Use factory elbows only where elbows can be installed parallel; otherwise, provide field bends for parallel raceways.

O. Install concealed raceways with a minimum of bends in the shortest practical distance, considering type of building construction and obstructions, unless otherwise indicated.

P. Conduit shall not be routed under floor slab unless specifically noted on drawings.

Q. Telecommunication Conduits:

1. Conduits that protrude through the structural floor shall be installed 1 to 3” above finished floor (AFF).
2. Conduits that are below grade and enter the building shall terminate a minimum of 4-inches above finished floor (AFF) and as close to the wall as possible.
3. Condit terminations shall have nylon bushings installed on each end of every conduit run.
4. Telecommunication conduits shall have no more than two (2) 90 degree bends between pull points and contain no continuous sections longer than 100 feet. Insert pull points or pull boxes for conduits exceeding 100 feet in length. A third bend is acceptable if: The total run is no longer than (33) feet.
5. Telecommunications pull boxes shall not be used in lieu of a bend. Align conduits that enter into the pull box from the opposite ends with each other. Pull box size shall be twelve (12) times the diameter of the largest conduit. Slip sleeves or gutters can be used in place of a pull box.
6. Conduit bend radius shall be six (6) times the diameter for conduits under 2-inches and ten (10) times the diameter for conduits over 2-inches.

R. Contractor shall be responsible for all openings required in masonry or exterior walls under this division. A qualified mason at the expense of this contractor shall repair all openings to match existing conditions.

3.5 CONDUIT TERMINATIONS

A. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.

B. Join raceways with fittings designed and approved for that purpose and make joints tight.

C. When raceways are terminated with locknuts and bushings, align raceways to enter squarely and install locknuts with dished part against box. Use two locknuts, one inside and one outside box.

D. Where raceways are terminated with threaded hubs, screw raceways or fittings tightly into hub so end bears against wire protection shoulder. Where chase nipples are used, align raceways so coupling is square to box; tighten chase nipple so no threads are exposed.

E. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors including conductors smaller than No. 4 AWG.

F. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install bushings on conduits up to 1-1/4-inch (35mm) trade size and insulated throat metal bushings on 1-1/2-inch (41-mm) trade size and larger conduits terminated with locknuts. Install insulated throat metal grounding bushings on service conduits.

G. Install raceways square to the enclosure and terminate at enclosures with locknuts. Install locknuts hand tight plus 1/4 turn more.

H. Do not rely on locknuts to penetrate nonconductive coatings on enclosures. Remove coatings in the locknut area prior to assembling conduit to enclosure to assure a continuous ground path.

I. Cut conduit perpendicular to the length. For conduits 2-inch (53-mm) trade size and larger, use roll cutter or a guide to make cut straight and perpendicular to the length.

J. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb (90-kg) tensile strength. Leave at least 12 inches (300 mm) of slack at each end of pull wire. Cap underground raceways designated as spare above grade alongside raceways in use.

K. Install raceway sealing fittings at accessible locations according to NFPA 70 and fill them with listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings according to NFPA 70.

L. Comply with manufacturer's written instructions for solvent welding RNC and fittings.

M. Stub-up Connections: Extend conduits through concrete floor for connection to freestanding equipment. Install with an adjustable top or coupling threaded inside for plugs set flush with finished floor. Extend conductors to equipment with rigid steel conduit; FMC may be used 6 inches (150 mm) above the floor. Install screwdriver-operated, threaded plugs flush with floor for future equipment connections.

3.6 BOX INSTALLATION

A. Electrical box locations shown on drawings are approximate unless dimensioned. Verify location of floor boxes and outlets in offices and work areas prior to rough-in.

B. It shall be the Contractor’s responsibility to study drawings pertaining to other trades, to discuss location of outlets with workmen installing other piping and equipment and to fit all electrical outlets to job conditions.

C. The proper location of each outlet is considered a part of this contract and no additional compensation will be paid to the Contractor for moving outlets which were improperly located.

D. Fasten junction and pull boxes to or support from building structure. Do not support boxes by conduits.

E. Install hinged-cover enclosures and cabinets plumb. Support at each corner.

3.7 PROTECTION

A. Protect coatings, finishes, and cabinets from damage and deterioration.

1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
2. Repair damage to PVC coatings or paint finishes with matching touchup coating recommended by manufacturer.

END OF SECTION

SECTION 26 05 43
UNDERGROUND DUCTS AND RACEWAYS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section Includes:

1. Metal conduits and fittings, including RMC and PVC-coated steel conduit.

2. Rigid nonmetallic duct.

3. Duct accessories.

4. Polymer concrete handholes and boxes with polymer concrete cover.

1.03 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include duct-bank materials, including spacers and miscellaneous components.

2. Include duct, conduits, and their accessories, including elbows, end bells, bends, fittings, and solvent cement.

3. Include accessories for manholes, handholes, boxes.

4. Include underground-line warning tape.

B. Shop Drawings:

1. Factory-Fabricated Handholes and Boxes Other Than Precast Concrete:

a. Include dimensioned plans, sections, and elevations, and fabrication and installation details.

b. Include duct entry provisions, including locations and duct sizes.

c. Include cover design.

d. Include grounding details.

e. Include dimensioned locations of cable rack inserts, and pulling-in and lifting irons.

1.04 FIELD CONDITIONS

A. Ground Water: Assume ground-water level is 36 inches (900 mm) below ground surface unless a higher water table is noted on Drawings.

PART 2 - PRODUCTS

2.01 METAL CONDUIT AND FITTINGS

A. RMC: Comply with ANSI C80.1 and UL 6.

B. Coated Steel Conduit: PVC-coated RMC.

1. Comply with NEMA RN 1.

2. Coating Thickness: 0.040 inch (1 mm), minimum.

C. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Allied Tube & Conduit; a part of Atkore International.

2. Thomas & Betts Corporation; A Member of the ABB Group.

3. Western Tube and Conduit Corporation.

4. Wheatland Tube Company.

2.02 RIGID NONMETALLIC DUCT

A. Underground Plastic Utilities Duct: Type EPC-80-PVC and Type EPC-40-PVC RNC, complying with NEMA TC 2 and UL 651, with matching fittings complying with NEMA TC 3 by same manufacturer as duct.

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Allied Tube and Conduit; a part of Atkore International.

2. CANTEX INC.

3. Kraloy.

4. Lamson & Sessions; Carlong Electrical Products.

5. Thomas & Betts Corporation; A Member of the ABB GRoup.

C. Solvents and Adhesives: As recommended by conduit manufacturer.

2.03 DUCT ACCESSORIES

A. Duct Spacers: Factory-fabricated, rigid, PVC interlocking spacers; sized for type and size of duct with which used and selected to provide minimum duct spacing indicated while supporting duct during concreting or backfilling.

B. Underground-Line Warning Tape: Comply with requirements for underground-line warning tape specified in Section 26 05 53 "Identification for Electrical Systems."

2.04 POLYMER CONCRETE HANDHOLES AND BOXES WITH POLYMER CONCRETE COVER

A. Description: Molded of sand and aggregate, bound together with a polymer resin, and reinforced with steel or fiberglass or a combination of the two.

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Armorcast Products Company.

2. Oldcastle Enclosure Solutions.

3. Quazite: Hubbell Power Systems, Inc.

C. Standard: Comply with SCTE 77. Comply with tier requirements in "Underground Enclosure Application" Article.

D. Color: Gray.

E. Configuration: Units shall be designed for flush burial and have open bottom unless otherwise indicated.

F. Cover: Weatherproof, secured by tamper-resistant locking devices and having structural load rating consistent with enclosure.

G. Cover Finish: Nonskid finish shall have a minimum coefficient of friction of 0.50.

H. Cover Legend: Molded lettering, as indicated for each service.

I. Duct Entrance Provisions: Duct-terminating fittings shall mate with entering duct for secure, fixed installation in enclosure wall.

J. Handholes 12 inches wide by 24 inches long (300 mm wide by 600 mm long) and larger shall have factory-installed inserts for cable racks and pulling-in irons.

2.05 SOURCE QUALITY CONTROL

A. Test and inspect precast concrete utility structures according to ASTM C 1037.

B. Nonconcrete Handhole and Pull-Box Prototype Test: Test prototypes of manholes and boxes for compliance with SCTE 77. Strength tests shall be for specified tier ratings of products supplied.

1. Strength tests of complete boxes and covers shall be by an independent testing agency or manufacturer. A qualified registered professional engineer shall certify tests by manufacturer.

2. Testing machine pressure gages shall have current calibration certification, complying with ISO 9000 and ISO 10012, and traceable to NIST standards.

PART 3 - EXECUTION

3.01 PREPARATION

A. Coordinate layout and installation of duct, duct bank, manholes, handholes, and boxes with final arrangement of other utilities, site grading, and surface features as determined in the field. Notify Architect if there is a conflict between areas of excavation and existing structures or archaeological sites to remain.

B. Coordinate elevations of duct and duct-bank entrances into manholes, handholes, and boxes with final locations and profiles of duct and duct banks, as determined by coordination with other utilities, underground obstructions, and surface features. Revise locations and elevations as required to suit field conditions and to ensure that duct and duct bank will drain to manholes and handholes, and as approved by Architect.

C. Clear and grub vegetation to be removed and protect vegetation to remain according to Section 31. Remove and stockpile topsoil for reapplication according to Section 31.

3.02 UNDERGROUND DUCT APPLICATION

A. Duct for Electrical Cables More Than 600 V: Type EPC-80-PVC RNC, concrete-encased unless otherwise indicated.

B. Duct for Electrical Feeders 600 V and Less: Type EPC-80-PVC RNC, direct-buried unless otherwise indicated.

C. Duct for Electrical Branch Circuits: Type EPC-40-PVC RNC, direct-buried unless otherwise indicated.

D. Bored Underground Duct: Type EPEC-40-HDPE unless otherwise indicated.

E. Underground Ducts Crossing Paved Paths and Driveways: Type EPC-40 PVC RNC, encased in reinforced concrete.

F. Stub-ups: Concrete-encased RNC.

3.03 UNDERGROUND ENCLOSURE APPLICATION

A. Handholes and Boxes for 600 V and Less:

1. Units in Roadways and Other Deliberate Traffic Paths: Precast concrete. AASHTO HB 17, H-20 structural load rating.

2. Units in Driveway, Parking Lot, and Off-Roadway Locations, Subject to Occasional, Nondeliberate Loading by Heavy Vehicles: Polymer concrete, SCTE 77, Tier 15 structural load rating.

3. Units in Sidewalk and Similar Applications with a Safety Factor for Nondeliberate Loading by Vehicles: Polymer concrete units, SCTE 77, Tier 8 structural load rating.

4. Units Subject to Light-Duty Pedestrian Traffic Only: Polymer concrete units, SCTE 77, Tier 8.

5. Cover design load shall not exceed the design load of the handhole or box.

3.04 EARTHWORK

A. Excavation and Backfill: Comply with Section 31, but do not use heavy-duty, hydraulic-operated, compaction equipment.

B. Restoration: Replace area after construction vehicle traffic in immediate area is complete.

C. Restore surface features at areas disturbed by excavation and re-establish original grades unless otherwise indicated. Replace removed sod immediately after backfilling is completed.

D. Restore areas disturbed by trenching, storing of dirt, cable laying, and other work.

3.05 DUCT AND DUCT-BANK INSTALLATION

A. Where indicated on Drawings, install duct, spacers, and accessories into the duct-bank configuration shown. Duct installation requirements in this Section also apply to duct bank.

B. Install duct according to NEMA TCB 2.

C. Slope: Pitch duct a minimum slope of 1:300 down toward manholes and handholes and away from buildings and equipment. Slope duct from a high point between two manholes, to drain in both directions.

D. Curves and Bends: Use 5-degree angle couplings for small changes in direction. Use manufactured long sweep bends with a minimum radius of 48 inches (1200 mm), both horizontally and vertically, at other locations unless otherwise indicated.

E. Joints: Use solvent-cemented joints in duct and fittings and make watertight according to manufacturer's written instructions. Stagger couplings so those of adjacent duct do not lie in same plane.

F. Building Wall Penetrations: Make a transition from underground duct to RMC at least 10 feet (3 m) outside the building wall, without reducing duct line slope away from the building and without forming a trap in the line. Use fittings manufactured for RNC-to-RMC transition.

G. Sealing: Provide temporary closure at terminations of duct with pulled cables. Seal spare duct at terminations. Use sealing compound and plugs to withstand at least 15-psig (1.03-MPa) hydrostatic pressure.

H. Pulling Cord: Install 200-lbf- (1000-N-) test nylon cord in empty ducts.

I. Concrete-Encased Ducts and Duct Bank:

1. Excavate trench bottom to provide firm and uniform support for duct. Prepare trench bottoms as specified in Section 31 20 00 "Earth Moving" for pipes less than 6 inches (150 mm) in nominal diameter.

2. Width: Excavate trench 12 inches (300 mm) wider than duct on each side.

3. Depth: Install so top of duct envelope is at least 24 inches (600 mm) below finished grade in areas not subject to deliberate traffic, and at least 30 inches (750 mm) below finished grade in deliberate traffic paths for vehicles unless otherwise indicated.

4. Support duct on duct spacers coordinated with duct size, duct spacing, and outdoor temperature.

5. Spacer Installation: Place spacers close enough to prevent sagging and deforming of duct, with not less than four spacers per 20 feet (6 m) of duct. Place spacers within 24 inches (600 mm) of duct ends. Stagger spacers approximately 6 inches (150 mm) between tiers. Secure spacers to earth and to duct to prevent floating during concreting. Tie entire assembly together using fabric straps; do not use tie wires or reinforcing steel that may form conductive or magnetic loops around ducts or duct groups.

6. Minimum Space between Duct: 3 inches (75 mm) between edge of duct and exterior envelope wall, 2 inches (50 mm) between ducts for like services, and 4 inches (100 mm) between power and communications ducts.

7. Elbows: Use manufactured duct elbows for stub-ups, at building entrances, and at changes of direction in duct unless otherwise indicated. Extend encasement throughout length of elbow.

8. Reinforcement: Reinforce concrete-encased duct where crossing disturbed earth and where indicated. Arrange reinforcing rods and ties without forming conductive or magnetic loops around ducts or duct groups.

9. Forms: Use walls of trench to form side walls of duct bank where soil is self-supporting and concrete envelope can be poured without soil inclusions; otherwise, use forms.

10. Concrete Cover: Install a minimum of 3 inches (75 mm) of concrete cover between edge of duct to exterior envelope wall, 2 inches (50 mm) between duct of like services, and 4 inches (100 mm) between power and communications ducts.

11. Concreting Sequence: Pour each run of envelope between manholes or other terminations in one continuous operation.

    a. Start at one end and finish at the other, allowing for expansion and contraction of duct as its temperature changes during and after the pour. Use expansion fittings installed according to manufacturer's written

instructions or use other specific measures to prevent expansion-contraction damage.

b. If more than one pour is necessary, terminate each pour in a vertical plane and install 3/4-inch (15-mm) reinforcing-rod dowels extending a minimum of 18 inches (450 mm) into concrete on both sides of joint near corners of envelope.

12. Pouring Concrete: Comply with requirements in "Concrete Placement" Article in Section 03. Place concrete carefully during pours to prevent voids under and between duct and at exterior surface of envelope. Do not allow a heavy mass of concrete to fall directly onto ducts. Allow concrete to flow around duct and rise up in middle, uniformly filling all open spaces. Do not use power-driven agitating equipment unless specifically designed for duct-installation application.

J. Direct-Buried Duct and Duct Bank:

1. Excavate trench bottom to provide firm and uniform support for duct. Comply with requirements in Section 31 for preparation of trench bottoms for pipes less than 6 inches (150 mm) in nominal diameter.

2. Width: Excavate trench 12 inches (300 mm) wider than duct on each side.

3. Depth: Install top of duct at least 36 inches (900 mm) below finished grade unless otherwise indicated.

4. Set elevation of bottom of duct bank below frost line.

5. Support ducts on duct spacers coordinated with duct size, duct spacing, and outdoor temperature.

6. Spacer Installation: Place spacers close enough to prevent sagging and deforming of duct, with not less than four spacers per 20 feet (6 m) of duct. Place spacers within 24 inches (600 mm) of duct ends. Stagger spacers approximately 6 inches (150 mm) between tiers. Secure spacers to earth and to ducts to prevent floating during concreting. Tie entire assembly together using fabric straps; do not use tie wires or reinforcing steel that may form conductive or magnetic loops around ducts or duct groups.

7. Install duct with a minimum of 3 inches (75 mm) between ducts for like services and 6 inches (150 mm) between power and communications duct.

8. Elbows: Install manufactured duct elbows for stub-ups, at building entrances, and at changes of direction in duct direction unless otherwise indicated. Encase elbows for stub-up ducts throughout length of elbow.

9. After installing first tier of duct, backfill and compact. Start at tie-in point and work toward end of duct run, leaving ducts at end of run free to move with expansion and contraction as temperature changes during this process. Repeat procedure after placing each tier. After placing last tier, hand place backfill to 4 inches (100

mm) over duct and hand tamp. Firmly tamp backfill around ducts to provide maximum supporting strength. Use hand tamper only. After placing controlled backfill over final tier, make final duct connections at end of run and complete backfilling with normal compaction. Comply with requirements in Section 31 20 00 "Earth Moving" for installation of backfill materials.

a. Place minimum 3 inches (75 mm) of sand as a bed for duct. Place sand to a minimum of 6 inches (150 mm) above top level of duct.

b. Place minimum 6 inches (150 mm) of engineered fill above concrete encasement of duct.

K. Underground-Line Warning Tape: Bury conducting underground line specified in Section 26 05 53 "Identification for Electrical Systems" no less than 12 inches (300 mm) above all concrete-encased duct and duct banks. Align tape parallel to and within 3 inches (75 mm) of centerline of duct bank. Provide an additional warning tape for each 12-inch (300-mm) increment of duct-bank width over a nominal 18 inches (450 mm). Space additional tapes 12 inches (300 mm) apart, horizontally.

3.06 INSTALLATION OF HANDHOLES AND BOXES OTHER THAN PRECAST CONCRETE

A. Install handholes and boxes level and plumb and with orientation and depth coordinated with connecting duct, to minimize bends and deflections required for proper entrances. Use box extension if required to match depths of duct, and seal joint between box and extension as recommended by manufacturer.

B. Unless otherwise indicated, support units on a level bed of crushed stone or gravel, graded from 1/2-inch (12.5-mm) sieve to No. 4 (4.75-mm) sieve and compacted to same density as adjacent undisturbed earth.

C. Elevation: In paved areas and trafficways, set cover flush with finished grade. Set covers of other handholes 1 inch (25 mm) above finished grade.

D. Install removable hardware, including pulling eyes, cable stanchions, cable arms, and insulators, as required for installation and support of cables and conductors and as indicated. Select arm lengths to be long enough to provide spare space for future cables, but short enough to preserve adequate working clearances in enclosure.

E. Field cut openings for duct according to enclosure manufacturer's written instructions. Cut wall of enclosure with a tool designed for material to be cut. Size holes for terminating fittings to be used, and seal around penetrations after fittings are installed.

F. For enclosures installed in asphalt paving and subject to occasional, nondeliberate, heavy-vehicle loading, form and pour a concrete ring encircling, and in contact with, enclosure and with top surface screeded to top of box cover frame. Bottom of ring shall rest on compacted earth.

1. Concrete: 3000 psi (20 kPa), 28-day strength, complying with Section 03, with a troweled finish.

2. Dimensions: 10 inches wide by 12 inches deep (250 mm wide by 300 mm deep).

3.07 GROUNDING

A. Ground underground ducts and utility structures according to Section 26 05 26 "Grounding and Bonding for Electrical Systems."

3.08 FIELD QUALITY CONTROL

A. Perform the following tests and inspections:

1. Demonstrate capability and compliance with requirements on completion of installation of underground duct, duct bank, and utility structures.

2. Pull solid aluminum or wood test mandrel through duct to prove joint integrity and adequate bend radii, and test for out-of-round duct. Provide a minimum 12-inch-(300-mm-) long mandrel equal to duct size minus 1/4 inch (6 mm). If obstructions are indicated, remove obstructions and retest.

3. Test manhole and handhole grounding to ensure electrical continuity of grounding and bonding connections. Measure and report ground resistance as specified in Section 26 05 26 "Grounding and Bonding for Electrical Systems."

B. Correct deficiencies and retest as specified above to demonstrate compliance.

C. Prepare test and inspection reports.

3.09 CLEANING

A. Pull leather-washer-type duct cleaner, with graduated washer sizes, through full length of duct until duct cleaner indicates that duct is clear of dirt and debris. Follow with rubber duct swab for final cleaning and to assist in spreading lubricant throughout ducts.

B. Clean internal surfaces of manholes, including sump.

1. Sweep floor, removing dirt and debris.

2. Remove foreign material.

END OF SECTION

SECTION 26 05 53
IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section Includes:
1. Identification for raceways.
2. Identification of power and control cables.
3. Identification for conductors.
4. Underground-line warning tape.
5. Warning labels and signs.
6. Instruction signs.
7. Equipment identification labels.
8. Miscellaneous identification products.

1.03 ACTION SUBMITTALS

A. Product Data: For each electrical identification product indicated.

B. Samples: For each type of label and sign to illustrate size, colors, lettering style, mounting provisions, and graphic features of identification products.

C. Identification Schedule: An index of nomenclature of electrical equipment and system components used in identification signs and labels.

1.04 QUALITY ASSURANCE

A. Comply with ANSI A13.1 and IEEE C2.

B. Comply with NFPA 70.

C. Comply with 29 CFR 1910.144 and 29 CFR 1910.145.

D. Comply with ANSI Z535.4 for safety signs and labels.

E. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.

1.05 COORDINATION

A. Coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual; and with those required by codes, standards, and 29 CFR 1910.145. Use consistent designations throughout Project.

B. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.

C. Coordinate installation of identifying devices with location of access panels and doors.

D. Install identifying devices before installing acoustical ceilings and similar concealment.

PART 2 - PRODUCTS

2.01 POWER AND CONTROL RACEWAY IDENTIFICATION MATERIALS

A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway size.

B. Colors for Raceways Carrying Circuits at 600 V or Less:
1. Black letters on an orange field.
2. Legend: Indicate voltage and system or service type.

C. Colors for Raceways Carrying Circuits at More Than 600 V:
1. Black letters on an orange field.
2. Legend: "DANGER CONCEALED HIGH VOLTAGE WIRING."

D. Vinyl Labels for Raceways Carrying Circuits at 600 V or Less: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound clear adhesive tape for securing ends of legend label.

E. Snap-Around Labels for Raceways Carrying Circuits at 600 V or Less: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeve, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.

F. Snap-Around, Color-Coding Bands for Raceways Carrying Circuits at 600 V or Less: Slit, pretensioned, flexible, solid-colored acrylic sleeve, 2 inches long, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.

G. Tape and Stencil for Raceways Carrying Circuits More Than 600 V: 4-inch wide black stripes on 10-inch centers diagonally over orange background that extends full length of raceway or duct and is 12 inches wide. Stop stripes at legends.

H. Metal Tags: Brass or aluminum, 2 by 2 by 0.05 inch, with stamped legend, punched for use with self-locking cable tie fastener.

I. Write-On Tags: Polyester tag, 0.010 inch thick, with corrosion-resistant grommet and cable tie for attachment to conductor or cable.
   1. Marker for Tags: Permanent, waterproof, black ink marker recommended by tag manufacturer.
   2. Marker for Tags: Machine-printed, permanent, waterproof, black ink marker recommended by printer manufacturer.

2.02 ARMORED AND METAL-CLAD CABLE IDENTIFICATION MATERIALS

A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each cable size.

B. Colors for Cables Carrying Circuits at 600 V and Less:
   1. Black letters on an orange field.
   2. Legend: Indicate voltage and system or service type.

C. Colors for Cables Carrying Circuits at More Than 600 V:
   1. Black letters on an orange field.
   2. Legend: "DANGER HIGH VOLTAGE WIRING."

D. Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound clear adhesive tape for securing ends of legend label.

E. Self-Adhesive Vinyl Tape: Colored, heavy duty, waterproof, fade resistant; 2 inches wide; compounded for outdoor use.

F. Heat-Shrink Preprinted Tubes: Flame-retardant polyolefin tube with machine-printed identification label. Sized to suit diameter of and shrinks to fit firmly around cable it identifies. Full shrink recovery at a maximum of 200 deg F. Comply with UL 224.

2.03 POWER AND CONTROL CABLE IDENTIFICATION MATERIALS

A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each cable size.

B. Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound clear adhesive tape for securing ends of legend label.

C. Self-Adhesive, Self-Laminating Polyester Labels: Preprinted, 3-mil thick flexible label with acrylic pressure-sensitive adhesive that provides a clear, weather- and chemical-resistant, self-laminating, protective shield over the legend. Labels sized to fit the cable diameter such that the clear shield overlaps the entire printed legend.

D. Heat-Shrink Preprinted Tubes: Flame-retardant polyolefin tube with machine-printed identification label. Sized to suit diameter of and shrinks to fit firmly around cable it identifies. Full shrink recovery at a maximum of 200 deg F Comply with UL 224.

E. Metal Tags: Brass or aluminum, 2 by 2 by 0.05 inch, with stamped legend, punched for use with self-locking cable tie fastener.

F. Write-On Tags: Polyester tag, 0.010 inch thick, with corrosion-resistant grommet and cable tie for attachment to conductor or cable.
   1. Marker for Tags: Permanent, waterproof, black ink marker recommended by tag manufacturer.
   2. Marker for Tags: Machine-printed, permanent, waterproof, black ink marker recommended by printer manufacturer.

G. Snap-Around Labels: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeve, with diameter sized to suit diameter of cable it identifies and to stay in place by gripping action.

H. Snap-Around, Color-Coding Bands: Slit, pretensioned, flexible, solid-colored acrylic sleeve, 2 inches long, with diameter sized to suit diameter of cable it identifies and to stay in place by gripping action.

2.04 CONDUCTOR IDENTIFICATION MATERIALS

A. Color-Coding Conductor Tape: Colored, self-adhesive vinyl tape not less than 3 mils thick by 1 to 2 inches wide.

B. Self-Adhesive, Self-Laminating Polyester Labels: Write-on, 3-mil thick flexible label with acrylic pressure-sensitive adhesive that provides a clear, weather- and chemical-resistant, self-laminating, protective shield over the legend. Labels sized to fit the conductor diameter such that the clear shield overlaps the entire printed legend.

C. Snap-Around Labels: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeve, with diameter sized to suit diameter of conductor it identifies and to stay in place by gripping action.

D. Snap-Around, Color-Coding Bands: Slit, pretensioned, flexible, solid-colored acrylic sleeve with diameter sized to suit diameter of conductor it identifies and to stay in place by gripping action.

E. Heat-Shrink Preprinted Tubes: Flame-retardant polyolefin tube with machine-printed identification label. Sized to suit diameter of and shrinks to fit firmly around conductor it identifies. Full shrink recovery at a maximum of 200 deg F. Comply with UL 224.

F. Marker Tapes: Vinyl or vinyl-cloth, self-adhesive wraparound type, with circuit identification legend machine printed by thermal transfer or equivalent process.

G. Write-On Tags: Polyester tag, 0.010 inch thick, with corrosion-resistant grommet and cable tie for attachment to conductor or cable.
   1. Marker for Tags: Permanent, waterproof, black ink marker recommended by tag manufacturer.
   2. Labels for Tags: Self-adhesive label, machine-printed with permanent, waterproof, black ink recommended by printer manufacturer, sized for attachment to tag.

2.05 FLOOR MARKING TAPE

A. 2-inch wide, 5-mil pressure-sensitive vinyl tape, with black and white stripes and clear vinyl overlay.

2.06 UNDERGROUND-LINE WARNING TAPE

A. Tape:
   1. Recommended by manufacturer for the method of installation and suitable to identify and locate underground electrical utility lines.

2. Printing on tape shall be permanent and shall not be damaged by burial operations.
3. Tape material and ink shall be chemically inert, and not subject to degrading when exposed to acids, alkalis, and other destructive substances commonly found in soils.

B. Color and Printing:
1. Comply with ANSI Z535.1 through ANSI Z535.5.
2. Inscriptions for Red-Colored Tapes: ELECTRIC LINE, HIGH VOLTAGE.
3. Inscriptions for Orange-Colored Tapes: TELEPHONE CABLE, CATV CABLE, COMMUNICATIONS CABLE, OPTICAL FIBER CABLE.

C. Tag: typical:
1. Pigmented polyolefin, bright-colored, compounded for direct-burial service.
2. Thickness: 4 mils.
3. Weight: 18.5 lb/1000 sq. ft..
4. 3-Inch Tensile According to ASTM D 882: 30 lbf, and 2500 psi.

2.07 WARNING LABELS AND SIGNS

A. Comply with NFPA 70 and 29 CFR 1910.145.

B. Self-Adhesive Warning Labels: Factory-printed, multicolor, pressure-sensitive adhesive labels, configured for display on front cover, door, or other access to equipment unless otherwise indicated.

C. Baked-Enamel Warning Signs:
1. Preprinted aluminum signs punched or drilled for fasteners, with colors, legend, and size required for application.
2. 1/4-inch grommets in corners for mounting.
3. Nominal size, 7 by 10 inches.

D. Metal-Backed, Butyrate Warning Signs:
1. Weather-resistant, nonfading, preprinted, cellulose-acetate butyrate signs with 0.0396-inch galvanized-steel backing; and with colors, legend, and size required for application.
2. 1/4-inch grommets in corners for mounting.
3. Nominal size, 10 by 14 inches.

E. Warning label and sign shall include, but are not limited to, the following legends:
1. Multiple Power Source Warning: "DANGER - ELECTRICAL SHOCK HAZARD - EQUIPMENT HAS MULTIPLE POWER SOURCES."

2. Workspace Clearance Warning: "WARNING - OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36 INCHES "

2.08 INSTRUCTION SIGNS

A. Engraved, laminated acrylic or melamine plastic, minimum 1/16 inch thick for signs up to 20 sq. inches and 1/8 inch thick for larger sizes.
1. Engraved legend with black letters on white face.
2. Punched or drilled for mechanical fasteners.
3. Framed with mitered acrylic molding and arranged for attachment at applicable equipment.

B. Adhesive Film Label: Machine printed, in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch.

C. Adhesive Film Label with Clear Protective Overlay: Machine printed, in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch. Overlay shall provide a weatherproof and UV-resistant seal for label.

2.09 EQUIPMENT IDENTIFICATION LABELS

A. Adhesive Film Label: Machine printed, in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch.

B. Adhesive Film Label with Clear Protective Overlay: Machine printed, in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch. Overlay shall provide a weatherproof and UV-resistant seal for label.

C. Self-Adhesive, Engraved, Laminated Acrylic or Melamine Label: Adhesive backed, with white letters on a dark-gray background. Minimum letter height shall be 3/8 inch.

D. Engraved, Laminated Acrylic or Melamine Label: Punched or drilled for screw mounting. White letters on a dark-gray background. Minimum letter height shall be 3/8 inch.

E. Stenciled Legend: In nonfading, waterproof, black ink or paint. Minimum letter height shall be 1 inch.

2.010 CABLE TIES

A. General-Purpose Cable Ties: Fungus inert, self-extinguishing, one piece, self-locking, Type 6/6 nylon.

1. Minimum Width: 3/16 inch.
2. Tensile Strength at 73 deg F, According to ASTM D 638: 12,000 psi.
3. Temperature Range: Minus 40 to plus 185 deg F.
4. Color: Black except where used for color-coding.

B. UV-Stabilized Cable Ties: Fungus inert, designed for continuous exposure to exterior sunlight, self-extinguishing, one piece, self-locking, Type 6/6 nylon.
1. Minimum Width: 3/16 inch.
2. Tensile Strength at 73 deg F, According to ASTM D 638: 12,000 psi.
3. Temperature Range: Minus 40 to plus 185 deg F.
4. Color: Black.

C. Plenum-Rated Cable Ties: Self-extinguishing, UV stabilized, one piece, self-locking.
1. Minimum Width: 3/16 inch.
2. Tensile Strength at 73 deg F, According to ASTM D 638: 7000 psi.
3. UL 94 Flame Rating: 94V-0.
4. Temperature Range: Minus 50 to plus 284 deg F.
5. Color: Black.

2.011 MISCELLANEOUS IDENTIFICATION PRODUCTS

A. Paint: Comply with requirements in painting Sections for paint materials and application requirements. Select paint system applicable for surface material and location (exterior or interior).

B. Fasteners for Labels and Signs: Self-tapping, stainless-steel screws or stainless-steel machine screws with nuts and flat and lock washers.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Verify identity of each item before installing identification products.

B. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.

C. Apply identification devices to surfaces that require finish after completing finish work.

D. Self-Adhesive Identification Products: Clean surfaces before application, using materials and methods recommended by manufacturer of identification device.

E. Attach signs and plastic labels that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.

F. Attach plastic raceway and cable labels that are not self-adhesive type with clear vinyl tape with adhesive appropriate to the location and substrate.

G. System Identification Color-Coding Bands for Raceways and Cables: Each color-coding band shall completely encircle cable or conduit. Place adjacent bands of two-color markings in contact, side by side. Locate bands at changes in direction, at penetrations of walls and floors, at 50-foot maximum intervals in straight runs, and at 25-foot maximum intervals in congested areas.

H. Aluminum Wraparound Marker Labels and Metal Tags: Secure tight to surface of conductor or cable at a location with high visibility and accessibility.

I. Cable Ties: For attaching tags. Use general-purpose type, except as listed below:
1. Outdoors: UV-stabilized nylon.
2. In Spaces Handling Environmental Air: Plenum rated.

J. Underground-Line Warning Tape: During backfilling of trenches install continuous underground-line warning tape directly above line at 6 to 8 inches below finished grade. Use multiple tapes where width of multiple lines installed in a common trench exceeds 16 inches overall.

K. Painted Identification: Comply with requirements in painting Sections for surface preparation and paint application.

3.02 IDENTIFICATION SCHEDULE

A. Concealed Raceways, Duct Banks, More Than 600 V, within Buildings: Tape and stencil 4-inch wide black stripes on 10-inch centers over orange background that extends full length of raceway or duct and is 12 inches wide. Stencil legend "DANGER CONCEALED HIGH VOLTAGE WIRING" with 3-inch high black letters on 20-inch centers. Stop stripes at legends. Apply to the following finished surfaces:
1. Floor surface directly above conduits running beneath and within 12 inches of a floor that is in contact with earth or is framed above unexcavated space.
2. Wall surfaces directly external to raceways concealed within wall.
3. Accessible surfaces of concrete envelope around raceways in vertical shafts, exposed in the building, or concealed above suspended ceilings.

B. Accessible Raceways Armored and Metal-Clad Cables, More Than 600 V: Self-adhesive vinyl labels. Install labels at 30-foot maximum intervals.

C. Accessible Raceways and Metal-Clad Cables, 600 V or Less, for Service, Feeder, and Branch Circuits More Than 30 A, and 120V to ground: Identify with self-adhesive vinyl label. Install labels at 30-foot maximum intervals.

D. Accessible Raceways and Cables within Buildings: Identify the covers of each junction and pull box of the following systems with self-adhesive vinyl labels with the wiring system legend and system voltage.

E. Power-Circuit Conductor Identification, 600 V or Less: For conductors in vaults, pull and junction boxes, manholes, and handholes, use color-coding conductor tape to identify the phase.

1. Color-Coding for Phase and Voltage Level Identification, 600 V or Less: Use colors listed below for ungrounded feeder and branch-circuit conductors.
    a. Color shall be factory applied.
    b. Colors for 208/120-V Circuits:
        1) Phase A: Black.
        2) Phase B: Red.
        3) Phase C: Blue.
    c. Colors for 480/277-V Circuits:
        1) Phase A: Brown.
        2) Phase B: Orange.
        3) Phase C: Yellow.
    d. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches from terminal points and in boxes where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding. Locate bands to avoid obscuring factory cable markings.

F. Power-Circuit Conductor Identification, More than 600 V: For conductors in vaults, pull and junction boxes, manholes, and handholes, use write-on tags.

G. Install instructional sign including the color-code for grounded and ungrounded conductors using adhesive-film-type labels.

H. Control-Circuit Conductor Identification: For conductors and cables in pull and junction boxes, manholes, and handholes, use write-on tags with the conductor or cable designation, origin, and destination.

I. Control-Circuit Conductor Termination Identification: For identification at terminations provide self-adhesive vinyl labels with the conductor designation.

J. Conductors to Be Extended in the Future: Attach write-on tags to conductors and list source.

K. Auxiliary Electrical Systems Conductor Identification: Identify field-installed alarm, control, and signal connections.
1. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, and pull points. Identify by system and circuit designation.
2. Use system of marker tape designations that is uniform and consistent with system used by manufacturer for factory-installed connections.
3. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual.

L. Locations of Underground Lines: Identify with underground-line warning tape for power, lighting, communication, and control wiring and optical fiber cable.
1. Limit use of underground-line warning tape to direct-buried cables.
2. Install underground-line warning tape for both direct-buried cables and cables in raceway.

M. Workspace Indication: Install floor marking tape to show working clearances in the direction of access to live parts. Workspace shall be as required by NFPA 70 and 29 CFR 1926.403 unless otherwise indicated. Do not install at flush-mounted panelboards and similar equipment in finished spaces.

N. Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting: Self-adhesive warning labels.
1. Comply with 29 CFR 1910.145.
2. Identify system voltage with black letters on an orange background.
3. Apply to exterior of door, cover, or other access.
4. For equipment with multiple power or control sources, apply to door or cover of equipment including, but not limited to, the following:
    a. Power transfer switches.
    b. Controls with external control power connections.

O. Operating Instruction Signs: Install instruction signs to facilitate proper operation and maintenance of electrical systems and items to which they connect. Install instruction signs with approved legend where instructions are needed for system or equipment operation.

P. Equipment Identification Labels: On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and the Operation and Maintenance Manual. Apply labels to disconnect switches and protection equipment, central or master units, control panels, control stations, terminal cabinets, and racks of each system. Systems include power, lighting, control, communication, signal, monitoring, and alarm systems unless equipment is provided with its own identification.
1. Labeling Instructions:

a. Indoor Equipment: Engraved, laminated acrylic or melamine label. Unless otherwise indicated, provide a single line of text with 1/2-inch high letters on 1-1/2-inch high label; where two lines of text are required, use labels 2 inches high.
b. Outdoor Equipment: Engraved, laminated acrylic or melamine label.
c. Elevated Components: Increase sizes of labels and letters to those appropriate for viewing from the floor.
d. Unless provided with self-adhesive means of attachment, fasten labels with appropriate mechanical fasteners that do not change the NEMA or NRTL rating of the enclosure.

2. Equipment to Be Labeled:
a. Panelboards: Typewritten directory of circuits in the location provided by panelboard manufacturer. Panelboard identification shall be self-adhesive, engraved, laminated acrylic or melamine label.
b. Enclosures and electrical cabinets.
c. Access doors and panels for concealed electrical items.
d. Switchgear.
e. Switchboards.
f. Transformers: Label that includes tag designation shown on Drawings for the transformer, feeder, and panelboards or equipment supplied by the secondary.
g. Motor-control centers.
h. Enclosed switches.
i. Enclosed circuit breakers.
j. Enclosed controllers.
k. Variable-speed controllers.
l. Push-button stations.
m. Power transfer equipment.
n. Contactors.
o. Remote-controlled switches, dimmer modules, and control devices.
p. Monitoring and control equipment.

END OF SECTION

SECTION 26 24 16
PANELBOARDS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section Includes:

1. Distribution panelboards.
2. Lighting and appliance branch-circuit panelboards.

1.03 ACTION SUBMITTALS

A. Product Data: For each type of panelboard.

1. Include materials, switching and overcurrent protective devices, SPDs, accessories, and components indicated.
2. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.

B. Shop Drawings: For each panelboard and related equipment.

1. Include dimensioned plans, elevations, sections, and details.
2. Show tabulations of installed devices with nameplates, conductor termination sizes, equipment features, and ratings.
3. Detail enclosure types including mounting and anchorage, environmental protection, knockouts, corner treatments, covers and doors, gaskets, hinges, and locks.
4. Detail bus configuration, current, and voltage ratings.
5. Short-circuit current rating of panelboards and overcurrent protective devices.
6. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.
7. Component List.
8. Cable terminal sizes.
9. Break layout drawings with dimensions indicated and nameplate designations.

1.04 INFORMATIONAL SUBMITTALS

A. Qualification Data: For testing agency.

B. Panelboard Schedules: For installation in panelboards.

1.05 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For panelboards and components to include in emergency, operation, and maintenance manuals. Refer to Division 1 “Operation and Maintenance Data” for additional requirements.

1.06 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Keys: Two spares for each type of panelboard cabinet lock.

2. Circuit Breakers Including GFCI and GFEP Types: Two spares for each panelboard.

1.07 QUALITY ASSURANCE

A. Manufacturer Qualifications: ISO 9001 or 9002 certified.

B. Source Limitations: Obtain panelboards, overcurrent protective devices, components, and accessories from single source from single manufacturer.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Remove loose packing and flammable materials from inside panelboards; install temporary electric heating (250 W per panelboard) to prevent condensation.

B. Handle and prepare panelboards for installation according to NEMA PB 1.

1.09 FIELD CONDITIONS

A. Environmental Limitations:

1. Do not deliver or install panelboards until spaces are enclosed and weathertight, wet work in spaces is complete and dry, work above panelboards is complete, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.

2. Rate equipment for continuous operation under the following conditions unless otherwise indicated:

a. Ambient Temperature: Not exceeding minus 22 deg F (minus 30 deg C) to plus 104 deg F (plus 40 deg C).

b. Altitude: Not exceeding 6600 feet (2000 m).

B. Service Conditions: NEMA PB 1, usual service conditions, as follows:

1. Ambient temperatures within limits specified.

2. Altitude not exceeding 6600 feet (2000 m).

1.10 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to repair or replace panelboards that fail in materials or workmanship within specified warranty period.

1. Panelboard Warranty Period: 18 months from date of Substantial Completion.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. Square D; by Schneider Electric., no alternative will be accepted.

2.02 PANELBOARDS AND LOAD CENTERS COMMON REQUIREMENTS

A. Product Selection for Restricted Space: Drawings indicate maximum dimensions for panelboards including clearances between panelboards and adjacent surfaces and other items. Comply with indicated maximum dimensions.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

C. Comply with NEMA PB 1.

D. Comply with NFPA 70.

E. Enclosures: Flush or Surface-mounted (as indicated on Panel Schedules), dead-front cabinets.

1. Rated for environmental conditions at installed location.

a. Indoor Dry and Clean Locations: NEMA 250, Type 1.

b. Indoor Locations Subject to Dust, Falling Dirt, and Dripping Noncorrosive Liquids: NEMA 250, Type 12.

2. Height: 84 inches (2.13 m) maximum.

3. Front: Secured to box with concealed trim clamps. For surface-mounted fronts, match box dimensions; for flush-mounted fronts, overlap box. Trims shall cover all live parts and shall have no exposed hardware.

4. Hinged Front Cover: Entire front trim hinged to box and with standard door within hinged trim cover. Trims shall cover all live parts and shall have no exposed hardware.

5. Finishes:

   a. Panels and Trim: Steel, factory finished immediately after cleaning and pretreating with manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat.

   b. Back Boxes: Same finish as panels and trim.

6. All multi-section panelboards shall have the same dimensional back box and cabinet front size.

F. Incoming Mains: Contractor to Determine Location

G. Phase, Neutral, and Ground Buses:

1. Material: Hard-drawn copper, 98 percent conductivity.

   a. Plating shall run entire length of bus.

   b. Bus shall be fully rated the entire length.

2. Interiors shall be factory assembled into a unit. Replacing switching and protective devices shall not disturb adjacent units or require removing the main bus connectors.

3. Equipment Ground Bus: Adequate for feeder and branch-circuit equipment grounding conductors; bonded to box.

4. Full-Sized Neutral: Equipped with full-capacity bonding strap for service entrance applications. Mount electrically isolated from enclosure. Do not mount neutral bus in gutter.

H. Conductor Connectors: Suitable for use with conductor material and sizes.

1. Material: Hard-drawn copper, 98 percent conductivity.

2. Terminations shall allow use of 75 deg C rated conductors without derating.

3. Size: Lugs suitable for indicated conductor sizes, with additional gutter space, if required, for larger conductors.

4. Main and Neutral Lugs: Mechanical type, with a lug on the neutral bar for each pole in the panelboard.

5. Ground Lugs and Bus-Configured Terminators: Mechanical type, with a lug on the bar for each pole in the panelboard.

6. Feed-Through Lugs: Mechanical type, suitable for use with conductor material. Locate at opposite end of bus from incoming lugs or main device.

7. Subfeed (Double) Lugs: Mechanical type suitable for use with conductor material. Locate at same end of bus as incoming lugs or main device.

I. NRTL Label: Panelboards shall be labeled by an NRTL acceptable to authority having jurisdiction for use as service equipment with one or more main service disconnecting and overcurrent protective devices. Panelboards or load centers shall have meter enclosures, wiring, connections, and other provisions for utility metering. Coordinate with utility company for exact requirements.

J. Future Devices: Panelboards or load centers shall have mounting brackets, bus connections, filler plates, and necessary appurtenances required for future installation of devices.

1. Percentage of Future Space Capacity: Ten percent.

K. Panelboard Short-Circuit Current Rating: Fully rated to interrupt symmetrical short-circuit current available at terminals. Assembly listed by an NRTL for 100 percent interrupting capacity.

1. Panelboards and overcurrent protective devices rated 240 V or less shall have short-circuit ratings as shown on Drawings, but not less than 10,000 A rms symmetrical.

2. Panelboards and overcurrent protective devices rated above 240 V and less than 600 V shall have short-circuit ratings as shown on Drawings, but not less than 14,000 A rms symmetrical.

2.03 DISTRIBUTION PANELBOARDS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Square D; by Schneider Electric.

B. Panelboards: NEMA PB 1, distribution type.

C. Doors: Secured with vault-type latch with tumbler lock; keyed alike.

1. For doors more than 36 inches (914 mm) high, provide two latches, keyed alike.

D. Mains: Refer to Panel Schedule.

E. Branch Overcurrent Protective Devices for Circuit-Breaker Frame Sizes 125 A and Smaller: Bolt-on circuit breakers.

F. Branch Overcurrent Protective Devices for Circuit-Breaker Frame Sizes Larger Than 125 A: Bolt-on circuit breakers.

2.04 LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Square D; by Schneider Electric.

B. Panelboards: NEMA PB 1, lighting and appliance branch-circuit type.

C. Mains: Refer to Panel Schedules.

D. Branch Overcurrent Protective Devices: Plug-in circuit breakers, replaceable without disturbing adjacent units.

E. Doors: Door-in-door construction with concealed hinges; secured with multipoint latch with tumbler lock; keyed alike. Outer door shall permit full access to the panel interior. Inner door shall permit access to breaker operating handles and labeling, but current carrying terminals and bus shall remain concealed.

2.05 DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Square D; by Schneider Electric.

B. MCCB: Comply with UL 489, with interrupting capacity to meet available fault currents.

1. Thermal-Magnetic Circuit Breakers:

a. Inverse time-current element for low-level overloads.

b. Instantaneous magnetic trip element for short circuits.

c. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.

2. Adjustable Instantaneous-Trip Circuit Breakers: Magnetic trip element with front-mounted, field-adjustable trip setting.

3. GFCI Circuit Breakers: Single- and double-pole configurations with Class A ground-fault protection (6-mA trip).

4. Subfeed Circuit Breakers: Vertically mounted.

5. MCCB Features and Accessories:

a. Standard frame sizes, trip ratings, and number of poles.

b. Breaker handle indicates tripped status.

c. UL listed for reverse connection without restrictive line or load ratings.

d. Lugs: Mechanical style, suitable for number, size, trip ratings, and conductor materials.

e. Rating Plugs: Three-pole breakers with ampere ratings greater than 150 amperes shall have interchangeable rating plugs or electronic adjustable trip units.

f. Multipole units enclosed in a single housing with a single handle.

g. Handle Clamp: Loose attachment, for holding circuit-breaker handle in on position.

2.06 IDENTIFICATION

A. Panelboard Label: Manufacturer's name and trademark, voltage, amperage, number of phases, and number of poles shall be located on the interior of the panelboard door.

B. Breaker Labels: Faceplate shall list current rating, UL and IEC certification standards, and AIC rating.

C. Circuit Directory: Directory card inside panelboard door, mounted in transparent card holder.

1. Circuit directory shall identify specific purpose with detail sufficient to distinguish it from all other circuits.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify actual conditions with field measurements prior to ordering panelboards to verify that equipment fits in allocated space in, and comply with, minimum required clearances specified in NFPA 70.

B. Receive, inspect, handle, and store panelboards according to NEMA PB 1.1.

C. Examine panelboards before installation. Reject panelboards that are damaged, rusted, or have been subjected to water saturation.

D. Examine elements and surfaces to receive panelboards for compliance with installation tolerances and other conditions affecting performance of the Work.

E. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. Coordinate layout and installation of panelboards and components with other construction that penetrates walls or is supported by them, including electrical and other

types of equipment, raceways, piping, encumbrances to workspace clearance requirements, and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.

B. Comply with NECA 1.

C. Install panelboards and accessories according to NEMA PB 1.1.

D. Equipment Mounting:

1. Attach panelboard to the vertical finished or structural surface behind the panelboard.

E. Temporary Lifting Provisions: Remove temporary lifting eyes, channels, and brackets and temporary blocking of moving parts from panelboards.

F. Mount top of panelboard so that the top-most switch or circuit breaker is not higher than 78” (6’ – 6”) above finished floor or grade.

G. Mount panelboard cabinet plumb and rigid without distortion of box.

H. Mount recessed panelboards with fronts uniformly flush with wall finish and mating with back box.

I. Mount surface-mounted panelboards to steel slotted supports 5/8 inch (16 mm) in depth. Orient steel slotted supports vertically.

J. Install overcurrent protective devices and controllers not already factory installed.

1. Set field-adjustable, circuit-breaker trip ranges.

2. Tighten bolted connections and circuit breaker connections using calibrated torque wrench or torque screwdriver per manufacturer's written instructions.

K. Make grounding connections and bond neutral for services and separately derived systems to ground. Make connections to grounding electrodes, separate grounds for isolated ground bars, and connections to separate ground bars.

L. Install filler plates in unused spaces.

M. Arrange conductors in gutters into groups and bundle and wrap with wire ties.

N. Mount spare fuse cabinet in accessible location.

3.03 IDENTIFICATION

A. Identify field-installed conductors, interconnecting wiring, and components; install warning signs complying with requirements in Section 26 05 53 "Identification for Electrical Systems."

B. Create a directory to indicate installed circuit loads; incorporate Owner's final room designations. Obtain approval before installing. Handwritten directories are not acceptable. Install directory inside panelboard door.

C. Panelboard Nameplates: Label each panelboard with a nameplate complying with requirements for identification specified in Section 26 05 53 "Identification for Electrical Systems."

D. Device Nameplates: Label each branch circuit device in power panelboards with a nameplate complying with requirements for identification specified in Section 26 05 53 "Identification for Electrical Systems."

E. Install warning signs complying with requirements in Section 26 05 53 "Identification for Electrical Systems" identifying source of remote circuit.

3.04 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections.

B. Acceptance Testing Preparation:

1. Test insulation resistance for each panelboard bus, component, connecting supply, feeder, and control circuit.

2. Test continuity of each circuit.

C. Tests and Inspections:

1. Perform each visual and mechanical inspection and electrical test for low-voltage air circuit breakers stated in NETA ATS, Paragraph 7.6 Circuit Breakers. Certify compliance with test parameters.

2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.

D. Panelboards will be considered defective if they do not pass tests and inspections.

E. Prepare test and inspection reports, including a certified report that identifies panelboards included. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

3.05 ADJUSTING

A. Adjust moving parts and operable components to function smoothly and lubricate as recommended by manufacturer.

B. Load Balancing: After Substantial Completion, but not more than 60 days after Final Acceptance, measure load balancing and make circuit changes. Prior to making circuit changes to achieve load balancing, inform Architect of effect on phase color coding.

3.06 PROTECTION

A. Temporary Heating: Prior to energizing panelboards, apply temporary heat to maintain temperature according to manufacturer's written instructions.

END OF SECTION

SECTION 26 28 16
ENCLOSED SWITCHES AND CIRCUIT BREAKERS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section Includes:
1. Fusible switches.
2. Non-fusible switches.
3. Molded-case circuit breakers (MCCBs).
4. Enclosures.

1.03 ACTION SUBMITTALS

A. Product Data: For each type of enclosed switch, circuit breaker, accessory, and component indicated. Include dimensioned elevations, sections, weights, and manufacturers' technical data on features, performance, electrical characteristics, ratings, accessories, and finishes.
1. Enclosure types and details.
2. Current. horsepower, and voltage ratings.
3. Short-circuit current ratings (interrupting and withstand, as appropriate).
4. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices, accessories, and auxiliary components.
5. Include time-current coordination curves (average melt) for each type and rating of overcurrent protective device; include selectable ranges for each type of overcurrent protective device.

B. Shop Drawings: For enclosed switches and circuit breakers. Include plans, elevations, sections, details, and attachments to other work.
1. Wiring Diagrams: For power, signal, and control wiring.

1.04 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For enclosed switches and circuit breakers to include in emergency, operation, and maintenance manuals. In addition to items specified in Section 01, include the following:
   1. Manufacturer's written instructions for testing and adjusting enclosed switches and circuit breakers.
   2. Time-current coordination curves (average melt) for each type and rating of overcurrent protective device; include selectable ranges for each type of overcurrent protective device.

1.05 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Fuses: Equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type.
   2. Fuse Pullers: Two for each size and type.

1.06 QUALITY ASSURANCE

A. Source Limitations: Obtain enclosed switches and circuit breakers, overcurrent protective devices, components, and accessories, within same product category, from single source from single manufacturer.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

C. Comply with NFPA 70.

1.07 PROJECT CONDITIONS

A. Environmental Limitations: Rate equipment for continuous operation under the following conditions unless otherwise indicated:
   1. Ambient Temperature: Not less than minus 22 deg F (minus 30 deg C) and not exceeding 104 deg F (40 deg C).
   2. Altitude: Not exceeding 6600 feet (2010 m).

PART 2 - PRODUCTS

2.01 FUSIBLE SWITCHES

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. Square D; a brand of Schneider Electric, no alternative will be accepted.

B. Type HD, Heavy Duty, Single Throw, 600-V ac, 1200 A and Smaller: UL 98 and NEMA KS 1, horsepower rated, with clips or bolt pads to accommodate indicated fuses, lockable handle with capability to accept three padlocks, and interlocked with cover in closed position.

C. HD Switches:
1. UL Listed Short Circuit Rating: 200,000 symmetrical amperes when Class R or Class J fuses are used on switch sizes 30 to 600 amperes. The UL listed short circuit rating shall be 200,000 symmetrical amperes when Class L fuses are used on switch sizes 800 to 1200 amperes.
2. Switch Blades: Visible when the switch is OFF and the cover is open.
3. Lugs: Front removable and UL listed for 167 deg F (75 deg C) conductors aluminum or copper conductors.
4. Fuse Pullers: 30 through 100 ampere switches shall be equipped with factory installed fuse pullers.
5. Arc Suppressors: Removable arc suppressors to facilitate easy access to line side lugs.
6. Electrical Interlock: Provisions for a field installable electrical interlock.
7. Switch Operating Mechanism: Quick-make, quick-break such that, during normal operation of the switch, the operation of the contacts shall not be capable of being restrained by the operating handle after the closing or opening action of the contacts has started.
8. Handle Position: At least 90° between OFF and ON positions to clearly distinguish and indicate handle position, “ON” and “OFF” positions shall be labeled.

D. Accessories:
1. Equipment Ground Kit: Internally mounted and labeled for copper and aluminum ground conductors.
2. Neutral Kit: Internally mounted; insulated, capable of being grounded and bonded; labeled for copper and aluminum neutral conductors.
3. Isolated Ground Kit: Internally mounted; insulated, capable of being grounded and bonded; labeled for copper and aluminum neutral conductors.

4. Class R Fuse Kit: Provides rejection of other fuse types when Class R fuses are specified.
5. Hookstick Handle: Allows use of a hookstick to operate the handle.
6. Lugs: Mechanical type, suitable for number, size, and conductor material.
7. Service-Rated Switches: Labeled for use as service equipment.

2.02 NONFUSIBLE SWITCHES

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. Square D; a brand of Schneider Electric.

B. Type HD, Heavy Duty, Single Throw, 600-V ac, 1200 A and Smaller: UL 98 and NEMA KS 1, horsepower rated, lockable handle with capability to accept three padlocks, and interlocked with cover in closed position.

C. HD Switches:
1. UL Listed Short Circuit Rating: 200,000 symmetrical amperes when Class R or Class J fuses are used on switch sizes 30 to 600 amperes. The UL listed short circuit rating shall be 200,000 symmetrical amperes when Class L fuses are used on switch sizes 800 to 1200 amperes.
2. Switch Blades: Visible when the switch is OFF and the cover is open.
3. Lugs: Front removable and UL listed for 167 deg F (75 deg C) conductors aluminum or copper conductors.
4. Fuse Pullers: 30 through 100 ampere switches shall be equipped with factory installed fuse pullers.Arc Suppressors: Removable arc suppressors to facilitate easy access to line side lugs.
5. Electrical Interlock: Provisions for a field installable electrical interlock.
6. Switch Operating Mechanism: Quick-make, quick-break such that, during normal operation of the switch, the operation of the contacts shall not be capable of being restrained by the operating handle after the closing or opening action of the contacts has started.
7. Handle Position: At least 90° between OFF and ON positions to clearly distinguish and indicate handle position, “ON” and “OFF” positions shall be labeled.

D. Accessories:
1. Equipment Ground Kit: Internally mounted and labeled for copper and aluminum ground conductors.
2. Neutral Kit: Internally mounted; insulated, capable of being grounded and bonded; labeled for copper and aluminum neutral conductors.

3. Isolated Ground Kit: Internally mounted; insulated, capable of being grounded and bonded; labeled for copper and aluminum neutral conductors.
4. Hookstick Handle: Allows use of a hookstick to operate the handle.
5. Lugs: Mechanical type, suitable for number, size, and conductor material.

2.03 MOLDED-CASE CIRCUIT BREAKERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. Square D; a brand of Schneider Electric.

B. General Requirements: Comply with UL 489, NEMA AB 1, and NEMA AB 3, with interrupting capacity to comply with available fault currents.

C. Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger set by a single adjustment. Breakers to be calibrated for operation in an ambient temperature of 104 deg F (40 deg C)..

D. Adjustable, Instantaneous-Trip Circuit Breakers: Magnetic trip element with front-mounted, field-adjustable trip setting.

E. Electronic Trip Circuit Breakers: Field-replaceable rating plug, rms sensing, with the following field-adjustable settings:
1. Instantaneous trip.
2. Long- and short-time pickup levels.
3. Long- and short-time time adjustments.
4. Ground-fault pickup level, time delay, and I^2t response.

F. Current-Limiting Circuit Breakers: Frame sizes 400 A and smaller, and let-through ratings less than NEMA FU 1, RK-5.

G. Integrally Fused Circuit Breakers: Thermal-magnetic trip element with integral limiter-style fuse listed for use with circuit breaker and trip activation on fuse opening or on opening of fuse compartment door.

H. Ground-Fault, Circuit-Interrupter (GFCI) Circuit Breakers: Single- and two-pole configurations with Class A ground-fault protection (6-mA trip).

I. Ground-Fault, Equipment-Protection (GFEP) Circuit Breakers: With Class B ground-fault protection (30-mA trip).

J. Features and Accessories:
1. Standard frame sizes, trip ratings, and number of poles.
2. Lugs: Mechanical type, suitable for number, size, trip ratings, and conductor material.
3. Ground-Fault Protection: Comply with UL 1053; integrally mounted, self-powered type with mechanical ground-fault indicator; relay with adjustable pickup and time-delay settings, push-to-test feature, internal memory, and shunt trip unit; and three-phase, zero-sequence current transformer/sensor.

2.04 ENCLOSURES

A. Enclosed Switches and Circuit Breakers: NEMA AB 1, NEMA KS 1, NEMA 250, and UL 50, to comply with environmental conditions at installed location. Provide the following minimum requirements, unless noted otherwise on the drawings.
1. Indoor, Dry and Clean Locations: NEMA 250, Type 1.
2. Outdoor Locations: NEMA 250, Type 4X, stainless steel.
3. Indoor Locations Subject to Dust, Falling Dirt, and Dripping Noncorrosive Liquids: NEMA 250, Type 12.
4. Hazardous Areas Indicated on Drawings: NEMA 250, as required by NEC Article 500.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine elements and surfaces to receive enclosed switches and circuit breakers for compliance with installation tolerances and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. Install individual wall-mounted switches and circuit breakers with tops at uniform height unless otherwise indicated.

B. Temporary Lifting Provisions: Remove temporary lifting eyes, channels, and brackets and temporary blocking of moving parts from enclosures and components.

C. Install fuses in fusible devices.

D. Comply with NECA 1.

3.03 IDENTIFICATION

A. Comply with requirements in Section 26 05 53 "Identification for Electrical Systems."
1. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs.
2. Label each enclosure with engraved metal or laminated-plastic nameplate.

B. Provide and install on the inside door of all fusible disconnect switches a typewritten copy with a transparent protective cover with the following information.
1. Fuse Amperage
2. Fuse Type
3. Fuse Class
4. Fuse Voltage Rating
5. Fuse Manufacturer
6. Unit or Circuit Protected by Fuse

3.04 FIELD QUALITY CONTROL

A. Perform tests and inspections.

B. Acceptance Testing Preparation:
1. Test insulation resistance for each enclosed switch and circuit breaker, component, connecting supply, feeder, and control circuit.
2. Test continuity of each circuit.

C. Tests and Inspections:
1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.
3. Test and adjust controls, remote monitoring, and safeties. Replace damaged and malfunctioning controls and equipment.

D. Enclosed switches and circuit breakers will be considered defective if they do not pass tests and inspections.

E. Prepare test and inspection reports, including a certified report that identifies enclosed switches and circuit breakers and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

3.05 ADJUSTING

A. Adjust moving parts and operable components to function smoothly and lubricate as recommended by manufacturer.

B. Set field-adjustable circuit-breaker trip ranges.

END OF SECTION

SECTION 26 29 23

VARIABLE-FREQUENCY MOTOR CONTROLLERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes separately enclosed, preassembled, combination VFCs, rated 600 V and less, for speed control of three-phase, squirrel-cage induction motors.

1.3 ACTION SUBMITTALS

A. Product Data: For each type and rating of VFC indicated.
1. Include dimensions and finishes for VFCs.
2. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.

B. Shop Drawings: For each VFC indicated.
1. Include mounting and attachment details.
2. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
3. Include diagrams for power, signal, and control wiring.

1.4 INFORMATIONAL SUBMITTALS

A. Harmonic Analysis Report: Provide Project-specific calculations and manufacturer's statement of compliance with IEEE 519.

B. Source quality-control reports.

C. Field quality-control reports.

D. Sample Warranty: For special warranty.

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For VFCs to include in emergency, operation, and maintenance manuals.
1. In addition to items specified in Section 017823 "Operation and Maintenance Data," include the following:

a. Manufacturer's written instructions for setting field-adjustable overload relays.
b. Manufacturer's written instructions for testing, adjusting, and reprogramming microprocessor control modules.
c. Manufacturer's written instructions for setting field-adjustable timers, controls, and status and alarm points.

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. Power Fuses: Equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type.
2. Control Power Fuses: Equal to 10 percent of quantity installed for each size and type, but no fewer than two of each size and type.
3. Indicating Lights: Two of each type and color installed.
4. Auxiliary Contacts: Furnish one spare(s) for each size and type of magnetic controller installed.
5. Power Contacts: Furnish three spares for each size and type of magnetic contactor installed.

1.7 DELIVERY, STORAGE, AND HANDLING

A. If stored in space that is not permanently enclosed and air conditioned, remove loose packing and flammable materials from inside controllers and install temporary electric heating, with at least 250 W per controller.

1.8 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace VFCs that fail in materials or workmanship within specified warranty period.
1. Warranty Period: One year from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. Square D; Schneider Electric Inc, no alternative will be accepted.

2.2 SYSTEM DESCRIPTION

A. General Requirements for VFCs:
1. VFCs and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2. Comply with NEMA ICS 7, NEMA ICS 61800-2, and UL 508A and UL 61800-5-1.

B. Application: Constant torque and variable torque.

C. VFC Description: Variable-frequency motor controller, consisting of power converter that employs pulse-width-modulated inverter, factory built and tested in an enclosure, with integral disconnecting means and overcurrent and overload protection; listed and labeled by an NRTL as a complete unit; arranged to provide self-protection, protection, and variable-speed control of one or more three-phase induction motors by adjusting output voltage and frequency.
1. Units suitable for operation of NEMA MG 1, Design A and Design B motors, as defined by NEMA MG 1, Section IV, Part 30, "Application Considerations for Constant Speed Motors Used on a Sinusoidal Bus with Harmonic Content and General Purpose Motors Used with Adjustable-Voltage or Adjustable-Frequency Controls or Both."
2. Units suitable for operation of inverter-duty motors as defined by NEMA MG 1, Section IV, Part 31, "Definite-Purpose Inverter-Fed Polyphase Motors."
3. Listed and labeled for integrated short-circuit current (withstand) rating by an NRTL acceptable to authorities having jurisdiction.

D. Design and Rating: Match load type, such as fans, blowers, and pumps; and type of connection used between motor and load such as direct or through a power-transmission connection.

E. Output Rating: Three phase; 10 to 60 Hz, with voltage proportional to frequency throughout voltage range; maximum voltage equals input voltage.

F. Unit Operating Requirements:
1. Input AC Voltage Tolerance: Plus 10 and minus 10 percent of VFC input voltage rating.
2. Input AC Voltage Unbalance: Not exceeding 3 percent.
3. Input Frequency Tolerance: Plus or minus 3 percent of VFC frequency rating.
4. Minimum Efficiency: 96 percent at 60 Hz, full load.
5. Minimum Displacement Primary-Side Power Factor: 96 percent under any load or speed condition.
6. Minimum Short-Circuit Current (Withstand) Rating: 22 kA.
7. Ambient Temperature Rating: Not less than 32 deg F (0 deg C) and not exceeding 104 deg F (40 deg C).
8. Humidity Rating: Less than 95 percent (noncondensing).
9. Altitude Rating: Not exceeding 3300 feet (1000 m).
10. Overload Capability: 1.1 times the base load current for 60 seconds; minimum of 1.8 times the base load current for three seconds.
11. Starting Torque: Minimum 100 percent of rated torque from 3 to 60 Hz.
12. Speed Regulation: Plus or minus 5 percent.
13. Output Carrier Frequency: Selectable; 0.5 to 15 kHz.
14. Stop Modes: Programmable; includes fast, free-wheel, and dc injection braking.

G. Inverter Logic: Microprocessor based, 32 bit, isolated from all power circuits.

H. Isolated Control Interface: Allows VFCs to follow remote-control signal over a minimum 40:1 speed range.
1. Signal: Electrical.

I. Internal Adjustability Capabilities:

1. Minimum Speed: 5 to 25 percent of maximum rpm.
2. Maximum Speed: 80 to 100 percent of maximum rpm.
3. Acceleration: 0.1 to 999.9 seconds.
4. Deceleration: 0.1 to 999.9 seconds.
5. Current Limit: 30 to minimum of 150 percent of maximum rating.

J. Self-Protection and Reliability Features:
1. Loss of Input Signal Protection: Selectable response strategy, including speed default to a percent of the most recent speed, a preset speed, or stop; with alarm.
2. Under- and overvoltage trips.
3. Inverter overcurrent trips.
4. VFC and Motor-Overload/Overtemperature Protection: Microprocessor-based thermal protection system for monitoring VFCs and motor thermal characteristics, and for providing VFC overtemperature and motor-overload alarm and trip; settings selectable via the keypad.
5. Critical frequency rejection, with three selectable, adjustable deadbands.
6. Instantaneous line-to-line and line-to-ground overcurrent trips.
7. Loss-of-phase protection.
8. Reverse-phase protection.
9. Short-circuit protection.
10. Motor-overtemperature fault.

K. Torque Boost: Automatically varies starting and continuous torque to at least 1.5 times the minimum torque to ensure high-starting torque and increased torque at slow speeds.

L. Motor Temperature Compensation at Slow Speeds: Adjustable current fall-back based on output frequency for temperature protection of self-cooled, fan-ventilated motors at slow speeds.

2.3 CONTROLS AND INDICATION

A. Status Lights: Door-mounted LED indicators displaying the following conditions:
1. Power on.
2. Run.
3. Overvoltage.
4. Line fault.
5. Overcurrent.
6. External fault.

B. Panel-Mounted Operator Station: Manufacturer's standard front-accessible, sealed keypad and plain-English-language digital display; allows complete programming, program copying, operating, monitoring, and diagnostic capability.
1. Keypad: In addition to required programming and control keys, include keys for HAND, OFF, and AUTO modes.
2. Security Access: Provide electronic security access to controls through identification and password with at least three levels of access: View only; view and operate; and view, operate, and service.
a. Control Authority: Supports at least four conditions: Off, local manual control at VFC, local automatic control at VFC, and automatic control through a remote source.

C. Historical Logging Information and Displays:
1. Real-time clock with current time and date.

2. Running log of total power versus time.
3. Total run time.
4. Fault log, maintaining last four faults with time and date stamp for each.

D. Indicating Devices: Digital display mounted flush in VFC door and connected to display VFC parameters including, but not limited to:
1. Output frequency (Hz).
2. Motor speed (rpm).
3. Motor status (running, stop, fault).
4. Motor current (amperes).
5. Motor torque (percent).
6. Fault or alarming status (code).
7. PID feedback signal (percent).
8. DC-link voltage (V dc).
9. Set point frequency (Hz).
10. Motor output voltage (V ac).

E. Control Signal Interfaces:
1. Electric Input Signal Interface:
   a. A minimum of two 4- to 20-mA dc.
   b. A minimum of six multifunction programmable digital inputs.
2. Remote Signal Inputs: Capability to accept any of the following speed-setting input signals from the BAS or other control systems:
   a. 0- to 10-V dc.
   b. 4- to 20-mA dc.
   c. Potentiometer using up/down digital inputs.
   d. Fixed frequencies using digital inputs.
3. Output Signal Interface: A minimum of one programmable analog output signal(s) (4- to 20-mA dc), which can be configured for any of the following:
   a. Output frequency (Hz).
   b. Output current (load).
   c. DC-link voltage (V dc).
   d. Motor torque (percent).
   e. Motor speed (rpm).
   f. Set point frequency (Hz).
4. Remote Indication Interface: A minimum of two programmable dry-circuit relay outputs (120-V ac, 1 A) for remote indication of the following:
   a. Motor running.
   b. Set point speed reached.
   c. Fault and warning indication (overtemperature or overcurrent).
   d. PID high- or low-speed limits reached.

2.4 LINE CONDITIONING AND FILTERING

A. Input Line Conditioning: Based on the manufacturer's harmonic analysis study and report, provide input filtering, as required, to limit total demand (harmonic current) distortion and total harmonic voltage demand at the defined point of common coupling to meet IEEE 519 recommendations.

B. EMI/RFI Filtering: CE marked; certify compliance with IEC 61800-3 for Category C2.

2.5 OPTIONAL FEATURES

A. Sleep Function: Senses a minimal deviation of a feedback signal and stops the motor. On an increase in speed-command signal deviation, VFC resumes normal operation.

B. Remote Indicating Circuit Terminals: Mode selection, controller status, and controller fault.

C. Communication Port: RS-232 port, USB 2.0 port, or equivalent connection capable of connecting a printer and a notebook computer.

D. Communication Port: Ethernet type for TCP/IP or Modbus connection.

2.6 ENCLOSURES

A. VFC Enclosures: NEMA 250, to comply with environmental conditions at installed location.
1. All Locations: Type 4X.

2.7 ACCESSORIES

A. General Requirements for Control-Circuit and Pilot Devices: NEMA ICS 5; factory installed in VFC enclosure cover unless otherwise indicated.
1. Push Buttons: Covered.
2. Pilot Lights: Push to test.
3. Selector Switches: Rotary type.

B. Control Relays: Auxiliary and adjustable solid-state time-delay relays.

C. Cooling Fan and Exhaust System: For NEMA 250, Type 4X; UL 508 component recognized: Supply fan, with stainless-steel intake and exhaust grills and filters; 120-V ac; obtained from integral CPT.

D. Sun shields installed on fronts, sides, and tops of enclosures installed outdoors and subject to direct and extended sun exposure.

2.8 SOURCE QUALITY CONTROL

A. Testing: Test and inspect VFCs according to requirements in NEMA ICS 61800-2.
1. Test each VFC while connected to a motor that is comparable to that for which the VFC is rated.
2. Verification of Performance: Rate VFCs according to operation of functions and features specified.

B. VFCs will be considered defective if they do not pass tests and inspections.

C. Prepare test and inspection reports.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas, surfaces, and substrates to receive VFCs, with Installer present, for compliance with requirements for installation tolerances, and other conditions affecting performance of the Work.

B. Examine VFC before installation. Reject VFCs that are wet, moisture damaged, or mold damaged.

C. Examine roughing-in for conduit systems to verify actual locations of conduit connections before VFC installation.

D. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.

E. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Wall-Mounting Controllers: Install with tops at uniform height and with disconnect operating handles not higher than 79 inches (2000 mm) above finished floor, unless otherwise indicated, and by bolting units to wall or mounting on lightweight structural-steel channels bolted to wall. For controllers not on walls, provide freestanding racks complying with Section 260529 "Hangers and Supports for Electrical Systems."

B. Temporary Lifting Provisions: Remove temporary lifting eyes, channels, and brackets and temporary blocking of moving parts from enclosures and components.

C. Install fuses in control circuits if not factory installed.

D. Install heaters in thermal-overload relays. Select heaters based on actual nameplate full-load amperes after motors are installed.

E. Install, connect, and fuse thermal-protector monitoring relays furnished with motor-driven equipment.

F. Comply with NECA 1.

3.3 CONTROL WIRING INSTALLATION

A. Install wiring between VFCs and remote devices and facility's central-control system.

B. Bundle, train, and support wiring in enclosures.

C. Connect selector switches and other automatic-control devices where applicable.
1. Connect selector switches to bypass only those manual- and automatic-control devices that have no safety functions when switches are in manual-control position.

2. Connect selector switches with control circuit in both manual and automatic positions for safety-type control devices such as low- and high-pressure cutouts, high-temperature cutouts, and motor-overload protectors.

3.4 IDENTIFICATION

A. Identify VFCs, components, and control wiring. Comply with requirements for identification specified in Section 260553 "Identification for Electrical Systems."
1. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs.
2. Label each VFC with engraved nameplate.
3. Label each enclosure-mounted control and pilot device.

3.5 FIELD QUALITY CONTROL

A. Perform tests and inspections with the assistance of a factory-authorized service representative.

B. Acceptance Testing Preparation:
1. Test insulation resistance for each VFC element, bus, component, connecting supply, feeder, and control circuit.
2. Test continuity of each circuit.

C. Tests and Inspections:
1. Inspect VFC, wiring, components, connections, and equipment installation. Test and adjust controllers, components, and equipment.
2. Test insulation resistance for each VFC element, component, connecting motor supply, feeder, and control circuits.
3. Test continuity of each circuit.
4. Verify that voltages at VFC locations are within 10 percent of motor nameplate rated voltages. If outside this range for any motor, notify Owner before starting the motor(s).
5. Test each motor for proper phase rotation.
6. Perform tests according to the Inspection and Test Procedures for Adjustable Speed Drives stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
7. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.

D. VFCs will be considered defective if they do not pass tests and inspections.

E. Prepare test and inspection reports, including a certified report that identifies the VFC and describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations made after remedial action.

3.6 STARTUP SERVICE

A. Perform startup service.
1. Complete installation and startup checks according to manufacturer's written instructions.

3.7 ADJUSTING

A. Program microprocessors for required operational sequences, status indications, alarms, event recording, and display features. Clear events memory after final acceptance testing and prior to Substantial Completion.

B. Set field-adjustable switches, auxiliary relays, time-delay relays, timers, and overload-relay pickup and trip ranges.

C. Set the taps on reduced-voltage autotransformer controllers.

3.8 PROTECTION

A. Temporary Heating: Apply temporary heat to maintain temperature according to manufacturer's written instructions until controllers are ready to be energized and placed into service.

B. Replace VFCs whose interiors have been exposed to water or other liquids prior to Substantial Completion.

3.9 DEMONSTRATION

A. Train Owner's maintenance personnel to adjust, operate, reprogram, and maintain VFCs.

END OF SECTION

SECTION 26 32 13

ENGINE GENERATORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes packaged engine-generator sets for emergency power supply with the following features:
   1. Diesel engine.
   2. Unit-mounted cooling system.
   3. Unit-mounted control and monitoring.
   4. Outdoor enclosure.

B. Related Sections include the following:
   1. Section 263600 "Transfer Switches" for transfer switches including sensors and relays to initiate automatic-starting and -stopping signals for engine-generator sets.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of packaged engine generator indicated. Include rated capacities, operating characteristics, and furnished specialties and accessories. In addition, include the following:
   1. Thermal damage curve for generator.
   2. Time-current characteristic curves for generator protective device.

B. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
   1. Dimensioned outline plan and elevation drawings of engine-generator set and other components specified.
   2. Vibration Isolation Base Details: Signed and sealed by a qualified professional engineer. Detail fabrication, including anchorages and attachments to structure and to supported equipment. Include base weights.
   3. Wiring Diagrams: Power, signal, and control wiring.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For manufacturer.

B. Source quality-control test reports.
   1. Certified summary of prototype-unit test report.

2. Certified Test Reports: For components and accessories that are equivalent, but not identical, to those tested on prototype unit.
3. Report of factory test on units to be shipped for this Project, showing evidence of compliance with specified requirements.
4. Report of sound generation.
5. Report of exhaust emissions showing compliance with applicable regulations.
6. Certified Torsional Vibration Compatibility: Comply with NFPA 110.

C. Field quality-control test reports.

D. Warranty: Special warranty specified in this Section.

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For packaged engine generators to include in emergency, operation, and maintenance manuals. In addition to items specified in Section 01, include the following:
1. List of tools and replacement items recommended to be stored at Project for ready access. Include part and drawing numbers, current unit prices, and source of supply.

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. Fuses: One for every 10 of each type and rating, but no fewer than one of each.
2. Indicator Lamps: Two for every six of each type used, but no fewer than two of each.
3. Filters: One set each of lubricating oil, fuel, and combustion-air filters.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
1. Maintenance Proximity: Not more than four hours' normal travel time from Installer's place of business to Project site.

B. Manufacturer Qualifications: A qualified manufacturer. Maintain, within 200 miles (321 km) of Project site, a service center capable of providing training, parts, and emergency maintenance repairs.

C. Source Limitations: Obtain packaged generator sets and auxiliary components through one source from a single manufacturer.

D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

E. Comply with ASME B15.1.

F. Comply with NFPA 37.

G. Comply with NFPA 110 requirements for Level 1 emergency power supply system.

H. Comply with UL 2200.

I. Engine Exhaust Emissions: Comply with applicable state and local government requirements.

J. Noise Emission: Comply with applicable state and local government requirements for maximum noise level at adjacent property boundaries due to sound emitted by generator set including engine, engine exhaust, engine cooling-air intake and discharge, and other components of installation.

1.8 PROJECT CONDITIONS

A. Environmental Conditions: Engine-generator system shall withstand the following environmental conditions without mechanical or electrical damage or degradation of performance capability:
   1. Ambient Temperature: 5 to 40 deg C.
   2. Relative Humidity: 0 to 95 percent.
   3. Altitude: Sea level to 1000 feet (300 m).

1.9 COORDINATION

A. Coordinate size and location of concrete bases for package engine generators. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified with concrete.

1.10 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of packaged engine generators and associated auxiliary components that fail in materials or workmanship within specified warranty period.
   1. Warranty Period: One year from date of Substantial Completion.

1.11 MAINTENANCE SERVICE

A. Initial Maintenance Service: Beginning at Substantial Completion, provide 12 months' full maintenance by skilled employees of manufacturer's designated service organization. Include quarterly exercising to check for proper starting, load transfer, and running under load. Include routine preventive maintenance as recommended by manufacturer and adjusting as required for proper operation. Provide parts and supplies same as those used in the manufacture and installation of original equipment.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. MTU Generators
2. Hipower Systems
3. Blue Star Power Systems
4. Gillete Generators

2.2 ENGINE-GENERATOR SET

A. Factory-assembled and -tested, engine-generator set.

B. Mounting Frame: Maintain alignment of mounted components without depending on concrete foundation; and have lifting attachments.

C. Capacities and Characteristics:
1. Power Output Ratings: Nominal ratings as indicated.
2. Output Connections: Three-phase, four wire.
3. Nameplates: For each major system component to identify manufacturer's name and address, and model and serial number of component.

D. Generator-Set Performance:
1. Steady-State Voltage Operational Bandwidth: 3 percent of rated output voltage from no load to full load.
2. Transient Voltage Performance: Not more than 20 percent variation for 50 percent step-load increase or decrease. Voltage shall recover and remain within the steady-state operating band within three seconds.
3. Steady-State Frequency Operational Bandwidth: 0.5 percent of rated frequency from no load to full load.
4. Steady-State Frequency Stability: When system is operating at any constant load within the rated load, there shall be no random speed variations outside the steady-state operational band and no hunting or surging of speed.
5. Transient Frequency Performance: Less than 5 percent variation for 50 percent step-load increase or decrease. Frequency shall recover and remain within the steady-state operating band within five seconds.
6. Output Waveform: At no load, harmonic content measured line to line or line to neutral shall not exceed 5 percent total and 3 percent for single harmonics. Telephone influence factor, determined according to NEMA MG 1, shall not exceed 50 percent.
7. Sustained Short-Circuit Current: For a 3-phase, bolted short circuit at system output terminals, system shall supply a minimum of 250 percent of rated full-load current for not less than 10 seconds and then clear the fault automatically, without damage to generator system components.
8. Start Time: Comply with NFPA 110, Type 10, system requirements.

2.3 ENGINE

A. Fuel: Fuel oil, Grade DF-2.

B. Rated Engine Speed: 1800 rpm.

C. Maximum Piston Speed for Four-Cycle Engines: 2250 fpm (11.4 m/s).

D. Lubrication System: The following items are mounted on engine or skid:
   1. Filter and Strainer: Rated to remove 90 percent of particles 5 micrometers and smaller while passing full flow.
   2. Thermostatic Control Valve: Control flow in system to maintain optimum oil temperature. Unit shall be capable of full flow and is designed to be fail-safe.
   3. Crankcase Drain: Arranged for complete gravity drainage to an easily removable container with no disassembly and without use of pumps, siphons, special tools, or appliances.

E. Engine Fuel System:
   1. Main Fuel Pump: Mounted on engine. Pump ensures adequate primary fuel flow under starting and load conditions.
   2. Relief-Bypass Valve: Automatically regulates pressure in fuel line and returns excess fuel to source.
      a. Carburetor.
      b. Secondary Gas Regulators: One for each fuel type.
      c. Fuel-Shutoff Solenoid Valves: One for each fuel source.
      d. Flexible Fuel Connectors: One for each fuel source.

F. Coolant Jacket Heater: Electric-immersion type, factory installed in coolant jacket system. Comply with NFPA 110 requirements for Level 1 equipment for heater capacity.

G. Governor: Mechanical.

H. Cooling System: Closed loop, liquid cooled, with radiator factory mounted on engine-generator-set mounting frame and integral engine-driven coolant pump.
   1. Coolant: Solution of 50 percent ethylene-glycol-based antifreeze and 50 percent water, with anticorrosion additives as recommended by engine manufacturer.
   2. Size of Radiator: Adequate to contain expansion of total system coolant from cold start to 110 percent load condition.
   3. Temperature Control: Self-contained, thermostatic-control valve modulates coolant flow automatically to maintain optimum constant coolant temperature as recommended by engine manufacturer.
   4. Coolant Hose: Flexible assembly with inside surface of nonporous rubber and outer covering of aging-, ultraviolet-, and abrasion-resistant fabric.
      a. Rating: 50-psig (345-kPa) maximum working pressure with coolant at 180 deg F (82 deg C), and noncollapsible under vacuum.
      b. End Fittings: Flanges or steel pipe nipples with clamps to suit piping and equipment connections.

I. Muffler/Silencer: Critical type, sized as recommended by engine manufacturer and selected with exhaust piping system to not exceed engine manufacturer's engine backpressure requirements.
   1. Minimum sound attenuation of 25 dB at 500 Hz.
   2. Sound level measured at a distance of 10 feet (3 m) from exhaust discharge after installation is complete shall be 85 dBA or less.

J.Air-Intake Filter: Standard-duty, engine-mounted air cleaner with replaceable dry-filter element and "blocked filter" indicator.

K. Starting System: 12-V electric, with negative ground.

1. Components: Sized so they will not be damaged during a full engine-cranking cycle with ambient temperature at maximum specified in Part 1 "Project Conditions" Article.
2. Cranking Motor: Heavy-duty unit that automatically engages and releases from engine flywheel without binding.
3. Cranking Cycle: As required by NFPA 110 for system level specified.
4. Battery: Adequate capacity within ambient temperature range specified in Part 1 "Project Conditions" Article to provide specified cranking cycle at least twice without recharging.
5. Battery Cable: Size as recommended by engine manufacturer for cable length indicated. Include required interconnecting conductors and connection accessories.
6. Battery Compartment: Factory fabricated of metal with acid-resistant finish and thermal insulation. Thermostatically controlled heater shall be arranged to maintain battery above 10 deg C regardless of external ambient temperature within range specified in Part 1 "Project Conditions" Article. Include accessories required to support and fasten batteries in place.
7. Battery-Charging Alternator: Factory mounted on engine with solid-state voltage regulation and 35-A minimum continuous rating.
8. Battery Charger: Current-limiting, automatic-equalizing and float-charging type. Unit shall comply with UL 1236 and include the following features:
    a. Operation: Equalizing-charging rate of 10 A shall be initiated automatically after battery has lost charge until an adjustable equalizing voltage is achieved at battery terminals. Unit shall then be automatically switched to a lower float-charging mode and shall continue to operate in that mode until battery is discharged again.
    b. Automatic Temperature Compensation: Adjust float and equalize voltages for variations in ambient temperature from minus 40 deg C to plus 60 deg C to prevent overcharging at high temperatures and undercharging at low temperatures.
    c. Automatic Voltage Regulation: Maintain constant output voltage regardless of input voltage variations up to plus or minus 10 percent.
    d. Ammeter and Voltmeter: Flush mounted in door. Meters shall indicate charging rates.
    e. Safety Functions: Sense abnormally low battery voltage and close contacts providing low battery voltage indication on control and monitoring panel. Sense high battery voltage and loss of ac input or dc output of battery charger. Either condition shall close contacts that provide a battery-charger malfunction indication at system control and monitoring panel.
    f. Enclosure and Mounting: NEMA 250, Type 1, wall-mounted cabinet.

2.4 FUEL OIL STORAGE

A. Comply with NFPA 30.

B. Base-Mounted Fuel Oil Tank: Factory installed and piped, complying with UL 142 fuel oil tank. Features include the following:
1. Tank level indicator.
2. Capacity: Fuel for 24 hours' continuous operation at 100 percent rated power output.
3. Vandal-resistant fill cap.
4. Containment Provisions: Comply with requirements of authorities having jurisdiction.

2.5 CONTROL AND MONITORING

A. Automatic Starting System Sequence of Operation: When mode-selector switch on the control and monitoring panel is in the automatic position, remote-control contacts in one or more separate automatic transfer switches initiate starting and stopping of generator set. When mode-selector switch is switched to the on position, generator set starts. The off position of same switch initiates generator-set shutdown. When generator set is running, specified system or equipment failures or derangements automatically shut down generator set and initiate alarms. Operation of a remote emergency-stop switch also shuts down generator set.

B. Configuration: Operating and safety indications, protective devices, basic system controls, and engine gages shall be grouped in a common control and monitoring panel mounted on the generator set. Mounting method shall isolate the control panel from generator-set vibration.

C. Indicating and Protective Devices and Controls: As required by NFPA 110 for Level 1 system, and the following:
1. AC voltmeter.
2. AC ammeter.
3. AC frequency meter.
4. DC voltmeter (alternator battery charging).
5. Engine-coolant temperature gage.
6. Engine lubricating-oil pressure gage.
7. Running-time meter.
8. Ammeter-voltmeter, phase-selector switch(es).
9. Generator-voltage adjusting rheostat.
10. Fuel tank high-level shutdown of fuel supply alarm.

D. Supporting Items: Include sensors, transducers, terminals, relays, and other devices and include wiring required to support specified items. Locate sensors and other supporting items on engine or generator, unless otherwise indicated.

E. Connection to Data Link: A separate terminal block, factory wired to Form C dry contacts, for each alarm and status indication is reserved for connections for data-link transmission of indications to remote data terminals.

F. Remote Emergency-Stop Switch: Flush; wall mounted, unless otherwise indicated; and labeled. Push button shall be protected from accidental operation.

2.6 GENERATOR OVERCURRENT AND FAULT PROTECTION

A. Generator Circuit Breaker: Molded-case, thermal-magnetic type; 100 percent rated; complying with NEMA AB 1 and UL 489.
1. Tripping Characteristic: Designed specifically for generator protection.
2. Trip Rating: Matched to generator rating.
3. Shunt Trip: Connected to trip breaker when generator set is shut down by other protective devices.
4. Mounting: Adjacent to or integrated with control and monitoring panel.

2.7 GENERATOR, EXCITER, AND VOLTAGE REGULATOR

A. Comply with NEMA MG 1.

B. Drive: Generator shaft shall be directly connected to engine shaft. Exciter shall be rotated integrally with generator rotor.

C. Electrical Insulation: Class H or Class F.

D. Stator-Winding Leads: Brought out to terminal box to permit future reconnection for other voltages if required.

E. Construction shall prevent mechanical, electrical, and thermal damage due to vibration, overspeed up to 125 percent of rating, and heat during operation at 110 percent of rated capacity.

F. Enclosure: Dripproof.

G. Voltage Regulator: Solid-state type, separate from exciter, providing performance as specified.
   1. Adjusting rheostat on control and monitoring panel shall provide plus or minus 5 percent adjustment of output-voltage operating band.

H. Windings: Two-thirds pitch stator winding and fully linked amortisseur winding.

I. Subtransient Reactance: 12 percent, maximum.

2.8 OUTDOOR GENERATOR-SET ENCLOSURE

A. Description: Vandal-resistant, weatherproof steel housing, wind resistant up to 150 mph (160 km/h). Multiple panels shall be lockable and provide adequate access to components requiring maintenance. Panels shall be removable by one person without tools. Instruments and control shall be mounted within enclosure.

B. Engine Cooling Airflow through Enclosure: Maintain temperature rise of system components within required limits when unit operates at 110 percent of rated load for 2 hours with ambient temperature at top of range specified in system service conditions.
   1. Louvers: Fixed-engine, cooling-air inlet and discharge. Storm-proof and drainable louvers prevent entry of rain and snow.
   2. Automatic Dampers: At engine cooling-air inlet and discharge. Dampers shall be closed to reduce enclosure heat loss in cold weather when unit is not operating.

C. Interior Lights with Switch: Factory-wired, vaporproof-type fixtures within housing; arranged to illuminate controls and accessible interior. Arrange for external electrical connection.
   1. AC lighting system and connection point for operation when remote source is available.
   2. DC lighting system for operation when remote source and generator are both unavailable.

2.9 VIBRATION ISOLATION DEVICES

A. Elastomeric Isolator Pads: Oil- and water-resistant elastomer or natural rubber, arranged in single or multiple layers, molded with a nonslip pattern and galvanized-steel baseplates of sufficient stiffness for uniform loading over pad area, and factory cut to sizes that match requirements of supported equipment.

1. Material: Standard neoprene.
2. Durometer Rating: 30.
3. Number of Layers: Two.

B. Restrained Spring Isolators: Freestanding, steel, open-spring isolators with seismic restraint.
1. Housing: Steel with resilient vertical-limit stops to prevent spring extension due to wind loads or if weight is removed; factory-drilled baseplate bonded to 1/4-inch- (6-mm-) thick, elastomeric isolator pad attached to baseplate underside; and adjustable equipment mounting and leveling bolt that acts as blocking during installation.
2. Outside Spring Diameter: Not less than 80 percent of compressed height of the spring at rated load.
3. Minimum Additional Travel: 50 percent of required deflection at rated load.
4. Lateral Stiffness: More than 80 percent of rated vertical stiffness.
5. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.

2.10 FINISHES

A. Indoor and Outdoor Enclosures and Components: Manufacturer's standard finish over corrosion-resistant pretreatment and compatible primer.

2.11 SOURCE QUALITY CONTROL

A. Prototype Testing: Factory test engine-generator set using same engine model, constructed of identical or equivalent components and equipped with identical or equivalent accessories.
1. Tests: Comply with NFPA 110, Level 1 Energy Converters and with IEEE 115.

B. Project-Specific Equipment Tests: Before shipment, factory test engine-generator set and other system components and accessories manufactured specifically for this Project. Perform tests at rated load and power factor. Include the following tests:
1. Test components and accessories furnished with installed unit that are not identical to those on tested prototype to demonstrate compatibility and reliability.
2. Full load run.
3. Maximum power.
4. Voltage regulation.
5. Transient and steady-state governing.
6. Single-step load pickup.
7. Safety shutdown.
8. Provide 14 days' advance notice of tests and opportunity for observation of tests by Owner's representative.
9. Report factory test results within 10 days of completion of test.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas, equipment bases, and conditions, with Installer present, for compliance with requirements for installation and other conditions affecting packaged engine-generator performance.

B. Examine roughing-in of piping systems and electrical connections. Verify actual locations of connections before packaged engine-generator installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Comply with packaged engine-generator manufacturers' written installation and alignment instructions and with NFPA 110.

B. Install packaged engine generator to provide access, without removing connections or accessories, for periodic maintenance.

C. Install packaged engine generator with on 4-inch- (100-mm-) high concrete base. Secure sets to anchor bolts installed in concrete bases.

D. Electrical Wiring: Install electrical devices furnished by equipment manufacturers but not specified to be factory mounted.

3.3 CONNECTIONS

A. Ground equipment according to Section 260526 "Grounding and Bonding for Electrical Systems."

B. Connect wiring according to Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

3.4 IDENTIFICATION

A. Identify system components according to Section 260553 "Identification for Electrical Systems."

3.5 FIELD QUALITY CONTROL

A. Perform tests and inspections and prepare test reports.
   1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.

B. Tests and Inspections:

1. Perform tests recommended by manufacturer and each electrical test and visual and mechanical inspection for "AC Generators and for Emergency Systems" specified in NETA Acceptance Testing Specification. Certify compliance with test parameters.
2. NFPA 110 Acceptance Tests: Perform tests required by NFPA 110 that are additional to those specified here including, but not limited to, single-step full-load pickup test.
3. Battery Tests: Equalize charging of battery cells according to manufacturer's written instructions. Record individual cell voltages.
    a. Measure charging voltage and voltages between available battery terminals for full-charging and float-charging conditions. Check electrolyte level and specific gravity under both conditions.
    b. Test for contact integrity of all connectors. Perform an integrity load test and a capacity load test for the battery.
    c. Verify acceptance of charge for each element of the battery after discharge.
    d. Verify that measurements are within manufacturer's specifications.
4. Battery-Charger Tests: Verify specified rates of charge for both equalizing and float-charging conditions.
5. System Integrity Tests: Methodically verify proper installation, connection, and integrity of each element of engine-generator system before and during system operation. Check for air, exhaust, and fluid leaks.
6. Exhaust Emissions Test: Comply with applicable government test criteria.
7. Voltage and Frequency Transient Stability Tests: Use recording oscilloscope to measure voltage and frequency transients for 50 and 100 percent step-load increases and decreases, and verify that performance is as specified.
8. Harmonic-Content Tests: Measure harmonic content of output voltage under 25 percent and at 100 percent of rated linear load. Verify that harmonic content is within specified limits.
9. Noise Level Tests: Measure A-weighted level of noise emanating from generator-set installation, including engine exhaust and cooling-air intake and discharge, at four locations on the property line, and compare measured levels with required values.

C. Coordinate tests with tests for transfer switches and run them concurrently.

D. Test instruments shall have been calibrated within the last 12 months, traceable to standards of NIST, and adequate for making positive observation of test results. Make calibration records available for examination on request.

E. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.

F. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

G. Remove and replace malfunctioning units and reinspect as specified above.

H. Retest: Correct deficiencies identified by tests and observations and retest until specified requirements are met.

I. Report results of tests and inspections in writing. Record adjustable relay settings and measured insulation resistances, time delays, and other values and observations. Attach a label or tag to each tested component indicating satisfactory completion of tests.

3.6 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain packaged engine generators. Refer to Section 01.

END OF SECTION

SECTION 26 36 00

TRANSFER SWITCHES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes transfer switches rated 600 V and less, including the following:
1. Automatic transfer switches.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include rated capacities, weights, operating characteristics, furnished specialties, and accessories.

B. Shop Drawings: Dimensioned plans, elevations, sections, and details showing minimum clearances, conductor entry provisions, gutter space, installed features and devices, and material lists for each switch specified.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For manufacturer.

B. Field quality-control reports.

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For each type of product to include in emergency, operation, and maintenance manuals. In addition to items specified in Section 01 include the following:
1. Features and operating sequences, both automatic and manual.
2. List of all factory settings of relays; provide relay-setting and calibration instructions, including software, where applicable.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Maintain a service center capable of providing training, parts, and emergency maintenance repairs within a response period of less than eight hours from time of notification.

B. Source Limitations: Obtain automatic transfer switches through one source from a single manufacturer in association with the generator supplier.

C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

D. Comply with NEMA ICS 1.

E. Comply with NFPA 110.

F. Comply with UL 1008 unless requirements of these Specifications are stricter.

PART 2 - PRODUCTS

2.1 MANUFACTURED UNITS

A. Contactor Transfer Switches:
   1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
      a. MTU Generators
      b. Hipower Systems
      c. Blue Star Power Systems
      d. Gillete Generators

2.2 GENERAL TRANSFER-SWITCH PRODUCT REQUIREMENTS

A. Indicated Current Ratings: Apply as defined in UL 1008 for continuous loading and total system transfer, including tungsten filament lamp loads not exceeding 30 percent of switch ampere rating, unless otherwise indicated.

B. Tested Fault-Current Closing and Withstand Ratings: Adequate for duty imposed by protective devices at installation locations in Project under the fault conditions indicated, based on testing according to UL 1008.

C. Solid-State Controls: Repetitive accuracy of all settings shall be plus or minus 2 percent or better over an operating temperature range of minus 20 to plus 70 deg C.

D. Resistance to Damage by Voltage Transients: Components shall meet or exceed voltage-surge withstand capability requirements when tested according to IEEE C62.41. Components shall meet or exceed voltage-impulse withstand test of NEMA ICS 1.

E. Electrical Operation: Accomplish by a nonfused, momentarily energized solenoid or electric-motor-operated mechanism, mechanically and electrically interlocked in both directions.

F. Switch Characteristics: Designed for continuous-duty repetitive transfer of full-rated current between active power sources.
   1. Switch Action: Double throw; mechanically held in both directions.

2. Contacts: Silver composition or silver alloy for load-current switching. Conventional automatic transfer-switch units, rated 225 A and higher, shall have separate arcing contacts.

G. Neutral Terminal: Solid and fully rated, unless otherwise indicated.

H. Annunciation, Control, and Programming Interface Components: Devices at transfer switches for communicating with remote programming devices, annunciators, or annunciator and control panels shall have communication capability matched with remote device.

I. Factory Wiring: Train and bundle factory wiring and label, consistent with Shop Drawings, either by color-code or by numbered or lettered wire and cable tape markers at terminations. Color-coding and wire and cable tape markers are specified in Section 260553 "Identification for Electrical Systems."
1. Designated Terminals: Pressure type, suitable for types and sizes of field wiring indicated.
2. Power-Terminal Arrangement and Field-Wiring Space: Suitable for top, side, or bottom entrance of feeder conductors as indicated.
3. Control Wiring: Equipped with lugs suitable for connection to terminal strips.

J.Enclosures: NEMA 250, Type 4X, complying with NEMA ICS 6 and UL 508, unless otherwise indicated.

2.3 AUTOMATIC TRANSFER SWITCHES

A. Comply with Level 1 equipment according to NFPA 110.

B. Switching Arrangement: Double-throw type, incapable of pauses or intermediate position stops during normal functioning, unless otherwise indicated.

C. Manual Switch Operation: Unloaded. Control circuit automatically disconnects from electrical operator during manual operation.

D. In-Phase Monitor: Factory-wired, internal relay controls transfer so it occurs only when the two sources are synchronized in phase. Relay compares phase relationship and frequency difference between normal and emergency sources and initiates transfer when both sources are within 15 electrical degrees, and only if transfer can be completed within 60 electrical degrees. Transfer is initiated only if both sources are within 2 Hz of nominal frequency and 70 percent or more of nominal voltage.

E. Automatic Transfer-Switch Features:
1. Undervoltage Sensing for Each Phase of Normal Source: Sense low phase-to-ground voltage on each phase. Pickup voltage shall be adjustable from 85 to 100 percent of nominal, and dropout voltage is adjustable from 75 to 98 percent of pickup value. Factory set for pickup at 90 percent and dropout at 85 percent.
2. Adjustable Time Delay: For override of normal-source voltage sensing to delay transfer and engine start signals. Adjustable from zero to six seconds, and factory set for one second.
3. Voltage/Frequency Lockout Relay: Prevent premature transfer to generator. Pickup voltage shall be adjustable from 85 to 100 percent of nominal. Factory set for pickup at 90 percent. Pickup frequency shall be adjustable from 90 to 100 percent of nominal. Factory set for pickup at 95 percent.

4. Time Delay for Retransfer to Normal Source: Adjustable from 0 to 30 minutes, and factory set for 10 minutes to automatically defeat delay on loss of voltage or sustained undervoltage of emergency source, provided normal supply has been restored.
5. Test Switch: Simulate normal-source failure.
6. Switch-Position Pilot Lights: Indicate source to which load is connected.
7. Source-Available Indicating Lights: Supervise sources via transfer-switch normal- and emergency-source sensing circuits.
   a. Normal Power Supervision: Green light with nameplate engraved "Normal Source Available."
   b. Emergency Power Supervision: Red light with nameplate engraved "Emergency Source Available."
8. Unassigned Auxiliary Contacts: Two normally open, single-pole, double-throw contacts for each switch position, rated 10 A at 240-V ac.
9. Transfer Override Switch: Overrides automatic retransfer control so automatic transfer switch will remain connected to emergency power source regardless of condition of normal source. Pilot light indicates override status.
10. Engine Starting Contacts: One isolated and normally closed, and one isolated and normally open; rated 10 A at 32-V dc minimum.
11. Engine Shutdown Contacts: Time delay adjustable from zero to five minutes, and factory set for five minutes. Contacts shall initiate shutdown at remote engine-generator controls after retransfer of load to normal source.
12. Engine-Generator Exerciser: Solid-state, programmable-time switch starts engine generator and transfers load to it from normal source for a preset time, then retransfers and shuts down engine after a preset cool-down period. Initiates exercise cycle at preset intervals adjustable from 7 to 30 days. Running periods are adjustable from 10 to 30 minutes. Factory settings are for 7-day exercise cycle, 20-minute running period, and 5-minute cool-down period. Exerciser features include the following:
    a. Exerciser Transfer Selector Switch: Permits selection of exercise with and without load transfer.
    b. Push-button programming control with digital display of settings.
    c. Integral battery operation of time switch when normal control power is not available.

2.4 SOURCE QUALITY CONTROL

A. Factory test and inspect components, assembled switches, and associated equipment. Ensure proper operation. Check transfer time and voltage, frequency, and time-delay settings for compliance with specified requirements. Perform dielectric strength test complying with NEMA ICS 1.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Floor-Mounting Switch: Anchor to floor by bolting.

B. Identify components according to Section 260553 "Identification for Electrical Systems."

C. Set field-adjustable intervals and delays, relays, and engine exerciser clock.

3.2 CONNECTIONS

A. Ground equipment according to Section 260526 "Grounding and Bonding for Electrical Systems."

B. Connect wiring according to Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

3.3 FIELD QUALITY CONTROL

A. Perform the following tests and inspections:
   1. After installing equipment and after electrical circuitry has been energized, test for compliance with requirements.
   2. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
   3. Measure insulation resistance phase-to-phase and phase-to-ground with insulation-resistance tester. Include external annunciation and control circuits. Use test voltages and procedure recommended by manufacturer. Comply with manufacturer's specified minimum resistance.
      a. Check for electrical continuity of circuits and for short circuits.
      b. Inspect for physical damage, proper installation and connection, and integrity of barriers, covers, and safety features.
      c. Verify that manual transfer warnings are properly placed.
      d. Perform manual transfer operation.
   4. After energizing circuits, demonstrate interlocking sequence and operational function for each switch at least three times.
      a. Simulate power failures of normal source to automatic transfer switches and of emergency source with normal source available.
      b. Simulate loss of phase-to-ground voltage for each phase of normal source.
      c. Verify time-delay settings.
      d. Verify pickup and dropout voltages by data readout or inspection of control settings.
      e. Verify proper sequence and correct timing of automatic engine starting, transfer time delay, retransfer time delay on restoration of normal power, and engine cool-down and shutdown.

B. Coordinate tests with tests of generator and run them concurrently.

C. Report results of tests and inspections in writing. Record adjustable relay settings and measured insulation and contact resistances and time delays. Attach a label or tag to each tested component indicating satisfactory completion of tests.

D. Remove and replace malfunctioning units and retest as specified above.

E. Prepare test and inspection reports.

3.4 DEMONSTRATION

A. Train Owner's maintenance personnel to adjust, operate, and maintain transfer switches and related equipment as specified below. Refer to Section 01.

B. Coordinate this training with that for generator equipment.

END OF SECTION

SECTION 26 41 13

LIGHTNING PROTECTION FOR STRUCTURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes lightning protection for structures.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: For air terminals and mounting accessories.

1. Layout of the lightning protection system, along with details of the components to be used in the installation.

2. Include indications for use of raceway, data on how concealment requirements will be met, and calculations required by NFPA 780 for bonding of grounded and isolated metal bodies.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified Installer and manufacturer. Include data on listing or certification by UL.

B. Certification, signed by Contractor, that roof adhesive is approved by manufacturer of roofing material.

C. Field quality-control reports.

D. Comply with recommendations in NFPA 780, Annex D, "Inspection and Maintenance of Lightning Protection Systems," for maintenance of the lightning protection system.

E. Other Informational Submittals: Plans showing dimensioned as-built locations of grounding features, including the following:

1. Ground rods.

2. Ground loop conductor.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Certified by UL as a Master Installer/Designer, trained and approved for installation of units required for this Project.

B. System Certificate:

1. UL Master Label.

C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 780, "Definitions" Article.

1.6 COORDINATION

A. Coordinate installation of lightning protection with installation of other building systems and components, including electrical wiring, supporting structures and building materials, metal bodies requiring bonding to lightning protection components, and building finishes.

B. Coordinate installation of air terminals attached to roof systems with roofing manufacturer and Installer.

C. Flashings of through-roof assemblies shall comply with roofing manufacturers' specifications.

PART 2 - PRODUCTS

2.1 LIGHTNING PROTECTION SYSTEM COMPONENTS

A. Comply with UL 96 and NFPA 780.

B. Roof-Mounted Air Terminals: NFPA 780, Class I, copper extending at least 10 inches (.25 m) above the object being protected, unless otherwise indicated.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   a. East Coast Lightning Equipment Inc.
   b. ERICO International Corporation.
   c. Harger.
   d. Heary Bros. Lightning Protection Co. Inc.
   e. Independent Protection Co.
   f. Preferred Lightning Protection.
   g. Robbins Lightning, Inc.
   h. Thompson Lightning Protection, Inc.

2. Air Terminals More than 24 Inches (600 mm) Long: With brace attached to the terminal at not less than half the height of the terminal.

3. Single-Membrane, Roof-Mounted Air Terminals: Designed specifically for single-membrane roof system materials. Comply with requirements in roofing Sections.

C. Main and Bonding Conductors: Copper.

1. Main Conductors: Provide copper cable with minimum 17 AWG strand size and a minimum cross-sectional area of 57,400 circular mils.

2. Bonding Conductors: Provide copper cable with minimum 17 AWG strand size and a minimum cross-sectional area of 26,240 circular mils.

D. Ground Loop Conductor: The same size and type as the main conductor except tinned.

E. Ground Rods: Copper-clad steel; 3/4 inch (19 mm) in diameter by 10 feet (3 m) long.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install lightning protection components and systems according to UL 96A and NFPA 780.

B. Install conductors with direct paths from air terminals to ground connections. Avoid sharp bends.

C. Cover lightning protection down conductors that are subject to physical damage or casual contact by personnel with Schedule 80 PVC conduit. Cover down conductors from grade level up to 8 feet above grade. Support conduit with conduit clamps spaced not more than 36 inches apart.

D. Conceal the following conductors:

1. Down conductors.

2. Conductors within normal view of exterior locations at grade within 200 feet (60 m) of building.

E. Cable Connections: Use crimped or bolted connections for all conductor splices and connections between conductors and other components. Use exothermic-welded connections in underground portions of the system except those in ground access wells.

F. Air Terminals on Single-Ply Membrane Roofing: Comply with roofing membrane and adhesive manufacturer's written instructions.

G. Ground Loop: Install ground-level, potential equalization conductor and extend around the perimeter of structure.

1. Bury ground ring not less than 24 inches (600 mm) from building foundation.

2. Bond ground terminals to the ground loop.

3. Bond grounded building systems to the ground loop conductor within 12 feet (3.6 m) of grade level.

H. Bond lightning protection components with intermediate-level interconnection loop conductors to grounded metal bodies of building at 60-foot (18-m) intervals.

3.2 CORROSION PROTECTION

A. Do not combine materials that can form an electrolytic couple that will accelerate corrosion in the presence of moisture unless moisture is permanently excluded from junction of such materials.

B. Use conductors with protective coatings where conditions cause deterioration or corrosion of conductors.

3.3 FIELD QUALITY CONTROL

A. Notify Architect at least 48 hours in advance of inspection before concealing lightning protection components.

B. UL Inspection: Meet requirements to obtain a UL Master Label for system.

END OF SECTION

SECTION 27 13 23

COMMUNICATIONS OPTICAL FIBER BACKBONE CABLING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
1. 9/125 micrometer single-mode, outside plant optical fiber cable (OS2).
2. Optical fiber cable connecting hardware, patch panels, and cross-connects.
3. Cabling identification products.

1.3 DEFINITIONS

A. BICSI: Building Industry Consulting Service International.

B. Cross-Connect: A facility enabling the termination of cable elements and their interconnection or cross-connection.

C. RCDD: Registered Communications Distribution Designer.

1.4 OPTICAL FIBER BACKBONE CABLING DESCRIPTION

A. Optical fiber backbone cabling system shall provide interconnections between communications equipment rooms, main terminal space, and entrance facilities in the telecommunications cabling system structure. Cabling system consists of backbone cables, intermediate and main cross-connects, mechanical terminations, and patch cords or jumpers used for backbone-to-backbone cross-connection.

B. Backbone cabling cross-connects may be located in communications equipment rooms or at entrance facilities. Bridged taps and splitters shall not be used as part of backbone cabling.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: Reviewed and stamped by RCDD.
1. System Labeling Schedules: Electronic copy of labeling schedules, in software and format selected by Owner.

2. System Labeling Schedules: Electronic copy of labeling schedules that are part of the cabling and asset identification system of the software.
3. Cabling administration drawings and printouts.
4. Wiring diagrams to show typical wiring schematics including the following:
   a. Telecommunications rooms plans and elevations.
   b. Telecommunications pathways.
   c. Telecommunications system access points.
   d. Telecommunications grounding system.
   e. Cross-connects.
   f. Patch panels.
   g. Patch cords.
5. Cross-connects and patch panels. Detail mounting assemblies and show elevations and physical relationship between the installed components.

C. Optical fiber cable testing plan.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For installer, installation supervisor, and field inspector.

B. Source quality-control reports.

C. Product Certificates: For each type of product.

D. Field quality-control reports.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: For optical fiber cable, splices, and connectors to include in maintenance manuals.

1.8 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. Patch-Panel Units: One of each type.
2. Plugs: Ten of each type.
3. Jacks: Ten of each type.

1.9 QUALITY ASSURANCE

A. Installer Qualifications: Cabling Installer must have personnel certified by BICSI on staff.
1. Layout Responsibility: Preparation of Shop Drawings and field-testing program development by an RCDD.
2. Installation Supervision: Installation shall be under the direct supervision of Level 2 Installer, who shall be always present when Work of this Section is performed at Project site.
3. Testing Supervisor: Currently certified by BICSI as an RCDD to supervise on-site testing.

B. Testing Agency Qualifications: Testing agency must have personnel certified by BICSI on staff.
   1. Testing Agency's Field Supervisor: Currently certified by BICSI as an RCDD.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Test cables upon receipt at Project site.
   1. Test optical fiber cable to determine the continuity of the strand end to end. Use optical fiber flashlight or optical loss test set.
   2. Test optical fiber cable while on reels. Use an optical time domain reflectometer to verify the cable length and locate cable defects, splices, and connector, including the loss value of each. Retain test data and include the record in maintenance data.

1.11 PROJECT CONDITIONS

A. Environmental Limitations: Do not deliver or install cables and connecting materials until wet work in spaces is complete and dry, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.

1.12 COORDINATION

A. Coordinate layout and installation of telecommunications pathways and cabling with Owner's telecommunications and LAN equipment and service suppliers.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General Performance: Backbone cabling system shall comply with transmission standards in TIA-568-C.1, when tested according to test procedures of this standard.

B. Surface-Burning Characteristics: As determined by testing identical products according to ASTM E84 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
   1. Flame-Spread Index: 25 or less.
   2. Smoke-Developed Index: 50 or less.

C. Telecommunications Pathways and Spaces: Comply with TIA-569-D.

D. Grounding: Comply with TIA-607-B.

2.2 9/125 MICROMETER SINGLE-MODE, OUTSIDE PLANT OPTICAL FIBER CABLE (OS2)

A. Interconnect Cable Description: Single mode, 9/125-micrometer, 12 fibers, single loose tube, optical fiber cable.

B. Main Distribution Cable Description: Single mode, 9/125-micrometer, 48 fibers, stranded loose tube, optical fiber cable.

C. Basis of Design: Corning ALTOS Loose Tube, Gel-Free, All-Dielectric Cable with FastAccess Technology SMF-28 Ultra fiber, Single-mode (OS2). Submit equivalent for approval prior to bid.

D. Standards:
1. Comply with TIA-492CAAB for detailed specifications.
2. Comply with TIA-568-C.3 for performance specifications.
3. Comply with ICEA S-87-640 for mechanical properties.

E. Maximum Attenuation: 0.5 dB/km at 1310 nm; 0.5 dB/km at 1550 nm.

F. Jacket:
1. Jacket Color: Black.
2. Cable cordage jacket, fiber, unit, and group color shall be according to TIA-598-D.
3. Imprinted with fiber count, fiber type, and aggregate length at regular intervals not to exceed 40 inches (1000 mm).

2.3 OPTICAL FIBER CABLE HARDWARE

A. Standards:
1. Comply with Fiber Optic Connector Intermateability Standard (FOCIS) specifications of the TIA-604 series.
2. Comply with TIA-568-C.3.

B. Cross-Connects and Patch Panels: Modular panels housing multiple-numbered, duplex cable connectors.
1. Number of Connectors per Field: One for each fiber of cable or cables assigned to field, plus spares and blank positions adequate to suit specified expansion criteria.

C. Patch Cords: Factory-made, dual-fiber cables in 36-inch (900-mm) lengths.

D. Connector Type: Coordinate with Owner for specific connector.
1. Type SC complying with TIA-604-3-B
2. Type LC complying with TIA-604-10-B
3. Type MT-RJ complying with TIA-604-12

E. Plugs and Plug Assemblies:
1. Male; color-coded modular telecommunications connector designed for termination of a single optical fiber cable.
2. Insertion loss not more than 0.25 dB.

F. Jacks and Jack Assemblies:
1. Female; quick-connect, simplex and duplex; fixed telecommunications connector designed for termination of a single optical fiber cable.
2. Insertion loss not more than 0.25 dB.
3. Designed to snap-in to a patch panel or faceplate.

2.4 GROUNDING

A. Comply with TIA-607-B.

2.5 IDENTIFICATION PRODUCTS

A. Comply with TIA-606-B and UL 969 for a system of labeling materials, including label stocks, laminating adhesives, and inks used by label printers.

2.6 SOURCE QUALITY CONTROL

A. Factory test multimode optical fiber cables according to TIA-526-14-B and TIA-568-C.3.

B. Factory test pre-terminated optical fiber cable assemblies according to TIA-526-14-B and TIA-568-C.3.

C. Cable will be considered defective if it does not pass tests and inspections.

D. Prepare test and inspection reports.

PART 3 - EXECUTION

3.1 ENTRANCE FACILITIES

A. Coordinate backbone cabling with the protectors and demarcation point provided by communications service provider.

3.2 WIRING METHODS

A. Wiring within Enclosures: Bundle, lace, and train cables within enclosures. Connect to terminal points with no excess and without exceeding manufacturer's limitations on bending radii. Provide and use lacing bars and distribution spools.

3.3 INSTALLATION OF OPTICAL FIBER BACKBONE CABLES

A. Comply with NECA 1, NECA 301, and NECA/BICSI 568.

B. General Requirements for Optical Fiber Cabling Installation:
   1. Comply with TIA-568-C.1 and TIA-568-C.3.
   2. Comply with BICSI ITSIMM, Ch. 6, "Cable Termination Practices."
   3. Terminate all cables; no cable shall contain unterminated elements. Make terminations only at indicated outlets, terminals, cross-connects, and patch panels.
   4. Cables may not be spliced. Secure and support cables at intervals not exceeding 30 inches (760 mm) and not more than 6 inches (150 mm) from cabinets, boxes, fittings, outlets, racks, frames, and terminals.

5. Install lacing bars to restrain cables, to prevent straining connections, and to prevent bending cables to smaller radii than minimums recommended by manufacturer.
6. Bundle, lace, and train cable to terminal points without exceeding manufacturer's limitations on bending radii, but not less than radii specified in BICSI ITSIMM, "Cabling Termination Practices" Chapter. Use lacing bars and distribution spools.
7. Do not install bruised, kinked, scored, deformed, or abraded cable. Do not splice cable between termination, tap, or junction points. Remove and discard cable if damaged during installation and replace it with new cable.
8. Cold-Weather Installation: Bring cable to room temperature before dereeling. Heat lamps shall not be used for heating.
9. In the communications equipment room, provide a 10-foot- (3-m-) long service loop on each end of cable.
10. Pulling Cable: Comply with BICSI ITSIMM, Ch. 4, "Pulling Cable." Monitor cable pull tensions.
11. Cable may be terminated on connecting hardware that is rack or cabinet mounted.

C. Open-Cable Installation:
1. Install cabling with horizontal and vertical cable guides in telecommunications spaces with terminating hardware and interconnection equipment.
2. Cable shall not be run through structural members or in contact with pipes, ducts, or other potentially damaging items.

D. Group connecting hardware for cables into separate logical fields.

3.4 FIRESTOPPING

A. Comply with TIA-569-D, Annex A, "Firestopping."

B. Comply with BICSI ITSIMM, "Firestopping" Chapter.

3.5 IDENTIFICATION

A. Identify system components, wiring, and cabling complying with TIA-606-B.
1. Color-code cross-connect fields and apply colors to voice and data service backboards, connections, covers, and labels.

B. Paint and label colors for equipment identification shall comply with TIA-606-B for Class 2 level of administration.

C. Cabling Administration Drawings: Show building floor plans with cabling administration-point labeling. Identify labeling convention and show labels for telecommunications closets, backbone pathways and cables, terminal hardware and positions, horizontal cables, work areas and workstation terminal positions, grounding buses and pathways, and equipment grounding conductors.

D. Cable and Wire Identification:
1. Label each cable within 4 inches (100 mm) of each termination and tap, where it is accessible in a cabinet or junction or outlet box, and elsewhere as indicated.
2. Each wire connected to building-mounted devices is not required to be numbered at device if color of wire is consistent with associated wire connected and numbered within panel or cabinet.

3. Exposed Cables and Cables in Cable Trays and Wire Troughs: Label each cable at intervals not exceeding 15 feet (4.5 m).
4. Label each unit and field within distribution racks and frames.
5. Identification within Connector Fields in Equipment Rooms and Wiring Closets: Label each connector and each discrete unit of cable-terminating and connecting hardware. Where similar jacks and plugs are used for both voice and data communication cabling, use a different color for jacks and plugs of each service.

E. Labels shall be preprinted or computer-printed type with printing area and font color that contrasts with cable jacket color but still complies with requirements in TIA 606-B, for the following:
1. Flexible vinyl or polyester that flexes as cables are bent.

3.6 FIELD QUALITY CONTROL

A. Perform tests and inspections.

B. Tests and Inspections:
1. Visually inspect optical fiber jacket materials for NRTL certification markings. Inspect cabling terminations in communications equipment rooms for compliance with color-coding for pin assignments and inspect cabling connections for compliance with TIA-568-C.1.
2. Visually inspect cable placement, cable termination, grounding and bonding, equipment and patch cords, and labeling of all components.
3. Optical Fiber Cable Tests:
a. Test instruments shall meet or exceed applicable requirements in TIA-568-C.1. Use only test cords and adapters that are qualified by test equipment manufacturer for channel or link test configuration.

C. Data for each measurement shall be documented. Data for submittals shall be printed in a summary report that is formatted similar to Table 10.1 in BICSI TDMM, or transferred from the instrument to the computer, saved as text files, and printed and submitted.

D. Remove and replace cabling where test results indicate that it does not comply with specified requirements.

E. End-to-end cabling will be considered defective if it does not pass tests and inspections.

F. Prepare test and inspection reports.

END OF SECTION

SECTION 31 11 00

CLEARING AND GRUBBING

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. The work consists of clearing and grubbing, within the limits of construction shown on the drawings. Included is the removal and disposal of all trees, stumps, roots and other such protruding objects necessary to prepare the area for the proposed construction and landscaping.

1.02 PROTECTION OF PROPERTY REMAINING IN PLACE

A. Property obstructions which are to remain in place, such as buildings, sewers, drains, water or gas pipes, conduits, poles, walls, posts, bridges, and similar items are to be carefully protected from injury and are not to be displaced. Restore damaged improvements to their original condition, as acceptable to parties having jurisdiction.

B. Protection of Existing Trees and Vegetation:

1. Protect existing trees and other vegetation indicated to remain in place, against unnecessary cutting, breaking or skinning of roots, skinning and bruising of bark, smothering of trees by stockpiling construction materials or excavated materials within drip lines, excess foot or vehicular traffic, or parking of vehicles within drip line.

2. When ground is to be excavated under the drip line of any existing protected tree (as defined in the Owner's Land Development Code), roots shall be pruned at the juncture of the grade excavation to reduce tree root shock and dieback. The depth of the pruning shall be equal to the depth of the excavation. The location of root pruning shall be marked with 2-inch by 4-inch fencing. The Owner shall supervise all root pruning activities.

3. Provide temporary guards to protect trees and vegetation to be left standing.

4. Contractor shall water trees and other vegetation remaining within the limits of the Contract work as required maintaining their health during the course of construction operations.

5. Provide protection for roots over 1/2-inch diameter cut during construction operations. Coat the cut faces with emulsified asphalt, or other acceptable coating, formulated for use on damaged plant tissues. Temporarily cover exposed roots with wet burlap to prevent roots from drying out; cover with earth as soon as possible.

6. Repair or replace trees and vegetation damaged by construction operations, in a manner acceptable to the Engineer. Repair tree damage with the services of a qualified tree surgeon.

7. Replace trees which cannot be repaired and restored to full-growth status, as determined by the tree surgeon.

C. Improvements on Adjoining Property:

1. Authority for performing removal and alteration work on property adjoining the Owner's property will be obtained by the Owner prior to award of Contract.

D. Salvageable Improvements:

1. Carefully remove items indicated to be salvaged, and store on the Owner's premises where indicated, unless otherwise directed.

1.03 OWNERSHIP OF MATERIALS

A. Except as may be otherwise called for on the drawings or elsewhere in the specifications, all materials removed by the Contractor shall become the property of the Contractor and shall be disposed of in a lawful manner.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

3.01 STANDARD CLEARING AND GRUBBING

A. Standard clearing and grubbing shall consist of the complete removal and disposal of all timber, brush, stumps, roots, rubbish and debris and all other obstructions resting on or protruding through the surface of the existing ground and the surface of excavated areas, and of all other obstructions necessary to be removed and for which the removal is not specified to be done under other items of the contract, including pipes and demolition.

B. Unless otherwise shown on the drawings, standard clearing and grubbing shall be done within the following areas:

1. All areas where retention areas will be modified or constructed.

2. Any other areas specifically called for on the drawings to have standard clearing and grubbing.

C. In all areas where excavation is to be done, roots and other debris shall be removed to a depth of at least one foot below the finished ground surface. The surface shall then be plowed to a depth of at least 6 inches and all roots thereby exposed shall be removed to a depth of at least one foot. All stumps within the area of standard clearing and grubbing shall be completely removed and disposed of by the Contractor.

D. Where excavation is done within the standard clearing and grubbing area and where excavation for structures is done, all roots and similar items, protruding through or appearing on the surface of the completed excavation shall be removed to a depth of at least one foot below the excavation surface.

E. Within all other areas where standard clearing and grubbing is to be done, roots and other debris, projecting through or appearing on the surface of the original ground, shall be

removed to a depth of one foot below the surface, but no plowing and harrowing will be required in these areas.

F. As an exception to the above provisions where so directed by the Engineer, desirable trees within the clearing and grubbing area shall be trimmed, protected and left standing. Trees shown on the drawings to be relocated shall be relocated to a location identified by the Engineer.

G. Any boulders encountered in the site excavation or found on the surface of the ground, shall be removed and placed in neat piles at a location approved by the Engineer.

H. For pipeline construction the Contractor shall only remove trees, shrubs and grass which interfere with the construction. All other vegetation shall be protected, preserved and/or replaced.

3.02 DISPOSAL OF MATERIALS

A. General Disposal:

1. Timber, stumps, brush, roots, rubbish, and other objectionable material resulting from clearing and grubbing shall be disposed of by the Contractor in locations and by methods approved by the Engineer.

2. In some instances, materials may be disposed of on the Owner’s property at a location and by a method approved by the Engineer, but only with advance written permission of the Owner.

B. Burning Debris:

1. In some instances, burning may be permitted on the Owner's property at a location and by a method approved by the Engineer, but only with advance written permission of the Owner.

2. Where burning of such material is permitted all such burning shall be subject to applicable laws, ordinances and regulations and shall be done at locations where trees and shrubs adjacent to the cleared area will not be harmed.

3. Where burning is prohibited by law, ordinance, or regulation, the Contractor shall dispose of the materials within areas provided by him and approved by the Engineer.

C. Disposal in areas Adjacent to Project:

1. Materials may be disposed of on private property, provided the Engineer is furnished with a written statement from the owner of the property giving permission for the disposal of the materials on his property. All disposal areas for materials resulting from clearing and grubbing, both on private property and on property owned by the Contractor, shall be in areas out of sight of the project and at least 300 feet from the nearest right-of-way line of the project, unless such materials are buried, in which case the requirement that the areas be 300 feet distant will be waived.

END OF SECTION

SECTION 31 22 00

GRADING

PART 1 - GENERAL

1.01 Work Includes

A. Excavation and embankment necessary for grading the site shall be considered to include that required for roads, walks, culvert installations, and drainage ditches and channels.

PART 2 - EXECUTION

2.01 Preparation

A. After the removal of topsoil, the then existing surface is to be excavated or filled to the elevations and slopes indicated on the Drawings, or as directed by the Engineer. Additional fill, if required, and is not available elsewhere, shall be excavated from borrow areas selected by the Contractor, but subject to the approval of the Engineer. Unless otherwise provided, all borrow pits shall be located entirely outside the limits of the site.

B. On areas where roadway pavement is to be placed, the subgrade therefore shall be no more than 0.10 foot above or below the established grade; in other areas, the finished grade shall be not more than 0.15 foot above or below the established grade.

C. Where rock is encountered at road subgrade or finished grade in areas other than roads, it shall be removed for a depth of six inches below such subgrade or finished grade elevation.

D. Subgrades and shoulders for the access and service roads shall be constructed to the lines and grades indicated, and in conformance with the applicable requirements of the "Standard Specifications" for the Florida State Department of Transportation.

2.02 Embankment

A. On hillsides in which the existing slope is steeper than four to one, the Engineer may require the surface to be plowed to provide binding of the embankment with the original ground. When, in the opinion of the Engineer, existing slopes are excessive, the Engineer may require the original ground to be cut into the steps or berms.

B. All materials removed from classes of excavation, which are determined as suitable by the Engineer, shall be used in the formation of embankments. Excavated material which is not required for embankments shall be disposed of by the Contractor, at his responsibility and expense, outside the limits of the site, unless the Engineer gives notice of some point of disposal within the site. No material shall be disposed of in any flood channel area.

C. Earth or other friable materials shall be placed in successive horizontal layers of loose material not more than nine inches in depth, spread uniformly by use of graders or other approved devices, and rolled until thoroughly compacted with an approved three wheel power roller weighing not less than 10 tons. The Engineer may permit the Contractor to use approved sheep-foot tamping rollers. Embankments at points inaccessible to the roller

shall be made in horizontal layers of loose material not exceeding six inches in depth and thoroughly compacted by mechanical tampers.

D. Where rock only is available, it shall be placed in loose layers not exceeding two feet in depth and rolled as provided above. Rock fills shall only be considered as such where the earth or other finer materials is uniformly distributed and is considerably less than sufficient to fill the voids and interstices; otherwise it shall be considered and placed as earth fill. The top layer of rock fills shall not exceed eight inches in depth, and the interstices shall be thoroughly filled with small spall, shale, gravel, or other similar approved material and thoroughly compacted. This top layer of rock shall be kept at least eight inches below the elevation of subgrade for payments, and finished grade elsewhere, with the balance of the fill formed by topsoil or other approved material, as required.

E. No roots, leaves, grass, or any form of vegetation shall be placed or allowed to remain in filled or graded areas.

F. The Contractor shall be responsible for the stability of all embankments and shall replace all sections which, in the opinion of the Engineer, have been damaged or displaced due to carelessness or neglect on the part of the Contractor due to natural causes, such as storms.

G. During grading operations, cuts and fills shall be kept shaped and drained at all times.

END OF SECTION

SECTION 31 23 00

EXCAVATION AND FILL

PART 1 - GENERAL

1.01 SCOPE

A. The work covered by this section and required by this Contract includes the completion of all excavation, backfilling and embankment to the lines and grades indicated by the drawings, as further specified below, and necessary to the following operations:

1. Stripping, storing and replacing topsoil.

2. Excavation and backfill for pipe trenches.

3. Excavation and embankment for road, grading and drainage of the site.

4. Excavation and backfill for buildings and structures.

5. Borrow excavation.

1.02 CHARACTER OF MATERIAL.

A. The Contractor must satisfy himself regarding the character and amount of loam, clay, sand, quicksand, muck, gravel, rock, water and all other material to be encountered in the work to be performed.

1.03 DESCRIPTION

A. The Contractor shall excavate, protect and backfill all foundations, trenches, tunnels and other excavations that may be necessary for completing the work to be done under this Contract. All excavation shall be in open cuts, except where and to such extent as the Engineer may authorize or direct that the same be done in tunnel, or where such is specified in the Special Requirements or Contract drawings. Trenches may, in general, be excavated and backfilled either by machinery, or by hand as the Contractor may elect; provided, however, that the Engineer shall be empowered, wherever he shall decide that such necessity exists, to direct that hand excavation by employed; and, provided, further that backfilling by hand shall be done to the extent hereinafter specified. The Contractor shall have not claim for extra compensation due to the fact that hand, instead of machine, excavation may be necessary from any cause whatever.

B. The Contractor shall perform all excavation of every description and of whatever substances encountered, to the lines and grades or depths indicated by the drawings, as specified herein, or as directed by the Engineer. Embankments shall be prepared in accordance with the Specifications, and as necessary to bring the ground surface to the subgrade elevation for roads and to finished grade elevations for other areas as shown on the drawings, or directed by the Engineer. All excavated material not required for backfill or embankment shall be removed and wasted or otherwise disposed of as directed or specified.

C. The term "subgrade" as used herein shall have the meaning given below:

1. The bed of a trench prepared as specified to receive pipes or other conduits.
2. The area upon which the lower surface of roadway paving, walks, gutters, or curb rests.
3. The surface of excavation or embankment areas prepared to receive topsoil.
4. The areas upon which rest the planned bottom of footings, foundations, or slabs.

PART 2 - MATERIALS

2.01 TOPSOIL

A. Stripping. The area from which topsoil is to be stripped and the locations where it is to be stored shall be as shown on the drawings or as specified below. The topsoil shall be stripped to a depth of not less than six inches. On all areas where any type of grading is to be performed, including the areas within the lines of buildings and structures, the topsoil shall be carefully removed and spread either on areas already graded or prepared for topsoil, or in stockpiles conveniently located to the areas which are later to receive application of topsoil.

B. Spreading. On areas intended to receive topsoil, the compacted subgrade shall be scarified to a depth of two inches for bonding topsoil with subsoil. The topsoil shall then be evenly spread, compacted and graded to the finished elevations shown on the drawings or as specified by the Engineer. Compaction shall be affected by a single pass of an approved roller.

2.02 REMOVAL AND STORAGE OF MATERIAL

A. In locations where the working space is limited, the material excavated from the first 100 feet of any trench, or from such additional length as may be required, shall upon order of the Engineer, be removed at the Contractor's own cost and expense, as soon

as excavated. The materials subsequently excavated shall be used to refill the trench. In no case will the Contractor be allowed to cast excavated material beyond curb of right-of-way lines, or on sidewalks or lawns, and the failure or refusal of the Contractor to comply with this requirement shall be sufficient cause for the Engineer to stop all work under the Contract.

B. In case more material is excavated from any trench than can be backfilled over the completed sewer or can be stored within the limits of the right-of-way, leaving space for the traffic and drainage as herein provided, the excess material shall be removed to some convenient place, provided by the Contractor. The Contractor shall at his own cost and expense bring back as much of the material so removed, as may be required to properly backfill the trench, if of the proper kind; or, if so directed by the Engineer, the Contractor shall, at his own cost and expense, furnish such other suitable material as may be necessary.

C. When it is necessary to haul soft or wet material over the streets, the Contractor shall provide suitable tight vehicles, or a pattern approved by the Engineer for this purpose.

2.03 SHEETING, BRACING AND SHORING

A. The Contractor shall furnish the material for, and do all timber shoring, bracing and sheeting necessary to perform and protect the excavation, and as required by the Engineer to protect the work, other structures, the public, and the Contractor's employees. If trench protection is necessary, per OSHA requirements, the Contractor shall account for the anticipated expense in the appropriate bid item, or in the unit cost for pipe installed, or a combination of both. If the Engineer deems that sheeting, bracing, or shoring is necessary, it shall be supplied by the Contractor at no additional expense to the Owner. Such sheeting, etc. may be removed as the work progresses, but where, in the opinion of the Engineer, damage may result through removal; it shall be left in place with payment therefore made as hereinafter provided. The right of the Engineer to order sheeting, etc. left in place shall not render the issuance of such order obligatory on the part of the Engineer.

B. All sheeting, etc. shall be arranged so that it may be withdrawn, as the trenches are backfilled, without injury to the pipe and its appurtenances, and without injury to or settlement of adjacent structures and pavements. All voids caused by withdrawal shall be immediately filled with sand or other satisfactory material and compacted by ramming or other method satisfactory to the Engineer.

C. No timber sheeting, bracing or shoring shall be left within 18 inches of any natural ground surfaces or within 12 inches of the subgrade of any rigid or flexible type pavement, or railroad roadbed. In any trench shoring system, no vertical member shall remain directly over the pipe and no horizontal member shall remain within 12 inches of any pipe. After backfilling is started, no sheeting shall extend below the horizontal diameter of the pipe without the Engineer's approval. Sheeting left in place shall be cut off at such point as the Engineer may order, and the portions cut off shall be removed from the work.

D. If the Engineer determines that the material furnished is not of proper size or quality, or not properly placed, the Contractor shall furnish and place other and satisfactory material in an acceptable manner and shall not be entitled to additional compensation for such corrective work.

PART 3 - EXECUTION

3.01 ORDER OF WORK

A. The Contractor shall submit a progress schedule as specified in Article 2.40 and shall carry on his work in strict accordance therewith. Deviations from the progress schedule may be made only with the approval of the Engineer.

B. Manholes shall be constructed either at the same time as the main sewer or immediately after its completion.

3.02 SEWER LINES AND GRADES. Sewer lines and grades shall be laid out and maintained during construction in the following manner.

A. Prior to the commencement of trench excavation, the Contractor shall prepare and submit to the Engineer for approval, detailed cut sheets provided by the Contractor's surveyor.

The surveyor shall be registered in the State of Florida. Cut sheet shall show; the beginning and ending of manholes; the distance between manholes; the grade, size and type of line, the depth of cut; etc. The form of cut sheets shall be satisfactory to the Engineer. All expense for the preparation of cut sheets shall be borne by the Contractor and be included in the unit price per foot of pipe. Cut sheets must be approved by the Engineer in writing before pipe laying operations may be permitted. It shall be the responsibility of the Contractor to prepare cut sheets far enough in advance of his anticipated trenching schedule so that avoidable delay in the work will not occur.

B. Before beginning the excavation for any run of main sewer, the Contractor's forces, under the direction of the Engineer, shall:

1. Set control points for line and grade as given on the Drawings or as otherwise determined by the Engineer. In unpaved or unsurfaced areas, these points shall be placed on the top of stakes securely driven into the ground. In paved areas, there may be spikes driven into the paving or crosses cut into the paving, and in either case, enclosed in a painted circle. Stakes or points shall be sufficiently offset from the centerline so as to be undisturbed during the excavation and pipe laying operations. The offset shall be on the side of the centerline opposite to that on which excavation will be thrown.

2. As the rough excavation is completed, the Contractor's surveyor shall place grade or batter boards of finished, straight lumber across the trench opposite each stake or point. The grade boards shall be securely supported so as not to be subject to accidental displacement. The top of each board shall be leveled and set at the same distance above the sewer invert. A nail shall then be driven into the top of each board on the centerline of the sewer and each nail connected by a string line pulled taut.

3. The preparation of the final subgrade and the pipe laying shall then proceed in the manner specified herein, beginning at the manhole having the lower invert and working upgrade and using the string line as control for maintaining sewer grade and horizontal alignment. A straight wooden pole suitably marked and with a right-angled offset at the bottom to project past the bell of the pipe and rest upon the pipe invert, shall be used to check the vertical distance from string line to invert.

C. The use of laser beams shall be acceptable as a method of controlling pipe alignment and grade.

3.03 WIDTH AND DEPTH OF TRENCHES

A. From the subgrade elevation to an elevation at least 12 inches above the top of the outside barrel of the pipe, the banks of trenches in all cases shall be excavated to vertical lines, and the trenches shall be not less than 12 inches nor more than 16 inches wider nor more than eight inches in width is provided on each side of the barrel of the pipe. If sheeting is required, the foregoing dimensions shall be applicable to the inside faces of the sheeting.

B. From a point 12 inches above the top of the outside barrel of the pipe to the surface, the banks of trenches in all streets, roads or highways, paved or unpaved, shall be kept as

nearly vertical as possible, and in no case shall the width of trench at the top exceed the outside diameter of the pipe plus 40 inches. If the specified maximum width of trench cannot otherwise be maintained, the Contractor shall install temporary sheeting at his own cost and expense. Where sewers are to be constructed on rights-of-way or easements in open country, the specified maximum width of trench at the top may be exceeded only if the construction is kept entirely within the limits of the easements or rights-of-way and can be carried on without damage to adjoining property.

C. Except at locations where excavation of rock or unsuitable material is required, care shall be taken not to excavate below the depths specified, when rock is encountered, it shall be removed to a depth six inches below the outside bottom of the pipe at the barrel. When the material encountered at subgrade is unstable, it shall be removed from under the pipe and on each side of the pipe for a distance of one diameter of the pipe. Such rock or unsuitable material excavation below subgrade shall be backfilled with moist clay, sand, bankrun gravel, or other suitable material compacted to the satisfaction of the Engineer, and the bed thus formed shaped as required above. In rock excavation, if trenches are shattered by blasting below the lines of excavation specified herein, the trench shall be refilled to subgrade with sand, well tamped earth, or concrete, if required by the Engineer, at the Contractor's expense. If earth trenches are excavated beyond the specified depths, they shall be backfilled to the proper grade with suitable, thoroughly tamped material at the expense of the Contractor.

3.04 PREPARATION OF FOUNDATION

A. In earth trenches, the bottom thereof shall be carefully rounded to fit the lower 90 degrees of the circumference of the pipe, i.e., so that one-fourth of the external circumference of the pipe will rest firmly on the undisturbed soil. Bell-holes shall be excavated to ensure that the barrel of the pipe will rest for its entire length upon the trench bottom.

B. Bell-holes shall be properly cut to provide free support of the pipe barrel and shall be directed by the Engineer. All irregularities and cavities, either in earth or rock excavation, in the bottom of trenches or tunnels, shall be filled up to a level which will support 90 degrees of the lower pipe circumference with selected material free from large gravel, rocks and stones, firmly compacted before pipelines are laid therein.

C. Where, in the opinion of the Engineer, the ground does not afford a sufficiently firm foundation, the Contractor shall construct a timber foundation, or shall excavate the trench to such increased depth as may be directed, and then shall bring up the bottom of the trench to the required level and form with such material and in such manner as the Engineer may direct.

3.05 CONCRETE CRADLE AND ENCASEMENT

A. The profiles generally indicate the approximate vertical limits where concrete cradle and encasement are necessary to support the anticipated loads on completed sewers for the widths of trench as required for each size and class of pipe, based on the crushing strength of the pipe.

B. The Contractor is warned that if the trench widths or clearances between pipe and trench walls or face of sheeting, as specified above, are exceeded, he will be required to furnish in all locations at his own expense either concrete cradle or encasement as directed by the Engineer.

C. It is anticipated that subsurface conditions may require a cradle for a portion of the project to provide an adequate foundation, even though the ultimate anticipated load on the pipe is less than the minimum crushing strength for sand bearing. The Contractor shall place the cradle or encasement at the location, and of the materials, as directed and required by the Engineer. The Contractor will not be paid for any cradle beyond the required widths of trench.

D. All excavation made beyond the required limits shall be at the Contractor's expense.

3.06 LENGTH OF OPEN TRENCH

A. The Engineer shall have the right to limit the amount of trench opened in advance of pipe laying and the amount of pipe laid in advance of backfilling, but in no case, except when leakage tests are required by the Engineer, shall these amounts exceed 300 feet and 100 feet, respectively. Trench excavation shall be fully completed, except for the shaping of the bottom of the trench, at least 20 feet in advance of the pipe placement and shall be kept free from obstructions, except that at the close of work at night, or at the discontinuance of work, the pipe laying may be completed to within five feet of the end of the open trench.

B. The Engineer shall be empowered, at any time, to require the refilling of open trenches over completed pipelines, if, in his judgment, such action is necessary, and the Contractor shall thereby have no claim for extra compensation even though to accomplish said refilling, he is compelled temporarily to stop excavation or other work at any place.

C. If the work is stopped on any trench, for any reason except by order of the Engineer, and the excavation is left open for an unreasonable length of time (in the opinion of the Engineer) in advance of construction, the Contractor shall, if so directed, refill such trench at his own cost and shall not again open said trench until he is ready to complete the structure therein.

3.07 ACCOMMODATION OF TRAFFIC

A. Streets shall not be unnecessarily obstructed and, unless the Engineer, in writing, shall authorize the complete closing of the street, the Contractor shall take such measures at his own expense as may be necessary to keep the street or road open and safe for traffic.

B. The Contractor shall construct and maintain without extra compensation such adequate and proper bridges over excavations as may be necessary or as directed for the safe accommodation of pedestrians or vehicles. The Contractor shall furnish and erect without cost to the Owner substantial barricades at crossings of trenches, or along the trench, to protect the traveling public.

C. The Contractor shall not obstruct fire hydrants.

D. The roadway on one side of the line of work shall be kept open at all times.

E. The streets, crosswalks and sidewalks shall be kept clean, clear and free for the passage of vehicles or pedestrians, unless otherwise authorized in writing by the Engineer. A straight and continuous passageway on sidewalks and over crosswalks, at least three feet in width, shall be preserved free from all obstruction.

F. Where deemed necessary, such additional passageway as may be directed shall be maintained free from obstructions.

G. In narrow or congested streets or alleys, when so directed, the Contractor shall complete his work up to a point designated by the Engineer before opening the work ahead, in order to give access to garages and other places. The Contractor shall in all cases so arrange his work as to cause the least inconvenience to property owners consistent with the proper precaution of the work as determined by the Engineer.

3.08 ACCOMMODATION OF DRAINAGE

A. Gutters, sewers, drains and ditches shall be kept open at all times for surface drainage. No damming or ponding of water in gutters or other waterways will be permitted, except where stream crossings are necessary and then only to an extent which the Engineer shall consider necessary. The Contractor will be responsible for all clean-up to existing utilities caused by their activities.

B. The Contractor shall not direct any flow of water across or over pavements except through approved pipes or properly constructed troughs and he shall, when so required at his own expense and cost, provide pipes or troughs of such sizes and lengths as may be required and place the same as directed.

C. The grading in the vicinity of sewer trenches shall be controlled so that the ground surface is properly pitched to prevent water running into trenches.

3.09 PUMPING

A. The Contractor shall keep all excavations free from water, at his own expense, while structural work is in progress, and to such extent as may be necessary while excavation work along is being carried on.

B. The Contractor shall build all dams and other devices necessary for this purpose, including lowering the water table below trench bottom by well points and pumping, and provide and operate pumps of sufficient capacity for dewatering the excavations.

C. He shall provide for the disposal of the water removed from excavation in such manner as shall not cause injury to the public health, to public or private property, to the work of other Contractors, to any portion of the work completed or in progress, or produce any impediment to the use of the highways, roads, lanes, and streets by the public.

D. Any dewatering required shall be performed at the Contractor's expense. Payment for dewatering shall be included in the Contractor's bid prices for pipe or other structures requiring dewatering for installation. If holes made for installation of well points are installed in a roadway, shoulder, or under a structure, these holes shall be filled with lean grout prior to backfill and compaction. Any permits needed for dewatering shall be obtained and paid for by the contractor.

3.10 EMBANKMENT

A. Where embankment is necessary to support the foundations of the pipe or structure, it shall be made to the height, width and slopes shown on the drawings, or as directed. The entire embankment, or such portion thereof as may be deemed necessary by the Engineer, shall be made prior to the construction of the sewer, structure, or the foundation thereof, at such time and in such order as the Engineer may direct; and the embankment, sewer, or structure, and appurtenances, which may be laid thereon or therein, shall be maintained by the Contractor, at his own cost and expense, until the completion of the period of one (1) year from and after the date of the Certificate of Completion and Acceptance.

B. After carefully grubbing and clearing the ground, removing all loose rock and stone, and all muck and improper material, to such a depth as the Engineer may determine, the embankment shall be built up of good loam, gravel or sand, or other selected and approved material, free from all stone above four inches diameter, and not containing in any place a proportion of stones exceeding one (1) part stone to three (3) parts earth.

C. In cast material which is unsatisfactory for the foundation of any embankment is encountered, said material shall be removed to such depth, and for such length and width as may be directed by the Engineer. Payment for the removal of material unfit for the foundation of an embankment will be made at the price bid or stipulated per cubic yard for excavation below subgrade.

D. The material for embankment shall be deposited in layers of not more than nine inches in thickness; each layer shall be separately compacted by heavy, grooved iron rollers, or where such rollers cannot be used, by heavy paver's rammers. The embankment shall be watered during rolling, if so required. No breaks or irregularities in the distribution of the material or the formation of the layers will be allowed. The whole embankment shall be carried up evenly to the height given by the Engineer in such a manner as to make a compact and solid foundation. When pipe is to be laid in a fill, the embankment shall be brought to a height of at least one foot above the proposed top of the pipe before the trench is excavated. The embankment shall then be excavated to the proper form and grade, and the sewer placed thereon; after which the embankment shall be carried up to a height of not less than three feet above the top of the sewer, the material being placed and rolled or rammed in layers as above described.

3.11 BACKFILLING TRENCHES

A. It is the intent of the following requirements for the backfilling of trenches to specify materials and methods which will:

1. Result in thorough compaction of the backfilled material without the displacement of the grade or alignment of the sewer line and its appurtenances.

2. Eliminate settlement of the backfilled material.

B. If displacement of the sewer or settlement of the backfilled material does occur, it will be considered as conclusive evidence of improper workmanship or the inclusion of unsuitable materials or both, and it shall be the Contractor's responsibility, at his own expense, to remove and recompact the settled material and regrade and realign the sewer. During the

course of the backfilling operation, the Engineer may, at any location of depth of trench, make tests to determine whether the Contractor's compaction operations are sufficient to meet the requirements specified below.

C. The procedure of backfilling shall be as follows:

1. After the structure, pipe, or conduit and its appurtenances have been installed or constructed, the excavation, to a height of at least two feet above the top of pipe or conduit, shall be refilled with clean earth deposited in four-inch layers and solidly rammed down and tamped around the pipe, or conduit and under it, with mechanical tampers and proper tools made for this purpose. The operation shall be done in such manner as not to disturb the structure. The area around the pipe shall be hand-tamped.

2. The earth, to the height specified above, shall be carefully thrown in with hand shovels; under no condition shall any other means than hand shoveling, such as pushing in with heavy equipment be used.

3. The remainder of the trench, except as described below, shall then be refilled evenly to the required height in layers, each layer not to exceed six inches in thickness after compaction. Mechanical tampers shall be used so as to produce a density of backfill (as determined by weight) at the bottom of each layer of not less than ninety-five percent (95%) of the optimum density of that material based upon the AASHTO T-180 modified proctor. The earth shall be properly rammed as directed and wetted as required as the work progresses.

4. Care shall be taken to carry the fill up evenly on opposite side of the sewer, other trench excavations, and around the sides of all structures.

D. If, in the opinion of the Engineer, the material being used for backfilling is of such character that satisfactory results cannot be obtained by tamping and ramming, the Contractor shall backfill and puddle the excavations in such manner and at such times as the Engineer may direct.

E. If the material excavated is not clean earth, as above specified, the best of the materials excavated shall be used in backfilling, in position and manner as directed by the Engineer.

F. In rock trenches, selected earth, sand or gravel shall be provided and used as backfill in the manner hereinbefore described to a height of two feet above the top of the sewer. The backfill for the balance of the trench in all cases shall be of good earth, sand or gravel, which may contain stores not more than six inches in largest dimensions, but not in proportion exceeding twenty percent (20%) of the total volume of backfill.

G. No bulkheads, or retaining walls for the backfilling, will be allowed in the trenches over the sewer, except for temporary use.

H. Should there be a deficiency of proper material for refilling the Contractor shall furnish acceptable material at his own cost and expense.

I. No house ashes, putrescible refuse or other material of unsatisfactory character shall be used in refilling, and the Contractor shall not permit the trench to be used as a dumping ground for refuse.

J. Testing of backfill in trenches shall be performed as deemed necessary by the Engineer or his representatives; the Contractor will supply and pay for the testing.

3.12 BORROW EXCAVATION

A. In cases where the amount of embankment exceeds the amount of excavation within the limits of the site as indicated by the Drawings, and where material is not available from other sources of contracts, the Contractor shall obtain sufficient, suitable material from borrow pits located entirely beyond the limits of the site unless the Engineer gives written permission to obtain such material from an area within the site.

B. The Contractor shall notify the Engineer sufficiently in advance of borrow excavation requirements to permit the Engineer to determine necessity and to view the proposed borrow pit.

C. Borrow obtained from within the site shall be removed to uniform lines and grades satisfactory to the Engineer, and in such a manner as not to detract from the general appearance of the improvement and shall not create unsatisfactory conditions.

D. All borrow pits shall be stripped of brush, roots, grass and other vegetation prior to removal of material for embankment purposes.

3.13 BUILDINGS AND STRUCTURES

A. Excavation.

1. All excavation for buildings and structures shall be performed in the dimensions indicated on the Drawings. If suitable bearing is not encountered at the planned footing or foundation elevations, the excavation shall be carried to such elevations as are approved by the Engineer.

2. Prior to construction of foundations, the excavation shall be inspected by the Engineer and no foundation work shall be started prior to the Engineer's approval of the excavation. Care shall be exercised to avoid excavation below the depths indicated on the Drawings or as directed by the Engineer.

3. Where excavation is made below plan elevation or below elevations directed by the Engineer. Where excavation is made below plan elevation or below elevations directed by the Engineer, through the fault of the Contractor, the excavation shall be restored to the proper elevation in the manner described for backfill below, or the heights of walls or footings shall be increased, as may be directed by the Engineer, at the expense of the Contractor.

B. Drainage.

1. Grading in the vicinity of structures shall be controlled to prevent water running into excavated areas. Any accumulation of water in excavations shall be removed by pumping or other means at the Contractor's expense.

C. Backfill.

1. After completion of footings and walls, and the removal of forms, and prior to backfilling, the excavation shall be cleaned of all trash and debris.

2. Backfill material shall consist of the excavation or other materials free from trash, lumbar or other debris. It shall be placed in horizontal layers not exceeding six inches in depth, moistened if required and compacted by hand or mechanical tampers to a density to prevent excessive settlement.

3.14 RESPONSIBILITY FOR CONDITION OF EXCAVATION

A. The Contractor shall be responsible for the condition of all excavations made by him. All slides and cave-ins shall be removed without extra compensation, at whatever time and under whatever circumstances they may occur.

B. The failure of the Engineer to order the use of bracing or sheeting or a better quality, grade or section, or larger sizes of steel or timber, or to order sheeting, bracing, struts, or shoring to be left in place, or the failure to give orders or directions as to the manner or methods of placing or driving sheeting, bracing jacks, wales, rangers, or other members, shall not in any way or to any extend relieve the Contractor of any responsibility concerning the condition of excavation or of any of his obligations under the Contract; nor shall any delay, whether caused by any action or want of action on the part of the Contractor, or by any act of the Owner, or his agents, or employees, resulting in the keeping of an excavation open longer than would otherwise have been necessary, relieve the Contractor or from the necessity of properly and adequately protecting the excavation from caving or slipping, nor from any of his obligations under the Contract relating to injury of persons or property, nor entitle him to any claim for extra compensation.

3.15 PROTECTION OF PROPERTY AND STRUCTURES

A. The Contractor shall, at his own expense, sustain in their places, and protect from direct or indirect injury, all pipes, tracks, walls, buildings, and other structures or property in the vicinity of his work, whether above or below the ground, or that may appear in the excavation. He shall at all times have a sufficient quantity of timber and plank, chains, ropes, trench boxes, and other material and equipment, on the ground and shall use them as necessary for sheeting his excavations and for sustaining or supporting any structures that are uncovered, undermined, endangered, threatened or weakened.

B. The Contractor shall take all risks attending the presence of proximity of pipes, poles, tracks, walls, buildings, and other structures and property, of every kind and description, in or over his excavation, or in the vicinity of his work, whether above or below the surface of the ground; and he shall be responsible for all damages and assume all expense for direct or indirect injury, caused by his work, to any of time, or to any person or property by reason of injury to them, whether such structures are not shown on the Drawings.

C. Where necessary, in order to keep one side of the street or roadway free from any obstruction or to keep the material piled alongside the excavation from falling on private property outside the right of way, a safe and suitable fence shall be placed alongside the excavation.

D. In the event of encountering quicksand, subsurface streams or similar dangerous contingencies, or where passing especially heavy building or any structures which by their construction or position might bring a great pressure upon the excavations the right is reserved by the Engineer to direct that such buildings, or structures, shall be underpinned, or supported and protected, or that special sheeting shall be driven in such a manner and to such depth, as may be directed, or that only a short length of excavation shall be opened at one time; and furthermore, if necessary, that the excavation shall be securely sheeted and braced on all sides, after the manner of a shaft, and that the permanent work shall be constructed in the same manner and the shaft backfilled before another opening is made. Any work done as above directed shall be at the cost and expense of the Contractor.

E. The Engineer reserves the right under such conditions to stop the excavation or any other part of the work, and to require the Contractor to complete the structure and the backfilling up to such a point as the Engineer may direct before proceeding further with the excavation; and the Contractor shall not thereby become entitled to demand or to receive any allowance or compensation, other than an extension of the contract time for as many days as the Engineer may determine that the work was delayed by such stoppage.

3.16 OBSTRUCTION SHOWN ON DRAWINGS

A. Certain information regarding the reputed presence, size, character, and location of existing underground structures, pipes and conduits has been shown on the Contract Drawings. There is no certainty of the accuracy of this information. The location of underground structures shown may be inaccurate and other obstructions not shown may be encountered.

B. The Contractor hereby distinctly agrees that the Owner is not responsible for the correctness or sufficiency of the information given; that in no event is this information to be considered as a part of the Contract; that he shall have no claim for delay or extra compensation on account of incorrectness of information given, or on account of the insufficiency or absence of information regarding obstructions either revealed or not revealed by the Drawings; and that he shall have no claim for relief from an obligation of responsibility under the Contract, in case the location, size or character of any pipe or other underground structure is not as indicated on the Drawings; or in case any pipe or other underground structure is encountered that is not shown on the Drawings.

C. The Contractor is solely and completely responsible for contacting utility providers and locating services to field locate existing utilities forty-eight (48) hours in advance of his activities. If inadequate locations are made, or if hand-digging of "test holes" is deemed necessary, this shall be accomplished and affected by the Contractor at no additional expense to the Owner.

3.17 REMOVAL OF OBSTRUCTIONS

A. Should the position of any pipe, conduits, pole, or other structures, above or below the ground be such as, in the opinion of the Engineer, to require its removal, realignment, or change due to work to be done under the Contract, the work of removal, realignment, or change will be done as extra work, or will be done by the Owner of the obstructions, without

cost to the Contractor; but the Contractor shall uncover and sustain the structures, at his own expense, before such removal and before and after such realignment or change as constituting part of the Contract; and the Contractor shall not be entitled to any claim for damage or extra compensation on account of the presence of said structure, or on account of any delay in the removal or rearrangement of the same.

B. The Contractor shall, without extra compensation, break through and reconstruct, if necessary, the invert or arch of any sewer, culver, or conduit that may be encountered, if the said structure is in such a position that in the judgment of the Engineer, as not to require its removal, realignment or complete reconstruction.

C. The Contractor shall not interfere with any persons, firms or corporations, or with the Owner in protecting, removing, changing, or replacing their pipes, conduits, poles, or other structures; but he shall suffer said persons, firms, or corporations, or the Owner to take all such measures as they may deem necessary or advisable for the purpose aforesaid, and the Contractor shall thereby be in no way relieved of any of his responsibilities under this Contract. At railway or railroad track crossings or paralleling, any expense to which the Owner of the trackage is put in shoring up tracks, or in maintaining traffic, shall be borne by the Contractor, whether the same is billed directly to him, or the Owner. Should any such bill be unpaid by the Contractor, before final payment under the Contract is made, the Owner shall be empowered to pay said bill and retain the amount thereof, from any monies due, or to become due the Contractor.

D. Except where trees are in rights-of-way, in immediate proximity to the excavation, they shall not be cut down except by authorization of the Engineer and the Contractor shall have no claim for the extra compensation owing to the fact that he may be required to excavate by hand, or tunnel in the vicinity of trees that may be left standing.

3.18 CHANGE OF EXCAVATION LOCATION

A. In case the Engineer shall direct that the location of a trench or other excavation be changed from that shown on the Drawings, on account of the presence of an obstruction, or from other cause, or if a changed location shall be authorized upon the Contractor's request, the Contractor shall not be entitled to extra compensation, or to a claim for damage, provided that the change is made before the excavation is begun. If, however, such change, made at the direction of the Engineer, involves the abandonment of excavation already made, such abandoned excavation, together with the necessary refill, will be classed as miscellaneous excavation. In the event that the excavation is abandoned in favor of a new location, at the Contractor's request, the abandoned excavation and refill shall be at the Contractor's expense.

B. Minor changes in alignment of pipe or other structures to accommodate the actual location of existing facilities shall be considered typical of construction activities and no additional compensation will be made for changes of this nature.

3.19 CLEANUP

A. As the trenches are filled in and the work completed, the Contractor shall immediately and at his own cost and expense remove and dispose of all surplus earth, stone or other material from the work, in such manner and at such point or points, as he may select or provide, subject to the approval of the Engineer; or he may deposit the same, either with or without rehandling, at any point or points on the line of the work covered by the Contract, if so directed by the Engineer; and shall leave all roads, sidewalks and other places free, clear and in good order. In case the Contractor shall fail or neglect to do so, or to make satisfactory progress in doing so within twenty-four (24) hours after the receipt of a written notice from the Engineer, the Owner may remove such surplus material and clear the roadways, sidewalks and other places, and the cost of said work shall be charged to the Contractor and deducted from any monies due or to become due him under the Contract.

B. All surplus earth or other material wasted on public property shall be evenly spread and left in a neat and smooth condition. All removed materials shall become the property of the Owner if they so desire. If the Owner does not want the removed materials, surplus materials will be removed by the Contractor at no extra cost to the Owner.

C. As soon as the trenches are refilled, all surplus earth, sand or rubbish shall be removed and kept removed to a point not more than two hundred feet from the head of the open trench, unless otherwise authorized by the Engineer.

3.20 MAINTENANCE OF BACKFILLED TRENCH SURFACES

A. The Contractor shall crown to such height, as directed by the Engineer, the top of all backfilled trench excavations. The Contractor shall also maintain these crowned surfaces to the satisfaction of the Engineer, without additional compensation, from the time of crowning operation to and including a period of eight (8) months beyond date of a Certificate of Completion of the work under this contract.

B. The Contractor shall be responsible for any injury or damage resulting from lack of required trench maintenance during the prescribed maintenance period. If the Contractor does not satisfactorily provide specified maintained surfaces or begin repairs of such surfaces when needed, within twenty-four (24) hours after written notice from the Engineer, such work may be done by the Owner and the cost thereof charged against the Contractor.

END OF SECTION

SECTION 31 23 13

SUBGRADE PREPARATION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Subgrade preparation for structures, pavement, and piping will necessitate undercutting the entire area plus a margin of 10 feet to a depth of 18 inches below and backfilling with compacted granular backfill so as to produce a stable working platform for construction. The backfill material should consist of a well graded crushed aggregate such as an FDOT No. 57 rock which should be uniformly compacted. The concept is to provide a relatively free-draining platform upon which to form and construct structures, pavement, and piping.

PART 2 - PRODUCTS (NOT USED)

PART 3 – EXECUTION

A. Finish proof rolling on an exposed subgrade free of surface water (wet conditions resulting from rainfall) which would promote degradation of an otherwise acceptable subgrade. After stripping, proof roll the existing subgrade of the roads and parking areas with six passes of a dump truck loaded with 4 cubic yards of soil. Operate the truck in a systematic manner to ensure the number of passes over all areas, and at speeds between 2-1/2 to 3-1/2 mph. Notify the Contracting Officer a minimum of 3 days prior to proof rolling. Perform proof rolling in the presence of the Contracting Officer. Undercut rutting or pumping of material as directed by the Contracting Officer and replace with fill and backfill material.

B. Shape subgrade to line, grade, and cross section, and compact as specified. Include plowing, disking, and any moistening or aerating required to obtain specified compaction for this operation. Remove soft or otherwise unsatisfactory material and replace with satisfactory excavated material or other approved material as directed. Excavate rock encountered in the cut section to a depth of 6 inches below finished grade for the subgrade. Bring up low areas resulting from removal of unsatisfactory material or excavation of rock to required grade with satisfactory materials, and shape the entire subgrade to line, grade, and cross section and compact as specified. After rolling, do not show deviations for the surface of the subgrade for roadways greater than 1/2 inch when tested with a 12-foot straightedge applied both parallel and at right angles to the centerline of the area. Do not vary the elevation of the finish subgrade more than 0.05 foot from the established grade and cross section.

C. Finish compaction by sheepsfoot rollers, pneumatic-tired rollers, steel-wheeled rollers, vibratory compactors, or other approved equipment. Except for paved areas and railroads, compact each layer of the embankment or subgrade to at least 95 percent of laboratory maximum density.

D. Compact subgrade for pavements to at least 95 percentage laboratory maximum density for the depth below the surface of the pavement shown. When more than one soil classification is present in the subgrade, thoroughly blend, reshape, and compact the top 12 inches of subgrade.

3.02 TESTING

A. Perform testing in accordance with 31 23 00 – Excavation and Fill

END OF SECTION

SECTION 31 23 19

DEWATERING

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. Scope: In general, the work specified in this section of the specifications shall consist of supplying labor, materials, and plant, and performing all work necessary to lower and control the groundwater levels and hydrostatic pressures to permit all excavations and construction specified under this Contract to be performed in the dry.

B. Examination of Site: The Contractor shall take all steps that he considers necessary to familiarize himself with the site conditions, the ground conditions and the groundwater conditions. It is expressly understood that neither the Owner nor the Engineer will be held responsible for any interpretations or conclusions drawn by the Contractor.

PART 2 - PRODUCT

2.01 METHOD AND EQUIPMENT

A. The Contractor may use any dewatering method he deems feasible so long as it results in working in the dry and in stable soil conditions. It is the intent of these specifications that an adequate dewatering system be installed to lower and control the groundwater in order to permit excavation, construction of the structures, construction of pipelines, and the placement of the fill materials, all to be performed under dry conditions. The dewatering system shall be adequate to pre-drain the water-bearing strata above and below the bottom of the foundations, the drains, the sewers and all other excavations. An adequate weight of fill material shall be in place prior to discontinuing operation of dewatering to prevent buoyancy of the structure.

PART 3 - EXECUTION

3.01 GENERAL

A. The Contractor shall be solely responsible for the arrangement, location and depths of the dewatering system necessary to accomplish the work described under this section of the specifications. The dewatering shall be accomplished in a manner that will reduce the hydrostatic head below any excavation to the extent that the water level and piezometric water levels in the construction area are below the prevailing excavation surface; will prevent the loss of fines, seepage, boils, quick conditions, or softening of the foundation strata; will maintain stability of the sides and bottom of the excavation; and will result in all construction operations being performed in the dry.

B. Disposal of Water: The Contractor shall promptly dispose of all water removed from the excavations in such a manner as will not endanger public health, damage public or private property, or affect adversely any portion of the work under construction or completed by him or any other Contractor. Contractor shall obtain written permission from the Owner of

any property involved before digging ditches or constructing water courses for the removal of water.

C. Siltation and Erosion:

1. The Contractor shall take steps and make suitable provisions to minimize siltation and erosion which may result from, or as a result of, his operations during the course of construction of this project.

2. The methods and provisions utilized by the Contractor to minimize siltation and erosion shall be approved by the Engineer and shall be in conformance with current Florida Department of Environmental Protection and St. Johns River Water Management District practices and regulations.

D. Inadequate System: If the dewatering requirements are not satisfied due to inadequacy or failure of the dewatering system, then loosening of the foundation strata, or instability of the slopes, or damage to the foundations or structures may occur. The supply of all labor, materials, and plant, and the performance of all work necessary to carry out additional work for reinstatement of the structures of foundation soil resulting from such inadequacy or failure shall be undertaken by the Contractor to the approval of the Engineer, and at no additional expense to the Owner.

END OF SECTION

SECTION 31 23 33
TRENCHING, BACKFILLING, AND COMPACTING

PART 1 – GENERAL

1.01 DESCRIPTION OF WORK

A. The extent of trenching, backfilling, and compacting is shown on the drawings.

B. This section includes furnishing equipment, labor, and materials, and performing all operations necessary and incidental to perform the required work.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 CLEARING OF THE SITE

A. The site of the work shall be cleared of all trees, shrubs, paving and objectionable material, which interfere with the prosecution of the proposed work. Trees and shrubs which will not interfere with construction shall be protected from damage. Clearing shall be considered as an incidental item of excavation.

3.02 EXCAVATION

A. General:

1. Perform excavation described of whatever substance encountered to the dimensions and depths specified or shown on the drawings. Undercutting will not be permitted, except when ordered by the Engineer. Material suitable for backfill shall be stockpiled near the site. Rock or other material undesirable for backfill shall be spoiled outside the area in a neat manner, as directed by the Engineer. Where it is necessary to cut roots projecting into an excavation or where it is necessary to trim branches for equipment clearance, all severed root ends, or cuts to branches over a half inch (1/2") diameter shall be treated with an asphalt base pruning paint. Backfill over exposed roots as soon as possible.

B. Rock:

1. Where encountered in the trench bed, rock shall be excavated to a depth of one-quarter (1/4) of the pipe diameter below the bottom of the pipe but in no case less than four inches. All undercut trench excavation shall be backfilled and tamped with materials as specified in the following paragraphs under Unstable Subgrade.

C. Unstable Subgrade:

1. In the event that unsuitable material is encountered at or below the excavation depth specified or shown on the drawings, the Engineer shall be notified. Such material shall be removed and replaced with suitable material. Methods and materials used for replacement shall be one of the following as directed by the Engineer in writing.

a. Suitable earth or sand compacted in the trench. Materials shall be furnished as a part of the Bid Proposal item covering excavation and backfill.

b. Gravel or crushed limerock, compacted in the trench and paid for under the appropriate item.

c. Existing materials stabilized after removal and then replaced and compacted in the trench at no additional cost to the Owner.

2. The Engineer shall determine the methods and materials to be used, based upon the condition of the excavation, the pipe structure to be supported, and the availability and character of stabilizing materials.

D. Trenches:

1. Keep pipe laying operation as close to the excavation operation as possible during the prosecution of the work. The Engineer reserves the right to stop the excavation at any time when, in his opinion, the excavation is opened too far in advance of the pipe laying.

2. Pipe trenches shall be only of sufficient width to provide a free working space on each side of the pipe. To prevent excess pressure on the pipe, the maximum width of trench at the top of the pipe and at the bottom of the trench shall not be greater than two feet more than the greatest exterior diameter of the pipe. If this maximum width is exceeded, it shall be the Contractor's responsibility to provide, at no additional cost to the Owner, such additional bedding or select backfill materials as the Engineer may require. The excavation below the spring line shall be made to conform as near as possible to the shape of the lower third of the pipe. To protect the pipelines from unusual stresses, all work shall be done in open trenches. Excavation shall be made for bells of all pipes and of sufficient depth to permit access to the joint for construction and inspections. In no case, will the bells be used to support the body of the pipe.

3. In order to avoid existing utilities, at times it may be necessary for the pipe to be laid deeper than the minimum cover specified in the preceding paragraph. At such time the Contractor will not be allowed extra compensation for additional excavation involved.

4. In case excavation has been made deeper than necessary, a layer of concrete, fine gravel, or other material satisfactory to the Engineer shall be placed, at no extra cost, to secure a firm foundation for the lower third of each pipe. Where possible, excavated material shall be placed so as not to interfere with public travel. Bridging shall be provided to afford necessary access to public or private premises. Bridging shall be considered as part of the excavation operation and shall be supplied at no additional cost to the Owner.

E. Structural (For inlets, manholes, and similar structures):

1. Remove sufficient material to allow proper space for erecting and removing forms. The elevations of the bottoms of footings, if shown on the drawings, shall be considered as approximate only, and the Engineer may order, in writing, such changes in dimensions or elevations of footings as may be deemed necessary to secure a satisfactory foundation. Excavation for structures shall be sufficient to leave at least 12 inches in the clear between their outer surfaces and the embankment or timber that may be used to protect them. Backfill of earth under structures will not be permitted. Excess excavation for structures shall be filled with thoroughly compacted sand, gravel, or concrete at the expense of the Contractor.

2. After excavation for a structure is completed, the Contractor shall notify the Engineer to that effect. No concrete or reinforcing steel shall be placed until the Engineer has approved the depth of the excavation and the character of the foundation material.

F. Sheeting and Shoring:

1. The Contractor shall provide all trench and structural bracing, sheeting or shoring necessary to construct and protect the excavation, existing utilities, structures, and private property of all types and as required for the safety of the employees. Sheeting shall be removed or cut off by the Contractor during backfilling operations as directed by the Engineer. Removal of shoring for structures shall be done in such a manner as not to disturb or mar finished masonry or concrete surfaces.

3.03 DRAINAGE

A. Grading shall be controlled in the vicinity of excavations so that the surface of the ground will be properly sloped to prevent water from running into trenches or other excavated areas. Any water which accumulates in the excavations shall be removed promptly by well point or by other means satisfactory to the Engineer in such a manner as to not create a nuisance to adjacent property or public thoroughfare. Trenches shall be kept dry while pipe is being laid. Bridging of dewatering pipe shall be provided where necessary. Pumps and engines for well point systems shall be operated with mufflers, and at a minimum noise level suitable to a residential area. The Contractor will not be allowed to discharge water into the Owner's storm drainage system without the written approval of the Engineer. Approval will be subject to the condition that the storm sewer be returned to its original condition.

B. The Contractor is responsible for carrying the water to the nearest ditch or body of water and for obtaining the necessary permission to use same. The Contractor shall be financially responsible for any nuisance created due to carrying off water from his drainage system.

3.04 BACKFILL

A. Trenches:

1. Trenches shall be backfilled immediately after the pipe is laid unless other protection for the pipeline is provided. Clean earth, sand, crushed limerock, or other material approved by the Engineer shall be used for backfill. Backfill material shall be selected, deposited and compacted (simultaneously on both sides of the pipe) so as to eliminate the possibility of lateral displacement of the pipe. Backfill material shall be solidly tamped around the pipes in layers to a level at least one foot above the top of the pipe. Each layer shall be compacted to a maximum thickness of six inches.

2. In unpaved areas, the remainder of the backfill shall be deposited and then compacted by puddling, water flooding or mechanical tampers. Mechanical tamping of layers in unpaved areas shall be to a maximum thickness of 12 inches. In areas to be paved or repaved, the entire depth of backfill shall be deposited in layers and compacted by hand or mechanical tampers to a maximum thickness of six inches. Compaction shall be carried out to achieve a density of at least 98 percent (98%) of the maximum density as determined by AASHTO, Method T-180. Under areas to be paved, puddling may be used for backfill consolidation after tamping to one foot over the pipe, as specified, provided the method is first approved by the Engineer and the density requirements are met.

3. In areas to be paved, density tests for determination of the specified compaction shall be made by a testing laboratory and spaced one in every 300 feet of trench cut. It is the intent of this specification to secure a condition where no further settlement of trenches will occur. When backfilling is completed, the roadway

base for pavement replacement may be placed immediately. It will be the responsibility of the Contractor to restore the surface to the original grade wherever settlement occurs.

B. Structural:

1. After completion of foundation footings and walls and other construction below the elevation of the final grades, and prior to backfilling, forms shall be removed and the excavation shall be cleared of all trash and debris. Material for backfilling shall consist of the excavation, borrow sand or other approved materials, and shall be free of trash, lumber, or other debris. Backfill shall be placed in horizontal layers not in excess of nine inches in thickness, and have moisture content such that a density may be obtained to prevent excessive settlement or shrinkage. Each layer shall be compacted by hand or approved machine tampers with extreme care being exerted not to damage pipe or structures. Backfill shall be placed and compacted evenly against the exposed surfaces to prevent undue stress on any surface.

3.05 RESTORATION OF SURFACE IMPROVEMENTS

A. Roadways, including shoulders, alleys, and driveways of shell, limerock, stabilized soil or gravel, grass plots, sod, shrubbery, ornamental trees, signs, fences, or other surface improvements on public or private property which have been damaged or removed in excavating, shall be restored to conditions equal to or better than conditions existing prior to beginning work. Restoration of shoulders shall consist of sodding, seeding and mulching, or stabilizing with limerock as selected by the Engineer. The cost of doing this work shall be included in the cost of the various applicable items.

B. Materials for unpaved roadways, road shoulders, alleys, or driveways, shall be compacted to a minimum of 98 percent (98%) of the maximum density as determined by AASHTO, Method T-180. The cost of this work and furnishing new materials shall be included in the cost of the applicable items of work as no separate payment will be made unless a separate bid item is provided.

3.06 FINE GRADING

A. Finished areas around structures shall be graded smooth and hand raked and shall meet the elevations and contours shown on the drawings. Lumber, earth clods, rocks, and other undesirable materials shall be removed from the site.

3.07 DISPOSAL OF MATERIAL

A. Such portions of the excavated materials as needed and as suitable shall be used for backfilling and grading about the completed work to the elevations as shown on the drawings or as directed. Excavated material in excess of the quantity required for this purpose shall be disposed of by the Contractor. The Contractor shall leave the earth over the trenches or other excavations in a neat and uniform condition acceptable to the Owner.

3.08 TESTS

A. The Contractor shall furnish facilities for making all density tests and make such restorations as may be necessary due to test operations. All density tests on backfill or base replacement will be made by a commercial testing laboratory employed by the Owner and at such locations as may be recommended by the Engineer. The Contractor shall pay for all tests where the densities, as determined by the specified tests, fall below the required minimums (failed tests).

END OF SECTION

SECTION 32 10 00
BASES, BALLASTS AND PAVING

PART 1 - GENERAL

1.01 WORK INCLUDED

A. The work covered and described in this section includes the furnishing and construction of paved surfaces, including roadways, driveways, bicycle paths, shoulders, and other paved surfaces, or paving work as shown or indicated on the drawings, specified herein, and as listed in this contract.

B. All work shall conform to the applicable Technical Specifications of Florida Department of Transportation "Standard Specifications for Road Bridge Construction" latest Edition (Divisions II and III) and Design Standards", latest Edition, including any amendments thereto. The Contractor shall acquire his own copies of the Department of Transportation Standards. In the event of conflict between the Department of Transportation Standards and the specifications listed in these documents, the Owner/Engineer shall determine which shall govern. Reference to the Department of Transportation Standards, to the Department or its representatives shall be interpreted for this contract to be the Owner/Engineer or their authorized representative.

PART 2 - MATERIALS

2.01 SUBBASE

A. The materials used should be high bearing value soil, sand-clay, ground limestone, crushed lime rock, coquina, or any other material suitable for stabilization. Muck shall not be used.

2.02 BASE COURSE

A. The base course material used shall be that specified in the plan sheets or contract documents. If no base material is specified, limerock shall be used, unless otherwise indicated. All base material shall be approved by the Owner/Engineer and supplied by the Contractor.

B. The lime rock base material shall have a minimum of seventy percent (70%) carbonates, calcium and magnesium and no more than three percent (3%) water sensitive clay. The liquid limit shall not exceed 35 and the plastic index shall not exceed 10. The average LBR value of the material shall be no less than 100, nor be large amounts of extremely hard pieces of clay pockets.

C. Soil-cement base shall be composed of a combination of soil and Portland cement uniformly mixed, moistened, compacted, finished, and cured. The soil shall be either existing in-place material or that brought from borrow locations. All soil must meet the requirements set forth in FDOT Standards and Specifications for Road and Bridge Construction Latest Edition, The cement used shall be Portland cement Type I or I-P and water shall be free from any substances deleterious to hardening of the soils-cement mixture.

1. The soil-cement mixture shall be proportioned in accordance with a design mix prepared by a testing laboratory and approved by the Owner/Engineer. The design mix shall be submitted for approval at least thirty (30) calendar days prior to beginning of soil-cement construction. The cement content shall be expressed in percentage of dry weight of the soil. Rate of application shall be based on the maximum density of the soil, determined in accordance with AASHTO T 99 and a thickness one inch greater than the base course thickness shown on the plans.

D. Asphalt base courses shall have a bituminous material content of asphalt cement, viscosity Grade AC-20 or AC-30, meeting the requirements of FDOT Standards and Specifications for Road and Bridge Construction, Latest Edition. The bituminous mixture shall be composed of a combination of aggregate, bituminous material. The job mix formula, as established by the Contractor, must be approved by the Owner/Engineer. The asphalt base mix shall be within the design ranges specified for mix Type ABC-3 or S-II, (Use of any other mix is subject to the approval of the Owner/Engineer.). The constituents of the mixture shall be combined to produce a mixture having Marshal properties within the limits of Appropriate Table of the FDOT Standards and Specifications for Road and Bridge Construction, latest Edition.

E. Coquina shell used in the base course shall have an organic material of not greater than 0.5% or contain significant quantities of sand or other impurities which would prevent bonding. At least ninety-seven percent (97%) of the coquina used shall pass through a three and one-half inch ring.

F. Recycled concrete aggregate used in the base course shall conform to Appropriate Section, graded aggregate base, of the latest revision of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction.

2.03 PRIME AND TACK COATS

A. Bituminous prime coats shall be applied to previously prepared bases. Bituminous tack coats shall be placed on existing paved surfaces and between successive lifts of asphalt material.

B. The prime coat shall be Cut-back asphalt Grade RC-70 or RC-250;Emulsified Asphalt Grades SS-I , CSS-I, SS-1H or CSS-1H diluted in equal proportion with water or other types and grades of bituminous material specified or approved by the Owner/Engineer.

C. The tack coat shall be RA-500 heated to a temperature of 250°F to 300°F. For undiluted Emulsified Asphalt, Grades RS-1 or RS-2 heated to a temperature of 140°F to 180°F.

D. A cover material must be placed on the prime coat to ensure that the prime coat remains intact until the surface course is placed.

2.04 ASPHALT WEARING SURFACE

A. The bituminous wearing surface applied shall be that specified in the plan sheets or contract documents. If no asphalt mix is specified, Type SP-9.5 Super Pave asphaltic concrete shall be used as the paving material, unless otherwise indicated.

B. The asphaltic mixture shall be transported to the site at a temperature of 300°F to 350°F. Mixtures that have cooled below 270°F will be rejected. The mix temperature will be taken on the first five loads each day and on an average of once every five (5) loads thereafter.

C. The Contractor is entirely responsible for producing a homogenous mixture, free from moisture and with no segregated materials, and meeting all requirements of the specifications for the mixture. Prior to the production of any asphalt paving mixture, the Contractor shall submit, in writing, a proposed job mix formula, at least two (2) weeks prior to the beginning of any paving activities. All requests for design mix adjustments, redesigns and new design mixes will be submitted, in writing, to the Owner/Engineer.

PART 3 - EXECUTION

3.01 SUBBASE

A. Prior to installation of base material, the area shall be graded to within 0.2 feet, and soft, spongy or mucky material removed. Sufficient stabilizing material shall be cut in to achieve a Florida Bearing Value (FBV) in excess of 75 psi or lime rock bearing ratio (LBR) greater than 40 pounds at a minimum density of ninety-eight percent (98%) of a maximum density as defined and measured in AASHTO T 180 (Modified Proctor), to a six-inch minimum depth.

B. Density test for subbase materials shall be taken at 300-foot intervals and around structures as required. If compaction procedures allow testing requirements may be reduced at the Owner/Engineer's discretion.

3.02 BASE COURSE

A. The base course shall be constructed on the prepared subgrade, in accordance with the specifications and plan sheets. All base material shall be placed in accordance with the lines, grades, notes, and typical cross sections shown on the plans. Any deviation from the plan sheets is subject to the approval of the Owner/Engineer. Any deviations not approved by the Owner/Engineer shall be repaired to the satisfaction of the Owner/Engineer at no expense to the Owner.

B. Lime Rock Base

1. Lime rock base shall be spread by mechanical spreaders, equipped to produce an even distribution with a uniform thickness. When the specified compacted thickness of the base is greater than six inches, the base shall be constructed in two (2) courses. The thickness of the first course shall be one-half the total thickness of the finished base. After spreading is completed, the entire surface shall be scarified and shaped so as to produce the required grade and cross section after compaction. If two (2) courses are required, each lift shall be prepared as previously described. Prior to spreading of the upper course, density tests will have been taken for the lower and determined to be satisfactory.

2. All materials shall be compacted to a density of not less than ninety-eight percent (98%) of maximum density as determined by AASHTO T 180. Density tests shall be taken in at least three locations on each day's final compaction of each course. Density determinations shall be made at more frequent intervals, at no extra cost, if deemed necessary by the Owner/Engineer.

3. The finished surface of the base course shall be checked with a template cut to the required crown and a 15-foot straight edge laid parallel to the center line of the road. All irregularities greater than 1/4 inch shall be corrected to the satisfaction of the Owner/Engineer.

4. The base material shall extend at least 12 inches outside the edge of the finished paved surface, unless otherwise indicated. Thickness of the base shall be measured at 200-foot intervals at various points in the cross section. Where the compacted thickness is deficient by 1/2 inch or more, the Contractor shall correct the deficiency by scarifying and adding rock for a distance of 100 feet in each direction from the edge of the deficient area. The required thickness, compaction and cross section will then be achieved.

5. Prime coat shall be applied only when the base meets the specified density and the moisture content in the top half of the base does not exceed ninety percent (90%) of the optimum moisture of the base material.

C. Soil Cement Base

1. Soil-cement mixing shall be either mixed-in-place or a central plant mix.

2. If mixed-in-place, the entire width of the base shall be processed in a single operation, where possible. The specified quantity of cement shall be applied at the required rate by means of an approved method. Mixing will begin within sixty (60) minutes after the cement has been applied. Processing may be to full depth in one (1) course, provided that the satisfactory distribution of cement, water, soil and the specified density can be obtained. If not, construction shall be in courses of such thickness to obtain satisfactory results. Adequate bonding between courses must be achieved. After mixing soil and cement, additional water shall be added, if necessary. After all mixing water has been applied, mixing shall continue until a uniform mixture has been obtained. Excessive concentrations of water shall be avoided.

3. Central plant mixtures shall have been mixed for at least thirty (30) seconds. The mixture shall be placed on the moistened subgrade in a uniform layer by an approved spreader. The layer of soil-cement shall be of uniform thickness and surface contour. The completed base will conform to the required grade and cross section.

4. Compaction of the soil-cement mixture shall begin immediately after mixing is complete. The optimum moisture content and maximum density shall be determined in the field by the methods described in AASHTO T 143. The base shall be compacted to not less than ninety-five percent (95%) of the maximum density. The soil-cement mix design shall be 350 psi at 28 days, unless otherwise indicated, and moisture content and density tests shall be taken every 300 lineal feet to a minimum depth of six inches.

5. After compaction, the surface shall be shaped to the required lines, grades and cross section. The moisture content of the surface material shall not be more than two percent (2%) less than the specified optimum moisture content during finishing operations. The finished surface shall be smooth, dense, and free of compaction planes, cracks, ridges and loose material.

6. Construction joints shall be formed by cutting back in the completed work to form a true vertical face. The vertical face shall be a straight transverse line perpendicular to the centerline of the roadway.

7. The finished surface of the base shall be tested with a template and a 15-foot straight edge. All irregularities greater than 1/4 inch shall be corrected to the satisfaction of the Owner/Engineer.

8. The finished surface shall be kept continuously moist until the surface is treated with either cut-back asphalt, Grade RC-70 applied at .15 to .20 gallons per square yard; or a mixture of emulsified asphalt and water applied at a rate of .20 of .25 gallons per square yard. If the Owner/Engineer deems it necessary, the surface shall be sanded using 10 pounds of clean sand per yard.

D. Asphalt Base Course

1. Asphalt base courses shall be applied in accordance with FDOT Standards and Specifications for Road and Bridge Construction, Appropriate Section. The job mix formula approved for the project shall be used. Any deviation from the approved mix must be submitted to the Owner/Engineer and approved before being implemented.

2. The base course material shall be placed with an approved paving machine. A motor grader may be required if a leveling course is needed. The base mix may be placed when the air temperature is at least 40°F and rising, provided that the sub-grade is not frozen or affected by frost.

3. A paver, equipped with automatic screed control, shall be used for all machine-laid courses. The automatic joint matcher shall be used on the top course of the base after the first pass with a paving machine. All mixtures shall be laid by the string line method, with the exception of areas adjacent to curb and gutter or other true edges. The temperature of the mix shall be between 300°F and 350°F. Any mixture caught by rain in transit may be laid at the Contractor's own risk; if removal and replacement is required, it shall be at the expense of the Contractor. In no case shall the mixture be spread when rain is falling or when there is water on the surface to be covered. The layer thickness for asphalt concrete structure courses shall match those listed in the table below.

E. Recycled Concrete Base Course

1. Recycled concrete base course shall be transported, spread compacted and finished per Appropriate Section, of the latest revision of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction.

2. The depth of all layers shall be checked every 50 feet. A tack coat, as specified, will be required on existing pavements to be overlaid with an asphalt mix and between successive layers of all asphalt mixes.

F. Compaction.

1. After the asphalt mixture has been spread to the proper lines, grades, and cross sections, compaction operations may begin. The Contractor shall establish rolling procedures and submit his sequence of compaction operations to the Owner/Engineer for approval. The equipment used may include, but is not committed to steel-wheeled rollers, pneumatic tired rollers, and vibratory rollers. Areas which are inaccessible to a roller shall be compacted by the use of hand tamps or other satisfactory means. An entire sequence of compaction operations shall be performed for each layer of applied material, density determinations shall also be made.

2. The in-place density of each course shall be determined through core samples and the nuclear backscatter method. A core sample of a representative paving section shall be taken for each day's production of paved surface; backscatters shall be taken every 30 feet at various locations in the cross section. Additional testing around manholes or other structures may be required.

3. Testing and density requirements shall not apply to the following construction activities: Asphalt patching courses, leveling and intermediate course less than one-inch thick, overbuild courses less than one-inch thick and open graded friction courses.

G. Shell Base Material

1. Shell base material shall be constructed on the prepared subgrade in accordance with these specifications and in conformity with the lines, grades and cross sections shown on the plans. The shell base shall be spread uniformly and evenly; during spreading operations the shell shall be thoroughly saturated with water.

2. After spreading the shell shall be compacted, with water being added as required, until the required density is obtained. Compaction and density shall be as required

for lime rock base, except that the testing methods shall be modified in the laboratory and in the field. At least three (3) density determinations shall be made on each day's final compaction operations.

3. Upon completion of initial compaction, the entire surface shall be scarified and shaped to exact crown and cross section. The base shall then be re-watered and compacted to the required density. The finished surface shall be tested with a template and 15-foot straight edge. All irregularities greater than 1/4 inch shall be corrected to the satisfaction of the Owner/Engineer. The prime coat shall be applied after the base meets all density and finish requirements.

3.03 ASPHALT WEARING SURFACE

A. The asphalt wearing surface shall be constructed on the prepared base in accordance with the plans and specifications and in conformity with the indicated lines, grades, and cross sections. If no asphalt mixture is indicated, the specified mixture shall be Type SP-9.5 Super Pave Asphaltic Concrete. A job mix formula shall be submitted to the Owner/Engineer for approval at least two (2) weeks prior to the application of paved surfaces.

B. The mixture shall be spread only when the base is clean, dry, properly cured, and approved by the Owner/Engineer. The temperature shall be at least 40°F and rising. No paving operations will be permitted if it is raining, or rain is imminent. The mix shall be between 270°F and 350°F.

C. The asphalt mixture shall be spread with an approved paving machine to the required width and depth. All mixes, except those adjacent to curb and gutter, shall be laid according to the string line method. The depth of each layer shall be checked every 50 feet.

D. The mixture shall be compacted to its final depth, no less than 1-1/4 inch and thicker if so indicated. Compaction and layering procedures specified for asphalt base courses shall apply to surface courses. All testing and density requirements will also apply.

E. When laying operations are interrupted, a transverse joint shall be constructed by cutting back on the previous run to expose the full depth of material. Longitudinal joints are to be sloped or rolled over and sealed. When the adjacent strip is constructed, the edge shall be trimmed back to expose the unsealed face. All longitudinal construction joints shall be offset 6 inches to 12 inches laterally between layers.

F. When fresh mixture is laid against transverse or longitudinal joints, it shall be placed in contact to produce an even, well compacted joint after rolling.

G. The finished surface shall be tested with a template and 15-foot rolling straight edge. Any irregularities shall be repaired to the satisfaction of the Owner/Engineer. The surface shall be of uniform texture and compaction. No sand spots, ripples, or loosened portions shall be evident. No traffic shall be allowed onto the finished surface until it is deemed acceptable by the Owner/Engineer.

3.04 CURING COAT

A. During the period when finishing and surface corrosion of the soil-cement base are being accomplished, the surface of the base shall be kept continuously moist by sprinkling as necessary. As soon as deemed practicable, the curing seal shall be applied to the soil-cement base. The curing seal shall consist of Emulsified Asphalt Grade SS-I or SS-1H, diluted in equal proportion with water, and be applied at the rate of 0.15 to 0.30 gallons per square yard.

B. The actual rate of application shall be as directed and shall provide complete coverage without excessive runoff. At the time the bituminous material is applied, the soil-cement surface shall be dense and free of all loose and extraneous material and shall contain sufficient moisture to prevent excessive penetration to the bituminous materials.

C. Should it be necessary to allow construction equipment or other traffic to use the completed base before the bituminous material has cured sufficiently to prevent pickup or displacement; the bituminous material shall be sanded, using approximately 10 pounds of clean sand per yard.

END OF SECTION

SECTION 32 31 13
CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. This Section includes furnishing and installing the chain link fence as shown on the Drawings and as specified.

1.02 QUALITY ASSURANCE

A. Manufacturer. A company specializing in commercial quality chain link fencing with a minimum of two years' experience.

1.03 SUBMITTALS

A. Submit layout.

B. Submit samples if requested by the Engineer.

PART 2 - MATERIALS AND EQUIPMENT

2.01 MATERIALS

A. Fabric. No. 9 gage (0.148-inch) steel wires, 2-inch mesh, with top and bottom selvages twisted and barbed. Furnish one-piece fabric width.

1. Select fabric finish to be used for this product

2. Coordinate with tension wire and barbed wire

B. Fabric finish shall be galvanized conforming to ASTM A392, Class II, galvanized after weaving, with a minimum weight of 2.0 oz. per square foot of wire surface.

C. Framework. Galvanized steel, ASTM A120, with not less than 1.8 oz. zinc per sq. ft.

D. Hardware and Accessories. Galvanized, ASTM A153, with zinc weights as per Table 1.

2.02 FRAMING AND ACCESSORIES

A. End, Corner and Pull Posts. Minimum sizes and weights as follows:

1. Up to 6-foot fabric height, 2.875-inch OD pipe, 5.79 lbs. per lin. ft.

B. Line Posts. Space 10-foot o.c. maximum, unless otherwise shown, of following minimum sizes and weights.

1. Up to 6-foot fabric height, 2.375-inch OD steel pipe. 3.65 lbs. per lin. ft.

C. Gate Posts. Furnish posts for supporting single gate leaf for nominal gate widths as follows:

1. Up to 6-feet in width, 2.875-inch OD steel pipe.

2. From 6-feet up to 13-feet in width, 4.00-inch OD steel pipe.

3. From 13-feet up to 18-feet in width, 6.625-inch OD steel pipe.

4. Over 18-feet in width, 8.625-inch OD steel pipe.

D. Top Rail. 1-5/8-inch OD pipe, manufacturer's longest lengths, with expansion type couplings, approximately 6-inches long, for each joint. Provide fittings for attaching top rail securely to each gate, corner, pull, and end post.

E. Post Brace Assembly. Manufacturer's standard adjustable brace at gate posts and at both sides of corner and pull posts, with horizontal brace located at mid-height of fabric.

1. Use 1-5/8-inch OD pipe for horizontal brace and 3/8-inch diameter adjustable diagonal truss rod.

F. Post Tops. Weathertight closure cap (for tubular posts), one cap for each post.

1. Furnish caps with openings to permit passage of top rail and arms to accept barbed wire. Caps shall be set screw retained.

G. Stretcher Bars. One-piece lengths equal to full height of fabric, galvanized, with minimum cross-section of 3/16-inch x 3/4-inch. Provide one stretcher bar for each gate and end post, and two for each corner and pull post, except where fabric is integrally woven into post.

H. Stretcher Bar Bands. Space not over 15-inches o.c., to secure stretcher bars to end, corner, pull, and gate posts.

I. Tension Wire. Single strand spring coil steel wire, 6-gage, [galvanized.] [aluminum coated.]

J. Extension Arms. Cast steel to accommodate three (3) strands of barbed wire, sloped 45 degrees. Provide single, double or vertical arm as shown on the drawings.

K. Barbed Wire. Three strands of 12-1/2 gauge, twisted [galvanized] [aluminum coated] wires with 14 gauge, four point barbs at 4-1/2 or 5-1/2 inches on center (including gate).

L. Wire Ties. For tying fabric to line posts, use wire ties spaced 12-inch o.c. For tying fabric to rails and braces, use wire ties spaced 24-inch o.c. For tying fabric to tension wire, use hog rings spaced 24-inch o.c. Manufacturer's standard procedure will be accepted if of equal strength and durability.

M. Gates. Gates shall be swing [or rolling] as shown on the drawings and shall be complete with latches, stops, keepers, hinges [rollers] and when shown, provision for three (3) strands of barbed wire above the fabric.

N. Gate Frames. Gate frames shall be constructed of tubular members and, shall be constructed in a manner such as to provide a rigid frame and ample strength and gate shall be free from sag and twist. Where a barbed wire top is specified, the end members of gate frames shall be extended approximately 1 foot above the top member and arranged for attaching three uniformly spaced strands of barbed wire and furnished with bands or other suitable method for securely attaching the wire.

O. Latches, [Padlocks,] Stops and Keepers. Provide latches, [padlocks], stops and keepers for all gates. Latches shall have the plunger bar arranged to engage the gate stop, except that for single gates for openings less than 10-feet wide a forked latch may be provided. Latches shall be arranged for padlocking. [Padlocks shall be Type ED, brass, with two (2) keys, conforming to Fed. Spec. FF-P-101.] Center stops shall consist of a device arranged to be set in concrete and to engage the plunger of the bar latch of double gates. No stop is required for single gates. Keepers shall consist of a mechanical device for securing the free end of the gate when in the fully open position.

P. Rolling Gate. Provide a rolling gate where shown on the drawings. Furnish horizontal and vertical members to ensure proper gate operation and for attachment of fabric, hardware and accessories. Fabricate perimeter frames of tubular members to form a gate 6-feet high and up to 36-feet wide as follows:

1. Steel Pipe: 2-inch OD.

2. Assemble gate frames by welding or with special fittings and rivets for rigid connections. Use same fabric and gage as for fence. Install fabric with stretcher bars at vertical edges. Bars may also be used at top and bottom edges. Attach hardware to provide security against removal or breakage.

3. Where manufacturer's design requires, provide diagonal cross-bracing to ensure frame rigidity without sag or twist.

4. Provide rubber wheels for ground contact and metal wheels to roll on pipe support.

PART 3 - EXECUTION

3.01 INSPECTION

A. Installer must examine the condition under which the fence and gates are to be installed and notify the Contractor in writing of conditions detrimental to the proper and timely completion of the work. Installer shall not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the Installer.

3.02 INSTALLATION

A. Do not begin installation and erection before final grading is completed, unless otherwise permitted.

B. Excavation. Drill holes for posts of diameters and spacings shown, in firm, undisturbed or compacted soil.

C. Setting Posts. Center and align posts in concrete with clearance as shown on the drawings. Place concrete around posts and vibrate or tamp for consolidation. Check each post for vertical and top alignment and hold in position during placement and finishing operations.

D. Top Rails. Run rail continuously through post caps, bending to radius for curved runs. Provide expansion couplings as recommended by fencing manufacturer.

E. Center Rails. Provide center rails only where shown. Install in one piece between posts and flush with post on fabric side, using special offset fittings where necessary.

F. Brace Assemblies. Install braces so posts are plumb when diagonal rod is under proper tension.

G. Fabric. Leave approximately 2-inches between finish grade and bottom selvage, unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Install fabric on security side of fence, and anchor to framework so that fabric remains in tension after pulling force is released.

H. Stretcher Bars. Thread through or clamp to fabric 4-inches o.c., and secure to posts with metal bands spaced 15-inches o.c.

I. Tie Wires. Use U-shaped wire, conforming to diameter of pipe to which attached, clasping pipe and fabric firmly with ends twisted at least two full turns. Bend wire to minimize hazard to persons or clothing.

J. Fasteners. Install nuts for tension bands and hardware bolts on side of fence opposite fabric side. Peen ends of bolts or score thread to prevent removal of nuts.

Gates. Install gates plumb, level, and secure for full opening without interference. Install ground-set items in concrete for anchorage as recommended by the fence manufacturer. Adjust hardware for smooth operation and lubricate where necessary.

3.03 TOUCH-UP PAINT

A. Coat all exposed surfaces resulting from field cuts, welding and other installation activities.

B. Touch up paint shall be inorganic zinc rich coating. Zinc-Lock 351 from Porter Paint Company is an acceptable product. Equivalent products may be submitted.

END OF SECTION

SECTION 32 92 00
TURF AND GRASSES

PART 1 - GENERAL

1.01 WORK INCLUDED

A. The work specified in this section consists of grassing, or of grassing and mulching on slopes, shoulders and other areas. The work of grassing shall include seeding and fertilizing; also watering as required. Any of the items of work covered by this section may be eliminated from the contract, at the discretion of the Engineer. Sodding is included herewith and shall conform to the lines and grades as shown on the plans.

PART 2 - MATERIALS AND EQUIPMENT

2.01 MATERIALS AND EQUIPMENT

A. The materials used for the work in this section shall conform to the requirements hereinafter specified.

2.02 SOD

A. Sod shall be well matted with roots. St. Augustine shall be used in residential areas. Bahia shall be used in the right-of-way areas, not covered by St. Augustine grass. Bermuda shall be used in FDOT right of ways.

B. The sod shall be taken up in commercial-size rectangles or rolls.

C. The sod shall be sufficiently thick to secure a dense stand of live grass. The sod shall be live, fresh and uninjured, at the time of planting. It shall be planted as soon as possible after being dug and shall be shaded and kept moist from the time it is dug until it is planted. The sod shall be approved by the Engineer before placing.

D. Source Requirements for Sod and Mulch. No mulch material or sod shall be used which is not certified as being free of the imported fire ant, and before any mulch or sod is brought to the project, the Contractor will be required to furnish the Engineer a written certification and clearance, from pest control officials of either the State or the Federal Department of Agriculture, verifying that the materials are being obtained from an area outside of the zone of quarantine of the imported fire ant, or that they are free of the imported fire ant.

2.03 WATER

A. The water used in the grassing operations may be obtained from the reclaimed water system.

B. The water shall be free of excess and harmful chemicals, acids, alkalis, or any substance which might be harmful to plant growth or obnoxious to traffic.

C. Salt water shall not be used.

2.04 EQUIPMENT

A. Fertilizer Spreader

1. The device for spreading dry fertilizer or for spraying liquid fertilizer shall meet the approval of the Engineer.

B. Seed Spreader.

1. The seed spreader shall be an approved mechanical head spreader or other approved type of spreader and may be integral with the cultipacker roller equipment specified below.

C. Equipment for Cutting Mulch into Soil.

1. The mulching equipment shall be a rotovator, or other equipment determined by the Engineer to be equally suitable for cutting the specified materials uniformly into the soil and to the required controlled depth.

2. Harrows will not be allowed.

D. Rollers

1. A cultipacker, traffic roller, or other roller approved by the Engineer, will be required for rolling the grassed and mulched areas.

E. Water-Metering Devices

1. The vehicle used for applying the water to the grassed areas shall be equipped with an approved metering device installed at such point on the vehicle as to measure the water at the time of its being applied to the grassed areas.

PART 3 - EXECUTION

3.01 TIME OF BEGINNING OPERATIONS

A. Whenever a suitable length of roadway is completed and ready for planting the Contractor shall, if directed by the Engineer, proceed at once with the planting of the available shoulder or embankment areas.

3.02 WEATHER AND SOIL LIMITATIONS

A. Fertilizing, seeding or mulching operations will not be permitted when wind velocities exceed 15 miles per hour.

B. Seed shall be sowed only when the soil is moist and in proper condition to induce growth.

3.03 SOIL MANIPULATION

A. All soil manipulation shall be done at right angles to the direction of slope.

3.04 WATERING

A. The soil shall be maintained in a moist condition for a period of at least two (2) weeks after the planting.

3.05 APPLYING AND MIXING FERTILIZER

A. Rate of Application

1. At the Contractor's option either dry or liquid commercial grade fertilizer may be used.

2. The rate of application for dry fertilizer shall be 800 to 1,000 pounds per acre, with application in the upper range for sandy soils in the lower range for loamy soils. The exact rate will be set by the Engineer.

3. Liquid fertilizer shall be applied at an equivalent rate which will provide the same amount of plant food as required for dry fertilizer (or at approximately 74 to 92 gallons per acre).

B. Application

1. The fertilizer shall be spread or sprayed uniformly over the area to be grassed by use of the approved distributing device, except that on steep slopes or other areas

where machine-spreading may not be practicable, spreading may be done by hand or by hose if the Engineer so directs.

2. Immediately after dry fertilizer is spread, it shall be harrowed in and mixed with the soil to a depth of approximately four inches.

3. When liquid fertilizer is sprayed, the soil, if dry, shall be moistened by sprinkling before the liquid fertilizer is applied not later than seven (7) days after the seed is in place.

3.06 MULCHING

A. When Dry Mulch is Used:

1. When mulching is called for, approximately two inches, loose thickness, of the straw or hay material shall then be applied uniformly over the grassing area, and the mulch material cut into the soil with the equipment specified, so as to produce a loose mulch thickness of three to four inches.

2. Care shall be exercised so that the materials are not cut too deeply into the soil.

B. When Green Mulch is Used:

1. When green mulch is used, the green mulch shall be incorporated into the soil not later than two (2) days after being cut, and not artificial watering shall be done before the mulch is applied.

2. It shall be spread in a layer of approximately two inches loose thickness and cut into the soil with the equipment specified.

3. The material shall not be cut too deeply into the soil.

3.07 SEEDING

A. Soon after the mulch material has been cut into the soil, and while the soil is still loose and moist, the seed shall be scattered uniformly over the grassing area.

The rate of spread for the seed shall be as follows:

1. Where mulching is not called for, or where dry mulch is used, the rate shall be 60 pounds per acre. In the period from March 15 to October 15 the seed mixture shall be 30 pounds of Bahia and 30 pounds of Bermuda. In the remainder of the year, the mixture shall be 20 pounds each of Bahia, Bermuda and rye seed.

2. When green mulch is used, the required rate of spread shall be reduced to 45 pounds per acre, because of the faster growing rate of the green mulch as compared with that of the seeds. The seed mixture shall be 22-1/2 pounds of Bahia and 22-1/2 pound of Bermuda, except that in the period October 15 to March 15 the mixture shall be 15 pounds each of Bahia, Bermuda and rye grass seed.

3. Seeding may be done in conjunction with the rolling if the equipment used is designed for that purpose.

4. Rolling. Immediately after completion of the seeding, the entire grassed or mulched area shall be rolled thoroughly with the equipment specified. At least two (2) trips over the entire area will be required.

3.08 SODDING

A. Wherever sodding is indicated on the plans, it shall include all of the requirements of this section except "Mulching".

3.09 MAINTENANCE

A. The Contractor shall be responsible for keeping the ground moist by watering until an acceptable stand of grass is grown. He will also be required to repair at his own expense any damage due to washouts, erosion or other causes which might occur prior to final acceptance of this work.

END OF SECTION

SECTION 32 92 23
SODDING

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Preparation of subsoil.
2. Placing topsoil.
3. Fertilizing.
4. Sod installation.
5. Maintenance.

1.02 REFERENCES

A. ASTM International:

1. ASTM C602 - Standard Specification for Agricultural Liming Materials.

B. Turfgrass Producers International:

1. TPI - Guideline Specifications to Turfgrass Sodding.

1.03 DEFINITIONS

A. Weeds: Vegetative species other than specified species to be established in given area.

1.04 SUBMITTALS

A. Section 01 33 23 – Shop Drawings, Product Data and Samples: Requirements for submittals.

B. Product Data: Submit data for sod grass species, fertilizer, mulch, and other accessories.

C. Submit minimum 10 oz sample of topsoil proposed. Forward sample to approved testing laboratory in sealed containers to prevent contamination.

D. Test Reports: Indicate topsoil nutrient and pH levels with recommended soil supplements and application rates.

E. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.05 CLOSEOUT SUBMITTALS

A. Section 01 77 00 - Closeout Procedures: Requirements for submittals.

B. Operation and Maintenance Data: Submit maintenance instructions, cutting method and maximum grass height; types, application frequency, and recommended coverage of fertilizer;

1.06 QUALITY ASSURANCE

A. Sod: Root development capable of supporting its own weight without tearing, when suspended vertically by holding upper two corners.

B. Perform Work in accordance with Florida Department of Transportation standard.

1.07 QUALIFICATIONS

A. Sod Producer: Company specializing in manufacturing Products specified in this section with minimum three years documented experience.

B. Installer: Company specializing in performing work of this section with minimum three years documented experience.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.

B. Deliver sod on pallets or in rolls. Protect exposed roots from dehydration.

C. Do not deliver more sod than can be laid within twenty four (24) hours.

1.09 COORDINATION

A. Section 01 30 00 - Administrative Requirements: Requirements for coordination.

B. Coordinate with installation of underground sprinkler system piping and watering heads when applicable.

1.10 MAINTENANCE SERVICE

A. Section 01 77 00 - Closeout Procedures: Maintenance service.

B. Maintain sodded areas sodded areas for three months from Date of Substantial Completion or until Final Completion, whichever is later.

C. Maintain sodded areas immediately after placement until grass is well established and

exhibits vigorous growing condition.

D. Repair any damage due to washouts, erosion or other causes which might occur prior to final acceptance of this work.

PART 2 - PRODUCTS

2.01 SOD

A. Furnish materials in accordance with Florida Department of Transportation standard.

B. Sod: Certified grade; cultivated grass sod; type indicated; with strong fibrous root system, free of stones, burned or bare spots; containing no more than 5 weeds per 1000 sq ft.

C. Type of sod to match existing. If restoration, type of sod to be shown on plans otherwise.

D. The sod shall be taken up in commercial-size rectangles, preferably 16-inch by 24-inch, except where rolled sod is utilized.

E. The sod shall be sufficiently thick to secure a dense stand of live grass. The sod shall be live, fresh and uninjured, at the time of planting.

F. No sod shall be used which is not certified as being free of the imported fire ant and must be obtained from an area outside of the zone of quarantine of the imported fire ant.

2.02 SOIL MATERIALS

A. Topsoil: Imported or excavated on-site, fertile, agricultural soil, typical for locality, capable of sustaining vigorous plant growth, taken from drained site; free of subsoil, clay, or impurities, plants, weeds and roots; pH value of minimum 5.4 and maximum 7.0.

2.03 ACCESSORIES

A. Fertilizer: Commercial grade; recommended for grass, with fifty percent of elements derived from organic sources; of proportion necessary to eliminate deficiencies of topsoil to the following proportions: nitrogen 6 percent, phosphoric acid 6 percent, soluble potash 6 percent.

B. Lime: ASTM C602, Class T agricultural limestone containing a minimum 80 percent calcium carbonate equivalent.

C. Water: Clean, fresh and free of substances or matter capable of inhibiting vigorous growth of grass.

1. The water used in the grassing operations may be obtained from the reclaimed water system.

2. The water shall be free of excess and harmful chemicals, acids, alkalis, or any substance which might be harmful to plant growth or obnoxious to traffic.

3. Salt water shall not be used.

D. Water-Metering Devices: The vehicle used for applying the water to the grassed areas shall be equipped with an approved metering device installed at such point on the vehicle as to measure the water at the time of its being applied to the grassed areas.

E. Wood Pegs: Softwood, sufficient size and length to anchor sod on slope.

F. Wire Mesh: Interwoven hexagonal plastic mesh of 2-inch size.

G. Edging: Plastic.

H. Rollers: A cultipacker, traffic roller, or other roller approved by the Engineer, will be required for rolling the grassed and mulched areas.

2.04 SOURCE QUALITY CONTROL

A. Section 01 45 29 – Testing Laboratory Services: Testing, inspection and analysis requirements.

B. Analyze to ascertain percentage of nitrogen, phosphorus, potash, soluble salt content, organic matter content, and pH value.

C. Provide recommendation for fertilizer and lime application rates for specified sod grass species as result of testing

D. Testing is not required when recent tests are available for imported topsoil. Submit these test results to testing laboratory. Indicate, by test results, information necessary to determine suitability.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.

B. Verify prepared soil base is ready to receive the Work of this section.

3.02 PREPARATION OF SUBSOIL

A. Prepare sub-soil and eliminate uneven areas and low spots.

B. Maintain lines, levels, profiles and contours. Make changes in grade gradual. Blend slopes into level areas.

C. Remove foreign materials and undesirable plants and their roots. Do not bury foreign material beneath areas to be sodded.

D. Remove contaminated subsoil.

E. Scarify sub-soil to depth of 4 inches where topsoil is to be placed.

F. Repeat cultivation in areas where equipment, used for hauling and spreading topsoil, has compacted subsoil.

3.03 PLACING TOPSOIL

A. Spread topsoil to minimum depth of 3 inches over area to be sodded.

B. Place topsoil during dry weather and on dry unfrozen subgrade.

C. Remove vegetable matter and foreign non-organic material from topsoil while spreading.

D. Grade topsoil to eliminate rough, low or soft areas and to ensure positive drainage.

E. Install edging at periphery of sodded areas in straight lines to consistent depth.

3.04 FERTILIZING

A. Apply lime at application rate recommended by soil analysis. Work lime into top 6 inches of soil.

B. Application:

1. The fertilizer shall be spread or sprayed uniformly over the area to be grassed by use of the approved distributing device, except that on steep slopes or other areas where machine-spreading may not be practicable, spreading may be done by hand or by hose if the Engineer so directs.

2. Immediately after dry fertilizer is spread, it shall be harrowed in and mixed with the soil to a depth of approximately four inches.

3. When liquid fertilizer is sprayed, the soil, if dry, shall be moistened by sprinkling before the liquid fertilizer is applied not later than seven days after the seed is in place.

C. Rate of Application: Apply fertilizer at application rate as determined by soil analysis.

D. Apply fertilizer after smooth raking of topsoil and prior to installation of sod.

E. Apply fertilizer no more than forty-eight (48) hours before laying sod.

F. Mix fertilizer thoroughly into upper 4 inches of topsoil.

G. Lightly water soil to aid dissipation of fertilizer.

H. Fertilizing operations will not be permitted when wind velocities exceed 15 miles per hour.

3.05 LAYING SOD

A. Moisten prepared surface immediately prior to laying sod.

B. Lay sod within twenty-four (24) hours after harvesting to prevent deterioration.

C. Lay sod tight with no open joints visible, and no overlapping; stagger end joints 12 inches minimum. Do not stretch or overlap sod pieces.

D. Lay smooth. Align with adjoining grass areas.

E. Place top elevation of sod 1/2 inch below adjoining edging paving or curbs.

F. On slopes and elevations 6 inches per foot and steeper:

1. On slopes 6 inches per foot and steeper, lay sod pieces perpendicular to slope and secure every row with wooden pegs at maximum 2 feet on center. When using rolled sod, lay sod parallel to slope. Drive pegs flush with soil portion of sod.

2. Prior to placing sod, on slopes exceeding 8 inches per foot, place wire mesh over topsoil. Securely anchor wire mesh in place with wood pegs sunk firmly into ground.

G. Do not place sod when temperature is lower than 32°F.

H. Water sodded areas immediately after installation. Saturate sod to 4 inches of soil.

I. After sod and soil have dried, roll sodded areas to bond sod to soil and to remove minor depressions and irregularities.

J. Roll before first watering.

3.06 MAINTENANCE

A. Mow grass at regular intervals to maintain at maximum height of 2-1/2 inches. Do not cut more than 1/3 of grass blade at each mowing.

B. Neatly trim edges and hand clip where necessary.

C. Immediately remove clippings after mowing and trimming.

D. Water to prevent grass and soil from drying out.

E. The soil shall be maintained in a moist condition for a period of at least two (2) weeks after the planting.

F. Roll surface to remove or irregularities.

G. Control growth of weeds. Apply herbicides. Remedy damage resulting from improper use of herbicides.

H. Immediately replace sod on areas showing deterioration or bare spots.

1. i.e. damage due to washouts, erosion or other causes which might occur.

I. Protect sodded areas with warning signs during maintenance period.

END OF SECTION

SECTION 33 00 00
UTILITIES

PART 1 - GENERAL

1.01 WORK INCLUDED

A. The Contractor shall furnish and install complete and ready for use, all the equipment, machinery, apparatus, motors, drives, tools, meters, charts and other accessories, and shall perform such operations and tests, all as specified herein, and as indicated on the drawings.

B. The materials of construction of all equipment furnished and permanently installed on the project shall be of best quality. The workmanship of construction, finish and fit shall be equal to the highest industry standards. All equipment and/or components thereof shall be new and shall not have been in service at any other installation.

C. The desired standard of quality for each item of equipment is established by reference on the drawings and in the specifications to specific manufacturer's products. Materials of construction and/or fabrication shall equal or exceed the standard of the referenced product. The Contractor's attention is called to Article 1.06.

1.02 EQUIPMENT WARRANTY

A. All mechanical and electrical equipment, together with devices of whatever nature and all components, which are furnished and/or installed by the Contractor shall be guaranteed against manufacturing and/or design inadequacies, materials and workmanship not in conformity with the paragraph above, improper assembly, hidden damage, failure of devices and/or components, excessive leakage or other circumstances which would cause the equipment to fail under normal design and/or specific operating conditions for a period of two years or such longer period as may be shown and/or specified from and after the date of acceptance of the equipment by the Owner. Each piece of equipment, device or components thereof which shall fail within the above specified term of the guarantee shall be replaced and installed with reasonable promptness by the Contractor without cost to the Owner.

B. Rotating machinery shall be designed and fabricated to provide satisfactory operation without excessive wear and without excessive maintenance during its operating life. Rotating parts shall be statically and dynamically balanced and shall operate without excessive vibration.

C. On all equipment ample mean of lubrication shall be provided for all bearings and other metal parts in sliding contact.

D. The minimum design criteria for lubrication of moving parts of the equipment shall include one (1) week of continuous operation during which no lubricants shall be added to the system. The system shall also be designed to receive lubricants whether in operation or shut down and shall not leak or waste lubricants under either condition. The manufacturer's

recommendations of grade and quality and a supply of lubricants so recommended in quantities sufficient to conduct startup and testing operations shall be furnished with the equipment. Alemite industrial-type fittings, or equal, shall be used for grease lubrication except as noted.

1.03 SPECIAL TOOLS

A. Special tools, wrenches and thickness or depth gauges required for removing parts and for making adjustment shall be included with each item of equipment having wearing parts and requiring repairs or adjustments. All accessories such as indicating gauges, indicators and lubrication devices necessary for the proper maintenance and operation of the equipment shall be furnished and stored safely at the site of the work and delivered to the Owner after the equipment is accepted.

1.04 SAFETY REQUIREMENTS

A. Screens, guards or cages shall be provided for all exposed, rotating or moving parts in accordance with accepted practices of applicable governmental regulatory agencies.

1.05 NAMEPLATES

A. Each major component of equipment shall have the manufacturer's name, catalog and/or model number, and serial number on a corrosion-resistant plate securely attached to the item of equipment.

1.06 INITIAL OPERATION AND TESTS

A. Upon completion of all the mechanical work, in a manner satisfactory to the Engineer, the Contractor shall designate a day for initial testing of the equipment. Prior to such completion date, the Contractor shall give the Owner seven (7) days' notice thereof in writing, and the Owner will then appoint the personnel which will operate the plant equipment, and on the test day designated, the Contractor shall make the initial test to determine the performance using the personnel designated by the Owner and such personnel of his own as is specified or as he deems necessary to complete the tests.

B. The initial tests shall be limited to a period of twenty-four (24) hour's duration and during this time the mechanical performance of all equipment shall be tested and demonstrated by the Contractor. If the demonstration and tests indicate satisfactory mechanical performance in the operation of the equipment, the Contractor will then be given a three (3) day notice by the Engineer to make a final guarantee test of the plant equipment under normal operation. During the initial tests and the three (3) day period between the initial tests and the final tests, the Contractor's personnel shall supervise the operation of the plant equipment, assist and train the Owner's operating personnel in their duties. Experts on equipment installation and operation, as specified or necessary as well as complete, written, detailed erection, operation and maintenance instructions, shall be furnished by the Contractor to insure proper training and instruction of the Owner's personnel. A minimum of six (6) complete sets of operation and maintenance instructions shall be provided.

C. The final guarantee tests shall be for a period of twenty-four (24) hours duration, except as otherwise provided, and shall be made at the conclusion of the three (3) day period of operation and training. These tests shall be made under normal operating conditions under the supervision of the Contractor's personnel. This test is for the purpose of demonstrating that all performance and efficiency guarantees of the equipment and other requirements in compliance with these specifications have been met, that the operation of all equipment is coordinated and that all controls operate satisfactorily in coordination with the equipment installed.

D. In the event the initial or final guarantee testing, and demonstration of equipment and controls does not meet the guarantee conditions or is not demonstrated to the satisfaction of the Engineer, the Contractor shall, at his own expense, make such changes and adjustments in the equipment which he deems necessary and shall conduct further tests until full satisfaction is indicated by the Engineer and written certification is received thereof.

1.07 SHOP PAINT

A. All ferrous metal on plant equipment, unless otherwise specified or directed by the Engineer, shall receive shop paint compatible with field costs provided by the Contractor, in accordance with the requirements of the section of the specifications entitled, "Painting and Special Coatings in Part A of Technical Specifications.

PART 2 - MATERIALS AND EQUIPMENT

2.01 EQUIPMENT

A. Equipment Requiring Variations from Structures Shown on the Plans.

B. It is the intent that the Contractor shall furnish equipment which may be installed and shall operate properly in the structure as shown. Should the Contractor select alternate equipment resulting in an alteration to, addition to, enlargement of, or any other changes from the lines, dimensions and grades shown on the drawings, the Contractor shall make such changes or alterations as are required and no additional payment will be made by the Owner for changes in structures occasioned by the selection of alternate equipment. All such variations shall be subject to review and acceptance by the Engineer.

C. Equipment requiring supplemental services in addition to those shown or specified in order to fulfill the operating objectives and including additional mechanisms, operating steps and/or controls as compared with specified equipment will not be acceptable.

END OF SECTION

SECTION 33 01 00

OPERATION AND MAINTENANCE OF UTILITIES

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work: The work included in this Section consists of furnishing all labor, equipment and materials and in performing all operations necessary for the construction or installation of all process and utility piping, valves, valve boxes and all castings and appurtenances within, complete and ready for operation as shown on the Drawings and specified herein.

B. Related Work Specified Elsewhere

1. Section 31 23 00: Excavation and Fill

1.02 QUALITY ASSURANCE

A. Construction Requirements:

1. All underground lines shall be installed with at least 30 inches of cover or as detailed on the drawings.

2. For underground utilities changes in pipe alignment and use of fittings may be allowed, subject to approval of the Engineer as to layout. Deflection shall not exceed eighty percent (80%) of the maximum allowable deflection as stated in the pipe manufacturer's installation instructions.

B. Pipe Inspection:

1. The Contractor shall obtain from the pipe manufacturers a certificate of inspection to the effect that the pipe and fittings supplied for this Contract have been inspected at the plant and that they meet the requirements of these specifications. Certification shall be stamped with corporate seal.

2. All pipe and fitting shall be subject to visual inspection at time of delivery by rail or truck and also just before they are lowered into the trench to be laid. Joints or fittings that do not conform to these specifications will be rejected and must be removed immediately by the Contractor.

3. The entire product of any plant may be rejected when, in the opinion of the Engineer, the methods of manufacture fail to secure uniform results, or where the materials used are such as to produce inferior pipe or fittings.

1.03 SUBMITTALS

A. Shop Drawings:

1. In general electronic copies of the following, but not limited to, shop drawings shall be submitted to the Engineer for approval prior to construction. Shop drawings to be numbered sequentially. Cover transmittal sheets to include project name, shop drawing number, shop drawing description and specification section(s).

a. Mill test certificates or certified test reports on pipe and fittings.

b. Details of restrained and flexible joints.

c. Valve vaults.

d. Valve boxes.

e. All gate, plug, ball, solenoid, check valves, and automatic air release valves.

f. Couplings.

g. Service saddles, curb, & corp stops.

h. Flexible expansion joints.

i. Pressure gauges.

j. Identification tape.

k. Joint lubricant.

l. Detailed piping layout drawings and pipe laying schedule.

m. Temporary plug and anchorage system for hydrostatic pressure test.

n. Tie rods.

o. Reduces pressure backflow preventers.

2. A separate shop drawing submittal will be required for each major item listed above and for each different type of an item within a major item. For example, separate submittals will be required for gate, plug, ball, solenoid, check and automatic air release valves. All submittals shall be in accordance with the General Conditions and the Supplementary Conditions.

B. Acceptance of Material:

1. The Contractor shall furnish an Affidavit of Compliance certified by the pipe manufacturer that the pipe, fittings and specials furnished under this Contract comply with all applicable provisions of current AWWA and ASTM Standards and these Specifications. No pipe or fittings will be accepted for use in the work on this project until the Affidavit has been submitted and approved by the Engineer.

2. The Owner reserves the right to sample and test any pipe or fitting after delivery and to reject all pipe and fittings represented by any sample which fails to comply with the specified requirements.

C. Operation and Maintenance Manuals:

1. Submit copies of operation and maintenance manuals for all the items requiring routine maintenance.

1.04 DELIVERY, STORAGE AND HANDLING

A. During shipping, delivering and installing pipe, fittings, valves, backflow preventers, and accessories, they shall be handled in such manner as to ensure a sound undamaged condition.

B. Particular care shall be taken not to damage the pipe coating.

C. Insides of valves and backflow preventers shall be kept free of dirt and debris.

1.05 JOB CONDITIONS

A. Water in Excavation:

1. Water shall not be allowed in the trenches while underground pipes are being laid and/or tested. The Contractor shall not open more than 100 feet of trench than the available pumping facilities are able to dewater to the satisfaction of the Engineer. The Contractor shall assume responsibility for disposing of all water so as not to interfere with the normal drainage of the territory in which he is working.

2. In no case shall the pipelines being installed be used as drains for such water, and the ends of the pipe shall be kept properly and adequately plugged during construction by the use of approved stoppers and not by improvised equipment. All necessary precautions shall be taken to prevent the entrance of mud, sand, or other obstructing matter into the pipelines. If on completion of the work any such materials have entered the pipelines, it must be cleaned as directed by the Engineer so that the entire system will be left clean and unobstructed.

PART 2 - PRODUCTS

2.01 DUCTILE IRON PIPE AND FITTINGS

A. Ductile Iron Pipe: Ductile iron pipe shall conform to the requirements of ANSI/AWWA C150/A21.50, latest revision. The minimum thickness class for all pipe greater than 12-inch diameter shall be pressure Class 250, and all pipe 12-inch or less in diameter shall be pressure Class 350.

Pipe shall have a minimum rated water working pressure of 250 psi and shall be furnished in laying lengths of 20 feet or less, unless specifically shown otherwise on the Drawings. The pipe shall be lined and coated as specified below.

1. Interior Lining for Raw Activated Sludge (RAS), Sludge Lines and Force Mains: Ductile iron fittings and specials shall be coated with 40 mils nominal dry film thickness of Protecto 401 or approved equal in accordance with the manufacturers recommended actions.

2. Interior Lining for Raw, Potable and Reclaimed Water Piping: Ductile iron pipe, fittings and specials shall be cement lined in accordance with ASNI/AWWA C104, current revision, "Cement-Mortar Lining for Ductile Iron and Gray Iron Pipe and Fittings for Water". The cement lining shall have a standard thickness and after curing the lining shall have a seal coat of bituminous material in accordance with ANSI/AWWA C104, current revision.

3. Exterior Coatings: The exterior of ductile iron pipe fittings and specials to be installed underground shall be coated at the factory with standard bitumastic coating.

4. Polyethylene Encasement: Where indicated the Contractor shall utilize polyethylene encasement in accordance with ANSI/AWWA C105-T1. The polyethylene shall conform with ASTMD-1248-68 and be color coded to the service application.

5. Ductile iron pipe, fittings and specials to be installed aboveground shall be furnished with a shop applied primer on the exterior. The shop primer shall be as specified in accordance with manufacturers recommendations.

B. Fittings: Fittings for ductile iron pipe shall be either mechanical joint, restrained joint or flanged joint as indicated on the Drawings and shall have a minimum working pressure of 250 psi. Fittings shall be ductile iron and shall conform to ANSI/AWWA C110, ANSI/AWWA C111 and ANSI/AWWA C153, latest revisions for flanged and mechanical joint pipe. Fittings shall be coated and lined as specified above for ductile iron pipe. The rubber gaskets for flanged, mechanical, and push on joints shall be as described below.

C. Push-On Joints: Pipe using push-on joints shall be in strict accordance with ANSI/AWWA C111, latest revision and shall be as manufactured by American Cast Iron Pipe Company (Fastite Joint), United States Pipe Company (Tyton Joint), or Clow Corporation (Super Bell Tite Joint). Jointing materials shall be provided by the pipe manufacturer and installation shall be in strict accordance with the manufacturer's recommended practice.

D. Mechanical Joints: Jointing materials for mechanical joints shall be provided by the pipe and fitting manufacturer. Materials assembly and bolting shall be in strict accordance with ANSI/AWWA C111 and ANSI/AWWA C153, latest revisions. Tee head bolts and nuts for mechanical joints shall be manufactured of CORTEN, high strength, low alloy, corrosion resistant steel as manufactured by NSS Industries, Plymouth, Michigan or an equal approved by the Engineer.

E. Flanged Joints: Flanges shall be American Standard for 125 pound steam pressure with any special drilling and tapping as required to insure correct alignment and bolting. Gaskets shall be rubber full face type, minimum thickness of 1/8 inch. Flanged joints shall be made with bolts and nuts, studs with a nut on each end, or studs with nuts where the flange is tapped.

The number of size of bolts shall conform to the same American National Standard as the flanges. Unless noted otherwise, bolts and nuts shall be Grade B conforming to the ASTM Specifications for Steel Machine Bolts and Nuts and Tap Bolts, Designation A 307. Bolts and studs shall be of the same quality as machine bolts. Bolts and nuts shall have hexagonal heads. Where noted on the Drawings or where flanges are underground, stainless steel nuts and bolts shall be used for flanges. Stainless steel shall be Type 316 in accordance with ASTM A320, Class 2.

1. Machined Surfaces: Machined surfaces shall be cleaned and coated with a suitable rust preventative coating at the shop immediately after being machined.

F. Restrained Joints: Restrained joints shall be provided for all buried piping systems at the location required to restrain the system thrust. Pipe joints and fitting shall be restrained as specified below.

1. Manufactured Restrained Joints: Manufactured restrained joints shall be Flex-Ring, Lok-Ring or Lok-Fast manufactured by the American Cast Iron Pipe Company, Lok-Tyte or Tr-Flex Type manufactured by the United States Pipe Company as manufactured by McWane, or an equal approved by the Engineer. Joints shall be manufacturer's standard specifically modified push-on type joints with joint restraint provided by ductile iron retainer rings joined together by corrosion resistant, high strength steel tee head bolts and nuts or with joint restraint provided by a welded on retainer ring and a split flexible ring assembled behind the retainer ring.

   Restrained joint pipe and fittings shall be ductile iron only and shall comply with applicable portions of this specification. Manufactured restrained joints shall be capable of deflection during assembly. Deflection shall not exceed 80 percent (80%) of the manufacturer's recommendations.

   Tee head bolts and nuts for restrained joints shall be manufactured of CORTEN, high strength, low alloy, corrosion resistant steel as manufactured by NSS Industries, Plymouth, Michigan, or an equal approved by the Engineer.

2. Alternate Restrained Joints:

   a. When prior approval is obtained from the Engineer, ductile iron pipe and fittings with mechanical joints may be restrained using a follower gland which includes a restraining mechanism. When actuated during installation, the restraining device shall impart multiple wedging action against the pipe wall which increases resistance as internal pressure in the pipeline increases. The pipe must be suitable for use with the proposed device.

      The joint shall maintain flexibility after installation. Glands shall be manufactured of ductile iron conforming to ASTM A536 and restraining devices shall be of head treated ductile iron with a minimum hardness of 370 BHN. The gland shall have standard dimension and bolting patterns for mechanical joints conforming to ASNI/AWWA C111 and C153, latest revisions.

      Tee head bolts and nuts shall be manufactured of corrosion resistant, high strength, low alloy CORTEN steel in accordance with ASTM A242.

      The restraining wedges shall have twist off nuts to insure proper torquing. The mechanical joint restraint device shall have a minimum working pressure rating of 250 psi with a minimum safety factor of 2 to 1 and shall

      be MEGALUG^{R} as manufactured by EBBA Iron, Inc.. No other retainer gland type device will be acceptable. After installation prior to backfilling,

all parts of the joint restraint system shall be coated with coal tar epoxy equal to Kop-Coat Bitumastic No. 300-M.

b. When prior approval is obtained from the Engineer, ductile iron pipe and fittings with push on joints may be restrained using a restraining gasket similar to the "Field Lok" gasket manufactured by U.S. Pipe & Foundry. The device must be suitable for the pipe and pressure rating intended and is subject to approval by the Engineer. The required length of restrained joint pipe shall be provided on either side of all valves and fittings employing restraining devices. Restrained lengths shall be calculated per DIPRA standards based on Type II laying conditions and an operating pressure of 150 psi, unless otherwise indicated.

2.02 POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS

A. Gravity Drainage Piping: PVC pipe used for gravity drainage piping installed underground shall be SDR 26 pipe.

B. Small PVC Pressure Piping: Unless otherwise specified, all PVC pressure pipe smaller than 4 inches nominal diameter shall be Schedule 80 PVC or Endot Endpure HDPE, (as shown). Schedule 80 pipe shall have either solvent welded or threaded joints. PVC pressure pipe shall bear the approved seal of the National Sanitation Foundation (NSF). PVC pipe that is exposed to sunlight shall be manufactured with additives to provide resistance to ultraviolet deterioration. No glued joint pipe shall be installed below ground, unless other specified. All water pipe to be Class 200 (DR 21) gasketed bell and spigot pipe blue in color.

C. Fittings: Socket type, solvent welded fittings for Schedule 80 PVC pipe shall be in conformance with ASTM D2467. Threaded type fittings for Schedule 80 PVC pipe shall be in conformance with ASTM D2464. All solvent welded or threaded joints shall be watertight.

D. Flanges: Flanges for Schedule 80 PVC pipe shall be rated for a 150 psi working pressure with ANSI B16.1 dimensions and bolting pattern. Flanges shall be connected to PVC piping with either solvent welded or threaded joints in accordance with ASTM D2467 or ASTM 2464, respectively. Gaskets shall be neoprene, full faced type with a minimum thickness of 1/8 inch. Nuts and bolts shall be hexagonal with machine threads, manufactured of Type 316 stainless steel in accordance with ASTM A320, Class 2. Type 316 stainless steel flat washers with lock washers shall be used against PVC flanges.

E. Solvent Cement: PVC solvent cement shall be in compliance with ASTM D2564 and in accordance with the pipe manufacturer's recommendations.

. Thread Lubricant: Lubricant for Schedule 80 threaded joints shall be Teflon tape only.

G. Polyvinyl Chloride Pipe 4 Inches and Larger in Size for Pressure Service: Polyvinyl chloride pipe for nominal diameters 4 inches to 12 inches in size shall conform to the requirements of AWWA C900 with a dimension ratio of DR 18, pressure class 150, and gasketed integral bell ends. For PVC pipe larger than 12 inches for pressure service, the pipe shall conform to the requirements of AWWA C900 with a minimum DR of 18, pressure

rating of 235 psi, with gasketed integral bell ends. Pipe shall be designed for maximum working pressure of not less than 235 psi and with not less than a 4 to 1 sustained hydrostatic pressure safety factor. Fittings for C-900 PVC pipe shall be ductile iron fittings with restrained joint ends for potable water, raw water or reclaimed water lines, and restrained PVC fittings for sanitary force mains.

H. All PVC pipe installed shall be color coded for the service intended. Water piping shall be extruded blue, reclaimed water shall be lavender, force main white, and gravity sewer green. Care shall be taken to avoid exposure to sunlight. Pipe should be marked for its use in three places on the pipe barrel.

. Joints (4 Inches and Larger PVC Pipe):

1. Bell and Spigot:

Pipe joints shall be made with integral bell and spigot pipe ends. The bell shall consist of an integral thickened wall section designed to be at least as strong as the pipe wall. The bell shall be supplied with factory glued rubber ring gasket with conforms to the manufacturer's standard dimensions and tolerances. The gasket shall meet the requirements of ASTM F477 "Elastomeric Seals (Gaskets) for Joining Plastic Pipe". PVC joints shall be "Ring-Tite" as manufactured by J-M Manufacturing Company, Inc. or an equal approved by the Engineer.

2. Restrained Joints:

Where indicated on Drawings, to prevent pipe joints and fittings from separating under pressure, pipe joints and fittings shall be restrained as follows:

a. PVC pipe bell and spigot joints shall be restrained with EBBA Iron MEGALUG^{R} Series 1500 Restrainer or an equal approved by the Engineer. The restraining device and Tee head bolts shall be manufactured of high strength ductile iron meeting ASTM A536, Grade 65-42-10. Clamping bolts and nuts shall be manufactured of corrosion resistant high strength, low alloy CORTEN steel meeting the requirements of ASTM A242.

b. Cast iron mechanical joint fittings used with PVC pipe shall be restrained with the EBBA Iron MEGALUG^{R} Series 2000 PV Restrainer or an equal approved by the Engineer. The restraining device and Tee head bolts shall be manufactured of high strength ductile iron meeting ASTM A536, Grade 65-42-10. Clamping bolts and nuts shall be manufactured of corrosion resistant high strength, low alloy CORTEN steel meeting the requirements of ASTM A242.

c. Thrust Blocking. Provided concrete reaction or thrust backing on all pressure pipelines four inches in diameter or larger (except those having flanged joints or restrained joints) at all tees, plugs, caps, and at bends defecting 222° or more, or movement shall be prevented by attaching suitable metal rods or straps as directed by the Engineer. Concrete used

for this purpose shall be Class "C". Reference reaction blocking table shown on construction plan details.

d. Joint restraint. Push on joints on either side of valves and fittings restrained by mechanical restraining devices shall be restrained with "Uni-Flange" mechanisms. The number of restrained joints shall be determined by DIPRA methods and a laying schedule shall be provided for approval by the Engineer prior to installation of joint restraint.

2.03 FITTINGS (4 INCHES AND LARGER PVC PIPE)

A. Fittings 3-inch through 24-inch diameter may be ductile-iron fittings conforming to the requirements of ANSI/AWWA C153/A21.53 or cast iron fittings conforming to the requirements of ANSI/AWWA C110/A21.10.

B. Fittings 30-inch through 48-inch diameter shall be cast-iron fittings conforming to the requirements of ANSI/AWWA C110/A21.10.

C. Fittings shall be provided with joints suitable for use with the pipe with which they are to be installed.

D. Only those fittings and accessories that are of domestic (USA) manufacture will be acceptable.

2.04 WALL SLEEVES, SEALS, PIPES AND NON-STANDARD CASTINGS

A. Wall Sleeves: Wall sleeves shall be of cast iron, ductile iron or carbon steel. The sleeve shall be hot dipped galvanized after fabrication and shall have a waterstop located in the center of the wall. Sleeves shall be provided with seals and shall be sized as required for the installation of seals. Sleeves shall terminate flush with finished surfaces of walls and ceilings, and shall extend 2 inches above the finished floor unless otherwise shown on the Drawings.

1. Wall sleeves shall be installed for all piping passing through building walls and floors, except where noted on the Drawings. Sleeves shall be of sufficient size to pass the pipe without binding. Escutcheons shall be provided at walls and floor to completely conceal the sleeves smaller than 3 inches. Escutcheons shall be 304 SS split-type.

B. Wall Sleeve Seals: Wall sleeve seals shall be modular mechanical type consisting of interlocking synthetic rubber links shaped to continuously fill the annular space between the pipe and wall sleeve. Links shall be loosely assembled with bolts to form a continuous rubber belt around the pipe with a pressure plate under each bolt head and nut. After the seal assembly is positioned in the sleeve, tightening of the bolts shall cause the rubber sealing elements to expand and provide an absolutely water-tight seal between the pipe and wall sleeve. The synthetic rubber shall be suitable for exposure to sludge and groundwater. Bolts, nuts and hardware shall be 18-8 stainless steel. The seals shall be Link Seal as manufactured by Thunderline Corporation or equal, and the wall sleeve and seal shall be sized as recommended by the seal manufacturer.

C. Wall Pipes: Wall pipes shall be of the size and types indicated on the Drawings. All wall pipes shall be of ductile iron and shall have a central fin not less than two inch thick and the same diameter as the bolting flange cast midway of the length to form a waterstop. Each wall pipe shall be of the same grade, thickness and interior coating as the piping to which it is joined. Those portions of the wall pipes that are buried shall have a coal tar epoxy outside coating.

D. Non-Standard Fittings and Castings: Fittings having non-standard dimensions and cast especially for this project shall be of an approved design. Fittings shall be manufactured to meet the requirements of the same specifications and shall have the same diameter and thickness as standard fittings but laying lengths and types of ends shall be determined by positions in the pipelines and by the particular piping to which it is connected. Flange facing and drilling shall conform to the 125 pound American National Standards Institute. Where require, flanges shall be drilled and tapped for studs. Other dimensions shall be substantially equal to corresponding parts of standard bell and spigot fittings.

2.05 PIPE COUPLINGS

A. Couplings:

1. Pipe couplings used to joint two pieces of plain end pipe shall be sized to suit the outside diameter of the pipe ends to be jointed. Transition couplings shall be used to join pipes of different outside diameters. Pipe couplings shall be bolted type with steel middle ring and end followers. The couplings shall be restrained for the test pressure of line using approved retaining system.

2. All carbon steel parts of the coupling shall be coated on the interior and exterior with a fusion bonded thermosetting epoxy coating with a 12 mil nominal coating thickness. The coating shall be equal to AL-CLAD as manufactured by Dresser Industries, Inc.

3. Gaskets for the coupling shall be wedge type manufactured of Buna-N resilient rubber.

. Bolts shall be manufactured of high strength Type 304 stainless steel with Type 316 stainless steel hexagonal nuts. Bolts and nuts shall conform dimensionally to ANSI/AWWA C111, latest revision.

5. Couplings shall be Style 38 as manufactured by Dresser Industries, Inc. or an equal approved by the Engineer.

2.06 PVC BALL AND BALL CHECK VALVES

A. PVC Ball Valves: All PVC ball valves 2 inch through 4 inch in size shall be of a one piece capsule type manufactured of Type 1, Grade 1 PVC. Ball valves shall be true union design with two-way blocking capability and shall have solvent welded socket or NPT threaded ends. Ball valves shall have Teflon seats with Viton backing cushions and Viton O-ring seals, and shall be designed for a 150 psi water working pressure at 120° F. Valves shall be supplied with ABS lever operating handles. PVC ball valves shall be manufactured by Asahi/America, or equal approved by the Engineer.

B. PVC Ball Check Valves: All PVC ball check valves 1 inch through 2-1/2 inch in size shall be of a solid thermoplastic construction manufactured of Type 1, Grade 1 PVC. Ball check valves shall be true union design with solvent welded socket or NPT threaded ends. Ball check valves shall be furnished with a solid thermoplastic ball. Ball seat shall be Teflon coated Viton. The same seal shall function as both the ball seat and the union seal. PVC ball check valves shall be designed for a 150 psi water working pressure at 120° F. Valves shall be manufactured by Asahi/America, or an equal approved by the Engineer.

2.07 GATE VALVES

A. Bronze Gate Valves: Gate valves installed aboveground, less than 2 inches in size and smaller, shall be Class 150 all bronze valves conforming to Fed. Spec. WW-V-54d, Type I, Class B designed for a non-shock water pressure of 300 psi. Bronze for valve body and internals shall be in accordance with ASTM B16.18. Valves shall be furnished with screwed ends, handwheel operator, non-rising stem, one-piece solid wedge disc and screwed bonnet. Valves shall be as manufactured by Crane, Powell or an approved equal.

B. Ductile Iron Gate Valves:

1. Ductile iron gate valves shall open by turning to the left (counter-clockwise), when viewed from the stem. When fully open, gate valves shall have a clear waterway equal to the nominal diameter of the pipe. Operating nut or hand wheel shall have an arrow cast in the metal indicating the direction of opening. Each valve shall have the manufacturer's distinctive marking, pressure rating and year of manufacture cast in the body. Prior to shipment from the factory, each valve shall be tested by applying to it a hydrostatic pressure equal to twice the specified working pressure. Hydrostatic and leakage tests shall be conducted in strict accordance with ANSI/AWWA C509, latest revisions.

2. Gate valves with nominal sizes from 2 to 24 inches shall conform to ASNI/AWWA C509, latest revision, and shall be designed for a minimum working pressure of 250 psi. Valves shall be ductile iron body resilient seat type with O-ring stem seals. The valve stem, stem nut, glands and bushings shall be manufactured of zinc free bronze. Valve disc shall be constructed to assure uniform seating pressure between disc seat ring and body seating surface. Resilient seat of valve shall be formed by a special corrosion and chloramine resistant, synthetic elastomer which is permanently bonded to and completely encapsulates a ductile iron valve disc.

   Interior of valve body shall be coated with a fusion bonded, thermosetting epoxy coating in accordance with AWWA C550, latest revision. Coating shall be holiday free with a minimum thickness of 12 mils. Surfaces shall be clean, dry and free from rust and grease before coating. Exterior surfaces shall be coated as specified hereinafter. Resilient seated type gate valves shall be as manufactured by U.S. Pipe or equal.

3. Valve Joints: All gate valves shall have either mechanical joint, restrained joint or flanged ends to fit the pipe run in which they are to be used. Gate valves installed on push on joint pipe shall have mechanical joint ends unless otherwise specified.

4. Valve Operators: Gate valves shall open left (counterclockwise) when viewed from the stem. Unless otherwise shown on the Drawings or specified herein, gate valves shall have non-rising stems. Buried gate valves shall be furnished with a 2 inch square AWWA standard nut operator with a valve box and cover. Gate valves located aboveground or inside structures shall be furnished with a handwheel operator which shall have an arrow cast in the metal indicating the direction of opening. Gate valves used as isolation valves for reduced pressure backflow preventers shall be of the open screw and yoke (OS&Y) design with a handwheel operator.

5. Exterior Valve Coatings: All exterior surfaces of iron body gate valves shall be clean, dry and free from rust and grease before coating. For buried service, the exterior ferrous parts of all valves shall be coated at the factory with coal tar epoxy with a minimum total finish dry film thickness of 20 mils. Prior to backfilling, all uncoated units, bolts, glands, rods and other parts of joints shall be coated in the field with coal tar epoxy equal to Kop-Coat Bitumastic No. 300-M. For valves installed aboveground, the exterior ferrous parts of all valves shall be shop primed at the factory with one coat, minimum dry film thickness 1.5 mils of a primer with rust-inhibitive pigments and synthetic resins. Following installation, aboveground valves shall be finish painted in accordance with manufactures recommendations.

2.08 PLUG VALVES

A. General: Plug valves shall be non-lubricated eccentric type with flanged or mechanical joint ends as specified below. Valves shall open by turning to the left (counterclockwise), when viewed from the stem. Port area of valves shall be a minimum of 80 percent of full pipe area. Valve pressure ratings, body flanges and wall thicknesses shall be in full conformance with ASNI B16.1, latest revision. Valves shall seal leak-tight against full rated pressure in both directions. Prior to shipment from the factory, each valve shall be hydrostatically tested as follows: Valve seats shall be tested to provide leak tight shut off to 175 psi for valves through 12 inch and 150 psi for valves 14 inches and larger, with pressure in either direction. In addition, a hydrostatic shell test shall be performed with a plug open to a pressure twice that of rating specified above to demonstrate overall pressure integrity of the valve body. Plug valves shall be eccentric plug valves as manufactured by DeZurik, Milliken, or approved equal.

B. Eccentric Plug Valves: Eccentric plug valves shall be Series 100 as manufactured by DeZurick or equal. Valve bodies shall be constructed of high strength cast iron conforming to ASTM A126, Class B and AWWA C504, latest revisions. Valve bodies shall be cast with raised eccentric seats which have a corrosion resistant welded in overlay of not less than 90 percent pure nickel on all surfaces contacting the plug face. Valve seats shall be in accordance with AWWA C504 and AWWA C507, latest revisions. Valves shall be furnished with resilient faced plugs with Neoprene facing, suitable for use with sludge.

Valves shall be furnished with replaceable, permanently lubricated, stainless steel, sleeve-type bearings in the upper and lower plug stem journals. Plug stem bearings shall comply with AWWA C504 and C507, latest revisions. Valves shall be bolted bonnet design. Valves shaft seals shall be designed so that they can be repacked without removing the bonnet and the packing shall be adjustable. Packing material shall be Buna-Vee type packing. Valve shaft seals shall be in accordance with AWWA C504 and AWWA C507, latest revisions. All exposed valve nuts, bolts, springs, washers and the like shall be Type 304 stainless steel.

C. Interior Valve Lining: All interior ferrous surfaces of the valve that will have contact with the leachate except the valve seating surfaces shall be coated with a factory applied, fusion bonded, thermosetting epoxy coating in accordance with AWWA C550, latest revisions. Coating shall be holiday free with a minimum thickness of 12 mils. Surfaces shall be clean, dry and free from rust, oil and grease before coating.

D. Exterior Valve Coating: All exterior surfaces of plug valves shall be clean, dry and free from rust and grease before coating. For buried service, the exterior ferrous parts of all valves shall be coated at the factory with coal tar epoxy with a minimum total finish dry film thickness of 20 mils. Prior to backfilling, all uncoated nuts, bolts, glands, rods and other parts of joints shall be coated in the field with coal tar epoxy equal to Kop-Coat Bitumastic No. 300-M. For valves installed above ground, the exterior ferrous parts of all valves shall be shop primed at the factory with one coat, minimum dry film thickness 1.5 mils, of a primer with rust inhibitive pigments and synthetic resins. Following installation aboveground valves shall be finish painted in accordance with manufacturer's recommendations.

E. Valve Joints: All plug valves installed aboveground, in valve vaults or on flanged piping shall have flanged ends. Flanges shall comply with facing, drilling and thickness of ANSI Standards for Class 125 dimension. Nuts and bolts for flanged connections in valve vaults or corrosive atmospheres shall be Type 316 stainless steel in accordance with ASTM A320, Class 2. Nuts and bolts for aboveground installations or non-corrosive atmospheres shall be carbon steel in accordance with ASTM A307, Grade B. All buried plug valves shall have mechanical joint ends with dimensions, bolting patterns and assembly in strict accordance with ANSI/AWWA C111, latest revision. Tee head bolts and nuts for mechanical joints shall be manufactured of CORTEN-A, high strength, low alloy, corrosion resistant steel as manufactured by NSS Industries, Plymouth, Michigan or an equal approved by the Engineer.

F. Mechanical Valve Actuators:

1. All plug valves installed in valve vaults or buried underground shall have actuators designed for buried and submerged service. Valves shall have seals on all shafts and gaskets on valve and actuator covers to prevent entry of water and dirt. Actuator mounting brackets for buried and submerged service shall be totally enclosed and shall have gasket seals. All exposed valve nuts, bolts, springs, washers and the like shall be Type 304 stainless steel.

2. All plug valves 6 inch in size and larger shall be furnished with mechanical gear actuators. Gear actuators shall be furnished with AWWA Standard 2 inch square operating nuts for buried valves, or handwheel, chainwheel or 2 inch square nut operators for aboveground or valve vault installation, as shown on the Drawings. Gear actuator shall be sized for the maximum pressure differential across the valve, equal to the pressure rating of the valve. All gearing shall be enclosed in a high strength cast iron housing, suitable for running in a lubricant. Housing shall be provided with seals on all shafts to prevent the entry of dirt and water into the actuator. Actuator shaft and quadrant shall be supported on permanently lubricated bronze bearings. Actuator shall clearly indicate valve position for aboveground and valve vault installations and an adjustable stop shall be provided to set closing torque. Actuator shall be capable of withstanding an over-torque without damage up to 450 foot pounds for 2 inch square nut operators and to 300 foot pounds for handwheel or chainwheel operators.

3. Four inch and smaller aboveground valves shall be furnished with manual actuators, one-quarter turn to open. Actuator shall be supplied with an AWWA Standard 2 inch operating nut with a standard valve operating lever.

2.09 BUTTERFLY VALVES

A. General: All butterfly valves shall be of the tight closing, rubber seat type with rubber seats that are securely fastened to the valve body or disc. No metal to metal seating surfaces will be permitted. Valves shall be bubble tight at rated pressures with flow in either direction, and shall be satisfactory for applications involving throttling service and/or frequent operation and for applications involving valve operation after long periods of inactivity and for buried installation. Valve discs shall rotate 90 degrees from the full open position to the tight shut position. Valves shall meet the full requirements of AWWA Standard C 504 for Class 150B, short body, flanged or mechanical joint as required. Wafer design valves are not acceptable, except when indicated on the Drawings. The manufacturer shall have manufactured tight closing, rubber seat butterfly valves for a period of at least five years. All valves shall be Henry Pratt Company, DeZurik, Mueller, or equal.

B. Valve Body: Valve bodies shall be constructed of cast iron ASTM A126 Class B or ASTM A48 Class 40. Ends shall be mechanical joint for buried service and flanged for aboveground use. Flange drilling shall be 125 pound in accordance with ANSI B16.1. Two trunnions for shaft bearings shall be integral with each valve body. When disc has the rubber seat, the valve body shall have a 18-8 Type 304 stainless steel body seat. The port diameter shall be no smaller than one inch less than the nominal valve size.

C. Valve Shaft: The valve shaft may consist of a one piece unit extending completely through the valve unit or may be the "stub shaft" type. Materials to be stainless steel 18-8 Type 304.

D. Valve Discs: Valve discs shall be constructed either of cast iron ASTM A126 Class B, ductile iron ASTM A536 or cast iron ASTM A48 each with Type 316 stainless steel seating

edge or the entire disc may be constructed of cast 316 stainless steel. The stainless steel seating edge is not applicable to rubber seat disc type valves.

E. Valve Seats: Valve seats shall be of a synthetic or natural rubber compound and any be mounted on the valve body.

F. Valve Bearings: Valves shall be fitted with sleeve type bearings. Bearings shall be corrosion resistant and self-lubricating.

G. Valve Packings: Packing shall be self-adjusting Chevron type or of the O-ring type.

H. Interior and Exterior Valve Coatings: The valve shall be coated similarly as described in Section 2.07 B(2) and B(5).

2.10 SWING CHECK VALVES

A. Swing check valves 2-inch through 12-inch in size shall conform to AWWA C-508, latest revision, and shall be designed for a minimum water working pressure of 150 psi. Check valves shall have cast iron body, swing type and ends shall be flanged, Class 125 in accordance with ANSI B16.1 When open, the valve shall have a straight way passage with a minimum flow area equal to the full pipe area. Swing check valves shall be completely bronze fitted with renewable bronze seat ring and a rubber faced disc; valve hinge pin shall be stainless steel. Check valves shall be supplied with an outside lever and weight.

B. Swing check valves shall absolutely prevent the return of water back through the valve when the inlet pressure decreases below the downstream pressure. The check valve shall be constructed such that the disc and body seat ring may be easily removed and replaced without removing the valve from the line. Each valve shall by hydrostatically tested at the factory, at a test pressure of 300 psi.

C. Interior Valve Coating: Prior to shipment from the factory, the interior ferrous surfaces of the valve, except for finished, non-ferrous or bearing surfaces, shall be coated with a fusion bonded, thermosetting epoxy coating in accordance with AWWA C-550, latest revision. Coating shall be holiday-free with a minimum thickness of 12 mils. Surfaces shall be clean, dry and free from rust and grease before coating.

D. Exterior Valve Coating: All exterior surface of swing check valves shall be clean, dry and free from rust and grease before coating. For valves installed in below ground valve vaults, the exterior ferrous parts of all valves shall be coated at the factory with coal tar epoxy with a minimum total finish dry film thickness of 20 mils. Following installation, all uncoated nuts, bolts, glands, rods and other parts of joints shall be coated in the field with coal tar epoxy equal to Kop-Coat Bitumastic No. 300-M. For valves installed aboveground, the exterior ferrous parts of all valves shall be shop primed at the factory with one coat, minimum dry film thickness 1.5 mils of a primer with rust-inhibitive pigments and synthetic resins. Following installation aboveground valves shall be finish painted in accordance with manufacturer’s recommendations.

E. All swing check valves shall be provided with a limit switch to indicate valve close position to pump starter, VFD, or control panel.

2.11 SERVICE SADDLES AND CORPORATION STOPS

A. Service Saddles: Service saddles shall have ductile iron bodies in accordance with ASTM A536, latest revision, with double stainless steel straps. Bodies shall be brass or ductile iron, body shall have a fusion bonded nylon coating with a minimum thickness of 12 mils. Straps shall be Type 304 stainless steel with premium grade Type 304 L stainless steel bolts and Type 304 stainless steel washers and nuts. The nuts shall be Teflon coated.

The gasket material shall be an elastomeric compound resistant to degradation by oil, natural gas, acids, alkalies, most aliphatic fluids and leachate. The outlet of the saddle shall have NPT threads. Service saddles shall be Rockwell No. 317, Ford or an equal approved by the Engineer.

B. Corporation Stops: Corporation stops shall be all bronze construction in accordance with AWWA C80, latest revision. Inlet threads shall be NPT iron pipe threads and the outlet connections shall be of the packed joint type suitable for use with Schedule 80 PVC pipe. Corporation stops shall be Ford Ball Corp Type FB 1102, McDonald or an equal approved by the Engineer.

C. Polyethylene Tubing. Service tubing shall be nominal wall polyethylene tubing conforming to the requirements of ASTM D-2737 and AWWA C-901. Tubing shall be manufactured from prime virgin PE-3408 high density polyethylene (HDPE) resin. Each coil of tubing shall be spiral wrapped with four (4) inch wide black .004 polyethylene film with minimum twp percent (2%) carbon black content to shield the tubing from ultraviolet and violet light. Reclaimed water service tubing shall be lavender in color.

D. Tubing shall be DR 9.0 CTS OD and supplied in 100 foot rolls. Tubing shall conform to all requirements set forth in AWWA C901. Tubing shall be marked with the following information at not more than 5 foot intervals: nominal size, material code designation, dimension ration and diameter base, AWWA pressure class, AWWA designation and manufacturer's name or trademark and product record code.

E. Fittings for use with polyethylene (PE) tubing shall be brass containing a pressure sealing O-ring and undirectional grip ring and shall be designed for "press-on" or "stab-on" installation, and manufactured by Ford Meter Box Company.

2.12 FLEXIBLE EXPANSION JOINTS

A. Flexible expansion joints shall be of the molded wide arch design manufactured of chloroprene (neoprene) rubber with polyester reinforcement. Chloroprene (neoprene) body shall be supplied with a hypalon coating. Joints shall be flanged suitable for 150 psi water working pressure and in accordance with ANSI B16.1 dimensions and bolting patterns. Flanged ends shall be furnished and galvanized, split ductile iron retaining rings.

B. Provide limit restraint bolts on all pump suction and discharge lines. Expansion joints six inches and larger in size shall have a minimum of four limit restraint bolts. Restraint bolts and nuts shall be Type 304 stainless steel.

C. Minimum performance for flexible expansion joints shall be as follows:

Size (in.)	Axial Compression (inches)	Axial Elongation (inches)	Lateral Deflection (inches)	Angular Deflection (degrees)
2	1-3/4	3/4	3/4	30
3	d.o.	d.o.	d.o.	30
4	d.o.	d.o.	d.o.	25
5	d.o.	d.o.	3/4	25
6	d.o.	d.o.	1	20
8	d.o.	d.o.	d.o.	20

D. Flexible expansion joints shall be Style 1015 Maxi-Joint as manufactured by General Rubber Corporation, Style 100 Metrasphere as manufactured by the Metraflex Company or an equal approved by the Engineer. Flexible joints for pump suction and discharge piping shall be designed for leachate service at 250°F.

2.13 PRESSURE GAUGE ASSEMBLIES

A. Pressure gauges shall have the following design features: glycerin filled, 2 inch dial, aluminum dial with black numerals on white background, Type 316 stainless steel bourdon tube and movement, 300 series stainless steel case and ring, safety glass lens, threaded lens retaining ring, adjustable pointer with over-pressure stop and zero pointer stop, blowout protection, 2 inch Type 316 stainless steel stem mounting, and 1.0 percent accuracy based on full scale. Provide Type 316 stainless steel pressure snubbers on all gauges not protected by seals. Pressure gauges shall be as manufactured by U.S. Gauge, Ashcroft, Marshalltown, Marsh, or approved equal.

B. Pressure Gauge Service and Ranges: Pressure gauges shall be furnished for the following services with the indicated ranges. Diaphragm seals shall be furnished for gauges as indicated.

2.14 VALVE BOXES

A. Furnish, assemble, and place a valve box over the operating nut for each buried valve. The valve box shall be designed so as to prevent the transmission of surface loads directly to the valve or piping.

B. Valve boxes shall be of the adjustable slide type of suitable length with an interior diameter of not less than five inches. The valve boxes shall be manufactured of cast iron and shall be of the two piece design including a bottom section and top section with cover. The cast iron cover shall be shaped and labeled for the appropriate service designation. The top

section shall be adjustable for elevation and shall be set to allow equal movement above and below finished grade.

C. The castings shall be manufactured of clean, even grain, gray cast iron conforming to ASTM A48, Class 30B for Gray Iron Castings; and shall be smooth, true to pattern, free from blow holes, sand holes, projections and other harmful defects. The seating surfaces of both the cover and the top section shall be machined so that the cover will not rock after it has been seated.

D. The valve boxes shall be coated inside and outside with an asphaltic coating prior to machining, so that the machined seating surfaces will be free of any coating. Cast iron valve box assemblies shall be Clow Corp. No F2452, Tyler Corp. Series 6855 or 6865 or an approved equal.

E. Valve extension stems shall be provided for all buried valves when operating nut is deeper than three feet below final grade.

2.15 TIE RODS

A. When prior approval is obtained from the Engineer, ductile iron pipe, fittings, and valves may be restrained using tie bolt joint restraint. Joint restraint materials for this method of restraint shall be the Super-Star SST Series Joint Restraint Joint System as manufactured by Star National Products, a Division of Star Industries, Inc., Columbus, Ohio, or an equal approved by the Engineer.

B. All bolts, nuts, washers, tie rods and other fasteners for the joint restraint system shall be manufactured of CORTEN high strength, low alloy, corrosion resistant steel in conformance with ASTM A242. Tie bolts shall be manufactured of heat treated CORTEN steel. Tie rods and all fasteners for the system shall be galvanized in conformance with the requirements of ASTM A123. Tie rods shall have a minimum diameter of 3/4 inch. The number of tie rods required per joint shall be as recommended by the manufacturer.

C. Prior to backfilling after installation, all parts of the joint restraint system shall be coated with coal tar epoxy equal to Kop-Coat Bitumastic No. 300-M, for a minimum dry film thickness of 20 mils.

2.16 REDUCED PRESSURE BACKFLOW PREVENTERS

A. Standards of Construction: Backflow prevention devices shall be manufactured in accordance with AWWA C506, latest revision, American Society of Sanitary Engineering Standards, and the University of Southern California Foundation for Cross Connection Control and Hydraulic Research "Manual of Cross Connection Control", latest edition.

. Product Handling: Exercise care in transporting and handling backflow preventers to avoid damage. Inside of backflow preventers shall be kept free of dirt and debris.

C. Reduced pressure principle backflow preventers shall include an integral sensing system that will automatically open a relief valve whenever the differential pressure between the inlet supply and the reduced pressure zone drops to 2 psi. The relief valve shall remain open until a positive pressure differential of 2 psi is re-established. if pressure upstream of the first check valve drops to atmospheric or below, the relief valve shall remain fully

open providing an internal air gap between the first check valve and the water level in the reduced pressure zone. The unit shall also be constructed such that any minor leakage of the second check valve will result in visible flow from the relief valve, event if the first check valve is totally disabled.

. Reduced pressure principle backflow preventers shall have all bronze bodies for sizes 22 inches and smaller and all ductile iron bodies for sizes 3 inches and larger. Ductile iron bodies shall be coated with a fusion bonded thermosetting epoxy coating in accordance with AWWA C550 with a minimum, holiday free, coating thickness of 12 mils. The reduced pressure backflow preventer shall consist of two independently operated, spring loaded, wye pattern, poppet type check valves designed for installation in a normal horizontal flow attitude. An independent spring loaded relief valve shall be located between the two check valves. Check valve assemblies, springs and seats and all other internal parts shall be constructed of Type 316 stainless steel. Relief valve body and trim shall be constructed of bronze. Check valve and relief valve seats shall be field replaceable without removing the device from the service line. Backflow preventers shall be designed for a working pressure of 200 psi and a temperature range of 32°F to 140°F. The backflow preventer shall be manufactured as a complete unit including test cocks, and upstream and downstream isolation valves. The test cocks shall be manufactured of bronze and shall be arranged such that the unit can be tested without removing the unit from the line.

E. Isolation Valves: Reduced pressure backflow preventers shall be furnished complete with isolation valves, For sizes 22 inches and smaller, the isolation valves shall be all bronze ball valves with Buna N O-rings and valve seats, and a lever operating handle. Ball valves shall be in accordance with AWWA C80, latest revision. For sizes 3 inches and larger, the isolation valves shall be resilient seated gate valves with flanged ends and OS&Y handwheel operators. Gate valves shall be as specified and described hereinbefore.

F. Exterior Coating: The exterior ferrous surfaces of the reduced pressure backflow preventer and the isolation valves shall be shop primed at the factory with one coat, minimum dry film thickness 1.5 mils of a primer with rust inhibitive pigments and synthetic resins compatible with the finish coats. Following installation, the backflow preventer unit and aboveground piping shall be finish painted in accordance with manufacturer’s recommendations. All surfaces to be coated shall be clean, dry and free of rust, oil and grease.

G. Acceptable Manufacturers: Reduced pressure principle backflow preventers shall Model 825 as manufactured by Febco, or an equal approved by the Engineer.

2.17 TAPPING SLEEVES AND VALVES

A. Tapping sleeves shall be designed for a water working pressure of 150 psi and shall be mechanical joint end type. Tap shall be done under pressure and without interruptions of service. Taps shall be tested at factory to 175 psi.

B. Tapping valves shall be as specified herein under Gate Valves.

C. The manufacturer shall furnish the services of a supervisor who will direct all operations for the installation of material, attachment of tapping machine and operation of the machine

in making the connection. The Contractors shall bear all such rental and supervision costs, and all other related costs.

D. Tapping sleeves and valves shall be the product of one of the following manufacturers, or equal: Mueller, Clow, M&H.

2.18 FLANGED ADAPTERS (WHEN APPLICABLE)

A. For joining plain end or grooved end pipe to flanged pipes and fittings.

B. Adapters shall conform in size and bolt hole placement to ANSI standards for steel and/or cast iron flanges 125 or 150 pound standard unless otherwise required for connections.

C. Exposed Sleeve Type:

1. Constructed from steel.

2. Coating: In accordance with manufacturer's recommendations.

3. Bolts: Carbon steel.

4. Acceptable Manufacturers:

a. Dresser Manufacturing Company - Style 128 for cast iron ductile iron and steel pipes with diameters of two (2) inches through 96 inches.

b. Or equal.

2.19 FIRE HYDRANTS

A. Hydrants shall comply with AWWA Standard C402 "Fire Hydrants for Ordinary Water Works Service", and shall be equipped with a minimum of one (1) pump outlet nozzle 4 inches in diameter and two (2) hose nozzles 2 inches in diameter. Threads, nozzle caps, operating nuts and color shall conform to City standards. Units shall be traffic types with breakable safety clips, or flange, and stem, with safety coupling located below barrel break line to preclude valve opening. Hydrants shall be dry top. Outlet nozzles shall be on the same place, with minimum distance of 18 inches from center of nozzles to ground line. Valve shall be compressive type with 52 inches minimum opening and hose inlet connection to be 6 inches minimum. Hydrants shall open left by Mueller A-423 or Clow Medallion Hydrant (AWWA C-502). Hydrants must drain.

PART 3 - EXECUTION

3.01 INSPECTION

A. All pipe, fittings, valves and other material shall be subject to inspection and approval by the Engineer after delivery, and no broken, cracked, imperfectly coated, or otherwise damaged or unsatisfactory material shall be used. When a defect or crack is discovered, the injured portion shall not be installed. Cracked pip shall have the defect cut off at least 12 inches from the break in the sound section of the barrel.

3.02 GENERAL INSTALLATION REQUIREMENTS

A. Excavation, backfill, and compaction shall conform to the provisions of Section 31 23 00.

1. Pipe Cradle: Upon satisfactory installation of the pipe bedding material as specified, a continuous trough for the pipe barrel and recesses for the pipe bells or couplings shall be excavated by hand digging. When the pipe is laid in the prepared trench, true to line and grade, the pipe barrel shall receive continuous, uniform support and no pressure will be exerted on the pipe joints from the trench bottom.

B. Cover for underground piping shall not be less than that indicated on the Drawings. The minimum cover for pipe shall be 36 inches. In areas where other piping conflicts preclude the maximum cover desired, the piping shall be laid to provide the maximum cover obtainable.

C. Pipe, fittings, valves and accessories shall be installed as shown or indicated on the Drawings.

D. All connections to existing piping systems shall be made as shown or indicated on the Drawings after consultation and cooperation with authorities of the Owner.

E. Pipe Joint Deflection: Whenever it is desirable, and approved by the Engineer, to deflect pipe joints to avoid obstructions or to maintain required alignment, the amount of the joint deflection shall not exceed eighty percent (80%) of the maximum limits allowed by the pipe manufacturer.

F. In preparation for pipe installation, placement (stringing) of pipe should be as close to the trench as practical on the opposite side of the trench from the excavated material. The bell ends of the pipe should point in the direction of the work progress.

G. Pipe and fittings shall be laid accurately to the lines and grades indicated on Drawings or required. Where grades for the pipeline are not indicated on the Drawings, maintain a uniform depth of cover with respect to finish grade. Care shall be taken to insure a good alignment both horizontally and vertically and to give the pipe a firm bearing along its entire length. Any pipe which has its grade or joint disturbed after laying shall be taken up and re-laid.

H. All pipe and fittings shall be cleared of sand, dirt, and debris before laying. All precautions shall be taken to prevent sand, dirt or other foreign material from entering the pipe during installation. If necessary, a heavy, tightly woven canvas bag of suitable size shall be placed over each end of the pipe before lowering into the trench and left there until the connection is made to the adjacent pipe. Any sand, dirt, or other foreign material that enters the pipe shall be removed from the pipe immediately. Interior of all pipe and fittings shall be kept clean after installation until acceptable in the complete work.

I. Any time that pipe installation is not in progress, the open ends of pipe shall be closed by a watertight plug or other method approved by the Engineer. Plugs shall remain in pipe ends until all water is removed from the trench. No pipe shall be installed when trench conditions are unsuitable for such work, including standing water, excess mud, or rain.

J. After pipe has been laid, inspected, and found satisfactory, sufficient backfill shall be placed along the pipe barrel to hold the pipe securely in place while conducting the preliminary

hydrostatic test. No backfill shall be placed over the joints until the preliminary test is satisfactorily completed, leaving them exposed to view for the detection of visible leaks.

K. Upon satisfactory completion of the hydrostatic test, backfilling of the trench shall be completed.

L. Aboveground and Exposed Piping: Piping shall be cut accurately to measurements established at the job site and shall be worked into place without springing or forcing, properly clearing all equipment access areas and openings. Changes in sizes shall be made with appropriate reducing fittings. Pipe connections shall be made in accordance with the details shown and manufacturer's recommendations. Open ends of pipe lines shall be properly capped or plugged during installation to keep dirt and other foreign material out of the system. Pipe supports and hangers shall be provided where indicated or as required to insure adequate support of the piping.

3.03 INSTALLATION OF DUCTILE IRON PIPE

A. Handling and Cutting Pipe:

1. Care shall be taken in handling, cutting, and laying ductile iron pipe and fittings to avoid damaging the pipe and interior coal tar epoxy or cement mortar lining, scratching or marring machined surfaces, and abrasion of the pipe coating. All cracked pipe and fittings shall be removed at once from the work at no additional cost to the Owner.

2. Pipe cutting shall be done in a neat workmanlike manner without creating damage to the pipe and interior coal tar epoxy or cement mortar lining. Ductile iron pipe may be cut using an abrasive pipe saw, rotary wheel cutter, guillotine pipe saw, milling wheel saw or oxyacetylene torch. Cut ends and rough edges of ductile iron pipe shall be ground smooth. For push-on joint connections, the cut end shall be beveled to prevent gasket damage during joint assembly. Interior lining shall be repaired at cut ends per the manufacturer's instructions prior to joint assembly.

B. Laying Pipe and Fittings:

1. Bedding for Ductile Iron Pipe: Minimum bedding requirements shall be Type 2 as defined in ANSI/AWWA C600, latest revision. Provide proper bedding required, in accordance with thickness class of pipe being laid and depth of cover. Proper pipe laying conditions shall be in accordance with ANSI/AWWA C150 and C151, latest revision, and ANSI/AWWA C600, latest revision.

2. All ductile iron pipe and fittings shall be laid in accordance with American Water Works Association Standard ANSI/AWWA C600, latest revision, entitled "Standard for Installation of Ductile Iron Water Mains and Their Appurtenances", with the following sections specifically applying:

a. Section 3.3 - Pipe Installation

b. Section 3.4 - Joint Assembly

C. Ductile Iron Pipe Joints:

. Type: The joints of all pipelines shall be made absolutely tight. The particular joint used shall be approved by the Engineer prior to installation. Where shown on the Drawings or where, in the opinion of the Engineer, settlement or vibration is likely to occur, all pipe joints shall be bolted mechanical type or restrained type as specified above, or as indicated on the Drawings.

2. Push-on Joints: Push-on joints shall be made in strict accordance with the the manufacturer's recommendations. Lubricant, if required, shall be an inert, non-toxic, water soluble compound incapable of harboring, supporting, or culturing bacterial life. Manufacturer's installation recommendations shall be submitted to the Engineer for review and approval before commencing work. The bell of the pipe shall be cleaned of excess tar or other obstructions and wiped out before the cleaned and prepared spigot of the next pipe is inserted. The new pipe shall be shoved firmly into place until properly seated and held securely until the joint has been completed.

3. Mechanical Joint: All types of mechanical joint pipes shall be laid and jointed in full conformance with manufacturer's recommendations, which shall be submitted to the Engineer for review and approval before work is begun. Only skilled workmen shall be permitted to makeup mechanical joints. Torque wrenches, set as specified ion AWWA Standard C111, shall be used; or spanner type wrenches not longer than specified therein may be used without the permission of the Engineer.

4. Flanged Joints: Flanged joints shall be made up by inserting the gasket between the flanges. The threads of the bolts and the faces of the gaskets shall be coated with suitable lubricant immediately before installation.

5. Restrained Joints: Restrained joints shall be provided where indicated on the Drawings. Joint assembly shall be made in strict accordance with the manufacturer's instructions, which shall be submitted to the Engineer for review and approval before commencing work.

3.04 INSTALLATION OF PVC PIPE

A. Storage and Handling:

1. PVC pipe shall be delivered to the site in unbroken bundles packaged in such manner as to provide protection against damage. When possible, pipe should be stored at the job site in the unit packages until ready for use. Packaged units shall be handled using a forklift or a spreader bar with fabric straps. Packaged units shall not be stacked at the job site higher than two units high.

2. When it is necessary to store PVC pipe for long periods of time, exposure to direct sunlight shall be prevented by covering the pipe with an opaque material. Adequate air circulation above and around the pipe shall be provided as required to prevent excessive heat accumulation. PVC pipe shall not be stored close to heat sources of hot objects such as heaters, fires, boiler, or engine exhaust. Pipe gaskets shall be protected from excessive exposure to heat, direct sunlight, ozone,

oil and grease. The interior and all sealing surfaces of pipe, fittings, and other appurtenances shall be kept clean and free of dirt and foreign matter.

3. Care shall be taken in handling and laying pipe and fittings to avoid severe impact blows, crushing, abrasion damage, gouging or cutting. Pipe shall be lowered, not dropped, from trucks or into trenches. All cracked, damaged, or defective pipe and fittings, or any length of PVC pipe having a gouge, scratch or other permanent indentation of more than ten percent (10%) of the wall thickness in depth, shall be rejected and removed at once from the work and replaced with new acceptable pipe at no additional cost to the Owner.

B. Field Cutting PVC Pipe: Field cutting of pipe shall be done in a neat workmanlike manner without creating damage to the pipe. The pipe shall be cut square with a fine-toothed hand or power saw, or other cutter or knife designed for use with plastic pipe. Prior to cutting, the pipe shall be marked around its entire circumference or a square in vise shall be used to ensure the pipe end is cut square. Remove burrs by smoothing edges with a knife, file, or sandpaper.

1. Field Cutting Bell and Spigot PVC Pipe: Bevel the cut end of the pipe using a pipe beveling tool, wood rasp or portable sander to prevent damage to the gasket during joint assembly. A factory finished beveled end should be used as a guide to ensure proper beveling angle and correct depth of bevel. Round off any sharp edges on the leading edge of the bevel with a knife or file.

C. Laying PVC Pipe:

1. Pipe Bedding: Bedding for PVC pipe shall be as specified using granular pipe bedding material.

2. All PVC pipes shall be laid in accordance with the pipe manufacturer's published installation guide, the AWWA Manual of Practice No. M23 "PVC Pipe-Design and Installation" and the Uni-Bell Plastic Pipe Association installation recommendations.

D. PVC Pipe Joint Assembly for Rubber Gasketed Bell and Spigot Pipe:

1. The PVC bell and spigot joint shall be assembled in accordance with the pipe manufacturer's installation instructions. Clean the interior of the bell, the gasket, and the spigot of the pipe to be jointed with a rag to remove any dirt or foreign material before assembling. Inspect the gasket, pipe spigot bevel, gasket groove and sealing surfaces for damage or deformation.

2. Lubricate the spigot end of the pipe with a lubricant supplied or specified by the pipe manufacturer for use with gasketed PVC pipe in potable water systems. The lubricant should be supplied as specified by the pipe manufacturer. After then spigot end is lubricated, it must be kept clean and free of dirt and sand. If dirt and sand adhere to the lubricated end, the spigot must be wiped clean and relubricated.

3. Insert the spigot into the bell so that it contacts the gasket uniformly. Align the pipe sections and push the spigot end into the bell until the manufacturer's reference

mark on the spigot is flush with the end of the bell. The pipe should be pushed into the bell using a bar and wood block. The joint shall not be assembled by "stabbing" or swinging the pipe into the bell, nor shall construction machinery be used to push the pipe into the bell.

4. If undue resistance to insertion of the spigot end is encountered or if the reference mark does not reach the flush position, disassemble the joint and check the position of the gasket. If the gasket is twisted or pushed out of its seat, inspect the components, repair or replace damaged items, clean the components and repeat the assembly steps. Be sure the pipe is in proper alignment during assembly. If the gasket was not out of position, check the distance between the spigot end and the reference mark and relocate the mark if it is out of position.

E. PVC Pipe Joint Assembly for Threaded and Solvent Welded Pipe

1. All threaded and solvent welded joints shall be made watertight. All pipe cutting, threading and jointing procedures for threaded and solvent welded PVC pipe joints shall be in strict accordance with the pipe and fitting manufacturer's printed installation instructions. Thread lubricant for threaded joints shall be Teflon tape only.

2. At threaded joints between PVC and metal pipes, the metal side shall contain the socket end and the PVC side the spigot. A metal spigot shall not, under any circumstances, be screwed into a PVC socket.

F. PVC forcemains underground shall be strapped every 10 feet or spiral wrapped with an insulated green No. 14 gauge copper ground wire for future location. The wire shall be stubbed out at each valve box or manhole.

3.05 FITTING INSTALLATION FOR UNDERGROUND PIPING

A. The weight of ductile iron fittings shall not be carried by the pipe on which they are installed. The fitting shall be supported by a concrete cradle as shown on the standard details. Concrete used for supports shall have a minimum compressive strength of 3000 psi at 28 days. Concrete for support cradle shall be poured against undisturbed soil.

B. All glands, clamps, bolts, nuts, studs and other uncoated parts of fitting joints for underground installation shall be coated with two coats, 10 mils DFT per coat, of coal tar epoxy equal to Kop-Coat Bitumastic No. 300-M.

3.06 CONCRETE PIPE ENCASEMENT

A. Concrete for concrete pipe encasement shall have a minimum strength of 3000 psi at 28 days and encasement shall be constructed in accordance with details shown on the Drawings. Encasement shall be constructed where:

1. Indicated on the Drawings

2. The Engineer shall order the pipeline encased.

B. The points of beginning and ending of concrete pipe encasement shall be not more than six inches from a pipe joint to protect the pipe from cracking due to uneven settlement of its foundation or the effects of superimposed live loads. Pipe shall be wrapped in visqueen.

C. Pipe encasement shall provide a minimum coverage of 6 inches all around the pipe including pipe bells.

3.07 INSTALLATION OF PIPE SLEEVES, WALL CASTINGS AND COUPLINGS

A. Pipe sleeves and wall castings shall be provided at the locations called for on the Drawings. These units shall be as detailed and of the material as noted on the Drawings. They shall be accurately set in the concrete or masonry to the elevations shown. All wall sleeves and castings required in the walls shall be in place when the walls are poured. Ends of all wall castings and wall sleeves shall be of a type consistent with the piping to be connected to them.

B. Link seals for wall sleeves shall be installed in strict accordance with the manufacturer's printed installation instructions. For watertight applications in tanks or treatment units, the link seal installation shall be tested hydrostatically for leaks at the same time as the tank or treatment unit. Any leaks that occur during the test period shall be repaired by checking the link seals for proper installation and replacement of unit(s) found to be defective at no additional cost to the Owner.

C. Pipe couplings shall be installed in strict accordance with the manufacturer's published instructions and recommendations.

3.08 INSTALLATION OF VALVES

A. Valves of the size and type shown on the Drawings shall be set plumb and installed at the locations indicated on the Drawings. Valves shall be installed in accordance with manufacturer's installation instructions and with the Details shown on the Drawings.

B. Valves shall be installed such that they are supported properly in their respective positions, free from distortion and strain. Valves shall be installed such that their weight is not borne by pumps and equipment that are not designed to support the weight of the valve.

C. Valves shall be carefully inspected during installation; they shall be opened wide and then tightly closed and the various nuts and bolts shall be tested for tightness. Special care shall be taken to prevent any foreign matter from becoming lodged in the valve seat. Check and adjust all valves for smooth operation.

D. Install valves with the operating stem in either horizontal or vertical position.

E. Allow sufficient clearance around the valve operator for proper operation.

F. Clean iron flanges by wire brushing before installing flanged valves. Clean carbon steel flange bolts and nuts by wire brushing, lubricate threads with oil or graphite, and tighten nuts uniformly and progressively. Clean threaded joints by wire brushing or swabbing. Apply Teflon joint compound or Teflon tape to pipe threads before installing threaded valves. Joints shall be watertight.

G. For buried valves, a valve box shall be centered accurately over the operating nut and the entire assembly shall be plumb. The tops of valve boxes shall be adjusted to the proper elevation as specified below and as shown on the Drawings.

1. In paved areas, tops of valve box covers shall be set flush with pavement. Following paving operations, a 16 inch square shall be neatly cut in the pavement around the box and the paving removed. The top of the box shall then be adjusted to the proper elevation and a 30 inch square by 6 inch thick concrete pad poured around the box cover. Concrete pads in traffic areas shall be reinforced with No. 4 reinforcement bars as shown on the Drawings. Concrete for the pad shall be 3000 psi compressive strength.

2. In unpaved areas, tops of valve box covers shall be set 2 inches above finished grade. After the top of the box is set to the proper elevation, a 16 inch square by 6 inch thick concrete pad shall be poured around the box cover. Concrete for the pad shall be 3000 psi compressive strength.

H. Valves shall be tested hydrostatically, concurrently with the pipeline in which they are installed. Protect or isolate any parts of valves, operators, or control and instrumentation system whose pressure rating is less than the pressure test(s). If valve joints leak during pressure testing, loosen or remove the nuts and bolts, reseat or replace the gasket, reinstall or retighten the bolts and nuts and hydrostatically retest the joints.

I. Following installation, all aboveground valves shall be painted in accordance with the painting system specified in accordance with manufacturer's recommendations. Following installation of buried valves or valves installed in valve vaults, repair any scratches, marks and other types of surface damage, etc., with a coating equal to the original coating supplied by the manufacturer. Prior to backfilling, all nuts, bolts and other parts of the valve joints shall be coated with two coats, 10 mils DFT per coat, of coal tar epoxy equal to Kop-Coat Bitumastic No. 300-M.

3.09 SEPARATION OF NON-POTABLE WATER MAINS AND POTABLE WATER MAINS

A. Reclaimed water mains shall be installed with at least a 3 foot horizontal separation from any potable water main. Force mains and gravity sewers shall have a 6 foot separation from potable mains. At crossings the installation shall provide of a minimum vertical separation distance of 12 inches between the outside of the crossing non-potable and potable water mains. This separation shall be provided where the potable water main is either below or above the non-potable water main. When the 12 inch minimum vertical separation distance cannot be maintained, the potable water main shall be encased in concrete. Concrete encasement shall be as specified above. The potable water main shall be encased for 10 feet each way of the crossing.

3.10 MAIN CLEANING AND FLUSHING

A. Following the hydrostatic and leakage tests, all the mains constructed under this contract shall be cleaned and flushed to remove sand, loose dirt and other debris. Flushing velocity shall be a minimum of 2.5 fps. Flushing shall continue until clean water flows from the main. However, the Contractor shall endeavor to use the minimum amount of flushing

water required to complete the work. To increase the efficiency of the cleaning and flushing operation, the Contractor shall use a pipeline pigging device of the proper size and designed to clean the intended pipeline. The pigging device shall be capable of turning through a standard 90 degree MJ bend. The type of pipeline pigging device and the method of operation shall be approved by the Engineer.

B. Upon completion of testing for the gravity drain line system, drain lines shall be flushed to remove dirt, sand, stones and other debris which may have entered the lines during construction and settled out in the lines and manholes. Materials and debris flushed from the drain lines shall be removed from a downstream manhole or basin and disposed of at an approved disposal area.

C. Water for flushing shall be clean water provided by the Contractor from a source approved by the Engineer and the Owner prior to beginning connections for flushing operations. Flushing shall only be completed upon approval by the Owner.

D. Temporary blow offs may be required for the purpose of flushing mains. Temporary blow offs shall be installed as close as possible to the ends of the main being flushed. Blow offs installed on the main shall be the same diameter as the main. Temporary blow offs shall be removed and plugged after the main is flushed. All costs for installing and removing temporary blow offs shall be at n additional cost to the Owner.

E. The Owner shall be notified at least three (3) working days prior to flushing mains.

F. Blow offs and temporary drainage piping used for flushing shall not be discharged into any gravity sewer or pumping station wetwell. The Contractor shall obtain prior approvals from the Engineer and the Owner as to the methods and locations of flushing water discharge.

3.11 INSTALLATION OF TIE RODS

A. Tie rods shall be installed in strict accordance with the manufacturer's written installation requirements. Unless otherwise indicated on the Drawings, the size and number of tie rods for a joint or installation shall be as recommended by the manufacturer's design chart for a working pressure of 150 psi.

B. Following installation and prior to backfilling, all parts of the tie rod joint restraint system, including tie rods, tie bolts, nuts, washers, and other fasteners, shall be coated with two (2) coats, 10 mils DFT per coat, of coal tar epoxy equal to Kop-Coat Bitumastic No. 300-M.

3.12 INSTALLATION OF REDUCED PRESSURE BACKFLOW PREVENTERS

A. Backflow preventers shall be installed at the locations shown on the Drawings. Backflow preventers shall be installed in accordance with the manufacturer's written installation instructions and as shown on the Drawings.

B. Reduced pressure principle backflow preventers shall be installed horizontally with an 18 inch minimum clearance between the finished grade and the lowest point on the bottom of the unit. Reduced pressure backflow preventers shall be installed with provisions for a suitable drain arrangement to drain off discharges from the relief valve, so that discharges are not objectionable. Backflow preventers shall be installed such that they are easily accessible for testing, maintenance and repair.

C. Piping and fittings for units three inches and larger in size shall have flanged joints. Piping, fittings and valves shall be properly supported with pipe support stands as shown on the Drawings.

D. Following installation of the reduced pressure backflow preventer, piping, fittings and valves, the entire aboveground assembly shall be finished painted in accordance with manufacturer's recommendations.

END OF SECTION

SECTION 33 01 12

INSPECTION AND TESTING OF WATER UTILITIES

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work: This section specifies the pneumatic, hydrostatic, and leakage testing of piping and acceptable piping materials for each application. The piping designations (mark) are also indicated.

B. Testing Records:

1. Provide a record of each piping installation during the testing. These records shall include:

a. Date of test.

b. Identification of pipeline tested or retested including designation.

c. Identification of pipeline material.

d. Identification of pipe specifications.

e. Test fluid.

f. Test pressure.

g. Remarks: Leaks identified (type and location), types of repairs, or corrections made.

h. Certification by Contractor that the leakage rate measured conformed to the specifications.

i. Signature of Engineer's representative witnessing pipe test.

2. Submit the test records to the Engineer's representative upon completion of the testing.

PART 2 - PRODUCTS

2.01 GENERAL

A. Testing fluid shall be water unless a pneumatic test for air or chemical systems is indicated on the Piping Pressure Test Schedule.

2.02 MATERIALS AND EQUIPMENT

A. Provide pressure gauges, pipes, bulkheads, pumps, and meters to perform the hydrostatic and pneumatic testing.

PART 3 - EXECUTION

3.01 TESTING PREPARATION

A. Pipes shall be in place and anchored before commencing pressure testing.

B. Conduct hydrostatic and pneumatic tests on exposed and above ground piping after the piping has been installed and attached to the pipe supports, hangers, anchors, expansion joints, valves, and meters.

C. Before conducting hydrostatic tests, flush pipes with water to remove dirt and debris. For pneumatic tests, blow air through the pipes.

D. Test new pipelines which are to be connected to existing pipelines by isolating the new line from the existing line by means of pipe caps, special flanges, or blind flanges. After the new line has been successfully tested, remove caps or flanges and connect to the existing piping.

E. Conduct hydrostatic tests on buried pipe after the trench has been completely backfilled. The pipe may be partially backfilled and the joints left exposed for inspection for an initial leakage test. Perform the final test, however, after completely backfilling and compacting the trench.

F. Testing of piping under structures shall be completed prior to beginning construction of the structure. In the case of concrete encased piping, the pressure test shall be conducted after the concrete encasement has been placed and cured, but prior to beginning construction of any structure above the piping.

3.02 INSPECTION AND TESTING

A. Hydrostatic Testing of Aboveground or Exposed Piping: Open vents at high points of the piping system to purge air while the pipe is being filled. Subject to piping system to the test pressure indicated. Maintain the test pressure for a minimum of two (2) hours. Examine joints, fittings, valves, and connections for leaks. The piping system shall show no leakage or weeping. Correct leaks and retest until no leakage is obtained. Test pressure shall be 150 psi for water unless otherwise specified.

B. Hydrostatic Testing of Buried Piping:

1. Where any section of the piping contains concrete thrust blocks or encasement, do not make the pressure test until at least ten (10) days after the concrete has been poured. When testing mortar lined or PCCP piping, fill the pipe to be tested with water and allow it to soak for at least forty-eight (48) hours to absorb water before conducting the pressure test.

2. Apply and maintain the test pressure by means of a hydraulic force pump. Maintain the test pressure for a minimum duration of two (2) hours. After the test pressure is reached, use a meter to measure the additional water added to maintain the pressure. This amount of water is the loss due to leakage in the piping system. The allowable leakage rate is defined by the formula.

$$L = \frac{ND\sqrt{P}}{7{,}400}$$

in which:

L	=	allowable leakage (gallons/hours) during the test period.
N	=	number of rubber gasketed joints in the pipe tested (zero for flanged or welded pipe)
D	=	diameter of the pipe (inches)
P	=	specified test pressure (psig)

. Repair and retest any pipes showing leakage rates greater than that allowed in the above formula.

C. Pneumatic Testing:

1. Test Pressure: As shown in the Specifications, or 150 psi.

2. Perform pneumatic testing using dry air. Perform tests only after the piping has been completely installed including supports, hangers, and anchors. Protect test personnel and Owner's operating personnel. Secure piping to be tested to prevent the pipe from moving and to prevent damage to adjacent piping and equipment. Remove or isolate from the pipe any appurtenant instruments or devices that could be damaged by the test, prior to applying the test.

3. Apply an initial pneumatic leakage test of 25 psig to the piping system prior to final leak testing. Examine for leakage, detected by soap bubbles, at joints and connections. After correcting visible leaks, gradually increase the pressure in the system to not more than one-half of the test pressure. Then increase the pressure in steps of approximately one-tenth of the test pressure until the required test pressure has been reached. Continuously maintain the pneumatic test pressure for a minimum time of four (4) hours and for such additional time as may be necessary to conduct a soap bubble examination for leakage. The piping system shall show no leakage. Correct any visible leakage and retest.

D. Testing of Non-Pressure Piping:

1. Testing of non-pressure gravity flow pipe shall be accomplished by infiltration or exfiltration testing. Non-pressure piping which has a crown elevation below the groundwater table shall be tested by measuring the infiltration. Non-pressure piping which has a crown elevation above the groundwater table shall be tested by measuring the exfiltration.

a. Infiltration Testing: The Contractor shall identify and prepare each section of piping to be tested. The designated piping shall be monitored for a minimum of four (4) hours. All buried leaks shall be located and repaired immediately and retested. All visible leaks must be repaired regardless of the measured leakage. No visible leakage will be allowed.

b. Exfiltration Testing: The Contractor shall close all openings in the section of pipe to be tested. The hydrostatic water level of the pipe system shall be raised to a height equal to the maximum design submergence, but in no case less than three feet above the highest point in the line. The closed system shall be maintained for a minimum duration of four (4) hours. Any loss of volume shall be noted. The line will not be accepted until this measured quantity is less than 25 gallons per inch of diameter of pipe per mile of pipe per twenty-four (24) hours. All buried leaks shall be located and repaired as soon as possible. All visible leaks must be repaired regardless of the measured leakage.

2. If impractical to conduct the infiltration or exfiltration tests as specified, the line can be pressurized for low pressure air testing. The air test shall be made by attaching an air compressor or testing apparatus to a suitable opening. After closing all other inlets and outlets to the system, force air into the system until there is a uniform gauge pressure of 5 psi. This pressure shall be held constant without introduction of additional air for a period of at least thirty (30) minutes.

3. The allowable limits of infiltration or exfiltration of manholes shall not exceed a rate of 0.165 gallons per manhole per hour.

4. Testing shall proceed for a continuous period of at least four (4) hours, with exfiltration or infiltration amounts measured by approved methods. Upon application of internal hydrostatic pressure for exfiltration testing, care shall be taken to preclude unseating the joint gaskets for a specific type of pipe by exceeding the pressure capability thereof.

5. Should any test fail, necessary repairs shall be accomplished by the Contractor and the test repeated until within the established limits. The Contractor shall furnish the necessary labor, water and all other items required to conduct the required testing and shall perform the necessary system repairs required to comply with the specified test.

3.03 DISINFECTION

. Following pressure testing, the Contractor shall disinfect all sections of the water or reclaimed water distribution system, and receive approval thereof from the appropriate agencies, prior to placing in service. Advance notice shall be provided to the Engineer before disinfection procedures start. The disinfection shall be accomplished in accordance with the applicable provisions of AWWA Standard C651, "Disinfecting Water Mains", and all appropriate approval agencies. Testing shall be performed by approved, professional laboratory.

B. The disinfecting agent shall be liquid chlorine or sodium hypochlorite solution conforming to Federal Specification O-S-602b Sodium Hypochlorite, Grade D. Dry hypochlorite, similar or equal to "HTH" may also be used as the disinfecting agent.

C. The piping shall be disinfected by introducing the disinfecting agent into the water, which is being pumped into the system, in such manner that the entire system will be filled with

water containing a minimum chlorine concentration of 50 ppm at any point. This water shall be allowed to remain in the system for a minimum contact period of eight (8) hours before the system is flushed out.

D. After the disinfecting agents have been permitted to remain for the specified contact periods, the structures, pipelines, pumps and valves shall be thoroughly flushed with water until the residual chlorine tests are less than 0.2 ppm in each instance. The determination of the amount of residual chlorine in the system shall be made at such points and in accord with standard tests by means of a standard orthotolodine test set.

E. After any units or portions of the system have been disinfected and flushed as specified, samples of water shall be taken from several points as applicable in suitable sterilized containers and the samples forwarded to an independent, approved testing laboratory for bacterial examination. If repeated tests of such samples show the presence of coliform organisms, the disinfection shall be repeated or continued until tests indicate the absence of pollution. Two (2) consecutive daily samples of two (2) samples per day per sampling point shall be satisfactorily tested, sent to the Florida Department of Environmental Regulation for their approval, and approved before the system is placed in service.

F. The Contractor shall furnish all equipment and materials and perform the work necessary for the disinfecting procedures, including additional disinfection as required and testing lab services.

3.04 CONNECTION TO EXISTING SYSTEM

A. All connections to existing mains shall be made after complete disinfection of the proposed system and shall be made under the direction of the Owners of the existing system. Valves separating the mains being installed from existing mains shall be operated by or under the direction of said Owner's representative. The cost of the work in making the connections shall be paid for by the Contractor.

B. In the event the proposed main is to be connected to a main which has one or more active services between the point of connection and the first existing line valve, a temporary plug or cap shall be installed on the new main until the pressure tests and disinfecting are completed. Upon satisfactory completion, the cap or plug shall be removed from both mains and the connection made with pipe which has been swabbed out with a solution of chlorine and water. The connection shall be made as swiftly as possible and any water in the ditch shall be kept below the level of the pipe. The pipeline shall then be placed in service by the Owner's personnel.

C. In the event any existing users will be without water while a connection is being made, the Contractor shall give the Owner forty-eight (48) hours’ notice. The Owner will notify residents when the water will be turned off and when service will be resumed. In some instances, these connections may have to be made at night. No user shall be without water service for more than two (2) hours.

D. Cut overs from existing water service lines at the meter box shall be accomplished by City personnel after the new water mains have been "cleared" for use and the Contractor has

installed the required new water line corporation stops, service lines and curb stops as shown on the contract plans.

TABLE 33 01 12
TREATMENT PLANTPIPING PRESSURE TEST SCHEDULE
AND MATERIAL LISTING

SERVICE	MARK	TEST PRESSURE IN PSIG	MATERIAL
Air	A	See Note 1	DIP OR SS
Alum	$ALW(SO4)^3$	See Note 2	SCH. 80 PVC
Backwash Air	BWA	See Note 1	DIP
Backwash Water	BWW	100	DIP
Chlorinated Effluent	CLE	100	DIP
Chlorine Gas Pressure	CGP	300, See Note 3	BLK. STEEL
Chlorine Gas Vacuum	CGV	See Note 4	SCH. 80 PVC
Chlorine Solution	CS	100	SCH. 80 PVC
Clarifier Effluent	CE	See Note 5	DIP
Compressed Air	CA	200	GS
Dechlorinated Effluent	DCLE	See Note 5	DIP
Dirty Backwash Water	DBWW	See Note 5	DIP
Drain	D	See Note 5	SEE NOTE 6
Filter Effluent	FE	See Note 5	DIP
Filter Influent	FI	See Note 5	DIP
Filtrate	F	100	DIP
Grit	GR	50	DIP
Internal Recirculation	IR	50	DIP

Methanol	M	See Note 2	SCH. 80 PVC
Mixed Liquor	ML	See Note 5	DIP
Non-Potable Water	NPW	150	SEE NOTE 7
Odor Control Duct	OCD	See Note 1	SEE NOTE 8
Potable Water	PW	150	SEE NOTE 7
Plant Recycle	PR	50	DIP
Plant Recycle Drain	PRD	See Note 5	SEE NOTE 6
Polymer Liquid	PYL	See Note 2	SCH 80 PVC
Polymer Solution	PYS	See Note 2	SCH 80 PVC
Raw Sewage	RS	50	DIP
Return Activated Sludge	RAS	50	DIP
Reuse Water (Pressure)	RW	150	DIP, HDPE or PVC
Reuse Water (Gravity)	RW	50	DIP
Sanitary Sewer	S	See Note 5	SEE NOTE 6
Scum	SC	50	DIP
Seal Water	SW	See Note 9	SCH. 80 PVC
Sodium Hydroxide	NaOH	See Note 2	SCH. 80 PVC
Sodium Hypochlorite	NaOC1	See Note 2	SCH. 80 PVC
Sulfur Dioxide Gas Pressure	SDGP	300, See Note 3	BLK. STEEL
Sulfur Dioxide Gas Vacuum	SDGV	See Note 4	SCH. 80 PVC
Sulfur Dioxide Solution	SDS	100	SCH. 80 PVC
Sulfuric Acid	H2SO4	See Note 2	BLK. STEEL
Sump Pump Discharge	SPD	50	SCH. 80 PVC
Thickened Waste Activated Sludge	TWAS	100	DIP
Waste Activated Sludge	WAS	50	DIP

NOTES:

1. Discharge pipes shall be tested at 1.5 times the maximum output pressure of the blowers but shall not be less than 50 psig. In addition, suction pipes, duct work or other vacuum conduits shall be vacuum tested at 1.5 times the maximum vacuum produced by blower operation.

2. Chemical feed piping shall be tested at 75 psig using compressed air.

3. Pneumatic test. Pressure test the system with nitrogen. Do not test through equipment.

4. Vacuum test. Perform pneumatic test to 100 psig using nitrogen. Do not perform pneumatic test through equipment. Afterward, perform vacuum test at 10 inch Hg VAC between vacuum regulator and chlorinator or sulphonator, and at 25 inch Hg VAC between chlorinator or sulphonator and injectors.

5. See paragraph 3.02D for testing of non-pressure piping. Calculations for restraint of non-pressure piping shall use a valve of 15 psig.

6. Drains pipes/sanitary sewers shall be DR 18 PVC meeting AWWA C900 or C905 or Class 52 DIP. All drain pipes under structures shall be DIP and shall be concrete encased in accordance with the contract documents.

7. Piping for sizes less than 4 inches shall be Schedule 80 PVC or HDPE, (as indicated). All other sizes of pipe shall be DIP of Class 250 or (DR 18) PVC. All above ground piping outside of structure 3 inches and less shall be Schedule 80 PVC while piping above 3 inches in diameter shall be DIP.

. Odor control duct work shall be vacuum tested at 1.5 times the maximum vacuum produced by blower operation, but shall not be tested at less than 10 inches water VAC.

9. Test pressure requirements for seal water piping shall be 1.5 times the maximum working pressure, but test pressure shall not be less than 100 psig.

END OF SECTION

SECTION 33 05 05.31

HYDROSTATIC TESTING

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

A. The Contractor shall be responsible for the pressure testing of all systems prior to placing them in service.

B. The pressure testing shall be as required to prove that the piping is left in proper condition or satisfactory operation under the conditions specified.

PART 2 - MATERIALS AND EQUIPMENT

(Not Applicable)

PART 3 - EXECUTION

3.01 PRESSURE AND LEAKAGE TESTS

A. Tests shall be conducted in the presence of and to the satisfaction of the Engineer and of authorities having jurisdiction over the work. Notice shall be given prior to start of tests.

B. Field pressure and leakage tests shall be conducted on the following:

C. Force Mains.

1. Mains shall be subjected to a leakage test. This test measures the amount of water required to be supplied to newly laid pipe to maintain a specific pressure after the pipe has been filled with water and the air expelled. The duration of this test shall be not less than two (2) hours and the test pressure shall be 150 psig as measured at the end point in the line. The maximum allowable leakage shall not exceed the limits specified in AWWA C-600.

3.02 ENGINEER'S RIGHT TO RETESTING

A. Should the Contractor refuse or neglect to make any tests necessary to demonstrate the integrity of the completed system, the Engineer may retain the services of an outside consultant to make all such tests and their resulting adjustments and balance.

B. The costs for such tests shall be deducted from amounts owing to the Contractor and shall not be borne by the Owner.

END OF SECTION

SECTION 33 05 07.23

BORING AND JACKING

PART 1 - GENERAL

1.01 WORK INCLUDED

A. The provisions of this item shall be the minimum standards for the installation of casing pipe by the boring and jacking method for placement of sewer, water, and reclaimed water pipelines.

B. In general, all underground pipelines crossing existing major roadways, Florida State Highways and railroads shall be installed under these traffic ways within bored and jacked steel casing pipe. Specific crossing requirements shall be obtained in advance from the authority having jurisdiction.

C. Related Work Specified Elsewhere Section 31 23 19: Dewatering.

PART 2 - MATERIALS

A. Casings shall be new prime steel pipe conforming to the requirements of ASTM Designation A-139. The minimum casing pipe size and wall thickness shall be as shown in the following table for the sewer or water carrier pipe size indicated.

Carrier Pipe Nominal Thickness (Inches)	Casing Pipe Outside Diameter (Inches)	Casing Pipe Wall Thickness (Inches)
4"	14"	0.250"
6"	16"	0.250"
8"	18"	0.250"
10"	22"	0.250"
12"	24"	0.312"
14"	30"	0.312"
16"	30"	0.312"
18"	30"	0.375"
20"	36"	0.375"
24"	36"	0.500"
30"	48"	0.500"

PART 3 - EXECUTION

3.01 GENERAL

A. For casing pipe crossings under roadways, railroads, or other installations, the Contractor shall comply with the regulations of said authority in regard to design, specifications and construction. State Highway casing installations shall be as specified in the Florida Department of Transportation, "Utility Accommodation Guide", and for railroads the American

Railway Engineering Association, Part 5, Section 5.2, "Specification for Pipelines conveying Non-Flammable Substances", shall be applicable. However, in no case shall the minimum casing pipe diameter and wall thickness, for a specific carrier pipe, be less than that specified in this section.

B. The boring and jacking operations shall be done simultaneously, with continuous installation, until the casing pipe is in final position. Correct line and grade shall be carefully maintained. Add-on sections of casing pipe shall be full-ring welded to the preceding length, developing water-tight total pipe strength joints. The casing installation shall produce no upheaval, settlement, cracking, movement or distortion of the existing roadbed or other facilities. Following placement of the carrier pipe within the steel casing, masonry plugs are to be installed at each open end. Said plugs shall be suitable for restraining the external earth load, while allowing internal drainage.

C. Casing pipe holes shall be mechanically bored through the soil by a cutting head on a continuous auger mounted inside the pipe. The auger shall extend a minimum distance beyond the end of the casing pipe to preclude formation of voids outside of the pipe shell.

D. The casing pipe shall be adequately protected to prevent crushing or other damage under jacking pressures. Backstops shall be provided for adequately distribution the jack thrust without causing deformation of the soil or other damage. Should the casing pipe be damaged, such damaged portion, if not in the hole, shall be replaced; however, if inserted, the encasement pipe shall be abandoned in place, suitably plugged, and an alternative installation made.

E. Required boring and jacking pits or shafts shall be excavated and maintained to the minimum dimensions. Said excavations shall be adequately barricaded, sheeted, braced and dewatered, as required.

F. Sewer and water carrier pipes to be installed within the specified casings shall be cast or ductile iron pipe, equipped with mechanical joint connections. Pipe and fittings shall comply with the applicable provisions of these standards.

G. All arc welding on casing shall conform to the applicable provisions of the specifications for electric arc welding as published by the American Welding System, American Petroleum Institute, and American Society of Mechanical Engineers. Pipe ends shall be beveled prior to welding. No butt joints are allowed. Welders shall be certified by the State of Florida.

H. Bores and jacks involving rights-of-ways shall be performed with two (2) boring machines and two (2) certified welders on the job at all times during the actual boring and jacking operations. Commencement of actual boring and jacking operations are limited to Monday through Thursday of normal work weeks.

I. Dewatering requirements are as specified in Section 31 23 19.

3.02 TUNNELING AND JACKING

A. Tunnels for the laying of pipelines shall be of sufficient size to allow at all points the proper joining of pipes, and the proper compacting of the refill around them. Tunnels shall be timbered where and to such extent as may be necessary, or as directed by the Engineer. Where rock

is encountered in tunnel, it shall be fully taken out at the lines prescribed by the Engineer. All methods of tunneling used shall be subject to the approval of the Engineer.

B. Where sewers, or other connections, cross under existing conduits and can be built in tunnel or jacked, no additional compensation will be paid.

C. Where excavation for the sewer is made in tunnel, the prism of material removed, shall conform as nearly as possible to the dimensions specified or shown. Tunnels in earth shall be properly braced and timbered in accordance with the most approved methods of soft ground tunneling.

D. Where ordinary timber lining is used, the space between such timber and the outer surface of the sewer shall be completely filled with selected earth or other approved material, rammed solidly between the sewer and the timber lining, or space shall be filled with concrete if ordered by the Engineer, and the Contractor shall be paid, therefore, at the unit price bid for Class "C" concrete (in place) in "Schedule of Unit Prices for Additions or Deductions in Contract Quantities".

E. All methods of tunneling or jacking shall be satisfactory to the Engineer, and subject to this approval, and shall be changed from time to time at the cost of the Contractor, if, in the judgment of the Engineer, conditions so require.

END OF SECTION

SECTION 33 05 33.23

POLYETHYLENE PRESSURE PIPE AND TUBING

PART 1 – GENERAL

1.01 SECTION DESCRIPTION

A. This specification includes but is not limited to high-density polyethylene (HDPE) pressure pipe primarily intended for the transportation of water or sewage either buried or above grade. Approved grades of HDPE pressure pipe are PE3408, PE4710, and PE100 (ISO), with ductile iron pipe size (DIPS) outer diameters.

1.02 REFERENCES

A. Reference: Title:

1. AWWA C901 Polyethylene (PE) pressure Pipe & Tubing, 1/2 inch through 3 inch for water
2. AWWA C906 Polyethylene (PE) pressure Pipe & Fittings, 4 inch through 63 inch for water
3. ASTM D3035 Standard Spec for PE Pipe (DR-PR) Based on Controlled Outside
4. Diameter ASTM D3261 Butt Heat Fusion PE Fittings for PE Pipe & Tubing
5. ASTM D3350 Standard Specification for PE Pipe & Fittings Materials
6. ASTM D1238 Melt Flow Index
7. ASTM D1505 Density of Plastics
8. ASTM D2837 Hydrostatic Design Basis
9. NSF Std. #14 Plastic Piping Components & Related Materials
10. TR-33/2005 Generic Butt Fusion Joining Procedure for Field Joining of PE Pipe
11. Section 33 01 12: Inspection and Testing of Water Utilities

1.03 GENERAL

A. USE

1. High Density Polyethylene (HDPE) pipes/fittings shall be allowed for use as water, wastewater and reclaimed water pressure pipe where compatible with the specific conditions of the project. The use of material other than HDPE pipe may be required by the Engineer if it is determined that HDPE pipe is unsuitable for the particular application. All material used in the production of water main piping shall be approved by the National Sanitation Foundation (NSF).

B. DOCUMENTATION

1. Documentation from the resin’s manufacturer showing results of the following tests for resin identification:

a. Melt Flow Index ASTM D1238

2. Density ASTM D1505

C. MANUFACTURER

1. All HDPE pipe and fittings shall be from a single manufacturer, who is fully experienced, reputable and qualified in the manufacture of the HDPE pipe to be furnished. The pipe shall be designed, constructed and installed in accordance with the best practices and methods and shall comply with these Specifications. Qualified manufacturers shall be: PLEXCO Division of Chevron Chemical Company, DRISCOPIPE as manufactured by Phillips Products Co., Inc., SCLAIRPIPE as manufactured by DuPont of Canada or equal as approved by the Engineer.

D. FINISHED PRODUCT EVALUATION

1. Production staff shall check each length of pipe produced for the items listed below. The results of all measurements shall be recorded on production sheets, which become part of the manufacturer’s permanent records.

a. Pipe in process shall be checked visually, inside and out for cosmetic defects (grooves, pits, hollows, etc.)

b. Pipe outside diameter shall be measured using a suitable periphery tape to ensure conformance with ASTM F714 or ASTM D3035, whichever is applicable.

c. Pipe wall thickness shall be measured at 12 equally spaced locations around the circumference at both ends of the pipe to ensure conformance with ASTM F714 or ASTM D3035, whichever is applicable.

d. Pipe length shall be measured.

e. Pipe marking shall be examined and checked for accuracy.

f. Pipe ends shall be checked to ensure they are cut square and clean.

g. Subject inside surface to a “reverse bend test” to ensure the pipe is free of oxidation (brittleness).

E. STRESS REGRESSION TESTING

1. The polyethylene pipe manufacturer shall provide certification that stress regression testing has been performed on the specific polyethylene resin being utilized in the manufacture of this product. This stress regression testing shall have been done in accordance with ASTM D2837 and the manufacturer shall provide a product supplying a minimum Hydrostatic Design Basis (HDB) of 1,600 psi as determined in accordance with ASTM D2837.

F. COMPATIBILITY

1. Contractor is responsible for compatibility between pipe materials, fittings and appurtenances.

G. WARRANTY

1. The pipe MANUFACTURER shall provide a warranty against manufacturing defects of material and workmanship for a period of ten years after the final acceptance of the project by the Owner. The MANUFACTURER shall replace at no expense to the Owner any defective pipe/fitting material including labor within the warranty period.

PART 2 - PRODUCTS

2.01 MATERIALS FOR PIPE SIZES 4-INCH DIAMETER AND LARGER

A. Materials used for the manufacture of polyethylene pipe and fittings shall be made from an approved grade (PE 3408 at minimum) of high density polyethylene resin compound meeting cell classification 345434C per ASTM D3350; and meeting Type III, Class C, Category 5, Grade P34 per ASTM D1238.

B. High Density Polyethylene (HDPE) pipe shall comply with AWWA Specifications C906.

C. If rework compounds are required, only those generated in the Manufacturer’s own plant from resin compounds of the same class and type from the same raw material supplier shall be used.

D. Dimensions and workmanship shall be as specified by ASTM F714. HDPE fittings and transitions shall meet ASTM D3261. HDPE pipe shall have a minimum density of 0.945 grams per cubic centimeter. All HDPE pipe and fittings shall have a Hydrostatic Design Basis (HDB) of 1,600 psi.

E. HDPE pipe and accessories 4-inch diameter and larger, shall be 160 psi at 73.4meeting the requirements of Standard Dimension Ration (SDR) 17 as MINIMUM STRENGTH.

F. The pipe Manufacturer must certify compliance with the above requirements.

2.02 MATERIALS FOR PIPE SIZES 2-INCH DIAMETER AND LESS

A. Materials used for the manufacture of polyethylene pipe and fittings shall be made from an approved grade (PE 3408 at minimum) of high density polyethylene resin compound meeting cell classification 345434C per ASTM D3350; and meeting Type III, Class C, Category 5, Grade P34 per ASTM D1238.

B. High Density Polyethylene (HDPE) pipes shall comply with AWWA Specifications C901.

C. If rework compounds are required, only those generated in the Manufacturer’s own plant from resin compounds of the same class and type from the same raw material supplier shall be used.

D. Dimensions and workmanship shall be as specified by ASTM D3035. HDPE fittings and transitions shall meet ASTM D3261. HDPE pipe shall have a minimum density of 0.945

grams per cubic centimeter. All HDPE pipe and fittings shall have a Hydrostatic Design Basis (HDB) of 1,600 psi.

E. HDPE pipe and accessories 2” and less in diameter, shall be 160 psi at 73.4 F meeting the requirements of Standard Dimension Ration (SDR) 9 as MINIMUM STRENGTH.

F. The pipe Manufacturer must certify compliance with the above requirements.

2.03 FITTINGS

A. All molded fittings and fabricated fittings shall be fully pressure rated to match the pipe SDR pressure rating to which they are made. All fittings shall be molded or fabricated by the manufacturer. No Contractor fabricated fittings shall be used unless approved by the Engineer.

B. The manufacturer of the HDPE pipe shall supply all HDPE fittings and accessories as well as any adapters and/or specials required to perform the work as shown on the Drawings and specified herein.

C. All fittings shall be installed using butt-fused fittings, thermo-fused fittings/couplings, flanged adapters, or fused mechanical joint adapters and must be approved by the Engineer. NO size on size wet taps shall be permitted.

D. All transition from HDPE pipe to ductile iron or PVC shall be made per the approval of the Engineer and per the HDPE pipe manufacturer’s recommendations and specifications. A molded flange connector adapter (or a molded mechanical joint adapter) within a carbon steel back-up ring assembly shall be used for pipe type transitions. Ductile iron back-up rings shall mate with cast iron flanges per ANSI B16.1. A 316 stainless steel back-up ring shall mate with a 316 stainless steel flange per ANSI B16.1.

1. Transition from HDPE to ductile iron fittings and valves shall be approved by the Engineer before installation.

2. Solid sleeves shall be allowed between such material transitions with the use of stainless steel inserts only in exceptional circumstances requiring written approval by the Engineer.

3. Fittings and transitions shall be as manufactured by Phillips DRISCOPIPE, Inc., 1000 Series Pressure Pipe, Chevron Chemical Company Plexco/Spiralite pipe, or equal.

4. The pipe supplier must certify compliance with the above requirements.

2.04 PIPE IDENTIFICATION

A. The following shall be continuously indent printed on the pipe or spaced at intervals not exceeding 5-feet:

1. Name and/or trademark of the pipe manufacturer.

2. Nominal pipe size.

3. Dimension ratio.

4. The letters PE followed by the polyethylene grade in accordance with ASTM
5. D1248 followed by the hydrostatic design basis in 100's of psi, e.g., PE 3408.
6. Manufacturing standard reference, e.g., ASTM F714 or D-3035, as required.
7. A production code from which the date and place of manufacture can be determined.
8. Color Identification, either stripped by co-extruding longitudinal identifiable color markings or shall be solid in color and as follows:
    a. BLUE – Potable/Raw Water
    b. GREEN – Sanitary Sewer
    c. PURPLE – Reclaimed
    d. BROWN – Membrane Concentrate/Reverse Osmosis reject.

B. Tracing Wire

1. Directional drilled HDPE pipe shall have two #10 AWG solid copper-clad steel conductor tracer wires insulated with 45 mil HDPE affixed to the drilling head/reamer. The tracing wires shall be continuous along the length of the HDPE pipe installation with no splicing allowed. Tracer wire shall be Copperhead Industries SoloShot #1045 Extra-High Strength Tracer Wire (or approved equal) and be color-coded for the type of utility service.

C. Marking Tape: Marking tape shall be installed per Engineer approval.

PART 3 – EXECUTION

3.01 JOINING METHOD

A. The pipe shall be joined with butt, heat fusion joints as outlined in ASTM D2657 and conform to the Generic Butt Fusion Joining Procedure for Field Joining of Polyethylene Pipe, Technical Report TR-33/2005, published by the Plastic Pipe Institute (PPI). All joints shall be made in strict compliance with the manufacturer's recommendations. A factory qualified joining technician as designated by pipe manufacturer or experienced, trained technician shall perform all heat fusion joints in the presence of the Engineer or his representative.

B. Lengths of pipe shall be assembled into suitable installation lengths by the butt-fusion process. All pipes so joined shall be made from the same class and type of raw material made by the same raw material supplier. Pipe shall be furnished in standard laying lengths not to exceed 50 feet and no shorter than 20 feet.

C. On days butt fusions are to be made, the first fusion shall be a trial fusion in the presence of the Engineer or his representative. The following shall apply:

1. Heating plate surfaces shall be inspected for cuts and scrapes and shall be free of dirt and residue. Heater surfaces should be between 400°F (minimum) to 450°F (maximum). Measure the temperature @ 12:00, 3:00, 6:00 and 9:00 o'clock

positions using a pyrometer of infrared thermometer at locations where the heating plate will contact the pipe/fitting ends. The maximum temperature difference between any two points on a single heating surface must not exceed 24°F. If this temperature is exceeded, the heating plate shall be cleaned per the manufacturer's recommendations.

2. The fusion or test section shall be cut out after cooling completely for inspection.

3. The test section shall be 12" or 30 times (minimum) the wall thickness in length and 1" or 1.5 times the wall thickness in width (minimum).

4. The joint shall be visually inspected as to continuity of "beads" from the melted material, and for assurance of "cold joint" prevention (i.e. – joint shall have visible molded material between walls of pipe). Joint spacing between the walls of the two ends shall be a minimum of 1/16" to a maximum 3/16".

5. The Engineer or his representative may choose to waive this joint test following sufficient review of the initial test joint and provided Contractor continues such fuses with the same attention to method detail.

D. The polyethylene flange adapters at pipe material transitions shall be backed up by stainless steel flanges conforming to ANSI B16.1 and shaped as necessary to suit the outside dimensions of the pipe. The flange adapter assemblies shall be connected with corrosion resisting bolts and nuts of Type 316 Stainless Steel as specified in ASTM A726 and ASTM A307. All bolts shall be tightened to the manufacturer's specified torques. Bolts shall be tightened alternatively and evenly. After installation, apply a bitumastic coating to bolts and nuts. (This applies equally to mechanical joint adapters, as appropriate)

3.02 INSTALLATION

A. High Density Polyethylene (HDPE) Pipe shall be installed in accordance with the instruction of the manufacturer, as shown on the Drawings and as specified herein. A factory qualified joining technician as designated by the pipe manufacturer shall perform all heat fusion joints.

B. HDPE shall be installed either by Open Trench Construction or Directional Bore Method as outlined in this section under sub-part 3.02 – Installation, Item Q – Open Trench Installation or Item R – Directional Bore Installation of this Section.

C. Care shall be taken in loading, transporting and unloading to prevent damage to the pipe. Pipe or fitting shall not be dropped. All pipe or fitting shall be examined before installation, and no piece shall be installed which is found to be defective. Any damage to the pipe shall be repaired as directed by the Engineer. If any defective pipe is discovered after it has been installed, it shall be removed and replaced with a sound pipe in a satisfactory manner by the Contractor, at his own expense.

D. Under no circumstances shall the pipe or accessories be dropped into the trench or forced through a directional bore upon "pull-back".

E. Care shall be taken during transportation of the pipe such that it will not be cut, kinked or otherwise damaged.

F. Ropes, fabric or rubber protected slings and straps shall be used when handling pipes. Chains, cables or hooks inserted into the pipe ends shall not be used. Two slings spread apart shall be used for lifting each length of pipe.

G. Pipes shall be stored on level ground, preferably turf or sand, free of sharp objects, which could damage the pipe. Stacking of the polyethylene pipe shall be limited to a height that will not cause excessive deformation of the bottom layers of pipes under anticipated temperature conditions. Where necessary due to ground conditions, the pipe shall be stored on wooden sleepers, spaced suitably and of such width as not to allow deformation of the pipe at the point of contact with the sleeper or between supports.

H. Pipe shall be stored on clean level ground to prevent undue scratching or gouging. The handling of the pipe shall be in such a manner that the pipe is not damaged by dragging it over sharp and cutting objects. The maximum allowable depth of cuts, scratches or gouges on the exterior of the pipe is 5 percent of wall thickness. The interior pipe surface shall be free of cuts, gouges or scratches.

I. Pipe shall be laid to lines and grade shown on the Drawings with bedding and backfill as shown on the Drawings.

J. When laying is not in progress, including lunchtime, the open ends of the pipe shall be closed by fabricated plugs, or by other approved means.

K. Sections of pipe with cuts, scratches or gouges exceeding 5 percent of the pipe wall thickness shall be removed completely and the ends of the pipeline rejoined.

L. The pipe shall be joined by the method of thermal butt fusion, as outlined in PART 3 – Execution, Section 3.01 Joining Method. All joints shall be made in strict compliance with the manufacturer’s recommendations.

M. Mechanical connections of the polyethylene pipe to auxiliary equipment such as valves, pumps and tanks shall be through flanged connections which shall consists of the following:

1. A polyethylene flange shall be thermally butt-fused to the stub end of the pipe.
2. A 316 stainless steel back up ring shall mate with a 316 stainless steel flange.
3. 316 stainless steel bolts and nuts shall be used.

N. Flange connections shall be provided with a full-face neoprene gasket.

O. All HDPE pipe must be at the temperature of the surrounding soil at the time of backfilling and compaction.

P. If a defective pipe is discovered after it has been installed, it shall be removed and replaced with a sound pipe in a satisfactory manner at no additional cost to the Owner. All pipe and fittings shall be thoroughly cleaned before installation, shall be kept clean until they are used in the work and when laid, shall conform to the lines and grades required.

Q. Open Trench Installation:

1. Refer to Specification Section 31 23 00: Excavation and Fill which shall apply in its entirety.

2. The centerline of the pipe shall not deviate from a straight line drawn between the centers of the openings at the ends of the pipe by more than 1/16-in per foot of length. If a piece of pipe fails to meet this requirement check for straightness, it shall be rejected and removed from the site. Laying instructions of the manufacturer shall be explicitly followed.

3. Good alignment shall be preserved during installation. Deflection of the pipe shall occur only at those places on design drawings and as approved by the Engineer. Fittings, in addition to those shown on the Drawings, shall be used only if necessary or required by the Engineer.

4. Each length of the pipe shall have the assembly mark aligned with the pipe previously laid and held securely until enough backfill has been placed to hold the pipe in place. Joints shall not be “pulled” or “cramped”.

5. Precautions shall be taken to prevent flotation of the pipe in the trench.

6. When moveable trench bracing such as trench boxes, moveable sheeting, shoring or plates are used to support the sides of the trench, care shall be taken in placing and moving the boxes or supporting bracing to prevent movement of the pipe, or disturbance of the pipe bedding and the backfill. Trench boxes, moveable sheeting, shoring or plates shall not be allowed to extend below top of the pipe. As trench boxes, moveable sheeting, shoring or plates are moved, pipe bedding shall be placed to fill any voids created and the backfill shall be recompacted to provide uniform side support for the pipe.

7. Restrained joints shall be installed where shown on the Drawings or as directed by the Engineer.

3.03 CLEANING

A. At the conclusion of the work, thoroughly clean all of the new pipelines to remove all dirt, stones, pieces of wood or other material which may have entered during the construction period by forcing a cleaning swab through all mains four inches or greater. Flushing velocities shall be a minimum of 2.5 feet per second. All flushing shall be coordinated with the Engineer and the Utility Department providing the flushing water. Debris cleaned from the lines shall be removed from the job site.

3.04 TESTING

A. Pressure testing shall be conducted per Manufacturer's recommendations and as approved by the Engineer. If manufacturer provides no sufficient pressure test protocol recommendation, Contractor shall follow the procedure outlined in sub-part 3.04-Testing, paragraph E of this section.

B. All HDPE water mains shall be disinfected prior to pressure testing as per Section 33 01 12.

C. All HDPE mains shall be field-tested. Contractor shall supply all labor, equipment, material, gages, pumps, meters and incidentals required for testing. Each main shall be pressure tested upon completion of the pipe laying and backfilling operations, including placement of any required temporary roadway surfacing.

D. All mains shall be tested at 150% of the operating design pressure of the pipe unless otherwise approved by the Engineer.

E. Pressure testing procedure shall be per Manufacturer's recommendations or as follows:

1. Fill line slowly with water. Maintain flow velocity less than two feet per second.

2. Expel air completely from the line during filling and again before applying test pressure. Air shall be expelled by means of taps at points of highest elevation.

3. Apply initial test pressure and allow to stand without makeup pressure for two to three hours, to allow for diametric expansion or pipe stretching to stabilize. Repeat as necessary until pressure stabilizes for two (2) hours.

4. After this equilibrium period, apply the specified test pressure and turn the pump off. The final test pressure shall be held for two (or more) hours.

5. Upon completion of the test, the pressure shall be bled off from a location other than the point where the pressure is monitored. The pressure drop shall be witnessed by the resident project representative and utility system representative at the point where the pressure is being monitored and shall show on the recorded pressure read-out submitted to the Engineer of Record.

F. The Engineer shall have discretion on a case by case basis to approve the use of makeup water for expansion observed during pressure test. If permitted, the maximum allowable amount of makeup water for expansion during the pressure test shall conform to table 1, Allowance for Expansion Under Test Pressure, in this section. If there are no observed leaks or significant pressure drops during the final test period, the installed pipe passes the test.

Table 1

Allowance for Expansion Under Test Pressure (US Gallons per 100 Feet of Pipe at 73.4ºF)			
Nominal Pipe Size	1 hour test	2 hour test	3 hour test
3	0.10	0.15	0.25
4	0.13	0.25	0.40
6	0.30	0.60	0.90
8	0.50	1.00	1.50
10	0.70	1.30	2.10
12	1.1	2.3	3.4
14	1.4	2.7	4.2
16	1.7	3.3	5.0
18	2.2	4.3	6.5
20	2.7	5.5	8.0
22	3.5	7.0	10.5
24	4.5	8.9	13.3
28	5.5	11.1	16.7
32	7.0	14.3	22.5
36	9.0	18.0	27.0
40	11.0	22.0	33.0
42	12.5	25.0	37.5
48	16.0	32.0	48.0
54	20.5	41.5	62.0
63	28.0	60.0	85.0

Source: Model Specification per Sclair Pipe ® HDPE Pipe, Table 1

G. If any test of pipe laid disclosed leakage significant pressure drop greater than the manufacturer's recommended loss, the Contractor shall, at his/her own expense, locate and repair the cause of leakage and retest the line. The amount of leakage, which will be permitted, shall be in accordance with AWWA C600 Standards.

H. All visible leaks are to be repaired regardless of the amount of leakage.

I. The Contractor shall notify the Engineer and the utility system representative a minimum of forty-eight (48) hours prior to test.

END OF SECTION

SECTION 33 10 11
PUMPS - GENERAL

PART 1 - GENERAL

1.01 WORK INCLUDED - DESCRIPTION

A. Scope of Work: Furnish all labor, materials, equipment and incidentals required to install complete and ready for operation all pumps related equipment specified in Division 33.

B. Except as specified to the contrary in the specific pump specifications, this specification shall be complied with for all pumping units.

C. Related Work Described Elsewhere:

1. Shop Drawings, Product Data and Samples: Section 01 33 23
2. Product Requirements: Section 01 60 00
3. Start-up Procedures: Section 01 75 16
4. Operation and Maintenance Data: Section 01 78 23
5. Warranties: Section 01 78 36
6. Utilities: Division 33
7. Motors and Starters: Division 26

D. General Design: Refer to respective sections of the specifications.

1.02 QUALITY ASSURANCE

A. Qualifications:

1. The pumping units specified herein are to be standard pumping units for the intended service and shall be the product of a fully experienced, reputable and qualified manufacturer. The manufacturer shall supply the Engineer with information pertaining to three (3) installations where equipment of the specific type, size and function have been in operation for not less than five (5) years with the shop drawing submittal. The information shall contain items as follows:

a. Installation name and location.

b. Date of installation of equipment.

c. Date of start up of equipment.

d. Personnel at installation which can be contacted with telephone numbers and extensions.

2. The Supplier shall supply the services of a qualified factory-trained service representative for a period specified under the individual equipment specifications. The representative shall inspect the completed equipment installation to ensure that it meets with the manufacturer's recommendations. Any adjustments or modifications shall be made, at not additional cost to the Owner, to place the equipment in trouble-free operation.

B. Equipment Manufacturer: Refer to respective sections of the contract documents.

1.03 SUBMITTALS

A. Materials and Shop Drawings:

1. The Contractor to conform shop drawings to Section 01 33 23 and as required below.

2. The Contractor shall submit the following to the Engineer for approval in accordance with Section 01 33 23:

a. Manufacturer's literature, illustrations and applicable data for the individual pumps, including the total weight of the equipment and the weight of the single largest item.

b. Manufacturer's certified curves illustrating pump characteristics of head, discharge, brake horsepower, efficiency, required net positive suction head, and available suction lift.

1) Curves shall be submitted on 8 ½ inch x 11 inch sheets, at as large a scale as is practical. Curves shall be plotted from no flow at shut off head to maximum pump runout head and gallonage allowed by the manufacturer. Curves for variable speed pumps shall be provided for maximum running, full load RPM as specified, and a minimum of 4 other curves of equal speed increments not inclusive of O RPM (i.e., 1760, 1408, 1056, 704, 352).

2) Points of operation which cause bearing stress or shaft deflection in excess of the manufacturer's tolerances for continuous operation shall be indicated on the submitted curves.

c. The shop drawings shall include details of pump assembly, installation layouts, procedures, types of materials used in pump construction, details on all pump accessories, and dimensions of major components. Where applicable, and pumps are provided as part of a complete package inclusive of controls, control diagrams shall be provided.

d. A complete total bill of materials for all equipment.

e. A list of manufacturer's recommended spare parts to be supplied, with the manufacturer's current price for each item. Include O-rings, seals, etc. on the list. List bearings by the bearing manufacturer's name and numbers only.

f. Pumping equipment, requiring special tools for maintenance, shall be provided with one set of tools labeled, packed with instructions for use, and housed in a metal toolbox with lock end hoop for each two units provided.

g. Motor data shall be submitted in accordance with the specific equipment specification.

B. Operating and Maintenance Instructions: For all pumps furnished under this Section, the Contractor shall submit operation and maintenance manuals in accordance with requirements of Section 01 78 23 to include, at a minimum, the following:

1. Equipment function.
2. Description.
3. Normal and limiting operating characteristics.
4. Installation instructions (assembly, alignment and adjustment procedures).
5. Operation instructions (normal start up and shut down procedures, normal operating conditions and emergency situations).
6. Lubrication and maintenance instructions.
7. Troubleshooting guide.
8. Parts list and predicted life of parts subject to wear.
9. Drawings - cross sectional view, assembly and wiring diagrams.
10. Performance curves.

C. Factory Performance Test Data:

1. After acceptance of pump shop drawings, factory performance test data will be submitted for approval on each pumping unit. Duplicate units require factory testing for only specified flow and head conditions, unless otherwise specified under the specific pump specification. Tests conducted in accordance with these specifications on similar units within 24 months may be submitted in lieu of tests on the actual units to be supplied.
2. Test shall be certified by a registered professional engineer.
3. Tests shall be in accordance with the standards of the Hydraulic Institute including head, capacity, brake horsepower, pump efficiency and NPSH.

D. Certifications: The Contractor shall furnish the Engineer with a written certification signed by the manufacturer's representative that the equipment has been properly installed and lubricated, is in accurate alignment, is free from undue stress imposed by piping or mounting bolts and has been operated under full load conditions and that satisfactory operation has been obtained. Refer to Section 01 75 16 for more details.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Refer to Section 01 60 00.

B. Finished surfaces of all exposed pump openings shall be protected by wooden blanks.

C. After hydrostatic or other tests, all entrapped water shall be drained prior to shipment, and proper care shall be taken to protect parts from the entrance of water during shipment, storage, and handling.

D. Each box or package shall be properly marked to show its net weight in addition to its contents.

E. For equipment such as pumping units, which require field alignment and connections, the Contract shall provide the services of the equipment manufacturer's qualified mechanic, millwright, machinist, or authorized representative, to align the pump and motor prior to making piping connections or anchoring the pump base.

F. Precision gauges and levels shall be used in setting all equipment. All piping and equipment shall be perfectly aligned, horizontally and vertically. Tolerances for piping and equipment installation shall be 1/2 inch in 30 foot horizontal and vertical. All valves and operators shall be installed in the position shown on the plans or as directed by the Engineer if not shown.

1.05 WARRANTY AND GUARANTEES

A. Refer to Section 01 78 36.

B. Certifications: The Contractor shall furnish the Engineer with a written certification signed by the manufacturer's representative, in accordance with Section 01 75 16, that the installed equipment:

1. Has been installed per manufacturer's requirements.

2. Has been lubricated per manufacturer's instructions.

3. Has been accurately aligned and proper running clearance set.

4. Is free from undue stress imposed by piping or mounting bolts.

5. Suction lines and seal water lines have been flushed and all debris removed prior to startup.

6. Is ready to be operated on a continuous basis and is free from any known defects.

C. The nominal nameplate horsepower rating for the motors at their rated speed shall not be exceeded by the driven equipment at any point of operation on it characteristics curve.

PART 2 - PRODUCTS

2.01 GENERAL

A. The equipment covered by these Specifications shall be designed, constructed, and installed in accordance with the best practice and methods.

B. All parts shall be so designed and proportioned as to have liberal strength and stiffness, and to be especially adapted for the work to be done. Ample room and facilities shall be provided for inspection, repairs and adjustment.

C. Pump bases shall be rigidly and accurately anchored into position, precisely leveled and aligned, so that the completed installation is free from stress or distortion. All necessary foundation bolts, plates, nuts and washers shall be furnished and installed by the Contractor and conform to the recommendations and instructions of the equipment manufacturer. Anchor bolts, nuts, and washers shall be stainless steel unless noted otherwise. Grouting under bases after the equipment is set is included as work under this Section. Pumps and

pump bases shall have adequate provisions to collect drainage and conduct it away to nearest drain.

D. Data Plates:

1. Stainless steel pump nameplates giving the name of the manufacturer, the rated capacity, head, speed and any other pertinent data shall be attached to each pump.

2. Stainless steel motor nameplates giving the name of the manufacturer, serial number, model number, horsepower, speed, voltage, amperes and all other pertinent date shall be attached to each motor.

E. All pumps shall be designed and built for 24 hour continuous service at any and all points within the specified range of operation, without overheating, without cavitation, and without excessive vibration or strain.

2.02 SPARE PARTS (TO BE SUPPLIED IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS)

PART 3 - EXECUTION

3.01 INSTALLATION

A. Installation of pumping equipment by the Contractor shall be in strict accordance with the respective manufacturer's instructions and recommendations in the locations shown on the Drawings. Installation shall include furnishing the required oil and grease for initial operation. The grades of oil and grease shall be in accordance with the manufacturer's recommendations.

B. The Contractor shall furnish and install 4 - ½ inch oil dampened pressure gauges on all pump discharge volutes with isolators and isolation valves. Where it is not practical to mount pressure gauges on pump volutes, gauges shall be mounted in the discharge piping.

3.02 FIELD PAINTING

A. All nameplates shall be properly protected during painting.

3.03 INSPECTION AND TESTING

A. After all pumps have been completely installed the Contractor shall conduct, in the presence of the Engineer, field tests to indicate that pump efficiency and discharge conform to the Specifications. Field tests shall include all pumps included under this Division. The Contractor shall supply all oil, grease, electric power, water, wastewater, chemical solutions and all other material necessary to complete the field tests.

B. If the pump performance does not meet the Specifications, corrective measures shall be immediately taken by the manufacturer, or pumps shall be removed and replaced with pumps which satisfy the conditions specified, without cost to the Owner.

C. The components of each seal lubricating system shall be completely tested by the Contractor in the presence of the Engineer. Any component parts which are damaged as a result of testing or which fail to meet requirements of this Specification shall be replaced, reinstalled and retested at the Contractor's expense.

D. The pumps and motors shall be designed and constructed to avoid the generation of objectionable noise or vibration. The sound pressure level at full load shall not exceed 85 (A Scale) decibels above 300 cycles when measured at a point not exceeding 5 feet from the motor. Mufflers or external baffles will not be accepted. When operating at any point or vertical plane at the top of the motor shall not exceed hydraulic institute standards.

E. Field Testing:

1. Upon completion of all the mechanical work, the Contractor shall conduct testing as specified herein to demonstrate that the equipment performs in accordance with all specifications.

2. The Contractor shall perform initial testing of the equipment insuring to himself that the tests listed in the Demonstration Test paragraph below can be completed.

3. The Demonstration Test shall demonstrate that all items of these Specifications have been met by the equipment, as installed, and shall include the following tests.

   a. That the pumps can deliver specified pressure and quantity at rated efficiency.

   b. That the pump controls perform satisfactorily (where pump control combinations are supplied).

4. In the event that the equipment does not meet the Demonstration Test, the Contractor shall, at his own expense, make such changes and adjustments in the equipment which he deems necessary and shall conduct further tests until written certification is received from the Engineer.

5. The data shall include the following:

   a. A vibration survey.

   b. Motor current and amp load.

   c. Certified alignment.

END OF SECTION

SECTION 33 11 13
PRODUCTION WELL CONSTRUCTION AND TESTING

PART 1 GENERAL

1.01 Section Includes

The Work included in this Section consists of completing:

1. Three (3) Public Water Supply Production Wells

All wells will be constructed in the location and in the manner shown on the Plans. This includes well drilling, casing, grouting, developing, capacity testing, geophysical and video logs, Florida Drinking Water Standards analysis, disinfection, and potential well stimulation with chemicals. Conceptual well construction details are displayed in **Table 1**:

Table 1 – Conceptual Well Construction Details

Surface Casing Material	Surface Casing Depth* (Ft.-BLS)	Final Casing Material	Final Casing Depth* (Ft.-BLS)	Total Depth* (Ft.-BLS)
18-in min. diameter 0.375-in wall Steel	+/- 40-80	12-in diameter Johnson Shur-A-Lock SDR17 PVC	+/- 100-120	300

Notes: * - Conceptual depths based on data from existing Hudson Wellfield PWS wells.

Depths are estimated maximum.

BLS – Below Land Surface

1.02 General Description

The CONTRACTOR shall provide a fully equipped drilling rig and appropriate support equipment capable of drilling boreholes, circulating drilling fluids (if used), air-lift pumping, and setting casings of the sizes and depths specified herein, and an experienced drilling crew to perform the Work. The drilling rig must be capable of drilling mud rotary, direct circulation through the unconsolidated formations AND reverse air drilling through the limestone formations. All test pumping equipment shall be capable of achieving and maintaining specified pumping rates.

1.03 Qualifications

A. The CONTRACTOR who is responsible for constructing the wells shall be licensed by a Florida Water Management District as a Water Well Contractor employing only competent workers for the execution of this Work, and all such Work shall be performed under the direct supervision of an experienced well driller and an adequate number of competent helpers satisfactory to the OWNER and the ENGINEER.

B. The Drilling Superintendent shall be experienced in drilling through the type of formations to be encountered and capable of identifying geologic formations, maintaining complete

and current well logs and daily notes for the well completion reports, and developing and testing the wells.

C. The CONTRACTOR shall furnish satisfactory evidence upon request that all materials to be furnished in performing the specified Work are new and all equipment to be used is in good working order.

D. The CONTRACTOR shall furnish equipment and perform the Work with equipment that is adequately suited for all phases of well construction and testing. If, in the opinion of the OWNER or ENGINEER, the CONTRACTOR'S equipment is not capable of satisfactorily performing the Work provided for in these Specifications, the CONTRACTOR shall substitute equipment satisfactory to the OWNER or ENGINEER.

E. Adequate safety equipment such as hard hats, steel-toed shoes, and safety eyewear shall be used by the drilling crew while on the job site.

F. The CONTRACTOR shall be responsible for geophysical logging of the wells and shall employ only a competent company for the execution of the Work. All such Work shall be performed under the direct supervision of an experienced geophysical logging SUBCONTRACTOR satisfactory to the ENGINEER.

G. The geophysical logging SUBCONTRACTOR shall be capable of providing representative interpretations of the results of the logging and an accurate daily report of activities during logging.

H. All geophysical logging tools shall be capable of accurately logging a borehole which is greater than 5¾-inches in diameter up to 60 inches in diameter. All television tools shall be able to video record diameters from four (4) inches up to 24 inches.

I. The borehole television survey shall be conducted by the CONTRACTOR or a SUBCONTRACTOR capable of providing the required video as specified and shall be able to provide documentation on experience on at least three (3) projects where television survey of a well borehole has been conducted. The ENGINEER shall approve the proposed television survey CONTRACTOR or SUBCONTRACTOR prior to starting the Work.

J. The CONTRACTOR shall furnish satisfactory evidence, upon request, that all equipment to be used in performing the specified Work is in good working order.

K. The OWNER and its representatives may make any other investigations deemed necessary to determine the ability of the CONTRACTOR and SUBCONTRACTORS to perform the Work, and the CONTRACTOR shall furnish to the OWNER all such information and data for this purpose as the OWNER may request.

1.04 Standards and Regulations

A. American Petroleum Institute (API) latest edition:

1. SPEC 5L, Specification for Line Pipe.

2. API 10-A, Specification for Materials and Testing for Well Cements

B. American Society for Testing and Materials (ASTM) latest edition:

1. A53, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded, and Stainless.
2. A139, Standard Specification for Electric-Fusion (Arc)-Welded Steel Pipe (NPS 4 and Over).
3. C33, Fine Aggregate.
4. C150, Standard Specification for Portland Cement.
5. C494, Standard Specifications for Chemical Admixtures for Concrete.
6. D1785, Standard Specification for Poly-Vinyl Chloride (PVC) Plastic Pipe, Schedules 40, 80 and 120.
7. F480, Standard Specification for Thermoplastic Well Casing Pipe and Couplings Made in Standard Dimension Ratios (SDR), Schedule 40 and Schedule 80.
8. D5783, Standard Method for Use of Direct Rotary Drilling with Water-Based Drilling Fluid.

C. American Water Works Association (AWWA), latest implemented edition:

1. A100, Standard for Water Wells.
2. C200, Standard for Steel Water Pipe, 6 Inches or Larger.
3. C206, Standard for Field Welding of Steel Water Pipe.
4. C654, Disinfection of Wells

D. The latest revisions of the rules of the Florida Department of Environmental Protection (FDEP) and the St. Johns River Water Management District (SJRWMD) shall apply.

1.05 Schedule and Sequences

A. Notify the ENGINEER of proposed drilling start date at least 10 working days before drilling begins. Notify the OWNER and ENGINEER of anticipated delays as soon as they become apparent.

B. The CONTRACTOR shall submit a work schedule.

C. Sequence of the work for each well shall be, in general, as follows:

1. Obtain well construction permit from SJRWMD.
2. Mobilize all equipment and materials.
3. Construct a temporary drilling pad to contain all fluids during drilling operations.
4. Option to install pit casing through unconsolidated surficial deposits (depth at the discretion of the contractor). The casing installation method is at the discretion of the CONTRACTOR and shall be approved by ENGINEER prior to installation.

5. Drill nominal 6-8-inch pilot hole to top of limestone (estimated 100-120 feet) using standard mud rotary drilling techniques. The goal of this pilot hole will be to identify a suitable depth to set and grout the surface casing and identify the top of the Ocala Limestone denoting the top of the Upper Floridan aquifer (UFA). Collect drill cuttings/samples every 10 feet to the total depth of the well and describe visually in a lithologic log. Include hydrogeologic-related information as applicable.
6. Conduct geophysical logging (electric and gamma ray) as described in Section 3.12 on pilot hole to aid in selecting the surface casing setting depth.
7. Record drilling information during all pilot hole drilling, including penetration rate, voids, water producing zones, etc., in daily reports prepared during all drilling activities. ENGINEER inspector and CONTRACTOR shall prepare independent daily reports.
8. Ream pilot hole to nominal 24-inch borehole to surface casing setting depth (estimated 40-80 feet).
9. Install and grout 18-inch surface casing as described in Sections 2.04 and 3.09.
10. Ream pilot hole to nominal 18-inch borehole to final casing setting depth (estimated 100-120 feet) using mud rotary drilling techniques.
11. Install and grout final casing as described in Sections 2.04 and 3.09.
12. Drill 6-8-inch pilot hole to maximum total well depth (300 feet) using reverse-air drilling techniques. The goal of this pilot hole will be to penetrate the freshwater aquifer units in the Ocala and Avon Park limestone formations. Collect drill cuttings/samples every 10 feet to the total depth of the well and describe visually in a lithologic log. Include hydrogeologic-related information as applicable.
13. Develop pilot hole using airlift, pumping, and surging well development practices as described in Section 3.10. Develop until clear water is produced from the well and water quality is acceptable to ENGINEER.
14. Conduct geophysical logging (full suite as described in Section 3.12) on pilot hole.
15. Back plug pilot hole (estimated 50 feet, if necessary)
16. Ream pilot hole using reverse-air drilling techniques to nominal 12-inch borehole to total depth (estimated 300 feet).
17. Conduct well development as described in Section 3.10.
18. Conduct geophysical logging (full suite) as described in Section 3.12 on completed well.
19. Conduct step-drawdown pumping test as described in Section 3.11.
20. Implement optional task to conduct well acidization (if necessary, as determined by the ENGINEER) as described in Section 3.13.
21. Conduct well development in accordance with Section 3.10, if necessary.
22. Re-run step-drawdown pumping test as described in Section 3.11, if necessary.

23. Conduct constant rate pumping test (collect full suite laboratory samples during final hour as described in Section 3.05 and 3.11).
24. Disinfect well as described in Section 3.14.
25. Secure wellhead as described in Section 3.17.
26. Restore site and demobilize equipment as described in Section 3.16.

1.06 Permits

The CONTRACTOR shall be responsible for obtaining any and all local, state, or federal permits required for constructing the wells, and discharging water from the sites, or clearing the sites for Work or access. The CONTRACTOR shall not perform Work on any well until these permits are obtained. The CONTRACTOR shall furnish copies of all permits to the ENGINEER as the permits are received. As required by law, the CONTRACTOR shall retain and/or post copies of the permits at the site.

1.07 Submittals

A. Preconstruction Quality Assurance Submittals:

1. Provide the name of the proposed geophysical logging SUBCONTRACTOR and references or, if geophysical logging is to be done by the CONTRACTOR, provide references for the CONTRACTOR. Provide at least 3 references showing location of project, diameter of borehole and depth. Provide contact names and phone numbers for each reference.
2. Provide the name of the proposed borehole television survey SUBCONTRACTOR and references or, if borehole television survey is to be done by the CONTRACTOR, provide references for the CONTRACTOR. Provide at least 3 references showing location of project, diameter of borehole and depth. Provide contact names and phone numbers for each reference.
3. Provide qualifications of the proposed FDEP-certified water laboratory with an FDEP-approved quality assurance and quality control plan.

B. Shop Drawings:

1. Description of Controls for Artesian Conditions
2. Description of Well Discharge Routing System including piping and equipment and their proposed locations
3. Description of Well Development
4. Description of Drilling Fluid Circulation System/Tank
5. Description of Solids Handling and Separation System
6. Description of Well Acidizing Procedures

7. Post-acidizing Water Neutralization Plan that documents how the pH of the water will be continuously monitored and logged, including the procedure for immediately terminating the water discharge if the pH goes out of range.

C. Product Data:

1. Drilling Fluid and Additives
2. Casing
3. Casing Centralizers
4. Grout Seal and Additive
5. Disinfection Solution
6. Hydrochloric Acid (20%, inhibited)
7. Video Logging Cameras and Lighting
8. Artesian flow equipment
9. Flowmeter or flow measuring equipment

D. Samples:

1. Formation Cuttings
2. Water Samples during reverse air drilling
3. Water Samples for laboratory testing

E. Quality Control Submittals:

1. Daily Drilling Log
2. Manufacturer’s Mill Certificate for Casings
3. Drilling Fluid and Additives
4. Grout Seal and Additives
5. Water quality results performed by a Certified Laboratory with results submitted on the Standard Format 62-550.730 (attached) for all water analysis per Chapters 62-550 and 62-315, F.A.C. Example FDEP laboratory forms are included in Appendix A.
6. Flowmeter calibration certification
7. Portable pH meter specifications
8. Meter calibration record

F. Contract Submittals:

1. SJRWMD Well Construction Permit
2. Well Completion Report/Log
3. Geophysical Logs (paper copies, .PDF, .LAS , and .CSV files on USB)

4. Color T.V. Video Logs (MP4 or WMV files on DVD and USB)

1.08 Hydrologic Conditions

A. The CONTRACTOR shall be aware that unfavorable subsurface geologic conditions may exist at the selected well sites. Loss of circulation may indicate subsurface conditions that, if severe, could cause the overlying sediments to collapse, thereby causing surface stability problems at and around the site. The CONTRACTOR shall make all necessary investigations to establish expected subsurface conditions. The CONTRACTOR, in particular, shall determine the appropriate depth for the surface casing to prevent well construction problems resulting from overlying sediment collapse and surface instability. The CONTRACTOR shall be responsible for setting the surface casing to a sufficient depth to avoid surface caving and raveling. In addition, the CONTRACTOR shall use a pit casing to provide a stable platform to perform drilling. The CONTRACTOR shall determine the depth of the pit casing.

B. Any information regarding sub-surface conditions provided by the OWNER or the ENGINEER is intended to assist the CONTRACTOR in preparing their bid. The OWNER and ENGINEER do not guarantee its accuracy, nor is it necessarily indicative of conditions to be encountered in constructing the wells in this contract. The CONTRACTOR shall satisfy himself regarding all local conditions affecting their work by personal investigations, and neither the information contained in this section nor that derived from maps or Plans or from the OWNER or their agents or employees, shall act to relieve the CONTRACTOR from any responsibility hereunder or from fulfilling any or all of the terms and requirements of their contract.

C. The CONTRACTOR is responsible for resolving issues associated with drilling through potentially unstable zones where caving may occur within the limestone formations. Procedures used to resolve these issues may include dredging of formation material or cement plugging the formation to resolve the problem. The procedures must be approved by the ENGINEER prior to implementing.

D. The CONTRACTOR is responsible for controlling artesian flow, if present, during drilling of the borehole. Procedures used to control the flow must be approved by the ENGINEER prior to implementing.

E. The OWNER reserves the right to use an alternate site if unfavorable hydrogeological conditions are encountered. Additional well construction would be paid at the unit prices provided in the CONTRACTOR’s Bid Schedule.

1.09 Handling of Materials

A. All materials shall be properly protected so that no damage or deterioration will occur during a prolonged delay from time of shipment until installation is completed and the units and equipment are ready for operation.

B. All materials must be properly protected against damage during a prolonged period at the site.

C. Finished iron or steel surfaces not painted shall be properly protected to prevent rust and corrosion.

1.10 Boundaries of Work

A. The location of the well sites shall be as indicated on the Plans. The CONTRACTOR shall accept the location as it is, and it is the responsibility to acquaint themselves with the actual site conditions prior to submitting a bid to do the Work. The OWNER reserves the right to change the location of any well to another similar site within 2,500 feet of the location indicated on the Plans. Unit prices will remain the same at the new location.

B. The CONTRACTOR shall ensure that the location of all their equipment and tools shall be such as not to interrupt access to any private property or to road traffic.

C. The CONTRACTOR shall install chain-link fencing around the wellsite locations as shown on the Plans.

D. The wells are located in Ormond Beach, Flagler County, Florida. The three wells are located as shown on the Plans.

1.11 Protection of Water Quality

A. The CONTRACTOR shall take all necessary precautions during the construction period to prevent contaminated water, gasoline, hydraulic oil, etc., from entering the wells either through the opening or by seepage through the ground surface. The CONTRACTOR shall take precautions as necessary, or as required, to permanently prevent contaminated water or water having undesirable physical, bacteriological, or chemical characteristics from entering the wells.

B. The CONTRACTOR shall maintain equipment to prevent any leaks of petroleum products or hazardous substances on the ground at the well sites. In the event a spill does occur, the CONTRACTOR shall immediately remove and dispose of the contaminated soil in an appropriate manner, file appropriate paperwork with the Florida Department of Environmental Protection (FDEP) and perform any soil and/or water testing as required.

C. The CONTRACTOR shall provide, install, and maintain erosion controls for the life of the well construction work, as needed and to prevent sediment and turbidity entering surface water bodies, or areas adjacent to the well sites.

D. The CONTRACTOR shall install necessary equipment to control artesian flow from the wells at all times and during all activities related to well construction and testing.

1.12 Well Acceptance Criteria

A. All casings installed shall be plumb and true to line as per Part 3 Section 3.08.

B. All casings, grout, and bridge plugs shall be set to the depths directed by the ENGINEER.

C. Each well shall be developed until, in the opinion of the ENGINEER:

1. The well is completely free of drilling fluids.
2. The water is no longer turbid during development (<1 NTU within 10 minutes of startup at design pumping rate).
3. The well is substantially free of sand (<0.01 mL/minute sand rate (as measured by Rossum Sand Cone) at design pumping rate during the initial 10 minutes of pumping (~5 ppm)).
4. The well is capable of producing the design rate (350 GPM or to be determined by ENGINEER) without excessive drawdown.
5. The well is in conformance with AWWA, SJRWMD, and FDEP Standards.
6. The well is structurally sound.

D. No payment for each well will be due if the CONTRACTOR fails to meet all of the above requirements.

1.13 Guarantee

The CONTRACTOR guarantees that the Work and services to be performed under this Contract and all workmanship, materials, and equipment performed, furnished, used, or installed in the Work shall be free from defects and flaws, and shall be performed and furnished in strict accordance with the Contract Documents; that the strength of all parts and all manufactured equipment shall be adequate and as specified; and that performance test requirements of the Contract Documents shall be fulfilled. The CONTRACTOR shall guarantee that all Work will be performed in a professional manner by qualified well drillers experienced in the type of formations to be encountered. The CONTRACTOR shall repair, correct, or replace all damage to the Work resulting from failures covered by this guarantee at their expense.

PART 2 PRODUCTS

2.01 Drilling

A. Drilling Equipment

1. The CONTRACTOR is responsible for selecting the appropriate drilling method and drill rig(s) for installing casings as shown in the Plans. Following installation of the primary production casing, the open borehole section will be completed using the rotary reverse-air drilling method.
2. Provide all tools, bits, and all other necessary equipment for drilling.

B. Drilling Fluid

1. Provide all drilling fluids, water, and additives as required. Review fluids and additives with the ENGINEER prior to drilling. The ENGINEER must approve any additives. All drilling mud must be managed in accordance with Part 3 Section 3.03. Water used by the CONTRACTOR during drilling must be fresh/clear and approved by the ENGINEER (no surface water).

2. CONTRACTOR shall use only drilling fluids and additives specifically recommended by the manufacturer for use in water well drilling. Avoid contamination of the samples or the aquifer. Do not introduce muds, clays, or drilling aids into the well or use lime, cement, organic matter, or other material to stop circulation losses of the drilling fluid, without reviewing the proposed program with the ENGINEER.

3. The CONTRACTOR shall use a mud balance (scale) as manufactured by CETCO or equivalent.

4. The CONTRACTOR shall use a marsh funnel system as manufactured by CETCO or equivalent.

C. Sample Containers

1. Sample bottles for water samples collected during well construction shall be new, one-liter plastic bottles with plastic screw caps.

2. Sample bottles for water samples collected during test pumping shall be as specified by the laboratory.

3. Lithologic sample bags submitted to the SJRWMD shall be 4½ x 6-inch, as manufactured by HUBCO of Hutchinson, Kansas, or equivalent.

4. Sample bags submitted to the ENGINEER shall be one-quart heavy duty zip-lock bags.

D. Solids Control System

1. The CONTRACTOR shall use a desander to clean the drilling mud during the test/pilot hole drilling and borehole drilling. The desander shall be of such size and design capacity to demonstrate adequate solids control.

2. The CONTRACTOR shall maintain a shale shaker to remove cuttings from the drilling fluids. The shale shaker shall be screened appropriately to remove cuttings larger than sand size (0.125 mm).

3. The desander and shale shaker shall be used and operated as specified by the Manufacturer.

2.02 Well Casings

A. Casings

1. Provide all casing of the types, thicknesses, diameters, and weights as specified and equipment necessary for joining and installing the casing. All casing shall be of new first quality material and free of defects in workmanship, handling, and significant corrosion.

2. Steel well casings shall be made of black carbon steel which conforms to ASTM A53, API 5L Grade B, or equal standards. Ends of plain end pipe shall be perfectly

square and shall be furnished beveled for field butt welding. The steel casings shall have standard wall thickness of 0.375-inches.

PVC well casing shall be Shur-A-Lock flush-joint, spline-connected PVC manufactured by Johnson Screens. PVC well casing shall be made of new and unused SDR-17 PVC or equivalent that conforms to requirements of ASTM D 1784-Standard Specifications for Rigid PVC Compounds and Chlorinated Compounds, and ASTM F480 – Standard Specifications for Thermoplastic Well Casing Pipe and Couplings Made in Standard Dimension Ratios, SCH 40, and SCH 80. The casing shall be joined by a spline-lock mechanical joining system per manufacturer installation methods.

a) The outside diameter for the outer (surface) casing shall be 18.00 inches. The inside diameter of the outer (surface) casing shall be 17.25 inches.

b) The outside diameter for the inner (final) PVC casing shall be 12.75 inches. The minimum inside diameter of the inner (final) PVC casing shall be 11.02 inches

3. Based on subsurface conditions documented in research completed by the ENGINEER, it is anticipated that the surface casing shall be installed into the unconsolidated sand, shell, and clays of the Hawthorn formation between 40-80 feet below land surface (BLS). However, the CONTRACTOR shall be responsible for selecting the outer casing length, drilling method, and type of drill rig used to install the outer casing to protect the hole from caving or raveling prior to, during, and after construction of the production wells. The depth and method of installation of the outer casing shall be approved by the ENGINEER prior to installation.

4. Based on subsurface conditions documented in research completed by the ENGINEER, it is anticipated that the final casing shall be installed the top of the Ocala Limestone that denotes the top of the Upper Floridan aquifer estimated to be between 100-120 feet BLS. However, the CONTRACTOR shall be responsible for selecting the final casing length, drilling method, and type of drill rig used to install the final casing to protect the hole from caving or raveling prior to, during, and after construction of the production wells. The depth and method of installation of the final casing shall be approved by the ENGINEER prior to installation.

5. Pit casing may be used during construction of the wells and is recommended. The use and depth of pit casing is solely at the discretion of the CONTRACTOR. The pit casing must be of sufficient diameter to provide minimum 2-inch annulus between the pit casing and surface casing.

B. Fittings

Provide all fittings, drive shoes, cement baskets, and centering guides as necessary to complete the wells and recommended by the manufacturer.

C. Plumbness and Alignment

Provide all materials and equipment necessary to perform the plumbness and alignment test(s) as specified. Test equipment shall be in conformance with AWWA A100, except as modified by these Specifications.

2.03 Casing Centralizers

A. Casing centralizers shall be kwik-ZIP® HD Series or 380 Series inert plastic centralizers or approved alternate.

B. Casing centralizers shall be fastened in accordance with manufacturer specifications using the manufacturer recommended tools.

2.04 Grout Seal

A. Portland Cement Conforms to ASTM C150, Type I/II.

Composition of resultant slurry consisting of neat Portland cement shall be subject to ENGINEER's approval and should be 15 to 15.6 lbs. /gal.

B. Grout Additives:

Additives such as bentonite to reduce shrinkage, other admixtures (ASTM C494) to reduce permeability, increase fluidity, and control set time, shall be suitable for use in potable water well construction. All additive use shall be approved by ENGINEER prior to use.

C. Mixing Water

1. An adequate and fresh/safe water supply for mixing mud or cementing shall be used by the CONTRACTOR for construction of the water supply wells (no surface water).

2. Neat Cement: 1 cubic foot of Portland Cement to not more than 6 gallons of water.

D. Limerock gravel aggregate may be used to bridge cavernous/fractured formations to reduce loss of grout as determined by the ENGINEER. Limerock gravel aggregate shall be clean, well sorted, and free from organic and other deleterious material. Material shall be ½ to 1-inch in diameter.

2.05 Test Pumping Equipment

A. Test Pump for Well Development and Pumping Tests

1. Furnish and install test pump(s) and driver(s) capable of pumping up to 750 gallons per minute (GPM) under atmospheric conditions.

2. Provide a gate valve, or equal, on the discharge side of the pump for adjustment of flow rate down to 250 GPM.

3. Provide up to two (2) access ports on discharge piping in a location approved by ENGINEER for sand content testing and water sample collection.

4. The pumping unit prime mover, controls, and appurtenances shall be capable of being operated without interruption.

5. CONTRACTOR shall furnish engine-driven equipment or shall make their own arrangements for power for well pumping tests.

B. Flow Measuring Device

Provide a calibrated, propeller-type, totalizing flow meter within 50 feet of the pumping well. The flow meter shall be placed in proper alignment and location upstream of the throttling valve. The flow meter must be new or calibrated within 30 days of use. The flow meter shall be capable of measuring the pump discharge within plus or minus 5 percent of true flow for rates from 250 to 750 GPM.

Provide a machined orifice plate(s) in the discharge piping capable of measuring the pump discharge within plus or minus 5 percent of true flow for rates from 250 to 750 GPM. The discharge piping will be equipped with a manometer for reading manual measurements.

C. Temporary Discharge Piping

Furnish, install, maintain, and operate discharge lines of up to 1,000-ft length in order to convey the water to a discharge location(s), as shown on Plans, which has been approved by the ENGINEER and OWNER. The discharge piping will be equipped with a diffuser(s) to prevent erosion if necessary.

D. Access Pipe

If necessary, provide and install up to two (2) 1-1/2-inch minimum ID pipe to permit installation of water level measuring devices. The temporary pipe shall terminate approximately 10 feet above the pump bowls and be of sufficient strength to remain open for the duration of each test.

E. Furnish complete written details of equipment and specifications used for the well pump tests.

F. The CONTRACTOR shall include necessary equipment to control artesian flow before, during, and after pumping test. A pressure gauge shall be installed to measure artesian pressure at land surface.

2.06 Chlorine Solution

The chlorine solution used for disinfecting the wells shall be of such volume and strength and shall be so applied that a concentration of at least 50 mg/L of free available chlorine shall be obtained in all parts of the well.

2.07 Geophysical Logging and Borehole TV Survey

A. Provide continuous-recording geophysical logging equipment capable of running: caliper, gamma-ray, spontaneous potential, single-point resistivity, long-short normal electric, fluid resistivity/conductivity, fluid temperature, and flow meter with scales of 1:100 (1 foot on paper =100 feet of logged borehole). The fluid conductivity, temperature, and flow meter logs shall be performed under both static and pumping conditions on the completed well. The CONTRACTOR shall supply a test pump capable of pumping a minimum of 500 GPM

at 150 feet of head for the dynamic logging and video surveys on the pilot hole and completed well.

B. Color TV video logging equipment shall be capable of logging the total well depth. During inspection, maintain continuous image on video screen displaying depth of camera below ground surface. The TV survey shall be performed under static and dynamic conditions.

C. Borehole video logs shall be conducted with equipment that has both down-hole and side-view capabilities capable of providing a clear color image up to 24-inches in diameter with sufficient resolution to identify the targets of the survey

D. A video record of the entire well shall be made from land surface to the total depth of the well in the down-hole and up-hole directions. Each casing joint shall be inspected using a sideward-looking camera with full 360° rotation capability. The survey shall be logged at slow play (SP) on high quality Digital Video Disc (DVD).

E. Geophysical logging equipment shall be capable of producing logs in a reproducible chart format and on an electronic disk (PDF, LAS, and CSV formats).

PART 3 EXECUTION

3.01 General

A. Provide drill rig(s) and accessories required to complete the wells as specified.

B. The wells shall be constructed at the locations shown on the Plans.

C. Obtain St. Johns River Water Management District (SJRWMD) well construction permits for the wells prior to initiation of drilling activities.

D. Any part of the Work which is not mentioned in the Specifications or on the Plans, but is necessary or normally required as a part of such Work, or is necessary or normally required to make each installation satisfactorily and legally operable, shall be performed by the CONTRACTOR as incidental Work without extra cost to the OWNER, as if fully described in the Specifications and shown on the Plans, and the expense thereof shall be included in the applicable unit prices or lump sum bid for the Work.

E. The CONTRACTOR shall provide a fully equipped drilling rig and appropriate support equipment capable of drilling boreholes, circulating drilling fluids (if used), air-lift pumping, and setting casings of the sizes and depths specified herein, and an experienced drilling crew to perform the Work.

F. Provide temporary piping and appurtenances to convey water produced by drilling, development, and testing to the designated location(s), as shown on Plans, as directed by the ENGINEER, and approved by the OWNER. Provide discharge lines of up to 1,000-ft length in order to convey the water to a discharge location that has been approved by the ENGINEER and OWNER.

G. The CONTRACTOR shall provide necessary equipment to provide access for property owners that may be affected by the location of the discharge piping.

H. Whenever work on the well is interrupted, such as during an overnight shutdown, the well opening shall be sealed with a cover. The cover shall be watertight and prevent artesian flow if present. At all times during construction on the wells, the CONTRACTOR shall use reasonable precautions to prevent both tampering with the wells and entrance of foreign material into the wells.

I. The SJRWMD shall be notified 24 hours before any grouting activities take place at the site. It is the responsibility of the CONTRACTOR to provide proper and timely notice to the SJRWMD.

3.02 Mobilization

A. This section covers the work necessary to: transport to the site all personnel, supplies, and equipment; set up workover and drill rigs, and temporary facilities; equipment referenced in other sections; temporary power, water, and per diem. This section also covers the work necessary to remove from the site all personnel, supplies, and equipment; remove workover and drill rigs and temporary facilities; equipment referenced in other sections; and site restoration and cleanup. Time is of the essence. Demobilization shall be completed within two weeks after substantial completion of other site work.

B. Set up equipment as necessary to accomplish the Work. Accomplish all required Work in accordance with applicable portions of these Specifications.

C. The CONTRACTOR must confine their Work, personnel, equipment, and activities to within the easement clearing limits and well site property boundary as shown on the Plans. Under no circumstances can personnel or products of this construction be allowed beyond the indicated limits.

D. The CONTRACTOR will prepare and provide a Maintenance of Traffic (MOT) Plan if required.

3.03 Borehole Construction

A. The CONTRACTOR shall drill the wells at the exact location shown in the Plans. The CONTRACTOR is responsible for determining the exact locations in the field.

B. The wells are to be of the type and characteristics shown in the Plans. The exact depth of the and length of casings are to be determined in the field in accordance with information obtained from the corresponding pilot hole or from the actual drilling operation.

C. The use of a pit casing is recommended and may be used during construction of the wells. The use and depth of pit casing is solely at the discretion of the CONTRACTOR. The pit casing must be of sufficient diameter to provide minimum 2-inch annulus between the pit casing and surface casing.

D. The CONTRACTOR is responsible for selecting the appropriate drilling method and drill rig(s) for installing casings as shown in the Plans. However, all casings must be pressure grouted from bottom to top. Following installation of the surface casing, the open borehole section will be completed using the rotary reverse-air drilling method.

E. The CONTRACTOR shall incorporate the use of a desander and shale shaker to remove sand, silt, and cuttings from the drilling mud fluids during the drilling and sampling of the test/pilot holes while drilling with closed circulation mud rotary drilling. The CONTRACTOR shall condition the mud and maintain mud conditioning at all times. The CONTRACTOR is solely responsible for maintaining and demonstrating the condition of the drilling mud fluids.

F. During closed circulation, mud rotary drilling; the CONTRACTOR shall contain all drilling fluids (drilling mud) in above-ground steel mud tanks. All mud tanks shall be steam cleaned, then disinfected with a minimum 200 mg/L chlorine solution prior to mixing drilling mud. All drill pipe, bits, hoses, pumps, desanders, mud mixers, i.e. all down hole and circulation equipment shall be disinfected with a minimum 200 mg/L chlorine solution prior to use. No open pits and/or trenches for drilling mud or fluids used for the test/pilot holes or the production wells shall be tolerated. Fluid shall be piped from the well head to the mud pumps/tanks.

G. The CONTRACTOR is responsible for disposal of drilling fluids, cuttings, and water generated during construction in a manner acceptable to the OWNER and ENGINEER in accordance with applicable state and local regulations.

H. Artesian flow is not expected during drilling of the open borehole section; however, the CONTRACTOR is responsible for controlling artesian flow if required. Discharge of formation water from the well to the ground shall be avoided to the greatest extent possible. The CONTRACTOR shall take all necessary precautions, and make repairs as needed, to minimize the discharge of formation water to the ground.

I. The CONTRACTOR shall dispose of all cuttings and drilling mud, removed from mud rotary drilling operations, at an off-site location in an acceptable manner required by Federal, State, and Local codes or regulations. CONTRACTOR shall not allow turbid water to be discharged off-site.

J. Drill the boreholes of the dimensions shown on Plans. The casing depths and total depth of the wells will be determined by the ENGINEER. Drill a 6 to 8-inch diameter pilot hole to full depth of each casing setting and total well depth, as approved by the ENGINEER. It is anticipated that the initial pilot hole will be drilled by mud rotary to ~100-120 feet into the Upper Floridan aquifer to identify a suitable depth to install the surface casing. The second pilot hole will be drilled reverse air rotary to the final total depth of the wells as determined by the ENGINEER (300 feet). Drill a nominal 12-inch diameter bore hole to the final total depth of the wells as determined by the ENGINEER.

K. Boreholes shall be drilled so as to permit the installation of the casings straight and plumb to the tolerances specified.

L. Boreholes shall be drilled so as to permit the annular space required by F.A.C. 40C-3.

M. After total well depth has been reached, development of the well by air lifting through the drill string shall continue until the air-lifted water is clean and free of cuttings and/or sand.

3.04 Formation Samples

A. The CONTRACTOR shall take representative formation samples between 10 feet below the ground surface to the full depth of the well. A sample shall be taken at each 10-foot level and each change in formation or material type. The method of sample collection must yield samples that are representative of the actual depth to which drilling has progressed.

B. Each sample shall be approximately one pint in volume. Place each sample in a zip lock plastic bag labeled with the date, well identification, and depth from which the sample was taken clearly marked on the bag. Submit one set of samples to the ENGINEER and save one set for SJRWMD. Store sample bags in 22-gallon plastic latching storage boxes.

3.05 Water Samples

A. While drilling with reverse air circulation upon penetration of the Floridan aquifer, the CONTRACTOR shall collect representative water samples every 20 feet. Samples shall be collected in new plastic bottles that have a capacity of not less than one pint and that are equipped with nonmetallic caps. Each bottle shall be rinsed twice with the water to be sampled before collecting the corresponding sample. Plastic bottles that are in good condition may be reused after properly rinsing and as determined by the ENGINEER.

B. Sample bottles shall be clearly labeled in an indelible way with the description of the well, depth, time, and date of collection. It shall be the CONTRACTOR’s sole responsibility to collect, protect, and deliver the water samples, properly labeled after collection, to the ENGINEER’s onsite representative who will perform the field analysis of the water samples.

C. The samples will be analyzed in the field by the ENGINEER’s onsite representative for the following parameters:

1. pH
2. Temperature
3. Specific Conductivity
4. Total Dissolved Solids (TDS)
5. Chloride
6. Total Iron
7. Sulfate

D. One (1) set of laboratory water quality samples will be collected during the last hour of the Constant Rate Pumping Test. The samples shall be collected and tested for all parameters contained in Chapters 62-550, Florida Administrative Code, including Primary and Secondary Florida Drinking Water Parameters. The tests shall be for all Primary and Secondary Drinking Water Standards, including volatile organic and synthetic organic contaminants, priority pollutants, asbestos, dioxin, disinfection byproducts, and radionuclides as required by the Florida Department of Environmental Protection, Water

Section, for Public Drinking Water Standards as outlined in Chapter 62-550, F.A.C. In addition, the tests shall include all parameters for public water system wells outlined in Chapter 62-555.315, F.A.C. Additional samples shall also be collected for analysis of PFAS compounds by EPA Methods 533 and 537. The samples must be collected and analyzed by a Laboratory accredited with NELAC and certified by the FDEP. It is the responsibility of the CONTRACTOR to secure prior acceptance from the ENGINEER of the proposed testing laboratories. Parameters analyzed for the determination of background water quality are listed below:

1. Extended primary and secondary drinking water standards in Chapters 62-550, and 62-555, F.A.C. and others as shown in Appendix A.
2. Alkalinity, bromide, calcium, magnesium
3. Dissolved Iron
4. Dissolved Oxygen
5. pH, specific conductance
6. Total Sulfide, Total Organic Carbon
7. Turbidity, HAA, TTHM
8. 25 PFAS EPA 533 (per UCMR 5)
9. 4 PFAS EPA 537.1 (per UCMR 5)
10. Lithium (per UCMR 5)

E. Sample Collection

Groundwater samples must be collected in accordance with the Florida Department of Environmental Protection's (FDEP) standard operating procedures (SOP), DEP-SOP-001/01, DEP Quality Assurance Rule, 62-160, F.A.C. The well must be purged in accordance with the appropriate procedure in DEP-SOP-001/01, as necessary to evacuate water from the well column and induce groundwater representative of the hydrogeologic formation into the well prior to sampling. Purged water must be sampled and analyzed in the field for the following parameters:

1. pH (SU)
2. Water Temperature (C)
3. Specific Conductance (umhos/cm or uS/cm)
4. Dissolved Oxygen (mg/L or % Saturation)
5. Turbidity (NTU)

Purging must be documented using the Groundwater Sampling Log form referenced in the FDEP SOP or equivalent. Water samples must be stored on ice immediately after collection and remain on ice until received by the laboratory. It is recommended that sample duplicates be taken to allow for laboratory errors or data loss, and these samples be stored

by the laboratory for a minimum of 60 days to ensure backup sample availability should re-analyses be required.

F. CONTRACTOR is to provide one (1) copy of the chemical analysis from the production wells) performed by a Certified Laboratory with results submitted on the Standard Format 62-550.730 (attached) for all water analysis per Chapters 62-550 and 62-555, F.A.C. Example FDEP laboratory forms are included in Appendix A.

G. Quality Assurance

The CONTRACTOR must provide documentation that field instruments were properly calibrated prior to obtaining field measurements during purging and sampling.

All water quality analyses must be performed by a laboratory certified by the Florida Department of Health (FDOH) and the National Environmental Laboratory Accreditation Program (NELAP). All laboratory analyses must be by methods for which the laboratory has FDOH certification. All laboratory analyses must be completed within EPA holding times. If data is lost or a laboratory error occurs and the EPA holding time for an analysis has expired, the permittee must have the well re-sampled within 15 days of notification from the laboratory that a loss or laboratory error has occurred. The resample shall be collected according to the procedures described above and analyzed for the field parameters and the major ion suite listed above.

With the exception of pH, laboratory analyses utilizing selective ion electrodes are not acceptable due to the inadequate sensitivity of these methods. Analyses utilizing test kits typically used for field screening (e.g., Hatch and LaMotte) are also not acceptable for the same reason. All major ion analyses must be checked for anion-cation balance (equivalent concentration in meq/L) and must not exceed 5% difference. If the ion balance exceeds 5% difference, the permittee must review the data and include in the report submitted to the District, a discussion of the cause or explanation of the imbalance. The permittee may also be required to have the sample re-analyzed if it is within acceptable holding times or have the well re-sampled. The resample shall be collected according to the procedures described above and analyzed for the four field parameters and the major ion suite.

3.06 Drilling and Well Logs

A. Furnish the ENGINEER with a daily copy of the drilling log. The log shall describe the geologic materials and depths encountered; the presence or absence of water; depths of lost circulation zones and methods of regaining circulation; drilling rates; time, depth, and description of any unusual occurrences or problems during drilling; and diameters and lengths of casing installed. Keep the log up to date with the progress of drilling. Keep a copy at the drill site for inspection by the ENGINEER. Installed quantities of items, identified on the Bid Schedule, should be included in the daily log.

B. Prepare and submit a Well Completion Report (Form) as required by the St. Johns River Water Management District. File all records and reports with the proper agencies required by federal, state, and local codes or regulations.

3.07 Casing Installation

A. Install specified casing in hole, plumb and straight as defined herein.

B. All casing shall be installed by a method appropriate to the well construction Drawing(s), as selected by the CONTRACTOR and approved by the ENGINEER.

C. Casing lengths shall be joined watertight by a method appropriate to the material used, as recommended by the manufacturer, so that the resulting joint shall have the same structural integrity as the casing itself.

D. The standards of the American Welding Society and AWWA C206 shall apply for all welded joint steel casing and accessories.

E. The standards of the PVC well casing manufacturer shall apply for connection of the PVC casing sections using mechanically joined connections.

F. Attach approved centering guides around the casing five (5) feet from the bottom end, at 40-foot intervals, and 10 feet from ground surface for the well casings.

G. Casing which fails, collapses, or separates during construction shall be removed from the hole and repaired or replaced at CONTRACTOR’s sole expense and approved by the ENGINEER.

3.08 Plumbness and Alignment Test

A. The production wells shall be constructed, and all casings and liners set round, straight, and plumb. At the discretion and direction of the ENGINEER, the CONTRACTOR shall perform the test described herein in conformance with AWWA A100, or equal to demonstrate compliance with the requirements. The test for plumbness and alignment shall be made following construction of the well and before test pump equipment is installed.

B. Plumbness and alignment shall be tested by lowering into the well, for the upper 100 feet of the final casing, a section of pipe 40 feet long or a dummy of the same length. The outer diameter of the pipe or dummy shall be not more than 0.5-inch smaller than the inside diameter of the casing. If a dummy is used, it shall consist of a rigid spindle with three rings, each ring being 12 inches in length. The rings shall be truly cylindrical and shall be spaced one at each end of the dummy and one ring in the center.

C. The plumb line may be suspended from the drilling rig or from a tripod with winch. An adjustable guide block shall be provided so that the test pipe or dummy will hang in the exact center of the top of the well casing. As the pipe or dummy is lowered into the hole, the deflection of the plumb line from the exact center of the casing will be measured every 10 feet.

D. Should the test pipe or dummy fail to move freely throughout the length of the casing or should the well vary from plumb in excess of 2/3 of the inside diameter per 100 feet, the plumbness and alignment of the well shall be corrected by the CONTRACTOR at their sole expense. Should the CONTRACTOR fail to correct such faulty alignment or plumbness, the OWNER may refuse to accept the well.

3.09 Grout Seal

A. Grouting of the well shall be performed in the presence of the ENGINEER. If cementing activities require observation by a SJRWMD representative, the CONTRACTOR shall coordinate cementing activities to accommodate this requirement at no additional cost to the OWNER.

B. The method of grout placement shall be reviewed and approved by the ENGINEER. If grouting below the water table, no method will be permitted that does not force grout from the bottom of the space to be grouted to the surface.

C. No drilling operations will be permitted until after the grout has cured for a minimum of 24 hours.

D. The annular space between the well casings and borehole wall shall be filled from bottom to top with neat Type I/II Portland cement. Portion one cubic foot of cement to not less than 5.2 gallons and not more than 6 gallons of water. Composition of resultant slurry shall be subject to ENGINEER's approval and should be 15 to 15.6 lbs. /gal. The grout material for the surface and final casings shall be neat cement.

E. The CONTRACTOR shall be solely responsible for any defect in cementing work due to improper, or lack of, equipment, technology, personnel, or experience, either of CONTRACTOR or any of their SUBCONTRACTORs. CONTRACTOR shall pay all costs necessary to correct such defects. Should CONTRACTOR fail to correct defects, the OWNER may refuse to accept the well.

F. The CONTRACTOR shall discuss with the ENGINEER a grouting plan, for each casing, prior to commencement of grout placement. The CONTRACTOR shall cement each casing using the sealed header with interior tremie line method (positive displacement) for the first stage and shall pump cement continuously until circulation of cement is achieved or the total amount of cement per stage has been pumped. This method requires a sealed header at the well head, the casing to be filled with fluid, and a working pressure gauge on the well head (see AWWA A100-06, Appendix C, Section C.3). If required, subsequent cement stages shall be emplaced using a collarless tremie pipe as described in AWWA A100-06, Appendix C, Section C.2.

G. The grout shall set at least 12 hours between each grouting operation/lift. After each grout operation, the grout will be tagged to determine the depth that the last grout operation terminated. After the grouting of each casing is complete, the casing and the well shall remain undisturbed for at least 24 hours.

H. The CONTRACTOR shall collect at least three (3) 12-ounce cement grout samples throughout each cement grouting procedure. The cement grout samples shall be collected at the beginning, at the midpoint, and at the end of grouting of each stage of cement. The CONTRACTOR shall measure the cement grout samples for cement slurry weights using a mud balance. The 12-ounce cement grout samples shall be marked with a waterproof pen and placed into a 5-gallon bucket of water. After grout solidification, all grout samples shall be submitted to the ENGINEER.

3.10 Well Development

A. The purpose of the development work is to effectively remove from the well, borehole walls, and the formation immediately adjacent to the well, material such as mud, clay, fine particles of sand and/or shell, and any other type of fine materials.

B. The CONTRACTOR shall develop the well by such methods as will effectively extract from the water-bearing formation the maximum practical quantity of sand, drilling mud and other fine materials in order to bring the well to maximum yield per foot of drawdown and to a sand-free condition. This work must be done in a manner that does not cause undue settlement and disturbance of the strata above the water-bearing formation nor disturb the seal affected around the well casing and thereby reduce the sanitary protection otherwise afforded by such seal.

C. Development of the pilot hole shall be accomplished by over pumping. The pump shall be run at the maximum pumping capacity of the pump (at least 500 GPM, a higher pumping rate may be used solely at the discretion of the CONTRACTOR and must be approved by the ENGINEER). Once the well is pumping at maximum rate, pumping will continue until Turbidity is measured below 50 Nephelometric Turbidity Units (NTUs). At that time, the CONTRACTOR will continue pumping at maximum capacity while surging the well at approximately 60-120-minute intervals during which time the discharge, water level, turbidity, and sand content are measured and recorded by the CONTRACTOR. This surging process will be repeated until such time as the well's discharge water at the design pumping rate (350 GPM) is measured at less than 20 NTU within 10 minutes of pump startup or until discontinued by the ENGINEER. The ENGINEER may, based on progress of development, define alternate discharge rates or durations of pumping as a means to improve the effectiveness of development. The CONTRACTOR may propose an alternative approach to development, subject to review and approval by the ENGINEER.

D. Final development of the well (after reaming of the pilot hole to final total depth) shall be accomplished by surging and over-pumping. The pump shall be run at the maximum pumping capacity of the pump (at least 750 GPM, a higher pumping rate may be used solely at the discretion of the CONTRACTOR and must be approved by the ENGINEER). Once the well is pumping at maximum rate, pumping will continue until Turbidity is measured below 50 Nephelometric Turbidity Units (NTUs). At that time, the CONTRACTOR will continue pumping at maximum capacity while surging the well at approximately 60–120-minute intervals during which time the discharge, water level, turbidity, and sand content are measured and recorded by the CONTRACTOR. This surging process will be repeated until such time as the well's discharge water at the designed pumping rate (350 GPM) is substantially sand free (less than five (5) ppm sand measured over a 10-minute interval immediately following pump startup and less than one (1) NTU within 10 minutes of pump startup) or until discontinued by the ENGINEER. The ENGINEER may, based on progress of development, define alternate discharge rates or durations of pumping as a means to improve the effectiveness of development. The CONTRACTOR may propose an alternative approach to development, subject to review and approval by the ENGINEER.

E. The cycle of surging or pumping shall be repeated until the discharge water is clear of sand, silt, and mud and until there is no increase in specific capacity (discharge per foot of drawdown) in the well. The well shall be thoroughly developed so that it will produce a reasonable maximum capacity based on the consideration of depth and nature of the water-bearing formations, and so that it will not produce a composite amount of fine sands in excess of that specified.

F. Upon completion of the development operations, the CONTRACTOR shall demonstrate that the bottom of the well is clear of all sand, mud, and other foreign material.

G. The well shall be developed until, in the opinion of the ENGINEER, it is:

1. The well is completely free of drilling fluids.

2. The water is no longer turbid during development (<1 NTU within 10 minutes of startup at design pumping rate).

3. The well is substantially free of sand (<0.01 mL/minute sand rate (as measured by Rossum Sand Cone) at design pumping rate during the initial 10 minutes of pumping (~5 ppm)).

4. The well is capable of producing the design rate (350 GPM or to be determined by ENGINEER) without excessive drawdown.

5. The well is in conformance with AWWA, SJRWMD, and FDEP Standards.

6. The well is structurally sound.

H. Disposition of well development water is the responsibility of the CONTRACTOR and shall be determined by the OWNER and ENGINEER in the field. All water produced shall be settled of excess solids and conveyed away from the well in an environmentally safe manner and as directed by the ENGINEER. Provide discharge lines of up to 1,000-ft length in order to convey the water to a discharge location, as shown on the Plans, which has been approved by the ENGINEER and OWNER. The CONTRACTOR must obtain pre-approval for any discharge piping and associated equipment located on the property, as well as pre-approval for the location of any water discharge that could impact these properties. The pre-approval must be obtained from the OWNER. If any negative impacts occur to these properties as a result of well development, the well development process shall be immediately terminated, and alternate arrangements shall be made to the satisfaction of the OWNER.

3.11 Step-Drawdown and Constant Rate Pumping Tests

A. The CONTRACTOR shall provide an operator during the total duration of the pumping tests conducted as required by the ENGINEER to operate the prime mover and to regulate the discharge by the throttling devices during the test pumping period.

B. Following the completion of well development, a step-drawdown pumping test shall be conducted. The test shall consist of a step-drawdown test in which the well shall be pumped for approximately one hour at each of three escalating rates. The actual duration of the step-drawdown pumping test shall be determined by the ENGINEER during the test.

Anticipated pumping rates for the step-drawdown pumping test are 25, 350, and 450 GPM or as determined by the ENGINEER.

C. The CONTRACTOR shall conduct an 8-hour constant rate pumping test following the step-drawdown pumping test after full recovery of the water level and results from the step-drawdown pumping test are reviewed and determined to be acceptable by the ENGINEER. The anticipated pumping rate for the constant rate pumping test is 350 GPM. The actual flow rate for the constant rate pumping test shall be determined by the ENGINEER based on field conditions.

D. If considerable quantities of fines are pumped out of the well during the tests, the CONTRACTOR shall discontinue the test and resume well development.

E. Water produced during the step-drawdown pumping test shall be piped to and discharged to a location as approved by the OWNER or ENGINEER. Provide discharge lines of up to 1,000-ft length in order to convey the water to a discharge location, as shown on the Plans, which has been approved by the ENGINEER and OWNER. The method of discharge shall not cause water to result in washouts or scouring. The CONTRACTOR shall be responsible for constructing any necessary discharge baffles, diffusers, or spreading plates to discharge the water in accordance with these Specifications.

F. During testing, the CONTRACTOR will record discharge rates and water levels in the well at predetermined times. For this purpose, the CONTRACTOR shall operate the pump without interruption, at no more than five percent fluctuation in the designated rate of discharge, during the full period of the step-drawdown pumping test as determined by the ENGINEER. During the test, the pipeline prior to the valve must be capable of maintaining a back pressure of 40 psi. If the test is started and then must be stopped due to equipment breakdown, failure of any water level recorder, or inadequate supervision by the CONTRACTOR, no extra payment shall be made for the time spent pumping before the test had to be stopped, or the time spent waiting for recovery before the test is restarted. If any part of the pumping equipment fails to operate properly or impairs the proper functioning of another element or instrument involved in the test, the equipment shall be removed and repaired at the expense of the CONTRACTOR, and no extra payment shall be made for the delay.

G. Sand content shall be determined from a pumping and sampling procedure conducted during the step-drawdown pumping test. It is the responsibility of the CONTRACTOR to secure prior written acceptance from the ENGINEER of the proposed sand content testing method. Sand results shall be less than 5.0 mg/L.

H. During each step, the ENGINEER will collect and analyze water samples for field analysis.

I. During the final hour of the constant rate pumping test, the CONTRACTOR shall have samples collected and tested as outlined in Section 3.05.

3.12 Well Geophysical and Video Logging

A. Geophysical logging shall be performed as identified hereinafter and as determined by the ENGINEER. Two (2) field copies of each requested geophysical log shall be provided to

the ENGINEER by the CONTRACTOR immediately upon the completion of each logging event. Five (5) final copies of each geophysical log, including one (1) reproducible copy, shall be provided to the ENGINEER by the CONTRACTOR upon the ENGINEER's review of such items as accuracy, scale, reproducibility, etc. Also, provide one USB memory device for all logs in PDF, LAS, and CSV format at the completion of the Project.

B. Geophysical logs are to be run on the completed pilot hole to the top of the limestone including gamma ray and long-short normal electric with scales of 1:100 (1 foot on paper = 100 feet of logged borehole).

C. Geophysical logs are to be run on the pilot hole to total depth and the completed production well including color video, caliper, gamma-ray, spontaneous potential, single-point resistivity, long-short normal electric, fluid resistivity/conductivity, fluid temperature, and flow meter with scales of 1:100 (1 foot on paper =100 feet of logged borehole). The fluid conductivity, temperature, and flow meter logs shall be performed under both static and pumping conditions. The CONTRACTOR shall supply a test pump capable of pumping up to 750 GPM at 150 feet of head.

D. A summary of the geophysical logs that are required is provided in **Table 2**:

Table 2 – Geophysical Logging Summary

Pilot Hole / Completed Well	Logged Interval (Feet BLS)	Static Logs				Static and Dynamic Logs			
		Caliper	Gamma Ray	Electric	Fluid Res.	Flow Meter	Temp	Fluid Res.	TV Video
Pilot Hole	0-120		X	X					
Pilot Hole	0-300	X	X	X	X	X	X	X	X
Completed Well	0-300	X	X	X	X	X	X	X	X

E. The CONTRACTOR shall assist in the logging operations when needed to set up logging equipment, during the logging, and to disassemble the logging setup.

F. Water produced during the geophysical logging shall be piped to and discharged to a location, as shown on the Plans, as approved by the OWNER or ENGINEER. Provide discharge lines of up to 1,000-ft length in order to convey the water to a discharge location that has been approved by the ENGINEER and OWNER.

G. The CONTRACTOR shall be responsible for keeping the borehole open and free of obstructions during geophysical logging and shall remove any obstruction to the logging tools at their own expense. In the event the logging tools do not reach within 5 feet of the bottom of the hole, as measured with the drill pipe, the CONTRACTOR shall clean the hole to the original drilled depth at their own expense. Standby time necessary to rerun the logs shall not be paid.

H. A color TV video recording of the well will be made for the full depth of the well upon completion and after well development is complete. The TV survey shall be performed under static and dynamic conditions. The CONTRACTOR shall prepare and perform inspection and recording only while water in the well is clear. During inspection, maintain continuous image on video screen. During inspection, display date and numbers indicating depth of camera below top of casing on video monitor. Record numbers with image on the video. Color video surveys of the borehole shall be recorded on digital video disc (DVD format) and USB memory device. Two (2) field copies of each requested video survey shall be provided to the ENGINEER by the CONTRACTOR immediately upon the completion of each event. CONTRACTOR shall furnish the OWNER five (5) copies of the survey on DVD and USB.

I. The CONTRACTOR is responsible for obtaining a clear, definitive picture of the well casings and boreholes, as defined by the ENGINEER. No additional cost shall be charged to the OWNER and/or its representatives to produce clear pictures.

J. If the CONTRACTOR observes an obstruction and/or other area of concern that precludes the completion of the television surveying, the CONTRACTOR is solely responsible for the decision to continue, suspend, or stop and remove the camera. The CONTRACTOR shall be paid for the survey if the presence of the obstruction is not the fault of the CONTRACTOR.

K. All geophysical logging and television surveying shall be performed in the presence of the ENGINEER.

3.13 Well Acidizing

It may be necessary to acidize and further develop the well if the well yield does not meet expectations.

This decision will be made after the TV Survey and geophysical logs have been conducted and after the Step-Drawdown Pumping Test has been completed (note: if this alternative is needed, the Step-Drawdown Pumping Test will need to be re-run after the well has been acidized and further developed). If well acidizing is needed, the CONTRACTOR will acidize according to the following general protocol:

A. Equip the casing with an airtight header, which will allow the introduction of a 1- to 2-inch diameter PVC chemical feed tremie line to be installed and made airtight. Equip the PVC chemical feed line with a valve. Provide a pressure gauge at the well header that records up to 100 pounds per square inch (PSI).

B. The CONTRACTOR shall pressure test the airtight header up to 60 psi and identify and fix leaks if any are present. The pressure will be increased to 60 psi and monitored for decreases in pressure for a minimum of one (1) hour or a duration acceptable to the ENGINEER.

C. The CONTRACTOR shall provide a staging area for delivery of the inhibited 20% hydrochloric acid (HCL) that will include a secondary containment area. The secondary

containment area shall have an equal or greater volume to the amount of HCL to be contained.

D. The CONTRACTOR shall keep 200 pounds of soda ash staged onsite in an easily accessible area in case of any chemical spills. The soda ash is for neutralizing the HCL.

E. The chemical feed tremie will be placed to a depth selected from the TV Survey and geophysical logs where water is produced from the formation (to be determined by ENGINEER). More than one zone may be selected for acid treatment. Perforations will be made in the chemical feed tremie line as directed by the ENGINEER.

F. Pump 1,650 gallons of HCL into the well via the chemical feed tremie line. If more than one zone is selected it may be necessary to re-position the chemical feed tremie line and repeat the process.

G. After all the HCL has been placed in the well, close the valve on the chemical feed tremie line and allow the HCL to react with the calcium carbonate formations. This reaction will produce a pressure build-up in the well casing. The pressure shall be monitored and not allowed to exceed 40 PSI above the background shut in pressure created by natural artesian conditions. This can be regulated by opening the valve on the chemical feed tremie line to slowly and periodically bleed off excess pressure and formation water.

H. Allow the acid to remain in the well for at least 24 hours.

I. Formation water will be slowly bled off through a discharge hose and/or piping directed to the on-site settling tanks supplied by the CONTRACTOR and managed in accordance with all applicable regulations. The settling tanks provided by the CONTRACTOR shall be watertight and shall be capable of holding all discharged formation water and spent acid during the neutralization process. The CONTRACTOR will monitor the pH of the spent acid to be sure it is at or near neutrality using a portable pH meter pre-approved by the ENGINEER. If the spent acid has a pH lower than 6.5, as measured in the settling tanks, then the CONTRACTOR will add sufficient sodium bicarbonate to bring the pH to neutral. This operation shall be monitored so that any water discharged from well and tanks is neutral.

J. The discharge water neutralization process shall be implemented to ensure the pH of the discharge water is within the range of 6.5 to 8.5 at all times when discharged to the property. Neutralizing shall be continuously adjusted to ensure the pH is within the acceptable range. All pH logs must be subsequently submitted to the ENGINEER and OWNER to document compliance with the requirement.

K. Once the formation water has been neutralized, the CONTRACTOR will re-set the test pump and develop the well by surging and over pumping for up to 8 hours and re-run the Step-Drawdown Pumping Test, as described above.

L. CONTRACTOR shall be responsible for site clean-up and restoration resulting from the acidization process.

3.14 Well Disinfection

A. At the conclusion of drilling and testing, the production well shall be disinfected with the chlorine solution as specified by AWWA Standard No. A100-06, Section 11. Chlorine solution shall be prepared and applied in accordance with the AWWA C654.

B. The chlorine solution used for disinfecting the well shall be of such volume and strength and shall be so applied that a concentration of at least 50 mg/l of available chlorine shall be obtained for the entire water depth of the well, and this solution shall remain in the well at the conclusion of drilling and testing. No tools or material shall be allowed to enter the well after disinfection is conducted. If tools and/or materials enter the well after disinfection, the CONTRACTOR shall repeat the disinfection procedure at no additional cost.

3.15 Abandonment of Well

If it becomes necessary to abandon a well, CONTRACTOR shall plug the well in accordance with the Minimum Water Well Construction Standards (Chapter 40C3.531 F.A.C.).

3.16 Cleanup of Construction Areas

Upon completion and acceptance of the well, remove from the site the drill rig and equipment, complete, and all debris, unused materials, and other miscellaneous items resulting from or used in the operations. Replace or repair any facility which has been damaged during the construction Work. Restore the site to its pre-drilling condition or as approved by the OWNER or ENGINEER.

3.17 Well Finish and Cover

Immediately after removing the test pump and completing all testing activities, the CONTRACTOR shall fasten a temporary, watertight, lockable capping plate to the inner casing of the well. The temporary cap shall prevent artesian flow from the well if artesian flow is present at the end of well construction. The temporary capping plate is to secure the well and prevent entrance of any foreign material prior to installation of the permanent pump. Wellhead shall be completed as shown in the Drawings or as directed by ENGINEER.

END OF SECTION

SECTION 33 11 20

SUBMERSIBLE WELL PUMPS

PART 1 – GENERAL

1.01 DESCRIPTION

A. The pump shall be submersible pump, motor and column. All pumps shall conform in all respects to the American National Standard ANSI-E102 and shall comply with all local and state sanitary and safety regulations. All components that come into contact with drinking water will comply with NSF Standard 61, or equivalent under Rule 62-555.320(3)(b), F.A.C.

B. The pump shall be of standard dimensions, built to limit gauges or formed to templates such that parts will be interchangeable between like units.

C. The pump shall conform to all requirements stipulated in the table at the end of this section as manufactured by Grundfos.

PART 2 – MATERIALS AND EQUIPMENT

2.01 PUMP CONSTRUCTION

A. Discharge Head

1. The discharge head shall be of 304 stainless steel, ASTM CF-8, free of sand holes and other defects, accurately machined and with a surface discharge. Discharge flange shall be machined and drilled to ANSI standards for 125# or 250# rating and shall be six inches normal inside diameter.

B. Column Assembly

1. The column pipe shall be six inches in diameter, Certa-Lok PVC manufactured to meet or exceed ASTM Specification D1785 requirements (SCH 80). Pipe shall be supplied in interchangeable sections not over 20 feet in length and couplings supplied by CertainTeed to make watertight drop pipe.

2. PVC compounds used in the manufacturing of Certa-Lok Drop Pipe shall be NSF61 listed after being tested for taste, color and toxicity.

3. Joints: Pipe shall be joined using a spline lock joint. High-strength, acid-resistant, flexible thermoplastic splines shall be inserted into mating precision-machined grooves to provide full 360° restraint with evenly distributed loading. No external pipe-to-pipe restraining devices which clamp onto or otherwise damage the pipe surface as a result of point-loading shall be permitted. The joining system shall incorporate elastomeric sealing gaskets which are designed to provide a watertight seal. Note that this specification does not cover pipe with threaded joints

C. Pump Assembly

1. The pump shall be 304 Stainless Steel. The water passages shall be free of blow holes, sand holes and other detrimental defects, and shall be accurately machined and fitted. The impellers shall be of 304 Stainless Steel dynamically balanced.

2. The pump shaft shall be 431 stainless-steel, turned, ground and polished. It shall be supported by bearings of NBR or 316 Stainless Steel above and below each impeller. The size of the shaft shall be no less than that determined by AWWA Specifications E102, Section 4.2.1.9.

3. The discharge case shall be threaded on the outside and fitted with a 304 Stainless Steel column adaptor of the proper size to connect to the column selected.

D. Strainer

1. A 304 stainless steel inlet screen shall be provided having a net inlet area equal to at least four (4) times the suction pipe area. The maximum opening size shall not be more than seventy-five percent (75%) of the minimum opening of the water passage through the bowls and impellers.

2.02 MOTORS

A. Performance Requirements

1. Motors shall be rated for operation on a three (3) phase 60 hertz power supply.

2. Each motor shall have a 1.15 service factor.

3. The motor shall be of the squirrel-cage induction type, suitable for across-the-line starting and shall be capable of reduced-voltage starting. The motor shall be capable of continuous operation under water at the conditions required in the purchase documents.

4. The motor temperature shall be rated no higher than the allowable operating temperature of the motor thrust and radial bearings and in no case shall it exceed the temperature rating of the insulation class used to wind the motor.

5. Motor shall be non-overloading without SF over entire pump performance curve.

B. Construction

1. The electric motor shall be submersible duty 3500 RPM, three (3) phase, 60 Hz with squirrel cage induction design.

2. A thrust bearing of ample capacity to carry the weight of rotating parts, plus the hydraulic thrust at maximum operating head, shall be an integral part of the motor. For antifriction bearings, the bearings shall be of such capacity that the ANSI/ABMA Standard 9 calculated rating life (L10) shall be no less than 8,800 hours. The thrust bearing shall have ample bearing capacity to permit the pump to operate during temporary operating conditions with the discharge valve in the closed position.

3. The motor rating shall be such that at design it will not be loaded beyond nameplate rating and at no place on the pump curve shall the loading exceed the service factor.

2.03 TESTING

A. Factory Performance Testing

1. The bowl assembly shall receive a certified factory performance test in accordance with HI standards. Pump bowls shall be tested for flow, head, horsepower, and hydraulic efficiency.

2. Results of the performance test shall be submitted to the Engineer for review and approval prior to shipment of the equipment.

B. Performance Testing

1. The pump bowl assembly shall be operated from zero capacity to the maximum capacity shown on the performance curve submitted by the manufacturer as accepted by the purchaser. Readings shall be taken at a minimum of seven capacity points, which shall include one point within ± 2 percent of the design capacity or as required in the purchase documents.

2. At the conclusion of the test, five copies of the performance testing report shall be supplied to the purchaser and shall include the actual performance curve(s) of the pump or pumps tested, unless otherwise required in the purchase documents.

PART 3 – EXECUTION

3.01 INSTALLATION

A. Pump

1. Equipment appropriately sized and designed for setting pumping equipment shall be used for setting the pump and column assembly. Only those individuals knowledgeable and experienced in the installation of municipal, domestic water pumping equipment shall be employed to perform the pump installation.

B. Motor

1. Motors shall be bumped for rotation and “meggered” in accordance with Division 26, Electrical.

3.02 WELL PUMP REQUIREMENTS

Table 33 11 20 - 1

Pump make and model	Grundfos 16B700A3 385S200-3-A
Maximum Allowable Horsepower	20 HP
Maximum Motor Full Load Speed	3450 RPM
Minimum Motor Full Load Efficiency	88%
Rated Pumping Temperature	68°F
Minimum Column Size	6 inches (6")
Discharge Size	4 inches (4")
Minimum Shutoff Head	210 feet (210')
Design Capacity	300 GPM
Design TDH	145 feet (145')
Minimum Bowl Efficiency	78 percent (78%)
Secondary Capacity	500 GPM
Secondary TDH	110 feet (110')
Minimum Bowl Efficiency	72 percent (72%)
Column Length	100 feet (100')

END OF SECTION

SECTION 40 61 13
PROCESS CONTROL SYSTEM GENERAL PROVISIONS

PART 1 – GENERAL

1.1 SUMMARY

A. This section covers general provisions and requirements for all work necessary for Engineering, furnishing, installing, adjusting, testing, documenting, programming, and starting-up the Process Control System.

B. Furnish and install all instrumentation and controls hereinafter specified to perform the intended function. This shall include all labor, materials, plant facilities and equipment, performance of all work necessary to complete, make factory tests, prepare, and load for shipment, deliver to the site, provide programming, calibration, installation supervision, system start up, services and incidentals required to completely furnish and install the instrumentation and control system upgrades as specified herein and shown on the Drawings.

C. Provide all investigation work required to establish the use and configuration of the as found hardware and software of each control signal affected under this contract.

D. Auxiliary and accessory devices necessary for system operation or performance such as transducers or relays to interface with existing equipment or equipment provided under other sections of this Specification shall be included whether specified or not.

E. The instrumentation and process control system shall be furnished by a single pre-qualified system integrator who shall provide all the services, equipment and appurtenances required to achieve a fully integrated and operational system. To facilitate the owner's future operation and maintenance, products shall be of the same major instrumentation manufacturer with panel mounted devices of the same type and model as far as possible.

F. Substitutions on functions or equipment specified will not be acceptable. To ensure the interchangeability of parts, the maintenance of quality, the ease of interfacing between the various sub systems and the establishment of minimums with regard to ranges and accuracy, strict compliance with the above requirements shall be maintained. To ensure compatibility between all equipment, it shall be the responsibility of the system supplier hereunder to coordinate all interface requirements with existing equipment and with mechanical and electrical system suppliers and furnish any signal isolation devices that might be required.

G. Equipment shall be fabricated, assembled, installed and placed in proper operating condition in full conformity with detail drawings, specifications, engineering data, instructions and recommendations of the equipment manufacturer as approved by the Engineer.

H. Equipment removed during this work shall become the property of the owner.

I. All equipment and installations shall satisfy applicable national, state, and local mechanical and electrical codes.

J. Document all changes to the plant's control system, including the updating of the plant's existing control system documentation to reflect changes made during construction and discrepancies found during the investigation work.

K. Furnish, install, connect, configure, and test PLC hardware, and software products and related items. Coordinate network addressing schemes with Owner and incorporate agreed upon scheme for all equipment on the process control system including vendor supplied equipment.

L. Furnish and install all equipment enclosures, power supplies, interconnecting cables, and support software and equipment required for a complete and functional system.

M. Furnish and install all conduit, conductors, terminal boxes, and appurtenant equipment shown on the Drawings, hereinafter specified, and/or required for a complete and fully functional installation to the satisfaction of the Engineer.

N. Assist in the configuration and setup of all variable frequency drive parameters as applicable to the scope of the project. The setup shall include data access via the process control system network.

O. Inspect equipment provided under this section prior to shipment to project site.

P. Provide training on the hardware and software supplied and implemented under this contract.

1.2 RELATED REQUIREMENTS

A. General provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

B. See drawings for:

1. Process and instrumentation diagrams (P&ID).
2. Schematic control diagrams.
3. Points Schedule or I/O summary.

C. Section 406700 – Control System Equipment Panels and Racks.

D. Section 407000 – Instrumentation for Process Systems.

1.3 REFERENCES

A. ANSI - American National Standards Institute

B. IEEE - Institute of Electrical and Electronics Engineers

C. ISA - Instrumentation, Systems and Automation Society

D. NEMA ICS 1 - General Standards for Industrial Control and Systems.

E. NEMA ICS 2 - Standards for Industrial Control Devices, Controllers and Assemblies.

F. NEMA ICS 3 - Industrial Systems.

G. NEMA ICS 6 - Enclosures for Industrial Controls and Systems.

H. NEMA ICS 250 - Enclosures for Electrical Equipment.

I. NFPA 70 – National Electrical Code

J. NFPA 79 - Electrical Standard for Industrial Machinery

K. UL 508 - Standards for Safety, Industrial Control Equipment.

L. UL 698A - Intrinsic Safe Circuits.

1.4 ABBREVIATIONS

A. HMI - Human/Machine Interface

B. I&C - Instrumentation and Controls

C. I/O - Input / Output

D. LOS - Line of Sight

E. PC - Personal Computer

F. PCN - Process Control Network

G. PCS - Process Control System

H. PLC - Programmable Logic Controller

I. OIT - Operator Interface Terminal

J. SCADA - Supervisory Control and Data Acquisition

K. UPS - Uninterruptible Power Supply

1.5 DEFINITIONS

A. Process Control System - a complete, integrated system of PLCs, PCs, Windows-based servers, instruments, devices, wireless and wired process control networks, software, application Engineering, and ancillary equipment for monitoring and control of wastewater collection and treatment facilities.

B. Process Control Network - a complete, integrated and secured communication network consisting of equipment and cabling that provides communications between components of the Process Control System.

C. System Integrator - Organization, whose principal function is to design, program, configure, manufacture, install and service of the PCS. An organization, under the direction of the Contractor, who shall assume complete responsibility for the detailed design, manufacture, installation, configuration, technical advising on and certifying correctness of installation, testing and adjusting, documenting and starting up, and training of the complete PCS.

1.6 SUBMITTALS

A. In addition to the requirements of Division 01, the following information shall be provided in tabbed, booklet format covering all project work.

B. Shop Drawings:

1. General:

a. Drawings shall include ancillary devices such as terminal strips, relays, fuses, utility lights and receptacles, fans, heaters, etc.
b. Typical drawings for multiple circuits or systems are not acceptable.

2. Panel Layout Drawings - Drawings shall show all panel mounted devices to scale and dimensioned and shall include legend.

a. Include cross reference to a bill of material for components used.
b. Component designations shall match those used on elementary schematic diagrams and physical component labeling required.
c. Prepare in general accordance with NFPA 79, Annex D.

3. Elementary Schematic Diagrams – Ladder type circuit diagrams prepared to facilitate the understanding of the system function and maintenance and fault detection.

a. Control devices shall be shown between vertical lines that represent control power wiring, with the left line representing control circuits common and right representing operating coils common except where permitted by Clause 9 of NFPA 79.
b. Control devices shall be shown on numbered horizontal lines (rungs) between the vertical lines.
c. Drawings shall include a cross referencing scheme used in conjunction with each relay, output device, limit switch, and other devices so that any contact related to a device can be readily located on the drawing.
d. Component designations shall be included for all devices, with the same designations used on Panel Layout Drawings.
e. Each panel terminal within a terminal strip shall be numbered; when multiple terminal strips exist, each shall be given a unique identification. Terminal strip identification shall be included on Panel Layout Drawings.
f. All wires shall be numbered; wire numbers shall be applied to labels in accordance with Section 40 67 00. Wiring and devices external to panel shall be clearly identified.
g. Control devices shall utilize the symbology depicted in NFPA 79 and IEEE315.
h. Switch symbols shall be shown with utilities turned off and devices in their normal starting condition. Include control settings on the diagrams when available.

4. Panel Interconnection Diagrams – Wiring interconnection diagrams prepared to show all signal and power wiring for external connections to control panels provided for Project. Wire and cable tags information shall be provided to Contractor in an electronic format for in physical wire and cable tagging.

a. Drawings prepared on a per control panel basis.
b. Show interconnecting wiring, field device, control panel, and provision for 2 field located termination cabinets.
c. Interconnecting wiring shall include wire and cable tag numbers.

d. Field device information shall include device tag and description, signal description, signal electrical characteristics, and range.
e. Control panel information shall include terminal strip identification and terminal number.
f. Drawings shall indicate source of control signal power.
g. Prepare drawings in accordance with requirements of NFPA 79.

5. PLC Equipment Layout Drawing including processing equipment, I/O components, power supplies, and peripheral devices.
6. PLC data base list with I/O module cross reference identification for each PLC processor.
7. PLC documentation describing memory type, size and structure; listing of I/O; data table memory and size of memory available for all programs.
8. PCS Equipment Layout Drawings including detailed enclosure layouts for servers, switches and communications systems with overall dimensions and equipment bill of materials.
9. SCADA software user manuals for all applications, including operating system, describing programming methods and procedures, utilities, diagnostics, documentation, and system support functions. Documentation covering all custom software or programming proposed or required for this Project.
10. Network information including detailed block diagram showing system hardware and components; operating systems and software with revision numbers indicated; format, protocol and procedures for Process Control Network communications; on-line and off-line capabilities for programming, system utilities and diagnostics; recommended test equipment.
11. Process Control Network Drawings - Drawings shall show connections between connected Process Control System devices including servers, HMIs, PLCs, radios, and network devices. Drawings shall indicate network domain and device addresses, subnet masks, gateways, and other pertinent network address information for both Ethernet and DeviceNet systems.
12. Detailed fiber optic system layout drawings including patch panel connections, cable ID and color code, and equipment bill of materials.
13. Electrical power, UPS, Grounding, and DC Power Schematics for all equipment.
14. Heat calculations for all enclosures.
15. UPS sizing calculations.
16. Test reports.

C. List of special tools (including software) required for instrument calibration, startup, checking, testing, parts replacement, troubleshooting, and maintenance of all components of the Process Control System. Identify any special tools specially designed or adapted for use on parts of this system.

D. Product Data:

1. Catalog Information - Provide catalog information and descriptive literature on all equipment associated with the PCS.
2. Product Data (Specification) Sheets – Provide product data sheets for each component provided under this Section. The purpose of the data sheets is to supplement the generalized catalog information provided by citing all specific features for each specific component (e.g.: scale range, materials of construction, special options included).
3. Product Data Sheets shall follow General ISA S20 format.

E. Test Outline and Procedure Submittal

1. A detailed description of each specified test procedure and demonstration shall be submitted for approval. The decision of Engineer upon the acceptability of the procedure shall be final.
2. It is required that this be a two-step submittal: outlines first followed, upon receipt of Engineer's approval, by specific test descriptions.
3. Test descriptions shall be in sufficient detail to fully describe the specific tests to be conducted to demonstrate conformance with these Specifications.
4. Provide detailed step-by-step in-factory and field test procedures. Include proposed documentation, sign-off sheets, and punch list forms.
5. Identify complete inventory of equipment to be tested at factory including make, model, and serial number. Label each piece of equipment.

F. Spare and Expendable Items Submittal

1. Contractor shall provide a list of recommended spares and expendable items as recommended by System Integrator in sufficient quantities to sustain the Process Control System for a period of 3 year after acceptance.
2. A total purchase cost for the recommended list shall be provided in addition to the unit cost for each item. The cost of obtaining spare and expendable items selected by Owner will be addressed as a Change Order at the Owner's discretion.
3. In addition to the Spares and Expendables List, Contractor shall provide a Component Part List as recommended by Systems Integrator. The Component Part List shall be a complete parts list for the entire Process Control System, and shall have the following features:

    a. All components shall be grouped by component type, with the component types identified in a similar manner to the component identification code used in these Specifications.
    b. All components shall be listed with their exact and complete manufacturer's part number, including all options or accessories.
    c. All components shall be identified with their complete tag number as shown in these Specifications, or as modified or assigned by Contractor and approved by Engineer.
    d. All components without tag numbers shall be grouped within component types by manufacturer's part number. Exact quantities shall be listed for each part number.

G. Operation and Maintenance (O&M) Data:

1. Refer to Division 01 for general requirements.
2. Process Control System.
3. Fully document copy of all application programs including PLC, PC and Server-based applications.
4. Network, server and workstation setup instructions.

H. Record Drawings: Submit in accordance with other Sections of Division 40 and 01.

1.7 FINAL DOCUMENTATION

A. Prior to final acceptance of the system, six (6) sets of Operating and Maintenance manuals covering instructions and maintenance on each type of equipment shall be furnished as noted herein. Electronic versions of these documents may be provided with approval by the Owner.

B. The instructions shall be bound in three ring binders with drawings reduced or folded for inclusion and shall provide at least the following as a minimum.

1. A comprehensive index.
2. A complete "As Constructed" set of approved shop drawings.
3. A complete list of the equipment supplied including serial number, ranges and pertinent data.
4. Full specifications on each item.
5. System schematic drawings "As Constructed" illustrating all components, piping and electrical connections of the systems supplied under this section.
6. Detailed service, maintenance and operation instructions for each item supplied.
7. Special maintenance requirements particular to this system shall be clearly defined, along with special calibration and test procedures.
8. The operating instructions shall also incorporate a functional description of the entire system with references to the system's schematic drawings and instructions.
9. Complete parts lists with stock numbers and name, address and telephone number of the local supplier.

1.8 SEQUENCE OF CONSTRUCTION

A. The contractor shall begin the submittal process within two weeks after notice to proceed by submitting the name of the proposed System Integrator along with all information required to determine the adequacy of the proposed System Integrator.

B. Within one month after approval of the System Integrator, all hardware and software product submittals shall be delivered to the Authority.

C. Within two months after approval of the System Integrator, detailed installation submittals shall be delivered to the Engineer.

D. All work shall be coordinated with plant maintenance personnel and approved by plant operations personnel prior to beginning any work.

E. Written consent from the Authority must be obtained not less than one week prior to carrying out any portion of the work which requires interruption of service.

F. Plant operations shall be notified no less than 24 hours prior to beginning any work that requires disruption of plant operation.

G. Complete any work that can be performed without interference to the existing operation of the plant control system, such as conduit and cable installations, prior to disconnecting any existing control equipment.

H. Provide and implement a workaround to address any Plant control or monitoring process that is affected by temporary or permanent work being performed under this contract. Submit this plan to the Authority for review.

I. Train operators in the functional operation of the new equipment.

J. Demonstrate that the new and existing equipment is properly configured and operating by displaying process data at the local workstation and at other workstations on the existing SCADA system and verifying the accuracy of the displayed data.

1.9 FIELD ENGINEERING

A. Where dimensions are shown or indicated, the information given is approximate only, and is not warranted by the Authority to be either complete or correct. The Contractor shall verify actual existing conditions and dimensions in the field before ordering materials or starting construction.

B. The Authority's details indicate the general location and arrangement of conduit, wiring devices, equipment, and other products. The Contractor shall adjust the indicated locations (subject to approval in the field) as necessary to:

C. Comply with all applicable code requirements.

D. Permit access for construction, inspection, testing, operation, and maintenance.

E. Avoid conflict with pipes, mechanical equipment, structural openings (e.g., doors), and other obstructions, as built, whether or not as shown on the Contract Drawings.

F. Produce a neat, workmanlike arrangement.

G. The Contractor shall determine the proper connection points for all power, control, and signal wiring, regardless of whether the connection points are in equipment furnished under this Contract, in equipment furnished by others, or in existing equipment.

H. The Authority will make available to the Contractor any reference drawings it may have. However, the Authority does not guarantee the correctness, completeness, or availability of reference drawings. Should the Contractor choose to rely upon the reference drawings, he does so at his own risk.

I. The Contractor shall coordinate the making and sealing of all holes through structures to accommodate electrical conduits and supports for electrical equipment and shall submit working drawings thereof for the Authority's approval.

J. The Contractor shall ensure that proper service is provided to all mechanical equipment requiring electricity for power or control.

1.10 WORK SEQUENCE AND SCHEDULING

A. See the General Conditions of the Contract, Scheduling and Coordination of Work, and Time for Completion of the Project, and General Requirements, Mutual Responsibility for additional requirements.

1.11 WORK BY OTHER TRADES

A. Every attempt has been made to indicate in this trade's specifications and drawings all work required of this Contractor. However, there may be additional specific paragraphs in other trade specifications and addenda, and additional notes on drawings for other trades which pertain to this Trade's work, and thus those additional requirements are hereby made a part of these specifications and drawings.

1.12 QUALITY ASSURANCE

A. Contractor shall engage the services of a qualified System Integrator for the purposes of furnishing the Process Control System, providing technical assistance on the installation of System and certifying the correctness of said installation.

B. Equipment shall be latest and most modern design at time of Notice to Proceed.

C. All software and firmware used in this Project shall be latest version that is compatible with each other, as of the Notice to Proceed.

D. Like items of Equipment shall be end products of single manufacturer to achieve standardization for maintenance, spare parts, operation, and service.

E. PCS components shall be grounded in accordance with NEC requirements.

F. Coordination - To ensure timely performance of the Contract and the System's conformance with Specifications, coordination meeting(s) shall be held during the course of the project.

1. Within 45 days of date of Contract Time commencement, submit Progress Meeting schedule for final coordination by Owner/Engineer, Contractor and Systems Integrator. Submit also the Submittal Schedule and Project Activity Schedule for final review.
2. Progress Meetings shall be held at the project site and designated by Owner with Owner/Engineer's, Contractor's and System Integrator's representatives in attendance.
3. Purpose of Progress Meetings is to obtain Owner/Engineer's clarification on intent of Contract Documents during Submittal preparation and prior to HMI and PLC software configuration at no additional cost to Owner. Progress Meeting(s) shall cover following:

    a. Review of functional descriptions describing equipment operation.
    b. Owner/Engineer selection of options.
    c. Owner/Engineer review documentation

4. Prepare and submit Startup Schedule, coordinated with overall Construction Schedule including the following:

    a. Factory Acceptance Test(s).
    b. Review of Wiring Sign-Off forms by Owner/Engineer.
    c. I/O checkout by System Integrator.
    d. Plant startup.
    e. Training.
    f. Post startup services.

1.13 WARRANTY

A. Provide warranty in accordance with General Conditions.

B. Furnish a copy of the warranty together with the operating instructions and maintenance data for the complete system.

C. System defects and deficiencies shall be corrected by Contractor within 24 hours of notification if Owner does not have necessary replacement parts in stock and within 4 hours of notification if Owner has necessary replacement parts in stock. Failure to correct these items per these requirements may result in Contractor losing Maintenance Bond.

PART 2 – PRODUCTS

2.1 SYSTEM INTEGRATION

A. PLC, I/O modules and RTU shall be by Emerson Process Management.

B. Programming and start-up by Emerson

1. Brett Courier, 407-629-9464, Brett.Courier@emerson.com
2. CEC Controls, Mark Bilbrey, 941-803-9464, mbilbrey@ceccontrols.com

C. VTScada integration by the City's SCADA integration contractor

1. Star Controls (Diego Pinto, 954-603-0491, dpinto@star@controls.com

2.2 SYSTEM INTEGRATOR RESPONSIBILITIES

A. System Integrator shall inspect Equipment provided under this Section prior to shipment to Project sites.

B. System Integrator shall coordinate work with Contactor to insure that:

1. All components provided under this Section are properly installed.
2. All components provided under this Section are properly configured.
3. The proper type, size, and number of control wires with conduits are provided.
4. Proper electric power circuits are provided for all components and systems.

C. System Integrator shall be responsible for coordination of voltage levels and signal types for signals connected to Process Control System. Provide relays, signal isolators, termination or pull-up resistors, signal conditioners or other devices only as required for proper interfacing and operation of non-compatible devices.

D. System Integrator shall supply all HMI, PLC software fully configured specific to the process functions described herein.

E. System Integrator shall be responsible for establishing proper communication of all control system equipment as shown on drawings and specified. System Integrator shall test and document communications as part of testing.

F. System Integrator shall be responsible for the operational testing of the HMI and PLC software programs.

G. Systems Integrator shall be responsible for configuration and setup of Variable Frequency Drive parameters. The setup shall include data access via the Process Control Network.

1. VFD's shall be programmed for auto-restart enabled.
2. VFD's shall be programmed such that a voltage dip is not considered a fault.
3. High temperature and/or leakage detection inputs wired to VFD's shall be programmed for "enable" and not "fault".

H. Systems Integrator shall be responsible for providing to Owner 1 WIN 911 alarm notification software package capable of 2-way mobile-to-mobile SMS messaging at minimum. Coordinate modem type with Owner to be compatible with their cell provider. Owner to purchase cell plan for modem. Software shall be installed on primary HMI computer and configured for remote alarm notification in accordance with Owner's direction. Modems shall be external and connected to the same computer via USB. No internal computer hardware is permitted.

I. Systems Integrator shall be responsible for proper installation of new drivers as required for existing SCADA system to interface with new PLC's.

J. System Integrator shall coordinate Process Control Network addressing schemes with Owner and incorporate agreed upon scheme for all equipment on the PCS including vendor supplied equipment.

K. All field located conduits, wiring and cables shall be provided in accordance with Division 26 – Electrical. Exceptions to this are copper Ethernet cable and fiber optic Ethernet cable which shall be provided in accordance with Division 27.

L. System Integrator shall ensure all usable Fibers for any PCS Fiber Optic Cable being installed or re-routed under this project shall be terminated in its respective patch panel and connected to local switches.

M. System Integrator shall setup and calibrate chemical pump systems.

N. Modifications to existing control equipment.

1. Provide equipment necessary to affect changes to existing control equipment as shown on drawings and specified.
2. Provide interposing relays and current-to-current isolation relays only as required to affect signal interfacing with non-compatible devices.
3. Modify documents of existing control equipment to reflect new as-built conditions.

O. Contactor shall furnish Owner with copy of all configured PLC application programs after On-Site Acceptance Test.

P. Application Engineering shall be done by System Integrator. Specific Application Engineering tasks to be performed by System Integrator shall include, but not be limited to:

1. All PLC application engineering programming.
2. All SCADA application engineering programming.
3. Operational Testing of 1-2 above.
4. Load all software and/or licenses.
5. Administer factory testing of PLC/RIO panels for verification of PLC programs and HMI configuration.
6. Alarming setup and dial out configuration.
7. Adhere to construction sequencing schedule.
8. Attend meetings as requested by Owner or Engineer.
9. Train the Owner's staff. Provide operator training for how to navigate/manipulate all SCADA systems.
10. Conduct factory testing of the PLC panels for verification of PLC programs and HMI configuration.
11. Conduct field testing.

Q. System Integrator shall coordinate secure remote access communications with outside entities for:

1. System Integrator Startup services.
2. Plant monitoring and off-hour access to SCADA.
3. Owner-Approved outside vendors for startup or monitoring.

2.3 INSTRUMENTATION

A. Refer to Section 407000 for additional requirements.

B. All instrumentation supplied shall be of the manufacturer's latest design and shall produce or be activated by signals which are established standards for the water and wastewater industries.

C. All electronic instrumentation shall be of the solid-state type and shall utilize transmission signals which conform to all FCC and local requirements.

D. Outputs of equipment that are not of the standard signals as outlined shall have the output immediately converted to compatible standard signal as for remote transmission.

E. All instruments shall be provided with mounting hardware and floor stands, wall brackets or instrument racks as shown on the drawings, or as required.

F. Equipment installed in a hazardous area shall meet Class, Group and Division as shown on the contract electrical drawings to comply with the National Electrical Code.

G. All indicators and readouts shall be linear in process units.

H. Electronic equipment shall be of the manufacturer's latest design utilizing printed circuitry and suitably coated to prevent contamination by dust, moisture and fungus. Solid state components shall be conservatively rated for their purpose to assure optimum long-term performance and dependability over ambient atmospheric fluctuations and 0 and 100 percent relative humidity. The field mounted equipment and system components shall be designed for installation in dusty, humid and slightly corrosive service conditions.

I. All equipment, cabinets and devices furnished hereunder shall be heavy duty type designed for continuous industrial service. The system shall contain products of a single manufacturer, insofar as possible, and shall consist of equipment models which are currently in production. All equipment provided shall be of modular construction and shall be capable of field expansion.

J. All electronic equipment shall be provided with radio frequency interference protection.

2.4 SURGE PROTECTION

A. Surge protection shall be provided to protect the electronic instrumentation system from induced surges propagating along the analog and discrete signal and power supply lines.

B. The protection systems shall be such that the protection level shall not interfere with normal operation but shall be lower than the instrument surge withstand level and be maintenance free and self-restoring. Instruments shall be housed in a suitable metallic case, properly grounded.

C. Equipment connected to AC circuits - Provide equipment that is internally protected against power-line surges or provide separate protection against power-line surges; provide protection meeting requirements of IEEE C62.41.2; do not use fuses.

D. Cabinet(s)/panel(s) and groups of field instruments, as approved by the Engineer, shall be protected by isolation transformers and surge suppressors. Individual field instruments shall be protected by individual gas tube surge suppressors.

E. Equipment connected to transmitter and control wiring installed outdoors - Provide equipment that is internally protected against induced waveform surges or provide separate protection against waveform surges as follows:

1. A waveform with 10-microsecond rise time, 1,000-microsecond decay time and peak current of 60 amps.
2. A waveform with 8-microsecond rise time, 20-microsecond decay time and peak current of 500 amperes.

F. Ground wires for all surge protectors shall be connected to a good earth ground and where practical, each ground wire run individually and insulated from each other.

G. These protectors shall be mounted within the instrument enclosure or a separate NEMA 4X junction box coupled to the enclosure.

H. Warranty - A five-year warranty shall be provided by the surge/lightning suppression equipment manufacturer. The warranty shall cover the replacement of all protected equipment for a period of five years after the date of acceptance.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Instrumentation and accessory equipment shall be installed in accordance with the manufacturer's instructions. The locations of equipment, transmitters, alarms and similar devices shown on the drawing are approximate only. Exact locations shall be as approved by the Engineer during construction.

B. Obtain in the field all information relevant to the relevant to the placing of process control work and in case of any interference with other work, proceed as directed by the Engineer and furnish all labor and materials necessary to complete the work in an approved manner.

C. Install process control system fully programmed and ready for operation.

D. Install with adequate clearance for maintenance, calibration, removal and replacement, and repair of process control devices.

E. The installation details on the drawings indicate the designed installation for the equipment specified. Where specific installation details are not specified or shown on the drawings, the American Petroleum Institute (API) Recommended Practice 550 shall be followed as applicable.

F. Install without interference with clearance requirements for other equipment.

G. Provide dielectric isolation where dissimilar metals are used for connection and support.

H. All work shall be executed in full accordance with codes and local rulings. Should any work be performed contrary to said rulings, ordinances and regulations, the Contractor shall bear full responsibility for such violations and assume all costs arising therefrom.

I. All equipment used in areas designated as hazardous shall be designed for the Class, Group and Division as required on the electrical drawings for the locations. All installation shall be in strict accordance with codes.

J. Unless specifically shown in the contract documents, direct reading or electrical transmitting instrumentation shall not be mounted on process piping. Instrumentation shall be mounted on instrument racks or stands as detailed on the installation detail drawings. All instrumentation connections shall be provided with shut off and drain valves. For the differential pressure transmitters, three-way stainless-steel valve manifolds shall also be provided. For slurries, chemical or corrosive fluids diaphragm seals with flushing connections shall be provided.

K. All piping to and from field instrumentation shall be provided with necessary unions, test tees, couplings, adapters and shut off valves.

L. Field instruments requiring power supplies shall be provided with local electrical shut offs and fuses as required.

M. Brackets and hangers required for equipment mounting shall be provided. They shall be installed in a workmanlike manner and not interfere with any other equipment.

N. The system supplier shall investigate each space in the building through which equipment must pass to reach its final location. If necessary, the system supplier shall be required to ship his material in sections sized to permit passing through restricted areas in the building. The system supplier shall also investigate and make any field modifications to the allocated space for each cabinet, enclosure and panel to assure proper space and access (front, rear, side).

O. The shield on each process instrumentation cable shall be continuous from source to destination and be grounded as directed by the manufacturer of the instrumentation equipment, but in no case shall more than one ground point be employed for each shield.

P. Lifting rings from cabinets/assemblies shall be removed. Hole plugs shall be provided for the holes of the same color as the cabinet.

3.2 PLC INPUT/OUTPUT SIGNAL POWER SOURCE

A. Except for 4-wire instruments, all analog loops shall be powered from respective process control panel.

B. 120 VAC and DC for Process Control System inputs shall be sourced from respective process control panel.

C. 120 VAC and DC for Process Control System outputs shall be sourced from respective location receiving control signal.

D. See Section 40 67 00 for additional signal interface requirements.

3.3 FIELD QUALITY CONTROL – PRIOR TO STARTUP

A. Contractor shall provide protection for materials and equipment against loss or damage and the effects of weather. Prior to installation, store items in indoor, dry locations. Provide heating in storage areas for items subject to corrosion under damp conditions. Specific storage requirements shall be in accordance with the Engineer-reviewed System Integrator's recommendations.

B. Adjust, calibrate, measure, program, configure, and otherwise perform all necessary actions to ensure that process control system will function as required by Contract Documents.

C. Physical Inspection:

1. Verify that each component of the process control system has been installed and is correctly connected to its power source and to the process control network.
2. Verify that instruments without built-in transceivers are correctly connected to their transceiver.
3. Verify that instruments are correctly installed in the manner necessary to sense the variables they are intended for.
4. Verify that software has been installed and programmed.
5. Verify that controller configuration settings and/or programs are correct.

D. Shutdown Condition Demonstration: Set all controller Hand-Off-Auto switches to OFF.

1. Verify that power and air, where required, are available.
2. Verify that output devices are in their OFF positions.
3. Verify that all display panels indicate shutdown conditions.

E. Bandwidth and Endurance Test: Operate control system continuously for one-week period while polling all points at intervals.

1. Measure and record network bandwidth usage on all channels including backbone.
2. Poll points associated with graphical displays, trending, and overrides at 15-minute intervals.
3. Poll all other points at 5-minute intervals.
4. Include in Startup Plan a description of the methodology to be used for this test.
5. Install temporary device on backbone to poll all points.
6. If there are any failures during this period, repair and re-start test.

F. Peak Bandwidth Test: Demonstrate that process control network is capable of supporting poll requests for all points within a 2-minute interval without exceeding peak expected bandwidth specified, using same methodology as bandwidth and endurance test; compare to approved bandwidth usage calculation submittal.

G. Owner reserves the right to reject installed equipment if performance appears to be unachievable with installed equipment.

3.4 FIELD QUALITY CONTROL – AFTER STARTUP

A. Controller Tuning - Tune controllers initially at whatever flow conditions exist; verify adequate tuning and re-tune if necessary until tuning is satisfactory for peak flow, average daily flow and minimum flow conditions.

1. Tune controllers in manner consistent with that described in ASHRAE (FUND).
2. Adjust proportional, integral, and, where applicable, derivative settings to provide stable closed-loop control.

    a. Make controlled variables settle out at a new setpoints with no more than two oscillations above and below setpoint with steady output.
    b. With the exception of naturally slow processes, make controllers settle out at new setpoints within five minutes.

3. Set controllers to correct setpoints and record final PID configuration settings on project record Points Schedule and submit with O&M data.

B. Functional Tests: Demonstrate compliance of process control system with Contract Documents, using approved test plans.

1. Demonstrate all physical and functional requirements of system.
2. Show, step-by-step, the actions and results for each sequence of operation.
3. Demonstrate that all alarms work correctly.

C. If test results are unsatisfactory or equipment cannot be adjusted to perform properly, modify, repair, or replace, and retest.

1. When new units are installed, restart testing from beginning.
2. Owner reserves the right to reject installed equipment if performance appears to be unachievable with installed equipment.
3. Prior to retesting, obtain Owner's approval of retesting schedule.

D. Project Record Trending Data: After functional tests and adjustments have been completed satisfactorily, provide digital trending data for all points monitored by process control system for minimum of one month at 6-hour intervals.

E. Touch-up scratches, scrapes, or chips in interior and exterior surfaces of devices and equipment with finishes matching as nearly as possible the type, color, consistency, and type of surface of the original finish.

F. Panels and panel-mounted devices shall be assembled as completely as possible at the System Integrator's factory. No work, other than correction of minor defects or minor transit damage, shall be done on the panels at the job site.

3.5 TESTING

A. The Contractor shall furnish the services of the system supplier servicemen, all special tools, calibration equipment and labor to perform the tests. Certified copies of the tests shall be furnished in duplicate to the Engineer.

B. Following connections, check out and final adjustment of all panels, instruments, meters, monitoring and control devices, a performance check shall be made on each. Analog instruments and system inputs shall be tested at 0 percent, 25 percent, 50 percent, 75 percent, 100 percent, and 1001 percent of scale, as required. All status and alarm switches as well as all monitoring and control functions shall also be checked. Each device on the loop/logic diagrams must be signed off by the Engineer as being acceptable. Testing shall be done from the signal source (transmitter) to the Data Acquisition and Process Control System including all field wiring.

C. If, during running of the tests one or more points appear to be out by more than the specified amount, the system supplier's servicemen shall make such adjustments or alterations as are necessary to bring equipment up to Specification performance. Following such adjustment, the tests shall be repeated for all specified points to ensure compliance.

3.6 TRAINING

A. The Contractor shall furnish a system supplier's representative for a field training program to be run at the owner's plant site and consist of up to two (2) days instruction for two (2) of the owner's personnel. The program shall cover instrumentation debugging, troubleshooting, calibration and maintenance procedures and system operation. This

training program will be held at a time chosen by the owner and will be exclusive of any instruction given at the time of system start up.

3.7 SUBSTANTIAL COMPLETION

A. In addition to requirements identified in other parts of the Contract Documents, Substantial Completion shall require the following process instrumentation and control work is successfully completed:

1. Owner’s receipt of required site documentation including required O&M material.
2. Owner’s receipt of Fiber testing submittal.
3. PLC and panel spare parts.
4. "As Built" drawings (3 per enclosure)
5. Fully commented PLC program.
6. Completion of specified training associated with equipment provided.
7. Successful completion of the specified demonstration period.

END OF SECTION

SECTION 40 67 00
PROCESS CONTROL PANELS AND HARDWARE

PART 1 – GENERAL

1.1 SUMMARY

A. Items specified in this section shall conform to general requirements of Section 40 61 13.

B. Section includes panel and enclosure requirements for Process Instrumentation and Control Equipment.

1.2 RELATED REQUIREMENTS

A. General provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

B. See drawings for:

1. Schematic control diagrams.
2. Points Schedule or I/O summary.
3. Control panel layout diagrams.

C. Section 407000 – Instrumentation for Process Systems.

1.3 REFERENCES

A. ANSI - American National Standards Institute

B. IEEE - Institute of Electrical and Electronics Engineers

C. ISA - Instrumentation, Systems and Automation Society

D. NEMA ICS 1 - General Standards for Industrial Control and Systems.

E. NEMA ICS 2 - Standards for Industrial Control Devices, Controllers and Assemblies.

F. NEMA ICS 3 - Industrial Systems.

G. NEMA ICS 6 - Enclosures for Industrial Controls and Systems.

H. NEMA ICS 250 - Enclosures for Electrical Equipment.

I. NFPA 70 – National Electrical Code

J. NFPA 79 - Electrical Standard for Industrial Machinery

K. UL 508 - Standards for Safety, Industrial Control Equipment.

L. UL 698A - Intrinsic Safe Circuits.

1.4 ABBREVIATIONS

A. HMI - Human/Machine Interface

B. I&C - Instrumentation and Controls

C. I/O - Input / Output

D. PC - Personal Computer

E. PCN - Process Control Network

F. PCS - Process Control System

G. PLC - Programmable Logic Controller

H. OIT - Operator Interface Terminal

I. SCADA - Supervisory Control and Data Acquisition

J. UPS - Uninterruptible Power Supply

1.5 SUBMITTALS

A. In addition to the requirements of Division 01, the following information shall be provided in tabbed, booklet format covering all project work.

B. Product Data:

1. Catalog Information - Provide catalog information and descriptive literature on all equipment associated with the panels and enclosures.
2. Product Data (Specification) Sheets – Provide product data sheets for each component provided under this Section. The purpose of the data sheets is to supplement the generalized catalog information provided by citing all specific features for each specific component.

C. Shop Drawings:

1. General:

a. Drawings shall include ancillary devices such as terminal strips, relays, fuses, utility lights and receptacles, fans, heaters, etc.
b. Typical drawings for multiple circuits or systems are not acceptable.

2. Panel Layout Drawings - Drawings shall show all panel mounted devices to scale and dimensioned and shall include legend.

a. Include cross reference to a bill of material for components used.
b. Component designations shall match those used on elementary schematic diagrams and physical component labeling required.
c. Prepare in general accordance with NFPA 79, Annex D.

D. Record Drawings: Submit in accordance with other Sections of Division 40 and 01.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Firms experienced in manufacturing panels and enclosures of types and materials indicated that have record of successful in-service performance.

B. Enclosures and components contained within the enclosure provided under this Section shall be listed or labeled by Underwriters Laboratories Inc. (UL) or other Nationally Recognized Testing Laboratory (NRTL).

1. Term "NRTL" shall be as defined in Occupational Safety and Health Administration (OSHA) Regulation 1910.7.
2. Terms "listed" and "labeled" shall be as defined in National Electrical Code (NEC), Article 100.

C. In-Factory Inspection.

1. Verify following in accordance with approved submittals:

a. Panel dimensions.
b. Equipment layout.
c. Wiring.
d. Wire and terminal identification.
e. Device identification.

2. Verify proper access to equipment for maintenance.
3. Verify proper access to field wire and fiber optic termination points.
4. Inspect for neatness of wiring and wire harness construction.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver panels and enclosures to their final locations in protective wrappings, containers, and other protection that will exclude dirt, moisture and prevent damage from construction operations. Remove protection only after equipment is made safe from such hazards and is ready for immediate installation.

B. Store panels and enclosures in clean, dry location.

1.8 MAINTENANCE

A. Extra Materials:

1. Furnish extra materials matching products installed, as described below packaged with protective covering for storage, dated and identified with labels describing contents.

a. Provide minimum of 5 or 10%, whichever is greater, of each type fuse used on project.
b. Provide minimum of 5 or 10%, whichever is greater, of each type relay used on project.
c. Provide minimum of 5 or 10%, whichever is greater, of each type pilot light replacement bulb used on project.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. The following are approved manufacturers for this project

1. Hoffman.
2. Saginaw.
3. Hammond.
4. Rittal.

2.2 GENERAL REQUIREMENTS

A. Panels shall be constructed using factory-fabricated enclosures.

B. Follow PLC manufacturer's written installation requirements for layout of PLC-specific panels.

C. Provide a minimum of 25% free back panel space for future expansion unhindered by current devices, wiring, etc.

D. Provide a minimum of 25% free terminal blocks of each type used in each panel. This is in additional to planned spare wiring terminations. Spares shall be shown on panel drawings.

E. The panel builder shall be a current Underwriters laboratories listed UL-508A industrial control panel builder and shall present its follow-up service procedure file number on submittals. All devices within the panel shall be UL listed and/or recognized where applicable and shall be mounted and wired in accordance with the most current edition of UL-508A and the NEC. A serialized UL-508A label shall be applied to all control panels prior to shipment to the Project site.

F. The panel builder shall be a current Underwriters laboratories listed UL-698 Option 1 (UL Category NRBX, panel located in an unclassified location with intrinsically safe extensions into a hazardous location) and Option 2 (UL Category NNNY, panel located in a hazardous location) industrial control panel builder. Panel builder shall present its follow-up service procedure file number on submittals. The panel shall be UL listed and/or recognized where applicable and shall be constructed in accordance with the most current edition of UL-698 and the NEC. A serialized UL-698 label shall be applied to all control panels prior to shipment to the Project site.

G. Arrange panel to allow all conduits for intrinsically safe wiring to enter the panel enclosure within the intrinsically safe section of the panel. Provide separate terminal strips for intrinsically safe wiring entering and leaving the panel.

H. Install instruments and devices, plumb, and wire panels at panel shop or other facility prior to shipment to jobsite.

I. Standard Signal Interfaces:

1. Unless otherwise specified, discrete input and output signals shall conform to the following:

a. Isolated non-powered (dry) contact closure.
b. Dry contacts shall be powered from panel or device receiving signal.
c. PLC based outputs shall be provided with an interposing relay when any of the following conditions apply:
1) When driving solenoids.

2) Potential in-rush current exceeds 75% of rated capacity of the I/O Module.
3) The current requirement of the driven device is insufficient to fully engage the output module consistently.
4) The voltage required to drive the output is incompatible with the output module.

2. Unless otherwise specified, analog input and output signals shall conform to the following:

a. 4-20 mAdc.
b. For 2-wire, loop-powered transmitters, provide regulated, fused, and isolated 24Vdc power supply at panel for driving of devices. Size power supply for 30% minimum spare capacity.
c. Where isolation is required for interfacing with particular equipment supplied, provide necessary I/I converters. Provide I/I converters where impedance capabilities of new or existing signal transmitter will be exceeded by addition of PLC input.

J. Wiring:

1. In addition to Division 26, NEC and NEMA requirements, wiring shall conform to following:

a. Power: 12 AWG stranded minimum, type MTW, 600V.
b. Control: 16 AWG stranded minimum, type MTW, 300V.
c. Analog Signal: Twisted pair, 18 AWG, Beldon 8760 or equal.

2. Wire color code:

a. AC neutral conductor: White.
b. AC hot conductor: Black.
c. Grounding conductor: Green.
d. AC control conductor, powered from within panel: Red.
e. AC control conductor, powered from remote source: Yellow.
f. DC (+) power conductor, discrete signal: Blue.
g. DC (-) power conductor, discrete signal: Blue with white stripe.
h. DC control conductor, discrete signal: Blue.
i. Twisted pair cable (+) signal conductor, analog signal: White.
j. Twisted pair cable (-) signal conductor, analog signal: Black.
k. Intrinsically safe wiring: Light Blue.

3. Design control panels to keep 480Vac power, 120Vac power and discrete signals, and analog and other low voltage signals separated.

a. Do not run 480Vac power, 120Vac power and discrete signals, or analog or other low voltage signals in the same conduit or wire-duct.
b. Where 480Vac power, 120Vac power and discrete signals, or analog or other low voltage signals must cross, they shall do so at right angles.

4. Wiring Within Wire Duct:

a. Wherever feasible plastic wire duct with cover shall be used for routing of wire within control panel.
b. Size wire duct to be no more than 50% full.

c. Maintain 2” clearance between wire duct and terminals.

5. Wiring outside of wire duct.

a. Wiring outside of ducts shall be restrained by use of plastic wire-ties.
b. Restrain wiring every six inches (minimum).
c. Provide abrasion protection for wires passing through holes or across abrasive metal edges.
d. Adhesive type wire fasteners shall not be used. Hard screw type shall be employed.

6. Each conductor or twisted pair cable shall be labeled near its termination point.
7. Color-coded multi-conductor cable or multi-pair cable shall be labeled on overall jacket near its point of fan-out. Each pair of a multi-pair cable, when not color-coded, shall be labeled at its termination point in addition to the overall jacket.
8. Labels shall be machine-printed wrap-around types with tag visible from front without removal of wire from termination.

K. Terminations:

1. Wiring within control panel shall be continuous and terminated only at terminal blocks or equipment terminals. Splices or butt connectors shall not be used within panel.
2. No more than two wires shall be terminated at any one terminal.
3. Make external connections by way of numbered terminal blocks on numbered terminal strips.
4. When signals are powered from remote location, switched terminal blocks shall be used where conductors enter or leave panel.
5. When signals are powered from within panel, fused terminal blocks shall be used where conductors enter or leave panel.
6. Provide integral bussing system on terminal block array where more than two terminations require common source or drain connection. Jumpered terminations shall not be acceptable.
7. Provide knife disconnect-type terminal blocks with test sockets for all analog loops.
8. Include provisions for grounding of shields on shielded twisted pair cables entering or leaving panel. Cable shields shall be grounded at terminal block end only. Shields shall run entire length of cable within panels. Running of twisted pairs without shields within panels is not permissible.
9. Provide separate terminal strips for each of the following types of signals.

a. 480Vac power circuits.
b. 120Vac power circuits.
c. 120Vac discrete signals.
d. 12Vdc, 24Vdc or 48Vdc discrete signals.
e. Analog signals.
f. Serial or parallel digital communication signals.
g. Intrinsically safe circuits.

L. Power Distribution:

1. Panels having 240Vac or 480Vac power supply:

a. Provide internal main circuit breaker to isolate power to panel.
b. Provide circuit breakers for all motor starters provided.

c. If panel includes separate 120Vac control power supply, provide auxiliary contact to isolate control power when main circuit breaker is opened.
d. 480Vac to 120Vac control power transformer requirements:
1) Both primary leads shall be fused.
2) First secondary lead shall be fused.
3) Second secondary lead shall be grounded.
4) Provide single-phase surge suppression/line conditioner, sized for total panel loadings (Benden Isotrol, or equal) between secondary leads and 120vac power distribution block.

2. Panels having 120Vac power supply:

a. Provide circuit breaker on power supply entering panel.
b. Provide single-phase surge suppression/line conditioner, sized for total panel loadings (Benden, Isotrol) between circuit breaker and 120Vac power distribution block.

3. Provide separately fused power supply to each major panel component.
4. Additional panel requirements.

a. Provide separately fused power circuits for panel powered devices entering panel from field. Provide separate circuit for each device. Devices may be 5-Amp fused terminal blocks.
1) Solenoid actuated valves
2) Loop powered transmitters
3) 120Vac switched cord and receptacles
4) Relays

b. Include digital transient surge suppressor/varistor installed in parallel with output contact at terminal strip for each PLC output signal driving an inductive load including:
1) Relays.
2) Solenoids.
3) Motor starters.
4) Motors.

M. Motor Protection Relays (MPR):

1. First named submersible pump manufacturer uses proprietary pump monitoring units, supplied by the pump manufacturer. Units shall be installed into Motor Control Centers as shown on Drawings. One unit shall be supplied for each of the submersible pumps referenced. Coordinate size, mounting, and wiring requirements for monitoring units with Contractor. Units shall be the source of Motor Overtemp, and Seal Fail signals.
2. Other listed manufacturers utilize specifically designed relays manufactured by third parties for monitoring of pump alarm signals. Relays shall be installed into control panels as shown on Drawings. Relays may or may not be provided by pump manufacturer dependent upon manufacturer selected and signal being monitored. Coordinate relay provision, type, mounting requirements, and wiring requirements with Contractor.

N. Labels and Nameplates:

1. Panel Designation:

a. Engraved with Engineer's tag number and description shown on the Drawings and in Specifications.
b. Laminated black plastic with ½-in. high white characters.
c. Fastened with stainless steel screws.

2. Front of panel mounted devices.

a. Provide nameplate for each front of panel device with descriptive phrase using nomenclature as listed on Drawings and in Specifications.
b. Laminated black plastic with 3/16-in. high white characters.
c. Fastened with stainless steel screws.

3. Rear of panel mounted devices.

a. Provide nametag for each rear of panel device with labels used on panel drawings.
b. Thermo-embossed or laser printed with 1/8-in. high white characters on black background or laminated black plastic with 3/16-in. high white characters.
c. Self-adhesive backing.
d. Clean area with mineral spirits prior to affixing labels

O. Panel Finish:

1. Remove mill scale, grease, and oil.
2. Primer thickness shall be 0.8 mil., minimum.
3. Finish coat shall be two-part epoxy or baked dry powder, 3-mil., minimum dry film thickness.
4. Color: Standard manufacturer's finish.

P. Conveniences:

1. Freestanding and floor mounted control panels shall be provided with door-activated, internal LED panel lighting units.

a. One unit shall be provided for every 3 feet of panel width and shall be mounted on the inside, top of the panel.
b. Lighting shall be consistent for entire project.

2. Freestanding and floor mounted control panels shall be provided with 120Vac, service outlet circuits within the back-of-panel area. The circuits shall be provided with three-wire, 120Vac, 15-ampere duplex GFCI receptacles, one for every 3 feet of panel width and spaced evenly along the back-of-panel area. GFCI receptacles shall not be used for supplying power to UPS.
3. UPS receptacle – Provide simplex non-GFCI receptacle for plug in of UPS where applicable. Receptacle shall be labeled "120VAC FOR UPS ONLY".

2.3 PANEL CONSTRUCTION – INDOOR AND OUTDOOR ENCLOSURES

A. Indoor and outdoor enclosures shall conform to NEMA requirements as follows:

1. NEMA 7 for indoor or outdoor enclosures in class 1, division 1 or 2 hazardous (classified) locations.
2. NEMA 4X – type 316 stainless steel for outdoor enclosures or indoor enclosures in wet and/or corrosive environment.

3. NEMA 12 for indoor enclosures not in classified or corrosive environments.

B. In addition to NEMA standards, conform to the following requirements:

1. Minimum metal thickness: 14 Ga.
2. Indoor enclosures: equip with rubber-gasketed doors with continuous metal hinges. Equip doors with 3-point lockable latches.
3. Outdoor enclosures: equip with hinged dead-front inner doors and rubber-gasketed, continuous metal hinged outer weather doors. Equip weather doors with toggle style door clamps. For transmitter cabinets replace doors with plexiglass front and add circuit breakers.
4. Equip outdoor enclosures with thermostatically controlled heaters capable of maintaining internal panel temperature of 50°F with 20mph wind at ambient temperature of -20°F. Heater shall operate at 120Vac, 60Hz power.
5. NEMA 4X enclosures shall be furnished with door gaskets.
6. Size to adequately dissipate heat generated by equipment mounted in or on panel.

C. Prior to final fabrication of panels, verify layout of front-of-panel devices with respect to rear-of-panel devices. Maintain minimum of 3 inches clearance between door and sub-panel mounted devices.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Install and wire in accordance with equipment/instrument manufacturer’s written instructions, approved submittals, applicable requirements of the NEC, NEIS, and recognized industry practices.

B. Coordinate housecleaning pad dimensions with enclosure dimensions.

C. Install control panels in locations indicated on Drawings and in accordance with manufacturer’s written instructions and approved submittals.

D. Touch-up panel finish if marred during installation using manufacturer’s paint matching enclosure.

3.2 IDENTIFICATION

A. Engrave Engineer tag number as listed in Specifications and on Drawings.

END OF SECTION

SECTION 40 70 00
INSTRUMENTATION FOR PROCESS SYSTEMS

PART 1 – GENERAL

1.1 SUMMARY

A. Items specified in this section shall conform to general requirements of Division 40 and Division 26.

B. Section includes field sensors and transmitters as required for monitoring of process information such as flow, level, pressure, temperature, and chemical analysis.

C. Ranges and performance parameters are listed for each type of instrument.

D. Section includes instrumentation enclosures as required for the installed environment.

1.2 RELATED REQUIREMENTS

A. General provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

B. Section 406113 – Process Control System General Provisions.

1.3 REFERENCES

A. ANSI: American National Standards Institute

B. ISA - Instrumentation, Systems and Automation Society

C. CSA: Canadian Standards Association

D. EN: European Standards (generic)

E. FM: Factory Mutual

F. IEC: International Electrotechnical Commission

G. NEC: National Electric Code

H. NEIS: National Electrical Installation Standards

I. NEMA: National Electrical Manufacturers Association

J. NIST: National Institute of Standards and Technology

K. NRTL: Nationally Recognized Testing Laboratory

L. OSHA: Occupational Safety and Health Administration

M. UL: Underwriters Laboratories

1.4 SUBMITTALS

A. In addition to the requirements of Division 01, the following information shall be provided in tabbed, booklet format covering all project work.

B. General:

1. Submit Product Data in sufficient detail to confirm compliance with requirements of this Section. Submit Product Data and Shop Drawings in one complete submittal package. Partial submittals are not acceptable.

C. Product Data:

1. Catalog cuts and product specifications for instrumentation specified.

D. Shop Drawings:

1. Installation and assembly drawings and specifically prepared technical data for instrumentation specified.

E. Operation and Maintenance (O&M) Data:

1. Operating instructions and maintenance data for materials and products for inclusion in O&M Manual.
2. Manufacturer's written instructions for periodic test/calibration/cleaning for instrumentation and controls in service.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Firms experienced in manufacturing panels and enclosures of types and materials indicated that have record of successful in-service performance.

B. Enclosures and components contained within the enclosure provided under this Section shall be listed or labeled by Underwriters Laboratories Inc. (UL) or other Nationally Recognized Testing Laboratory (NRTL).

1. Term "NRTL" shall be as defined in Occupational Safety and Health Administration (OSHA) Regulation 1910.7.
2. Terms "listed" and "labeled" shall be as defined in National Electrical Code (NEC), Article 100.

1.6 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to repair or replace components that fail in materials or workmanship within specified warranty period.

1. Warranty Period: 12 months from date of Substantial Completion.

PART 2 – PRODUCTS

2.1 GENERAL REQUIREMENTS

A. In addition to devices indicated, provide all transformers, field preamplifiers, signal conditioners, offset and span adjustments, amplifiers, transducers, transmitters, control devices, signal transmission, and control and power wiring suitable for the application, as

necessary to provide complete end-to-end process control loop accuracy from sensor to display and final control element.

B. Where necessary provide devices that make engineering units conversions and have specific algorithms for applications.

C. Power Supply: 120 volts AC, single phase, 60 Hz.

D. Gauges: Comply with ASME B40.100, with gauge range appropriate for installation.

E. Transmitters: Provide a transmitter for each sensor unless otherwise indicated; transmitter selected to match sensor, with following characteristics unless otherwise indicated:

1. Display: Four digit or analog visual display of measured parameter.
2. Output Signal: 4 to 20 mA DC, proportional to level of measured parameter.
3. Accuracy: Plus/minus 0.5 percent of full scale reading with output error not exceeding Plus/minus 0.25 percent of the calibrated measurement.
4. Mounting: Integral with sensor, pipe mounted, wall mounted or installed in control panel.
5. Location, if Not Integral with Sensor: Where indicated; if not indicated, not more than the distance from the sensor recommended by manufacturer.

F. Liquid Service Devices: Rated for continuous duty service at specified fluid approach velocities with correspondingly higher constriction velocities over the specified fluid temperature range at specified pressures.

1. Fluid Approach Velocity: 0.327 to 7 feet/second (0.1 to 2.1 m/sec).
2. Fluid Temperature Range: 32 to 105 degrees F (0 to 40 degrees C).
3. Pressure Range: Up to 10 psig (70 kPa).

G. Gas and Vapor Service Devices: Rated for continuous duty service at specified fluid approach velocities with correspondingly higher constriction velocities over the specified fluid temperature range at specified pressures.

1. Fluid Approach Velocity: 500 to 5000 feet per minute (2.5 to 25 m/s).
2. Fluid Temperature Range: Minus 0 degrees F (18 degrees C) to 105 degrees F (40 degrees C).
3. Pressure Range: Minus 7.2 psig (50 kPa), up to 15 psig (100 kPa).
4. Flow Indication: In cubic feet per minute and cubic meters per second.

2.2 FLOW INSTRUMENTATION

A. General

1. Liquid Indication: In gallons per minute and liters per second.
2. Air/Gas/Vapor Indication: In cubic feet per minute and cubic meters per second.
3. Flow Rate Control: Plus/minus 5 percent of design flow.
4. Mounting: Easily removed for periodic maintenance.
5. Provide appropriate snubbers for pressure taps.
6. For Liquids: Mount sensors in horizontal piping, unless otherwise indicated or otherwise recommended by manufacturer.
7. For Air, Gases, and Vapors: Mount sensors in vertical piping.

8. Straight Run Piping Requirements: Minimum straight unobstructed piping of 10.0 pipe diameters upstream and 5.0 pipe diameters downstream, unless otherwise indicated.
9. Flow Transmitters:

    a. Readout: Digital readout of volumetric flow rate to 3 significant figures.
    b. Signal: Proportional to volumetric flow rate and compensated for fluid temperature, unless otherwise indicated.
    c. Accuracy: Plus/minus one percent of full flow.
    d. Location: Within 15 feet (5 m) of flow element.

B. Flow Switches

1. Non-flexible paddle type with Form C snap action contacts rated in accordance with NEMA ICS 1; rated for use and constructed of suitable materials for installation in environment measured.
2. Accuracy: Plus/minus 10 percent of actual flow setting.
3. Actuation adjustable over operating flow range.
4. Mounting: Minimize disturbance of flow of fluid while maintaining reliable operation of switch.

C. Magnetic Flow Element and Transmitter:

1. Design is based on startup average velocity of 3 ft/sec through meter. Meters requiring greater velocities to meet specified accuracy and proper performance are not acceptable.
2. Flowmeter system accuracy shall be ±0.25% of flow rate over 10:1 turndown minimum.
3. Repeatability shall be ±0.1% and response time programmable from 1 sec to 100 sec.
4. Meters shall be furnished with NIST certification of calibration.
5. Flow Element:

    a. Low frequency, electromagnetic induction type producing dc pulse signal directly proportional and linear to liquid flow rate.
    b. NEMA 4X, IP66/67 type housing. Watertight external and internal electrical conduit connections.
    c. Provide power from signal converter.
    d. Unless otherwise specified, materials of construction shall be:
        1) Flow meter liner: Hard Rubber, Polyurethane, or PTFE.
        2) Electrode materials: 316 stainless steel.
        3) Electrode type; Bullet nose.
        4) Grounding rings: 316 Stainless Steel.

    e. Use grounding rings or gaskets on each end of magnetic flow meter to provide ground path and prevent interference with flow signal. Probes are not acceptable.
    f. Sensing head interchangeable with meter body of same manufacturer without performing flow recalibration.
    g. High impedance device of not less than 1012 ohms to minimize span shift due to electrode coating.
    h. Explosion-proof sensor element certified by Factory Mutual Research for Class I, Division 2, Groups C and D when sensor is in a hazardous area.
    i. Laying length of meters shall be minimum of 1-1/2 times nominal meter size.

6. Transmitter:

   a. Remote or integrally mounted according to Drawings and Plans, microprocessor controlled.
   b. Operate on 120Vac, 60 Hz power.
   c. Provide pulsed dc voltage to magnet coils of magnetic flow meter to establish magnetic field.
   d. Convert flow signal from magnetic flow meter to analog and digital output signals, for bidirectional flow.
   e. Span to be continuously adjustable between 2 and 31 ft/sec. Adjustment shall be by keypad.
   f. Display shall have 2 rows of 16 alpha numeric characters minimum. Top row shall indicate instantaneous flow rate in direct engineering units, field selectable.
   g. Converter interchangeable with magnetic flow meter of same manufacturer and requires no additional flow calibration adjustment.
   h. 4-20 mA DC analog current output into 0 to 900 ohm load and 24Vdc scaled, pulse output software adjustable.
   i. Locate flow rate indicator within each converter. Indicator shall display flow rate in engineering units.
   j. House in cast aluminum enclosure to meet NEMA 4X requirements.
   k. Noise reduction feature to minimize effects of noise generating processes.
   l. Automatic empty pipe detection.
   m. Suitable for -5°F to +140°F ambient temperature (-40°F to +140°F for outdoor applications).

7. Cable:

   a. Provide sufficient standard length of manufacturer's signal cable connecting meter and converter without splice.

D. Turbine Type

1. Series 300 stainless steel.
2. Accuracy: Plus/minus one percent from 30 to 100 percent of actual flow.
3. Mounting: So that sensor is located in center of fluid flow pipe on main axis.
4. Straight Run Piping Requirements: Minimum 10 pipe diameters upstream and 5 pipe diameters downstream.

E. Insertion Turbine Type

1. Pipeline mounted assembly for insertion/retraction of turbine rotor into/from pipe without interruption of service; integral flow, temperature, and pressure monitoring.
2. Meter and Rotor Assembly: Series 300 stainless steel with polytetrafluoroethylene (PTFE) seals; turbine rotor designed to allow compensation for bearing wear without affecting rotor calibration; assembly designed to protect turbine rotor during insertion/retraction; manual hand wheel operation; isolation valve for removal of meter from pipeline.
3. Temperature Range: As indicated.
4. Pressure Loss: Not more than one percent of operating pressure at maximum flow rate.
5. Pressure Range: 0 psig (0 MPa) to 300 psi (2 MPa).
6. Sensor Accuracy: Plus/minus one percent of reading.

7. Rotor Response Time: Less than 10 milliseconds from minimum to maximum flow.
8. Turndown Ratio: 1:1 through 50:1.
9. Repeatability: Plus/minus 0.25 percent of reading.
10. Transmitter Accuracy: Plus/minus 0.25 percent over calibrated span.
11. Electronics scaled and rescaled in field when application data changes.
12. Designed for minimum pipe size of 3 inches (75 mm).
13. Accommodate probe insertion depth up to 44 inches (1118 mm).
14. Rotor Depth Gauge: Markings in one inch (25 mm) increments, showing exact position of turbine rotor in pipe.
15. Over Range Operating Capacity: 150 percent of maximum flow for up to 5 seconds.
16. Rotor factory-calibrated in actual flow of similar fluid over specified flow range, performed on test equipment with accuracy traceable to National Institute of Standards and Technology (NIST).

    a. For each rotor, submit copy of calibration test data, including all physical parameters under which tests were performed.
    b. Analyze test data to determine rotor's arithmetic average "K" factor, the best line fit, and the plus/minus deviation from these figures.

17. Location: In accordance with manufacturer's instructions for specified flow rates and installation conditions.
18. Mounting: Welded flanged riser of appropriate pipe line rating, with a full opening valve bolted to it; reduced diameter pipe sections as necessary to achieve required flow velocities; installation using hot-tap method with tools recommended by manufacturer.
19. Straight Run Piping Requirements: Minimum 10 pipe diameters upstream and 5 pipe diameters downstream.

2.3 PRESSURE INSTRUMENTATION

A. General

1. Operating Pressure: As indicated.
2. Control pressures within plus/minus 5 percent of design pressures.
3. Select switch contact ratings and duty for suitability to application.
4. Adjust pressure switches to proper setpoint and verify by calibration.
5. Verify pressure sensors and pressure transducers by calibration.
6. Provide appropriate snubbers on pressure taps.
7. For pressure sensors and switches, provide valves for isolation, venting, and taps for calibration.
8. For pressure switches and transducers installed on liquid or steam lines, provide drains.
9. For pressure transducers, differential pressure sensors and differential pressure switches, provide nulling valves.

B. Pressure and Vacuum Gauges

1. Mounting: Stem mounted, unless otherwise indicated.
2. Case: Stainless steel cases, with safety pressure blowout back.
3. Dial: Dry; 4.5-inch (114 mm) diameter; slotted adjustable pointer.
4. Scale: From zero to approximately twice anticipated process operating or equipment pressure; readings in psig/inches of mercury and MPa/mm of mercury.

5. Accuracy: Comply with ASME B40.100 Grade A.
6. Sensors: Diaphragm actuated; phosphor bronze.
7. Connections: Threaded; TP316L stainless steel; 5/16 inch (8 mm) diameter, male.
8. Provide lever handled gauge cock.
9. Provide filter type snubber between pipe and gauge.
10. Isolate gauges from process fluids using remote diaphragm seals of stainless steel in housing of stainless steel.

C. Pressure Sensors

1. Capsule, diaphragm, bellows, Bourdon tube, or solid state as suitable for application.
2. Indication: In psig and kPa with output to nearest 0.145 psi (1.0 kPa).
3. Range: Plus/minus 10 percent of operating pressure.
4. Local Output: Display and printout.
5. Pressure Transducer: Rated for 300 percent of rated pressure, selected to put design range of measured pressure in middle third of transducer's range.
6. Transducer Accuracy: Plus/minus 1.0 percent of full scale.
7. Transmitter Output Error: Not more than 0.1 percent of calibrated span.

D. Pressure Sensors, Differential Type

1. Suitable for installation with low pressure connection removed.
2. Rating: Minimum of 300 percent of operating pressure.
3. Accuracy: Plus/minus 2 percent of full scale.

E. Pressure Switch, Diaphragm or Bourdon Tube Type

1. As suitable for application; brass; with two dry contacts.
2. Rating: Minimum of 150 percent of operating pressure.
3. Repetitive Accuracy: Plus/minus 5.0 percent of full scale.
4. Actuation Set Point: Adjustable over operating pressure range with differential adjustment span of 20 to 40 percent of range.
5. Contacts: Form C snap-action contacts rated in accordance with NEMA ICS 1.

F. Pressure Switches, Differential Type

1. Adjustable range diaphragm or bellows operated device, with taps for sensing lines for connection of pressure fittings designed to sense fluid pressure; with two dry contacts.
2. For measuring air, gas or vapor stream, provide fittings of angled-tip type with tips pointing into air stream.
3. Range: 0.15 to 0.35 inches water gauge (0.037 to 0.087 kPa).
4. Contacts: Form C snap-action contacts rated in accordance with NEMA ICS 1.

G. Pneumatic to Electric (PE) Switches

1. Adjustable set point; dry contacts.
2. Set Point Range: 3.0 to 20 psig (20 to 138 kPa).
3. Differential Range: 2.0 to 6.0 psi (13 to 41 kPa).
4. Contacts: Form C snap-action contacts rated in accordance with NEMA ICS 1.

2.4 INSTRUMENTATION ENCLOSURES

A. Manufacturers:

1. Astava Instrument Solutions
2. Dwyer
3. INTERTEC, Industrial Controls & Equipment
4. Approved alternate.

B. Enclosures: As specified for environmental and/or hazardous area conditions.

C. Weather Shields and Shelters:

1. Provide for sensors located outdoors.
2. Prevent the sun from directly striking sensor.
3. Provide adequate ventilation so sensing element responds to ambient conditions.
4. Prevent rain from directly striking or dripping onto sensor; for sensors near outside air intake ducts allow for normal outside air flow.
5. Construction Materials: FRP, aluminum, stainless steel, or PVC.
6. Color/Finish: White, painted; or natural aluminum or stainless steel.
7. Locations as indicated on drawings and as required.
8. Ground-Mounted Shelters: Three sides and roof.

a. Mounting Height: 48 inches (1220 mm) above supporting surface to bottom of shelter.
b. Supports as required, anchored, and reinforced to minimize vibrations due to wind.
c. Mount devices in the 3-dimensional center of the open space of the shelter.
d. Orient shelters with open side facing North.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Install and wire in accordance with equipment/instrument manufacturer's written instructions, approved submittals, applicable requirements of the NEC, NEIS, and recognized industry practices.

B. Provide the services of a qualified technician experienced in installation and operation of type of equipment provided, to supervise installation, calibration, start-up, demonstration, and testing.

C. Install devices with adequate clearance for maintenance.

D. Do not obstruct access to or clearances required for maintenance of other equipment and systems.

E. Devices Installed in Piping: Provide all necessary gaskets, flanges, thermal compounds, insulation, piping, and fittings.

F. Provide bypass piping and manual valves as indicated on drawings.

G. Where new devices are installed in existing piping, also provide bypass piping and two manual valves for shutoff.

H. Devices Installed in Ductwork: Provide all necessary fittings, gaskets, sealing compounds, insulation, and access panels.

I. Local Indicators: Install direct-reading indicator devices, thermometers, and pressure gauges so that they can be easily read from floor level and are readily accessible for maintenance and service.

J. Temperature Sensing Bulbs: Coat with silver base heat transfer grease prior to insertion into thermowells.

K. Adjust or replace devices not complying with specified requirements; except factory sealed devices must be replaced, rather than adjusted.

L. Replace damaged insulation to match existing work.

M. Repair damaged galvanized surfaces.

3.2 IDENTIFICATION

A. Provide Type 316 stainless steel tag permanently affixed to each unit (where sensor and transmitter separately mounted).

B. Engrave with process application as listed in Specifications.

C. Include Engineer tag number as listed in Specifications and on Drawings.

3.3 FIELD QUALITY CONTROL - SENSOR CALIBRATION - PRIOR TO STARTUP

A. Calibrate monitoring and control instrumentation; devices with factory calibration certification need not be field calibrated.

B. Calibrate using methods described below; alternate methods may be used, if approved by Owner beforehand.

C. Make reports of calibrations performed, documenting methods, and initial, intermediate, and final results.

D. Calibration Accuracy and Tolerances: As indicated for each device.

1. Owner reserves the right to require more rigorous calibration accuracy or tolerances for selected devices.

E. Calibration Equipment: Provide equipment of sufficient quality and accuracy to test and/or measure system performance with the tolerances specified. If not otherwise noted, the following minimum equipment calibration requirements apply:

1. Temperature Sensors and Digital Thermometers: Certified calibration within past year to accuracy of 0.5 degree F (0.3 degree C) and resolution of plus/minus 0.1 degree F (0.05 degree C).
2. Pressure Sensors: Accuracy of plus/minus 2.0 percent of the value range being measured (not full range of meter), calibrated within the last year.
3. Equipment Calibration: According to the manufacturer92s recommended intervals and when dropped or damaged; affix calibration tags or keep certificates readily available for inspection.

F. All Sensors:

1. Verify that sensor location is appropriate and away from potential causes of erratic operation.
2. Verify that sensors with shielded cable are grounded only at one end.
3. For sensor pairs that are used to determine a temperature or pressure difference, for temperature make sure they are reading within 0.2 degree F (0.1 degree C) of each other, and for pressure, within tolerance equal to 2 percent of the reading, of each other.
4. Tolerances for critical applications may be tighter.

G. Sensors Without Transmitters:

1. Make a reading with a calibrated test instrument within 6 inches (150 mm) of the site sensor.
2. Verify that the sensor reading is within the specified tolerances of the instrument-measured value.
3. If not, install offset, calibrate, or replace sensor.

H. Sensors With Transmitters:

1. Disconnect sensor.
2. Connect a signal generator in place of sensor to simulate desired characteristic.
3. Connect ammeter in series between transmitter and process control panel.
4. Adjust transmitter potentiometer zero until 4 mA is read by the ammeter.
5. Repeat for the maximum characteristic matching 20 mA to the potentiometer span or maximum and verify at the process control system.
6. Record all values and recalibrate controller as necessary to comply with specified control ramps, reset schedules, proportional relationship, reset relationship and P/I reaction.
7. Reconnect sensor.
8. Make a reading with a calibrated test instrument within 6 inches (150 mm) of the site sensor.
9. Verify that the sensor reading, via the permanent local display or the process control system, is within the specified tolerances of the instrument-measured value.
10. If not, replace sensor and repeat.

I. After calibration, perform calibration accuracy check:

1. Conduct two-point accuracy check of calibration of each control system sensing element and transmitter by comparing value from test instrument to corresponding sensor/transmitter output variable.
2. Use digital indicating test instruments at least twice as accurate as specified sensor accuracy, with calibration traceable to NIST standards.
3. Verify that sensing element-to-control system readout accuracies at two points are within specified product accuracy tolerances.
4. If not, recalibrate or replace device and repeat calibration check.

END OF SECTION

City of Ormond Beach
AGENDA ITEM

August 20, 2024 - City Commission

Number: 7.N

Section:	CONSENT AGENDA		
Item Category:	Consent - Disposition Item	**Res./Ord. No:**	
Strategic Goal:	Quality of Life - Other		
Department:	Public Works - Engineering		
Subject:	Intent to Bid - Cassen Park Redesign		

Summary:

This item provides public notice of the City Commission's intent to issue a invitation to bid for the construction of the redesign of Cassen Park.

On December 6, 2022, the City Commission authorized a contract with Zev Cohen & Associates to prepare plans and bid specifications for the redevelopment of Cassen Park. Zev Cohen and Associates and Marquis Latimer + Halback have work with City staff and stakeholders to prepare plans and specifications that reflect participation from Commission, members of our appointed Boards, and interested residents. Included with completion of the final engineering plans, are including permitting (FDOT, Department of Health, FDEP, and NPDES), landscaping, electrical, and architectural plans as well as approval of the plans through the City's Site Plan Review process. Working with Zev Cohen, staff and our consultants have developed the following tentative schedule for bidding and construction of this project.

Milestone Event	Current Projected Date
Bid Documents to Commission	August 20, 2024
Bid Award by City Commission	November 6, 2024
Begin Construction	January, 2025
Construction Complete	June, 2025
Grand Opening	July, 2025

Financial Impact:	Funds are available from the CRA Fund - 104. The engineers' estimated cost is $2,817,566.
Citizen Impact:	As one of the City's "Four Corners Parks," Cassen Park is a heavily used recreation facility that serves many populations. A redesign of the park incorporating collected public input provides an opportunity to enhance and improve the use and enjoyment of this space for all residents. During the construction process, portions of the park will be closed to the public. The bait shop and at least 1 boat ramp will remain accessible and open. Upon completion, citizens will be able to utilize the new restroom and bait shop facilities and enjoy these wonderful amenities.
Recommended Action (Staff, Advisory Board and/or Other):	Staff intends to proceed with advertising the project for bid unless otherwise directed.
Staff Contact:	Alex Schumann, City Engineer, (386) 676-3302
Attachments:	1. Cassen Spec Book 2. Cassen Site Plans 3. Cassen Landscaping Plans 4. Colored Elevations
Approval:	Kelly McGuire, Finance Director 8/9/2024 Shawn Finley, Assistant City Manager 8/15/2024 Joyce Shanahan, City Manager 8/15/2024

Cassen Park Redevelopment

CONTRACT DOCUMENTS AND TECHNICAL SPECIFICATIONS

BID No. 2025-02

City of Ormond Beach

Project Manual

PREPARED BY:

Zev Cohen & Associates, Inc.
300 Interchange Blvd., Suite C
Ormond Beach, Florida 32174

August 2024

ZCA PROJECT NO. 22138

CASSEN PARK REDEVELOPMENT
Ormond Beach, Florida

TABLE OF CONTENTS

Section No.	Title
	BIDDING REQUIREMENTS
00030	Advertisement for Bid
00100	Instructions to Bidders
00300	Bid
00410	Bid Bond
	CONTRACT FORMS
00500	Form of Agreement
00610	Performance Bond
00615	Payment Bond
00670	Opinion of Attorney
	CONDITIONS OF CONTRACT
00700	General Conditions
00800	Supplementary Conditions
L.W.	Lien Waiver
	TECHNICAL SPECIFICATIONS
	DIVISION 1 - GENERAL REQUIREMENTS
01010	Summary of Work
01025	Measurement and Payment
01027	Application for Payment
01040	Coordination
01050	Field Engineering
01070	Codes, Abbreviations and Symbols
01200	Project Meetings
01300	Submittals
01380	Construction Graphic Record
01400	Quality Control
01500	Temporary Facilities and Controls
01568	Erosion & Sedimentation Control
01600	Materials and Equipment
01630	Substitutions and Product Options
01650	Disinfection
01657	Start-up
01660	Pressure Testing of Piping
01670	Operating and Maintenance Data
01700	Contract Closeout
01710	Final Cleaning

TABLE OF CONTENTS (Continued)

01740 Warranties

DIVISION 2 - SITEWORK

02010 Subsurface Investigation
02050 Demolition
02100 Clearing and Grubbing
02140 Dewatering System
02200 Earthwork
02222 Trenching, Backfilling and Compacting
02500 Paving
02580 Roadway Striping & Marking
02605 Precast Concreate Manholes and Structures
02616 Ductile-Iron Pipe and Fittings for Pressure Service
02622 Plastic Pipe for Gravity Service
02623 Plastic Pipe for Pressure Service
02640 Valves and Accessories (for Pipeline Work)
02641 Pipe Cleaning and Pigging
02720 Drainage Structures & Piping
02801 Restoration of Surface Improvements
02802 Identification Tape for Buried Pipe
02930 Sodding

DIVISION 3 - CONCRETE

03100 Cast In-Place and Poured Concrete
03300 Concrete

DIVISION 4 through DIVISION 25

(Not Applicable)

DIVISION 12 through **DIVISION 14**

(Not Applicable)

DIVISION 26 – ELECTRICAL

260510	Basic Electrical Materials and Methods
260519	Low Voltage Conductors and Cables
260529	Hangers and Supports for Electrical Systems
260533	Raceways and Boxes for Electrical Systems
260553	Identification for Electrical Systems
262816	Enclosed Switches
265619	LED Exterior Lighting

DIVISION 32 – EXTERIOR IMPROVEMENTS

321313	Concrete Paving
321373	Concrete Paving Joint Sealants
328400	Planting Irrigation
329200	Turf and Grasses
329300	Plants

APPENDIX

Appendix A	FDEP Permits Geotechnical Reports

END
TABLE OF CONTENTS

SECTION 00030
ADVERTISEMENT FOR BIDS

Sealed bids for furnishing all labor, materials and equipment necessary for constructing the **CASSEN PARK REDEVELOPMENT PROJECT**, **Bid No. 2025-02** for the City of Ormond Beach, Florida, will be received at the Office of the Purchasing Coordinator, City Hall, Ormond Beach, Florida, until October 9th, 2024 at 2:00pm, at which time bids will be opened and publicly read aloud in the Training Room located in the breezeway between City Hall and the Public Library. Bids received after the above time and date will be returned unopened.

The work consists of paving boat trailer and car parking areas along with construction of a new bait shop and restroom building with associated stormwater management systems, potable water service, and sanitary sewer service. The work is shown on the Drawings and specified in the Project Manual. The project Drawings, Specifications and related Bidding documents are available on-line at **www.demandstar.com**, or by calling DemandStar at (206) 940-0305. If you have difficulty obtaining these documents, please contact the City's purchasing office at (386) 676-3223.

A **pre-bid conference** to discuss the details and requirements of the contract will be held on September 5th at 10am, in the Training Room at City Hall. All prospective bidders are strongly encouraged to attend. The deadline for submitting questions is October 2nd at 5:00pm.

END OF SECTION

SECTION 00100
INSTRUCTION TO BIDDERS

00101. Defined Terms

Terms used in these Instructions to Bidders are defined in the General Conditions of the Construction Contract and have the meanings assigned to them in the General Conditions. The term "Successful Bidder" means the lowest, qualified, responsible Bidder to whom OWNER (on the basis of OWNER's evaluation as hereinafter provided) makes an award.

The OWNER for this project is:

The City of Ormond Beach
22 South Beach Street
Ormond Beach, Florida 32174

The ENGINEER for this project is:

Zev Cohen & Associates, Inc.
300 Interchange Blvd. Suite C
Ormond Beach, FL 32174

00102. Copies of Bidding Documents

2.1 The City uses the services of DemandStar (www.demandstar.com) to advertise/distribute its bids and RFP's via the internet.

2.2 Complete sets of the Bidding Documents may be obtained from the issuing office designated in the Advertisement for Bids.

2.3 Complete sets of Bidding Documents shall be used in preparing Bids; neither OWNER nor ENGINEER assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2.4 OWNER and ENGINEER in making copies of Bidding Documents available, on the above terms, do so only for the purpose of obtaining Bids on the Work and do not confer a license or grant for any other use.

00102.1 COMPLIANCE WITH FLORIDA PUBLIC RECORDS LAW

Contractor expressly agrees that it shall comply with the public records law provided in Florida Statutes, Chapter 119, and specifically to:

(a) Keep and maintain public records required by the City to perform the contracted service.

(b) Upon request from the City Clerk, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes, or as otherwise provided by law.

(c) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by lawfor the duration of the contract term and following completion of the contract if the contractor does not transfer the records to the City.

(d) Upon completion of the contract, transfer at no cost, to the City all public records in possession of the contractor or keep and maintain public records required by the City to perform the service. If the contractor transfers all public records to the City upon completion of the contract, the contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the contractor keeps and maintains public records upon the completion of the contract, the contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City Clerk, in a format that is compatible with the information technology systems of theCity.

(e) Failure of the Contractor to comply with Public Records Law as provided by Florida Statutes, Chapter 119, shall subject the Contractor to penalties under Chapter 119.10 and subject this Agreement to termination for cause by the City.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

CITY CLERK
22 SOUTH BEACH STREET
ORMOND BEACH, FLORIDA 32174 (386) 676-3297
CITYCLERK@ORMONDBEACH.ORG

Ref: Fla. Stat. §119.0701(2016)

00102.2 Public Records/Non-Confidentiality of Bids

The City of Ormond Beach cannot and does not warrant the confidentiality of any information submitted in response to this bid solicitation. Florida law provides that municipal records shall at all times be open for personal inspection by any person, Section 119, F.S., the Public Records Act. Information and materials received by the City of Ormond Beach in connection with responsive bids shall be deemed to be public records subject to public inspection upon award, recommendation of award, or 30 days after bid opening, whichever occursfirst.

00103. Qualifications of Bidders

To demonstrate qualifications to perform the Work, each Bidder must be prepared to submit, within seven days after the OWNER's request, written evidence of his ability to perform the work, such as financial data, previous experience, and evidence of authority to conduct business in the jurisdiction where the Project is located. Each Bid must contain evidence of Bidder's qualification to do business in the state where the Project is located or covenant to obtain such qualification prior to award of the contract.

00104. Public Entity Crimes:

A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a Proposal on a contract to provide any goods or services to a public entity, may not submit a Proposal on a contract with a public entity for the construction or repair of a public building or public work, may not submit Proposals on leases or real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.

4.1 Discrimination Pursuant to Section 287.134(2)(a), Florida Statutes, an entity or affiliate who has been placed on the discriminatory vendor list may not submit a bid on a contract to provide any goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity.

00105. Examination of Contract Documents and Site

5.1 Before submitting a Bid, each Bidder must (a) examine the Contract Documents thoroughly, (b) visit the site to familiarize himself with local conditions that may in any manner affect cost, progress or performance of the Work, (c) familiarize himself with federal, state and local laws, ordinances, rules and regulations that may in any manner affect cost, progress or performance of the Work; and (d) study and carefully correlate Bidder's observations with the Contract Documents.

5.2 Reference is made to the Supplementary Conditions for the identification of those reports of investigations and tests for subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the Work which have been relied upon by ENGINEER in preparing the Drawings and Specifications. OWNER will make such reports available for inspection to any Bidder or copies may be obtained from the ENGINEER by the Bidder at reproduction cost. These reports are not guaranteed as to accuracy or completeness, nor are they part of the Contract Documents. Before submitting his Bid each Bidder will, at his own expense, make such additional investigations and tests as the Bidder may deem necessary to determine his Bid for performance of

the Work in accordance with the time, price and other terms and conditions of the Contract Documents.

5.3 On request OWNER will provide each Bidder access to the site to conduct such investigations and tests as each Bidder deems necessary for submission of his Bid. Bidders making such investigations shall return site to original condition and shall pay for any damages resulting therefrom.

5.4 The lands upon which the Work is to be performed, rights-of-way for access thereto and other lands designated for use by CONTRACTOR in performing the Work are identified in the Supplementary Conditions, General Requirements, or Drawings.

5.5 The submission of a Bid will constitute an incontrovertible representation by the Bidder that he has complied with every requirement of this Article 4 and that the Contract Documents are sufficient in Scope and detail to indicate and convey understanding of all terms and conditions for performance of the Work.

00106. Clarification/Correction of Proposal

The City of Ormond Beach reserves the right to allow for the clarification of questionable entries and for the correction of obvious mistakes.

00107. Interpretations

All questions about the meaning or intent of the Contract Documents shall be submitted in writing to the Purchasing Coordinator via email to Rob.Hart@ormondbeach.org. Replies will be issued by Addenda mailed or delivered to all parties recorded by ENGINEER as having received the Bidding Documents. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

00108. Minority Policies

The City of Ormond Beach, Florida, encourages the full participation of Disadvantaged and Women Business Enterprises (D&WBE) in the provision of goods and services.

00109. Bid Security

9.1 Bids shall be accompanied by a Bid Security. The Security shall be made payable to OWNER, in the amount of five percent (5%) of the total bid, and in the form of a certified or cashier's check or a Bid Bond issued by a Surety meeting the requirements of paragraph 5.1 of the General Conditions. The Bid Security shall be irrevocable after the time and date set for the opening of bids, and for a period of ninety (90) days thereafter.

9.2 The Bid Security of the Successful Bidder will be retained until such Bidder has executed the Agreement and furnished the required Contract Security, whereupon it will be returned; if the successful Bidder fails to execute and deliver the Agreement and furnish the required Contract

Security within fifteen (15) days of the Notice of Award, OWNER may annul the Notice of Award and the Bid Security of that Bidder will be forfeited. The Bid Security of any Bidder whom OWNER believes to have a reasonable chance of receiving the award may be retained by OWNER until the seventh day after the "effective date of the Agreement" or the first day after the expiration of the period that Bids are specified to remain open in the Advertisement for Bids. Bid Security of other Bidders will be returned within seven (7) days of the Bid opening.

00110. Contract Time

The number of days within which, or the date by which, the Work is to be completed (the Contract Time) is set forth in the Bid Form and will be included in the Agreement.

00111. Liquidated Damages

Provisions for liquidated damages, if any, are set forth in the Bid Form and Agreement.

00112. Subcontractors

12.1 If the Supplementary Conditions, Bid Form and/or Specifications require the identity of certain subcontractors to be submitted to the OWNER with the bid, the bidder will list in his bid all subcontractors proposed for those portions of the work for which such identification is so required. When requested, an experience statement, pertinent information as to similar projects satisfactorily completed and other evidence of qualifications for each listed subcontractor shall be submitted within seven (7) days after the bid. If the OWNER after due investigation has reasonable objection to any proposed subcontractor, OWNER may before giving the Notice of Award request the apparent low bidder to submit an acceptable substitute without an increase in his bid price. If the apparent Successful Bidder declines to make any such substitution, the contract shall not be awarded to such Bidder, but his declining to make any such substitution will not constitute grounds for sacrificing his Bid Security. Any Subcontractor so listed and to whom OWNER does not make written objection prior to the giving of the Notice of Award will be deemed acceptable to OWNER.

12.2 In contracts where the Contract Price is on the basis of Cost-of-the-Work Plus a Fee, the apparent Successful Bidder, prior to the Notice of Award, shall identify in writing to OWNER those portions of the Work that such Bidder proposes to subcontract and after the Notice of Award may only subcontract other portions of the Work with OWNER's written consent.

00113. Material and Equipment List (Manufacturers)

If the Supplementary Conditions, Bid Form and/or Specifications require the identity of certain material and equipment manufacturers be submitted to the OWNER with the bid, the bidder will list in his bid all material and equipment manufacturers proposed for those portions of the work for which such identification is so required. Such list shall be supplemented by product descriptions for each listed material and equipment item. Supplemental information will be submitted with the bid unless it has been prefiled with the ENGINEER. In this latter case, the bid shall state that the information has been prefiled. Equipment manufacturers/suppliers must agree to OWNER'S terms of purchase. In no event will OWNER accept terms of sale that limit OWNER'S ability to

reasonably recover in the event of equipment failure/defect such as, but not limited to; mandatory arbitration clauses, venue of court proceedings and applicable law outside of Volusia County, Florida, or damage limitations that preclude recovery for failed or defective equipment that would be less than full compensation for OWNER's loss. If the OWNER after due investigation has reasonable objection to any proposed material or equipment item, OWNER may before giving the Notice of Award request the apparent low bidder to submit an acceptable substitute without an increase in his bid price. If the apparent Successful Bidder declines to make any such substitution, the contract may not be awarded to such Bidder, but his declining to make any such substitution will not constitute grounds for sacrificing his Bid Security. Any material or equipment manufacturer so listed and to whom OWNER does not make written objection prior to the giving of the Notice of Award will be deemed acceptable to OWNER. This acceptance of a material or equipment manufacturer does not relieve the CONTRACTOR from the responsibility of submitting shop drawings in accordance with Section 01300 before incorporating said material and/or equipment into the Work.

00114. Material and Equipment Substitutions

Excluding items called for in the bidders Equipment and Subcontractors List in the Bid, Section 00300, whenever it is indicated on the Drawings or specified in the Specifications that a substitute or "or equivalent" item of material or equipment may be furnished or used by CONTRACTOR if acceptable to ENGINEER, application for such acceptance will not be considered by ENGINEER until after the "effective date of the Agreement". The procedure for submittal of any such application by CONTRACTOR and consideration by ENGINEER is set forth in Section 01630 - Substitutions and Product Options.

00115. Bid Form

15.1 Bids shall be submitted on standard forms which are furnished in this Project Manual.

15.2 Bid Forms must be completed in ink or by typewriter. All blank spaces must be filled. Where indicated on the Bid Form, the Bid price of each item on the form must be stated in words and numerals; in case of a conflict, words will take precedence.

15.3 The estimate of the various quantities of work applicable to unit price items as shown on the Bid Form is approximate and is intended solely to provide the basis of comparison upon which the award of contract is made. Final payment will be made on the basis of the actual completed quantities of each item.

15.4 Bids by corporations must be executed in the corporate name by the president or a vice president (or other corporate officer accompanied by evidence of authority to sign) and the corporate seal must be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown below the signature.

15.5 Bids by partnerships must be executed in the partnership name and signed by a partner, whose title must appear under the signature and the official address of the partnership must be shown below the signature.

15.6 Bids by a Joint Venture must be executed by all individuals, Partners, or Corporations interested in the Joint Venture in the same manner that bids by these separate entities are required to be executed.

15.7 All names must be typed or printed below the signature.

15.8 The Bid shall contain an acknowledgment of receipt of all Addenda (the numbers of which shall be filled in on the Bid Form).

15.9 The address to which communications regarding the Bid are to be directed must be shown.

15.10 Only one bid from any individual, firm, partnership or corporation under the same or different names, will be considered. Should it appear to the OWNER that any Bidder is interested in more than one bid, all bids in which such Bidder is interested will be rejected.

00116. Submission of Bids

Bids shall be submitted at the time and place indicated in the Advertisement for Bids and shall be included in an opaque sealed envelope, marked with the Bid Number, Project Title, and Bidder's Name and Address, accompanied by the Bid Security and other required documents. Include one (1) original bid form and (1) electronic file (thumb/flash drive or CD). If the Bid is sent through the mail or other delivery system, the sealed Bid shall be sent in a separate envelope with the notation "BID ENCLOSED" as well as the Bid Number, Project Title, and Bid Opening Date clearly displayed on the shipping envelope/package.

Submit bids to:

City of Ormond Beach
Purchasing Coordinator
22 South Beach Street, Room 102
Ormond Beach, FL 32174

00117. Modification and Withdrawal of Bids

Bids may be modified or withdrawn by an appropriate document duly executed (in the manner that a Bid must be executed) and delivered to the place where Bids are to be submitted at any time prior to the opening of Bids.

00118. Opening of Bids

Bids will be opened publicly and read aloud and an abstract of the amounts of the base Bids and major alternates (if any) will be made available after the opening of Bids.

00119. Bids to Remain Open

All Bids shall remain open for ninety (90) days after the day of the Bid opening, but OWNER may, in his sole discretion, release any Bid and return the Bid Security prior to that date.

00120. Award of Contract

20.1 OWNER reserves the right to reject any and all Bids, to waive any and all informalities and to negotiate contract terms with the Successful Bidder, and the right to disregard all nonconforming, nonresponsive or conditional Bids. Discrepancies between words and figures will be resolved in favor of words. Discrepancies between the indicated product of quantities and unit prices and the correct product thereof will be resolved in favor of the correct product. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

20.2 In evaluating Bids, OWNER shall consider the qualifications of the Bidders, whether or not the Bids comply with the prescribed requirements, and alternates and unit prices if requested in the Bid forms. It is OWNER's intent to accept alternates (if any are accepted) in the order in which they are listed in the Bid form but OWNER may accept them in any order or combination.

20.3 OWNER may consider the qualifications and experience of Subcontractors and other persons and organizations (including those who are to furnish the principal items or material or equipment) proposed for those portions of the Work as to which the identity of Subcontractors and other persons and organizations must be submitted as provided in the Supplementary Conditions. Operating costs, maintenance considerations, performance data and guarantees of materials and equipment may also be considered by OWNER.

20.4 Irregular bids may be rejected. Irregular bids are defined as those containing serious omissions, unauthorized alternative bids, incomplete bids or unbalanced bids. Failure to provide all of the information required to accompany the bid will be considered to be a serious omission.

20.5 OWNER may conduct such investigations as he deems necessary to assist in the evaluation of any Bid.

20.6 OWNER reserves the right to reject the Bid of any Bidder who does not pass any such evaluation to OWNER's satisfaction.

20.7 If the contract is to be awarded it will be awarded to the lowest responsible Bidder whose evaluation by OWNER indicates that the award will be in the best interests of the Project. Pursuant to the provisions of Florida Statutes Chapter 287.05701, the City does not request, or consider, a Vendor's social, political, or ideological interests in making a responsibility determination. The low bid will be based on the total cost of the Base Bid and, when applicable, any Additive or Deductive Alternates that are to be included in the Contract, as decided by the OWNER.

20.8 If the contract is to be awarded, OWNER will give the Successful Bidder a Notice of Award within the number of days after the day of the Bid opening specified in the Advertisement for Bids to remain open.

00121. Performance and Other Bonds

Paragraph 5.1 of the General Conditions and the Supplementary Conditions set forth OWNER's requirements as to performance and other Bonds. When the Successful Bidder delivers the executed Agreement to OWNER it shall be accompanied by the required Contract Security.

00122. Signing of Agreement

When OWNER gives a Notice of Award to the Successful Bidder, it will be accompanied by at least two (2) unsigned counterparts of the Agreement and all other Contract Documents. Within fifteen (15) days thereafter CONTRACTOR shall sign all and deliver at least two (2) counterparts of the Agreement to OWNER with other Contract Documents attached. Within fifteen (15) days thereafter OWNER will deliver fully signed counterparts to CONTRACTOR.

00123. Special Requirements

23.1 Financing. Funds will be available for payment of estimate draws as they become due.

23.2 Prohibited Interests. No official of the OWNER who is authorized in such capacity, and on behalf of the OWNER to negotiate, make, accept or approve, or to take part in negotiating, making, accepting, or approving any architectural, engineering, inspection, construction or material supply contract or any subcontract in connection with the construction of the project shall become directly or indirectly interested, personally, in this Contract or in any part thereof. No officer, employee, architect, attorney, engineer, or inspector of or for the OWNER who is authorized in such capacity and on behalf of the OWNER to exercise legislative, executive, supervisory, or other similar functions in connection with the construction of the project, shall become directly or indirectly interested personally, in this Contract or in any part thereof, any material supply contract, subcontract, insurance contract, or any other contract pertaining to the project.

23.3 Performance of Work by CONTRACTOR:

Contract Assignment. The successful Bidder (or Bidders) will be required to perform the work as a prime contractor.

The CONTRACTOR shall not sublet, sell, transfer, assign or otherwise dispose of the contract or any portion thereof, or of his right, title or interest therein, without written consent of the OWNER.

END OF INSTRUCTION TO BIDDERS

SECTION 00300
BID

CONTRACTORS NAME_____ LICENSE NO. _____

PROJECT IDENTIFICATION: **CASSEN PARK REDEVELOPMENT**

CONTRACT IDENTIFICATION AND NUMBER: Bid No. 2025-02

THIS BID IS SUBMITTED TO:
(Name and Address of Owner)

City of Ormond Beach
22 South Beach Street
Ormond Beach, Florida 32174

1. The undersigned BIDDER proposes and agrees, if this Bid is accepted, to enter into an Agreement with OWNER in the form included in the Contract Documents to complete all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in this Bid and in accordance with the Contract Documents.

2. BIDDER certifies that he has investigated the requirements to do business in the jurisdiction where the project is located, and that he is either qualified to do business or will obtain such prequalification prior to award of the contract.

3. BIDDER accepts all of the terms and conditions of the Instructions to Bidders (Section 00100) including, without limitation, those dealing with the disposition of Bid Security, Public Entity Crimes, and Minority Policies. This Bid will remain open for 90 days after the day of Bid opening. BIDDER will sign the Agreement and submit the Contract security and other documents required by the Contract Documents within ten (10) days after the date of OWNER'S Notice of Award.

4. In submitting this Bid, BIDDER represents, as more fully set forth in the Agreement, that:

(a) BIDDER has examined copies of all the Contract Documents and of the following addenda:

Date	Number
_____	_____
_____	_____
_____	_____
_____	_____

(receipt of all of which is hereby acknowledged) and also copies of the Advertisement to Bid and the Instructions to Bidders;

(b) BIDDER has examined the site and locality where the Work is to be performed, the legal requirements (federal, state and local laws, ordinances, rules and regulations) and the conditions affecting cost, progress or performance of the Work and has made such independent investigations as BIDDER deems necessary.

(c) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; BIDDER has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; BIDDER has not solicited or induced any person, firm or a corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for himself any advantage over any other Bidder or over OWNER; and

5. BIDDER will complete the Work for the followingprice(s):

BID SCHEDULE

Bid No.	Item	Estimated Quantity	Unit	Unit Price	Amount
101	Mobilization/Demobilization	1	LS		$
102	Survey and Layout	1	LS		$
103	Submit Certified "As-Built" Drawings	1	LS		$
104	Maintenance of Traffic	1	LS		$
105	Construction Entrance	1	LS		$
106	Erosion, Sedimentation, and Turbidity Control	1	LS		$
107	Clearing & Grubbing	1	LS		$
108	Demolition	1	LS		$
109	Pavement Removal	2,794	SY		$
110	Tree Protection	1	LS		$
111	Removal & Replacement of Unsuitable Materials	475	CY		$
112	Removal & Replacement of Rock Material	100	CY		$
113	Import Fill (Fill, Spread, and Compacted)	475	CY		$
114	FDOT (4' Dia.) Sanitary Sewer Manhole	1	EA		$
115	8" PVC (SDR-26), ASTM D-3034 Sanitary Sewer Main	206	LF		$
116	6" PVC (SDR-26), ASTM D-3034 Sanitary Sewer Service	156	LF		$
117	Connection to Existing Sanitary Sewer Manhole	1	EA		$
118	2" PVC Potable Water Service	337	LF		$
119	6" PVC Potable Water Main	32	LF		$
120	4" PVC Fire Main	72	LF		$
121	6" PVC Fire Main	353	LF		$
122	6" Tapping Sleeve & Valve	1	EA		$
123	6" Gate Valve	1	EA		$
124	2" Potable Water Meter	1	EA		$
125	2" RPZ Backflow Preventer	1	EA		$

126	Fire Standpipe Assembly	1	EA		$
127	Fire Hydrant Assembly	1	EA		$
128	12" PVC Storm Pipe	112	LF		$
129	12" Yard Drain w/ Circular Grate	2	EA		$
130	Class III Reinforced Concrete Pipe (RCP) – Various Sizes				
	A. 15" RCP	55	LF		$
	B. 18" RCP	37	LF		$
	C. 24" RCP	211	LF		$
131	Class III Elliptical Reinforce Concrete Pipe (ERCP) – Various Sizes				
	A. 12" x 18" ERCP	96	LF		$
	B. 14" x 23" ERCP	288	LF		$
132	FDOT Type C Inlet with Steel Grate	6	EA		$
133	FDOT Type D Inlet with Steel Grate	1	EA		$
134	FDOT Type J Storm Drain Junction Box – Various Sizes				
	A. Storm Manhole – 48" Dia.	2	EA		$
	B. Storm Manhole – 60" Dia.	1	EA		$
135	14" x 23" ERCP MES	2	EA		$
136	Drainage Control Structure	1	EA		$
137	Stormwater Backflow Preventer	1	EA		$
138	Sodded Overflow Weir	1	EA		$
139	Connect to Existing Storm Pipe	1	EA		$
140	Connect to Existing Headwall	1	EA		$
141	Asphaltic Concrete Pavement, Surface Course, SP-9.5 (2.5")	583	TN		$
142	8" Crushed Concrete Base Course	4,243	SY		$
143	12" Subbase Stabilized to LBR-40 98% AASHTO	4,243	SY		$
144	Decorative Concrete Pavement	1	LS		$
145	FDOT Curbs – Various Sizes				
	A. FDOT Type D Curb	559	LF		$
	B. Environmental Curb	205	LF		$
	C. High Back Curb	102	LF		$
146	Rumble Strip	507	LF		$
147	Sidewalk – Various Styles				
	A. ROW Decorative Sidewalk	232	SF		$
	B. Thickened Edge Sidewalk	9,396	SF		$
	C. Concrete Plaza Sidewalk	1,526	SF		$
	D. Exposed River Rock Aggregate Sidewalk	1,087	SF		$
148	ADA Ramp	5	EA		$
149	Retaining Wall w/ Railing	1	LS		$
150	FDOT Handrailing	40	LF		$
151	Striping & Signage	1	LS		$
152	Sod	3,173	SY		$
153	Landscape	1	LS		$
154	Tree Relocation	1	LS		$
155	Site Furnishings	1	LS		$

156	**Planters**	**1**	**LS**		**$**
157	**Architectural Features (Park Sign)**	**1**	**LS**		**$**

TOTAL BID $_____
(Figures)

_____
(Words)

BIDDER acknowledges that the quantities are not guaranteed and final payment will be based on actual quantities determined as provided in the Contract Documents.

BIDDER agrees that the Work will be substantially completed within 155 calendar days after the date when the Contract Time commences to run, and completed within 185 calendar days after the date when the Contract Time commences to run.

BIDDER recognizes that time is of the essence to complete this Project and that OWNER will suffer financial loss if the Work is not substantially complete within the time specified above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The BIDDER also recognize the delays, expense and difficulties involved in proving, in a legal or arbitration proceeding, the actual loss suffered by OWNER if the Work is not substantially complete on time. Accordingly, instead of requiring any such proof, OWNER has determined and BIDDER agrees to accept that as liquidated damages for delay (but not as a penalty) CONTRACTOR shall pay OWNER five hundred Dollars ($500.00) for each calendar day that expires after the time specified above for substantial completion until the Work is substantially complete. After substantial completion, if CONTRACTOR shall neglect, refuse or fail to complete the remaining Work within the time specified above for completion and readiness for final payment or any proper extension thereof granted by OWNER, CONTRACTOR shall pay the OWNER an amount equal to all actual expenses incurred by the OWNER as a direct result of the CONTRACTOR'S negligence, refusal, or failure to so complete the remaining work. In the event the CONTRACTOR is terminated or abandons the work prior to the scheduled date for final completion, the CONTRACTOR may be liable for both liquidated damages attributable to delay and for excess completion costs.

6. The following documents are attached to and made a condition of this Bid:

(a) Required Bid Security in the form of

(1) a certified check drawn in favor of the City of Ormond Beach in the amount of 5 percent of the total bid; or

(2) a Bid Bond in the amount of 5 percent of the total bid.

(b) Equipment, Material, and Subcontractors List

(c) All information required by the Trench Safety Act (Part VI, Chapter 553, Florida Statutes).

(d) Drug Free Workplace Certificate

(e) Conflict, Non-Conflict of Interest, Litigation Statement

(f) Local Vendor Preference

(g) Verification of Employment Status Using E-Verify System

(h) Affidavit of Compliance F.S. 287.138 Contracting With Foreign Entities of Concern

7. Communications to the BIDDER concerning this Bid shall be addressed to:

Mailing Address: _____
Street Address: _____
City, State, Zip Code: _____
Email: _____
Telephone No.: _____ Fax No.: _____

8. The terms used in this Bid which are defined in the General Conditions of the Construction Contract included as part of the Contract DOCUMENTS have the meanings assigned to them in the General Conditions.

SUBMITTED on _____, 20___.

If BIDDER is:

An Individual

By _____
(Individual's Name - Signature)

_____ (SEAL)
(Individual's Name - Typed or Printed)

doing business as _____

Business address: _____

_____

_____

Phone No.: _____

Fax No.: _____

If BIDDER is:

A Partnership

By_____(SEAL)
(Firm Name)

_____
(General Partner - Signature)

_____
(General Partner - Typed or Printed)

Business Address: _____

_____

_____

Phone No.: _____

Fax No.: _____

If BIDDER is:

A Corporation

By _____
(Corporation Name)

_____
(State of Incorporation)

By _____
(Name of Person Authorized to Sign - Signature)

_____
(Name of Person Authorized to Sign - Typed or Printed)

_____
(Title)

(Corporate Seal)

Attest _____

Business address: _____

_____

_____

Phone No.: _____

Fax No.: _____

If BIDDER is:

A Joint Venture

By_____
(Name - Signature)

_____
(Name - Typed or Printed)

Address: _____

_____

_____

Phone No.: _____

Fax No.: _____

By_____
(Name - Signature)

_____
(Name - Typed or Printed)

Address: _____

_____

_____

Phone No.: _____

Fax No.: _____

(Each joint venturer must sign. The manner of signing for each individual, partnership and corporation that is a party to the joint venture should be in the manner indicated above.)

EQUIPMENT AND SUBCONTRACTORS LIST

List the names of the manufacturers whose product is proposed for use. No more than one manufacturer's name shall be inserted for each item of material and/or equipment listed. Failure to list materials and equipment supplier may result in the Bid being rejected as incomplete and nonresponsive. If any Subcontractors are proposed to be used for any portions of the Work, the names, addresses, phone numbers and work classifications of each such Subcontractor must be listed. The failure to list all Subcontractors proposed for the work may result in the Bid being rejected as incomplete and nonresponsive. If more than one manufacturer or subcontractor is listed, selection will be made by the OWNER. If none is listed, those listed as the "Basis for Design" will be used.

Materials and Equipment:

Item	Supplier
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Subcontractors:

Work Classification: _____

Name: _____

Address: _____

Phone Number: _____ Fax Number: _____

Subcontractors:

Work Classification: _____

Name: _____

Address: _____

Phone Number: _____ Fax Number: _____

Work Classification: _____

Name: _____

Address: _____

Phone Number: _____ Fax Number: _____

Work Classification: _____

Name: _____

Address: _____

Phone Number: _____ Fax Number: _____

Work Classification: _____

Name: _____

Address: _____

Phone Number: _____ Fax Number: _____

Work Classification: _____

Name: _____

Address: _____

Phone Number: _____ Fax Number: _____

TRENCH SAFETY STANDARDS

If this project includes trench excavation in excess of five (5) feet in depth, the following trench safety standards will be in effect during the period of construction of the project:

The Occupational Safety and Health Administration's excavation safety standards, 29 C.F.R.s. 1926.650 Subpart P, and any regulation promulgated there under are hereby incorporated as the standard for this project.

The Bidder hereby certifies that the Contractor performing the trench excavation will comply with the applicable trench safety standards.

The Bidder further certifies that the cost (which is included in his unit cost) of compliance with applicable trench safety standards is:

ITEM	Estimated Quantity	Units	Unit Price	Total Estimated Price
1. Trench Excavation	_____	L.F.	_____	_____
2. Sheeting/Shoring	_____	S.F.	_____	_____

_____
Name (signature) Date

_____
Name (typed or printed)

_____
Title

DRUG-FREE WORKPLACE CERTIFICATION

Identical Or "Tie" Bids: Preference shall be given to businesses with drug-free workplace programs. Whenever two or more proposals which are equal in respect to price, quality, and service are received by the State or by any political subdivision for the procurement of commodities or contractual services, a bid received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. Established procedures for processing tie bids will be followed if none of the tied vendors have a drug-free workplace program. In order to have a drug-free workplace program, a business shall:

1) Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2) Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violation.

3) Give each employee that engages in providing the commodities or contractual services that are under bid a copy of the statement specified in subsection (1).

4) In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) calendar days after such conviction.

5) Impose sanctions on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.

6) Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

_____
Name (signature) Date

_____
Name (typed or printed)

_____
Title

CONFLICT, NON-CONFLICT OF INTEREST STATEMENT LITIGATION STATEMENT

1.

[ ] To the best of our knowledge, the undersigned firm has no potential conflicts of interest due to any other clients or contracts for this project.

[ ] The undersigned firm, by attachment to this form, submits information which may be a potential conflict of interest due to other clients or contracts for this project.

2.

[ ] The undersigned firm has had no litigation on any project in the last five (5) years.

[ ] The undersigned firm, by attachment to this form, submits a summary and disposition of individual cases of litigation during the past five (5) years.

_____

COMPANY NAME

_____

AUTHORIZED SIGNATURE

_____

NAME (PRINT OR TYPE)

_____

TITLE

_____

DATE

LOCAL VENDOR PREFERENCE

The following is taken from the Code of Ordinances, City of Ormond Beach, Chapter 2, Financial Matters, Division 3, Purchasing, Article IX, Section 2-304:

Except where otherwise provided by federal or state law or other funding source restrictions, purchases of goods and services under the Purchasing Code shall give preference to local businesses as follows:

(a) Under a competitive bid solicitation, the City *may* give a local preference in the amount of three percent (3%) of the bid price or $25,000, whichever is less. The bid price shall include not only the base bid price but all alternatives which are part of the bid and actually purchased or awarded.

(b) A *local business* shall mean a vendor that has a valid occupational license issued by the City of Ormond Beach at least one year prior to bid opening, with a physical business address located within the municipal boundaries of the City of Ormond Beach from which the vendor operates or performs business on a day-to-day basis that is a substantial component of the goods or services being offered and has provided a Local Vendor Affidavit of Eligibility at the time the bid is submitted.

(c) A *Local Vendor Affidavit of Eligibility* shall accompany the bid submittal to be considered valid and shall include, but not be limited to, the following information:

(1) A physical business and location address;
(2) A copy of current City of Ormond Beach Local Business Tax Receipt (occupational license) to verify the business location;
(3) Proof of payment of business tax and real property tax due to the City of Ormond Beach;
(4) A copy of the firm's most recent annual corporation report to the Florida Division of Corporations;
(5) Any additional information necessary to verify local status.

(d) *Exemptions:* Goods or services provided under a cooperative purchasing agreement, contracts for professional services subject to Consultants' Competitive Negotiation Act, purchases or contracts funded in whole or part by a governmental entity that does not allow local preferences, purchases made under another agency's agreements or contracts (piggybacking), purchases under emergency or sole source situations and procurements subject to formal proposals including but not limited to request for proposals (RFP) or continuing contract, and request for quotes (RFQ) versus straight competitive bids.

(e) This section shall not be deemed to require the granting of a local preference, and nothing herein prohibits the award of a contract to a non-local vendor where such award is in the public interest.

LOCAL VENDOR AFFIDAVIT OF ELIGIBILITY

I certify that my company meets all of the following qualifications to be eligible for the local vendor preference:

a. My company has a physical business address located within the municipal boundaries of the City of Ormond Beach which is used to perform business on a day-to-daybasis.
b. My company holds any business (occupational) or contractor license required by the City of Ormond Beach at least one year prior to bid opening.
c. Payment of business tax and real property tax due to the City of Ormond Beach is current
d. My company is in compliance with annual reporting to the Florida Division of Corporations

Company Name: _____

Address: _____

Business or Contractor License Number: _____

Phone Number:_____ Fax Number: _____

Owner's Name:_____ Signature:_____

Sworn to before me this_____ day of _____

Notary Public for the State of_____ My Commission Expires _____

Notary Public Signature: _____

Printed Name: _____

To be approved as a local bidder and receive bid preference on an eligible local project, this affidavit of eligibility, a copy of your local business or contractor license, copy of business tax/real property tax and a copy of the firm's most recent annual corporation report must be submitted with your bonafide BID package. Bid preference is provided at the City's sole discretion.

VENDOR DO NOT COMPLETE BELOW

To be verified and completed by an authorized representative of the City of Ormond Beach's Purchasing Department:

Vendor Certified by:_____ Date: _____

VERIFICATION OF EMPLOYMENT STATUS USING E-VERIFY SYSTEM

1. Undersigned firm warrants it **IS** currently registered with the U.S. Department of Homeland Security's E-Verify system, **and** is compliant with the requirements of Sections 448.09 and 448.095, *Florida Statutes*.
2. Undersigned firm warrants it **has not** had any contracts terminated as a result of violations of Sections 448.09 or 448.095, *Florida Statutes*, that prohibit it from contracting with a public agency.
3. Undersigned firm warrants that if it enters into an agreement with a subcontractor, an express provision shall be included in all of its subcontracts requiring subcontractors, who perform work or provide services pursuant to the contract, to use the E-Verify system to verify employment eligibility of all new employees hired by the subcontractor during the contract term.
4. Undersigned firm understands that any subcontractor must provide the contractor with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, and the contractor understands it shall maintain any such affidavits for the duration of the contract, and the contract with the subcontractor must be immediately terminated if the City has a good faith belief that the subcontractor knowingly violated Section 448.09 (1), *Florida Statutes*.
5. Undersigned firm understands that in the event the City has a good faith belief that the contractor has knowingly violated Section 448.09 (1), *Florida Statutes*, the City shall terminate the contract, and the contractor may not be awarded a public contract for a period of at least one (1) year after the date of termination. The contractor may be held liable for any additional costs incurred by the City as a result of termination of the contract.

_____

COMPANY NAME

_____

AUTHORIZED SIGNATURE

_____

NAME (PRINT OR TYPE)

_____

TITLE

_____

DATE

AFFIDAVIT OF COMPLIANCE WITH SECTION 287.138, FLORIDA STATUTES CONTRACTING WITH FOREIGN ENTITIES OF CONCERN

The undersigned ("Affiant"), on behalf of the entity listed below ("Entity"), hereby attests under penalty of perjury as follows:

1. Affiant is the _____ (Title) of _____ (Business Name) which does business in the State of Florida, hereinafter called the "Entity".
2. Entity is not owned by the government of a foreign country of concern, as defined in Section 287.138 (1) (c), Florida Statutes.
3. The government of a foreign country of concern does not have a controlling interest in Entity, as defined in Section 287.138 (1)(a), Florida Statutes.
4. Entity is not organized under the laws of, and does not have a principal place of business in, a foreign country of concern.
5. Entity is not owned or controlled by the government of a foreign country of concern.
6. For purposes of this affidavit, a foreign country of concern means the People's Republic of China, the Russian Federation, the Islamic Republic of Iran, the Democratic People's Republic of Korea, the Republic of Cuba, the Venezuelan regime of Nicolas Maduro, or the Syrian Arab Republic, including any agency of or any other entity of significant control of such foreign country of concern, as defined in Section 287.138(1)(c), Florida Statutes.

The undersigned is authorized to execute this affidavit on behalf of the Entity.

Date: _____, 20____ Signed: _____

Title: _____ Print Name: _____

Entity: _____

STATE OF: _____ COUNTY OF: _____

The foregoing instrument was acknowledged before me by means of ☐physical presence or ☐online notarization, this _____ day of _____, 20_____, by _____ and who:

☐Is personally known to me; or ☐ has produced _____ as identification.

_____

Notary Public, State of Florida at Large: (seal)
Printed Name/Seal of Notary, Commission and Expiration Date:

My commission expires: _____

This page must be completed & notarized.

END OF BID

SECTION 00410
BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we

_____

(*hereinafter called Principal*) and

_____

(hereinafter called the Surety) a corporation chartered and existing under the Laws of the State _____ of with its principal offices in the County of and authorized to do business in the State of Florida, in the full and just sum of _____ Dollars ($_____) good and lawful money of the United States of America, to be paid upon demand of the_____, Florida, to which payment well and truly to be made we bind ourselves, our heirs, executors, administrators, and assigns, jointly and severally and firmly by these presents,

WHEREAS, the Principal is about to submit, or has submitted to the City of Ormond Beach, Florida, a bid for work to be done on **CASSEN PARK REDEVELOPMENT, Bid No. 2025-02** in, and for the City and

WHEREAS, the Principal desires to file this bond in accordance with law, in lieu of a certified or cashier's check otherwise required to accompany this Bid.

NOW, THEREFORE: the conditions of this obligation are such that if the Bid be accepted the Principal shall within ten (10) days after the receipt of notification of the acceptance thereof execute a contract in accordance with the Bid and upon the terms, conditions and unit or lump sum prices set forth therein, in the form and manner required by the Owner, and execute a sufficient and satisfactory Contract Bond payable to the Owner, in an amount not less than the total contract price, as indicated by the approximate quantities shown in the Bid, in form and with security satisfactory to the said City, then this obligation to be void; otherwise to be and remain in full force and virtue in law; and the Surety shall upon the failure of the Principal to comply with any or all of the foregoing requirements within the time specified above, immediately pay to the aforesaid City upon demand the amount hereof in good and lawful money of the United States of America, not as a penalty, but as liquidated damages.

IN TESTIMONY WHEREOF, the Principal and Surety have caused these presents to be duly signed and sealed this_____day_____, 2024.

_____
(Principal)

By: _____

ATTEST:

_____
(Surety)

By: _____

_____
(SEAL)

END OF SECTION

SECTION 00500
FORM OF AGREEMENT

THIS AGREEMENT is dated as of the_____day of_____in the year 2024 by and between City of Ormond Beach, a Municipal Corporation in the State of Florida (hereinafter called OWNER) and

_____

(hereinafter called CONTRACTOR)

The bid for this contract was approved by the City Commission on_____, 2024.

Article 1. WORK

CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

The work consists of paving boat trailer and car parking areas along with construction of a new bait shop and restroom building with associated stormwater management systems, potable water service, and sanitary sewer service.

The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

CASSEN PARK REDEVELOPMENT
and BID NUMBER 2025-02

Article 2. ENGINEER

The Project has been designed by Zev Cohen & Associates, Inc., 300 Interchange Boulevard, Ormond Beach, FL 32174, who is hereinafter called ENGINEER and who will assume all duties and responsibilities and will have the rights and authority assigned to ENGINEER in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

Article 3. CONTRACT TIME

3.1 The Work will be substantially completed within 155 calendar days after the date when the Contract Time commences to run as provided in paragraph 2.3 of the General Conditions, and completed and ready for final payment in accordance with paragraph 14.10 of the General Conditions within 185 calendar days after the date when the Contract Time commences to run. Substantial completion is to insure that boat ramp is kept open during boating season and park is completed prior to July 4, 2025.

3.2 Liquidated Damages. OWNER and CONTRACTOR recognize that time is of the essence of this Agreement and that OWNER will suffer financial loss if the Work is not substantially complete within the time specified in paragraph 3.1 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. They also recognize the delays, expense and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by OWNER if the Work is not substantially complete on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as

liquidated damages for delay (but not as a penalty) CONTRACTOR shall pay FIVE Hundred shall neglect, refuse or fail to complete the remaining Work within the time specified in paragraph 3.1 for completion and readiness for final payment or any proper extension thereof granted by OWNER, CONTRACTOR shall pay the OWNER an amount equal to all actual expenses incurred by the OWNER as a direct result of the CONTRACTOR'S negligence, refusal, or failure to so complete the remaining work. In the event the Contractor is terminated or abandons the Work prior to the scheduled date for final completion, the Contractor may be liable for both liquidated damages attributable to delay and for excess completion costs.

Article 4. CONTRACT PRICE

OWNER shall pay CONTRACTOR for completion of the Work, in accordance with the Contract Documents, an amount in current funds equal to the unit price TOTAL BID of $_____, as listed in the Bid Form. Payment shall be for the actual completed work, as specified in the Measurement and Payment section of the project Manual and in accordance with Article 14 of the General Conditions.

Article 5. PAYMENT PROCEDURES

CONTRACTOR shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by ENGINEER as provided in the General Conditions.

5.1 Progress Payments. OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR'S Applications for Payment as recommended by ENGINEER, on or about the 15th day of each month during construction as provided below, provided Applications for Payment are timely delivered pursuant to Article 14.1 of the General Conditions. All progress payments will be on the basis of the progress of the Work measured by the schedule of values provided for in paragraph 14.1 of the General Conditions.

5.1.1 When applicable, all progress payments shall be in an amount equal to:

Ninety-Five percent (95%) of the Workcompleted.

Ninety-Five percent (95%) of materials and equipment not incorporated in the Work but delivered and suitably stored, less in each case the aggregate of payments previously made and less such amounts as ENGINEER shall determine in accordance with paragraph 14.4 of the General Conditions.

5.2 Final Payment. Upon final completion and acceptance of the Work in accordance with paragraph 14.10 of the General Conditions, OWNER shall pay the remainder of the Contract Price as recommended by ENGINEER as provided in said paragraph 14.10.

Article 6. CONTRACTOR'S REPRESENTATIONS

In order to induce OWNER to enter into this Agreement CONTRACTOR makes the following representations:

6.1 CONTRACTOR has familiarized himself with the nature and extent of the Contract Documents, Work, locality, and with all local conditions and federal, state and local laws, ordinances, rules and regulations that in any manner may affect cost, progress or performance of the Work.

6.2 CONTRACTOR has studied carefully all reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the Work which were relied upon by ENGINEER in the preparation of the Drawings and Specifications and which have been identified in the Supplementary Conditions.

6.3 CONTRACTOR has made or caused to be made examinations, investigations and tests and studies of such reports and related data in addition to those referred to in paragraph 6.2 as he deems necessary for the performance of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents, and no additional examinations, investigations, tests, reports or similar data are or will be required by CONTRACTOR for such purposes.

6.4 CONTRACTOR has correlated the results of all such observations, examinations, investigations, tests, reports and data with the terms and conditions of the Contract Documents.

6.5 CONTRACTOR has given ENGINEER written notice of all conflicts, errors or discrepancies that he has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR.

Article 7. CONTRACT DOCUMENTS

The Contract Documents which comprise the entire agreement between OWNER and CONTRACTOR are attached to this Agreement, made a part hereof and consists of the following:

7.1 This Agreement (pages 1 to 5, inclusive).

7.2 Exhibits to this Agreement (pages ___ to ___, inclusive).

7.3 Performance and other Bonds, identified as exhibits 00610 AND 00615 and consisting of 4 pages.

7.4 Notice of Award.

7.5 General Conditions (pages 1 to 37, inclusive).

7.6 Supplementary Conditions (pages 1 to 7, inclusive).

7.7 Specifications bearing the title:

CASSEN PARK REDEVELOPMENT

and consisting of 16 divisions, as listed in table of contents thereof.

7.8 Drawings, consisting of 31 sheets numbered C-1 through E3.1 inclusive and bearing the following general title:

CASSEN PARK REDEVELOPMENT

7.9 Addenda numbers_____to_____, inclusive.

7.10 CONTRACTOR'S Bid (pages 1 to 17, inclusive)

7.11 Documentation submitted by CONTRACTOR prior to Notice of Award (pages _____ to_____, inclusive).

7.12 Any Modification, including Change Orders, duly delivered after execution of Agreement.

There are no Contract Documents other than those listed above in this Article 7. The Contract Documents may only be altered, amended or repealed by a Modification (as defined in Section 1 of the General Conditions).

Article 8. MISCELLANEOUS

8.1 Terms used in this Agreement which are defined in Article 1 of the General Conditions shall have the meanings indicated in the General Conditions.

8.2 No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

8.3 OWNER and CONTRACTOR each binds himself, his partners, successors, assigns and legal representatives to the other party hereto, his partners, successors, assigns and legal representatives in respect to all covenants, agreements and obligations contained in the Contract Documents.

IN WITNESS WHEREOF, the parties hereto have signed this Agreement in triplicate. One counterpart each has been delivered to OWNER, CONTRACTOR and ENGINEER. All portions of the Contract Documents have been signed by OWNER and CONTRACTOR or identified by ENGINEER on their behalf.

This Agreement will be effective on _____, 2024.

OWNER City of Ormond Beach

By _____

Bill Partington
Mayor

[CITY SEAL]

Attest _____

Joyce A. Shanahan
City Manager

Address for giving notices:

City of Ormond Beach
PO Box 277
Ormond Beach, FL 32175-0277

CONTRACTOR

By _____

_____
(Title)

[SEAL]

Attest _____

(Title)

Address for giving notices:

_____

_____

_____

License No. _____

Registered Agent for service process:

_____
(Name)

_____
(Title)

END OF AGREEMENT

SECTION 00610
PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

_____
(Name of Contractor)

_____
(Address of Contractor)

a(n)_____, hereinafter called Principal, and
(Corporation, Partnership or Individual)

_____
(Name of Surety)

_____
(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

_____
(Name of Owner)

_____
(Address of Owner)

hereinafter called OWNER, in the penal sum of _____

_____Dollars, ($_____) in lawful money of the United States, for the payment of which sum will and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with OWNER, dated_____day of_____, 20_, for the construction of:

CASSEN PARK REDEVELOPMENT PROJECT
Bid No. 2025-02

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the OWNER, with or without notice to the Surety and during the one-year guaranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS The Surety agrees that modifications and changes to the terms and conditions of the Contract that increase the total amount to be paid the Principal shall automatically increase the obligation of the Surety on this bond and notice to Surety is not required for such increased obligation.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts, each one of which shall be (number)

deemed an original, this _____ day of _____, 20_____.

ATTEST:

_____

Principal

_____ By _____(s)

(Principal) Secretary

(SEAL)

_____ _____

(Witness to Principal) *(Address)*

_____ _____

(Address)

_____ _____

(Surety)

ATTEST:

_____

(Surety) Secretary

(SEAL)

_____ _____

Witness to Surety *Attorney-In-Fact*

_____ _____

(Address) *(Address)*

_____ _____

NOTE: Date of BOND must not be prior to date of Contract. If CONTRACTOR is Partnership, all partners should execute BOND. All BONDS signed by an agent must be accompanied by a certified copy of the authority to act.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the PROJECT is located.

END OF SECTION

SECTION 00615
PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

_____
(Name of Contractor)

_____
(Address of Contractor)

a(n)_____, hereinafter called Principal, and
(Corporation, Partnership or Individual)

_____
(Name of Surety)

_____

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

_____
(Name of Owner)

_____
(Address of Owner)

hereinafter called OWNER, in the penal sum of _____

_____Dollars, ($_____) in lawful money of the United States, for the payment of which sum will and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with OWNER, dated_____day of_____, 20____, for the construction of:

CASSEN PARK REDEVELOPMENT PROJECT
Bid No. 2025-02

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, SUBCONTRACTORS, and corporations furnishing materials for or performing labor in the prosecution of the WORK provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such WORK, and all insurance premiums on said WORK, and for all labor, performed in such WORK whether by SUBCONTRACTOR or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS. The Surety agrees that modifications and changes to the terms and conditions of the Contract that increase the total amount to be paid the Principal shall automatically increase the obligation of the Surety on this bond and notice to Surety is not required for such increased obligation.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____ (number) counterparts, each one of which shall be deemed an original, this _____ day of _____, 20_____.

ATTEST:

_____
Principal

_____
(Principal) Secretary

By (s)

(SEAL)

_____
(Witness to Principal)

_____
(Address)

_____
(Address)

_____
(Surety)

ATTEST:

_____
(Surety) Secretary

(SEAL)

_____
Witness to Surety

_____
(Address)

_____

_____
Attorney-In-Fact

_____
(Address)

_____

NOTE: Date of BOND must not be prior to date of Contract. If CONTRACTOR is Partnership, all partners should execute BOND. All BONDS signed by an agent must be accompanied by a certified copy of the authority to act.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list

(Circular 570 as amended) and be authorized to transact business in the state where the PROJECT is located.

END OF SECTION

SECTION 670
OPINION OF ATTORNEY

This is to certify that I have examined the attached Contract Documents, and that I am of the opinion that such documents conform to the Laws of the State of Florida, and that the execution of the Contract is in due and proper form, and that the foregoing agreements constitute valid and binding obligations on such parties.

_____

Attorney for Owner

This is the_____day of_____, 2024.

END OF SECTION

SECTION 700
GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

ARTICLE 1 - DEFINITIONS

Whenever used in these General Conditions or in the other Contract Documents, the following terms have the meanings indicated which are applicable to both the singular and plural thereof.

1.1. Addenda -Written or graphic instruments issued prior to the opening of Bids which clarify, correct or change the bidding documents of the Contract Documents.

1.2. Agreement - The written agreement between OWNER and CONTRACTOR covering the Work to be performed; other Contract Documents are attached to the Agreement and made a part thereof as provided therein.

1.3. Application for Payment - The form accepted by ENGINEER which is to be used by CONTRACTOR in requesting progress or final payment and which is to include such supporting documentation as required by the Contract Documents.

1.4. Approve - The word approve is defined to mean review of the material, equipment or methods for general compliance with the design concepts and with the information given in the Contract Documents. It does not imply a responsibility on the part of the ENGINEER to verify in every detail conformance with the Drawings and Specifications.

1.5. Bid -The offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

1.6. Bonds - Bid, Performance and Payment Bonds and other instruments of security.

1.7. Change Order - A written order to CONTRACTOR signed by OWNER authorizing an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Time issued after the effective date of the Agreement.

1.8. Contract - The Agreement.

1.9. Contract Documents - The Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR's Bid (including documentation accompanying the bid and any post-Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, Notice of Award, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, any other exhibits identified in the Agreement, together with all Modifications issued after the execution of the Agreement.

1.10. Contract Price - The Contract Price constitutes the total compensation (subject to authorized adjustments) payable by OWNER to CONTRACTOR for performing the Work.

1.11. Contract Time - The number of days (computed as provided in paragraph 16.2) or the date stated in the Agreement for the completion of the Work.

1.12. CONTRACTOR - The person, firm or corporation with whom OWNER has entered into the Agreement.

1.13. Day - A calendar day of twenty-four hours measured from midnight to the next midnight.

1.14. Defective - Work that is unsatisfactory, faulty or deficient, or does not conform to the Contract Documents or does not meet the requirements of any inspection, test or approval referred to in the Contract Documents, or has been damaged prior to ENGINEER's recommendation of final payment.

1.15. Drawings - The drawings, which will be identified in the Agreement, which show the character and scope of the Work to be performed and which have been prepared or approved by ENGINEER and are referred to in the Contract Documents.

1.16. Effective Date of the Agreement - The date indicated in the Agreement on which it becomes effective, but if no such date is indicated it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

1.17. ENGINEER - The City Engineer of the City of Ormond Beach, Florida, or the designee of such Engineer.

1.18. Engineering Order - A written request issued by ENGINEER to CONTRACTOR requesting a cost for certain modifications to the Work. An Engineering Order is not an authorization to perform the modifications.

1.19. Field Order - A written order issued by ENGINEER which clarifies or interprets the Contract Documents or orders minor changes in the Work in accordance with paragraph 10.2, but which does not involve a change in the Contract Price or the Contract Time.

1.20. Furnish - The words "furnish", "furnish and install", "install", and "provide" or words with similar meaning shall be interpreted, unless otherwise specifically stated, to mean "furnish and install complete in place and ready for service".

1.21. General Requirements - Sections of Division 1 of the Specifications.

1.22. Inspection - The term "Inspection" and the act of inspecting as used in these Contract Documents is defined to mean examination of construction to ensure that it conforms to the design concept expressed in the Drawings and Specifications. These terms shall not be construed to mean supervision, superintending and/or overseeing.

1.23. Modification - (a) A written amendment of the Contract Documents signed by both parties, (b) a Change Order, or (c) a Field Order. A modification may only be issued after the effective date of the Agreement and must be in writing to be effective.

1.24. Notice of Award - The written notice by OWNER to the apparent successful Bidder stating that upon compliance by the apparent successful Bidder with the conditions precedent enumerated therein, within the time specified, OWNER will sign and deliver the Agreement.

1.25. Notice to Proceed - A written notice given by OWNER to CONTRACTOR (with a copy to ENGINEER) fixing the date on which the Contract Time will commence to run and on which CONTRACTOR shall start to perform his obligation under the Contract Documents.

1.26. OWNER - The City of Ormond Beach, Florida.

1.27. Product - Materials, systems and equipment provided by the CONTRACTOR.

1.28. Project - The total construction of which the Work to be provided under the Contract Documents may be the whole, or a part as indicated elsewhere in the Contract Documents.

1.29. Project Manual - The term "Project Manual" includes Bidding Requirements, Conditions of the Contract, Specifications, and Drawings.

1.30. Project Representative - The authorized representative of ENGINEER who is assigned to the site or any part thereof.

1.31. Shop Drawings - All drawings, diagrams, illustrations, schedules and other data which are specifically prepared by CONTRACTOR, a Subcontractor, manufacturer, fabricator, supplier or distributor to illustrate some portion of the Work and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams and other information prepared by a manufacturer, fabricator, supplier or distributor and submitted by CONTRACTOR to illustrate material or equipment for some portion of the Work.

1.32. Specifications - Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work and certain administrative details applicable thereto.

1.33. Subcontractor - An individual, firm or corporation having a contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the site.

1.34. Substantial Completion - The point reached when the Work (or a specified part thereof), in the opinion of ENGINEER as evidenced by his final certificate of Substantial Completion, is sufficiently complete, in accordance with the Contract Documents, so that the Work (or specified part) can be utilized for the purposes for which it was intended; or if there be no such certificate issued, when final payment is due in accordance with paragraph 14.10. The

terms "substantially complete" and "substantially completed" as applied to any Work refer to Substantial Completion thereof.

1.35. Surety - Any person, firm or corporation which is bound with CONTRACTOR and which engages to be responsible for CONTRACTOR and his acceptable performance of the Work by a Performance or Payment Bond, or by a Public Construction Bond.

1.36. Work - The entire completed construction or the various separately identifiable parts thereof required to be furnished under the Contract Documents. Work is the result of performing services, furnishing labor and furnishing and incorporating materials and equipment into the construction, all as required by the Contract Documents.

ARTICLE 2 - PRELIMINARY MATTERS

Delivery of Bonds:

2.1. When CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER such Bonds as CONTRACTOR may be required to furnish in accordance with paragraph 5.1.

Copies of Documents:

2.2. OWNER shall furnish to CONTRACTOR, at OWNER's expense, up to three copies of the Contract Documents. Additional copies will be furnished, upon request, at the cost of reproduction.

Commencement of Contract Time; Notice to Proceed:

2.3. The Contract Time will commence on the day indicated in the Notice to Proceed.

Starting the Project:

2.4. CONTRACTOR shall start to perform the work on the date when the Contract Time commences to run, but no work shall be done at the site prior to the date on which the Contract Time commences to run, and no work shall be done at the site before the Payment and Performance Bond is executed, delivered to the OWNER, and recorded in the public records of Volusia County, Florida.

Before Starting Construction:

2.5. Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. CONTRACTOR shall promptly report in writing to ENGINEER any conflict, error or discrepancy which CONTRACTOR may discover; however, CONTRACTOR shall not be liable to OWNER for failure to report any conflict, error or

discrepancy in the Drawings or Specifications, unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof. No verbal agreement or conversation with any officer, agent or employee of OWNER, either before or after the execution of this Contract, shall affect or modify any of the terms or obligations herein contained.

2.6. Before any Work at the site is started, CONTRACTOR shall deliver to OWNER certificates (and other evidence of insurance requested by OWNER) which CONTRACTOR is required to purchase and maintain in accordance with paragraphs 5.3, 5.4, 5.6 and 5.7.

2.7. CONTRACTOR shall not allow any on-site Subcontractor to commence work on his subcontract until insurance required of the Subcontractor has been obtained and approved by the CONTRACTOR. Failure to obtain this insurance will be the sole responsibility of the CONTRACTOR.

ARTICLE 3 - CONTRACT DOCUMENTS; INTENT AND REUSE

3.1. The Contract Documents comprise the entire Agreement between OWNER and CONTRACTOR concerning the Work. They may be altered only by a Modification.

3.2. The Contract Documents are complementary; a requirement contained in one is applicable to all. If, during the performance of the Work, CONTRACTOR finds a conflict, error or discrepancy in the Contract Documents, he shall report it to ENGINEER in writing at once and before proceeding with the Work affected thereby; however, CONTRACTOR shall not be liable to OWNER for failure to report any conflict, error or discrepancy in the Specifications or Drawings unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof. The various Contract Documents shall be given precedence, in case of conflict, error or discrepancy, as follows: Modifications, Agreement, Addenda, Supplementary Conditions, General Conditions, Drawings and Specifications. In a series of Modifications or Addenda the latest will govern.

3.3. It is the intent of the Specifications and Drawings to describe a complete project (or part thereof) to be constructed in accordance with the Contract Documents. Any Work that may reasonably be inferred from the Specifications or Drawings as being required to produce the intended results shall be supplied whether or not it is specifically called for. When words which have well-known technical or trade meaning are used to describe Work, materials or equipment such words shall be interpreted in accordance with such meaning. Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the code of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual or code in effect at the time of opening of Bids(or, on the effective date of the Agreement if there were no Bids), except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall change the duties and responsibilities of OWNER, CONTRACTOR or ENGINEER, or any of their agents or employees from those set forth in the Contract Documents. Clarifications and interpretations of the Contract Documents shall be issued by ENGINEER as provided for in paragraph 9.2.

3.4. The Contract Documents will be governed by the law of the State of Florida, and venue for any action brought thereunder shall lie solely and exclusively in the Circuit Court in and for Volusia County, Florida.

Reuse of Documents:

3.5. Neither CONTRACTOR nor any Subcontractor, manufacturer, fabricator, supplier or distributor shall have or acquire any title to or ownership rights in any of the Drawings, Specifications or other documents (or copies of any thereof) prepared by or bearing the seal of ENGINEER; and they shall not reuse any of them on extensions of the Project or any other project without written consent of OWNER and ENGINEER and specific written verification or adaptation by ENGINEER.

ARTICLE 4 - AVAILABILITY OF LANDS; PHYSICAL CONDITIONS; REFERENCE POINTS

4.1. OWNER shall furnish, as indicated in the Contract Documents, the lands upon which the Work is to be performed, rights-of-way for access thereto, and such other lands which are designated for the use of CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by OWNER, unless otherwise provided in the Contract Documents. If CONTRACTOR believes that any delay in OWNER's furnishing these lands or easements entitles him to an extension of the Contract Time, CONTRACTOR may make a claim therefor as provided in Article 12. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

Physical Conditions - Investigations and Reports:

4.2. Reference is made to the Supplementary Conditions for identification of those reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the Work which have been relied upon by ENGINEER in preparation of the Drawings and Specifications. Such reports are not guaranteed as to accuracy or completeness and are not part of the Contract Documents.

Unforeseen Physical Conditions:

4.3. CONTRACTOR shall promptly, after becoming aware of and before further disturbing conditions affected thereby or performing any work in connection therewith, notify ENGINEER in writing of any subsurface or latent physical conditions at the site or in an existing structure differing materially from those indicated or referred to in the Contract Documents. CONTRACTOR, upon discovering and notifying OWNER of such subsurface or latent conditions, shall not perform work in the affected area until authorized to do so by OWNER. ENGINEER will promptly review those conditions and determine if further investigation or tests

are necessary. If so determined by the ENGINEER, OWNER shall promptly obtain the necessary additional investigations and tests and furnish copies to CONTRACTOR. If ENGINEER finds that the results of such investigations or tests indicate that there are subsurface or latent physical conditions which differ materially from those intended in the Contract Documents, and which could not reasonably have been anticipated by CONTRACTOR, a Change Order authorizing CONTRACTOR to perform the additional work may be issued incorporating the necessary revisions.

Reference Points:

4.4. OWNER shall provide engineering surveys for construction to establish reference points which in his judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for laying out the Work (unless otherwise specified in the General Requirements), shall protect and preserve the established reference points and shall make no changes or relocations without the prior written approval of OWNER. CONTRACTOR shall report to ENGINEER whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for replacement or relocation of such reference points by professionally qualified personnel.

ARTICLE 5 - BONDS AND INSURANCE

Performance and Other Bonds:

5.1. CONTRACTOR shall furnish Performance and Payment Bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all CONTRACTOR's obligations under the Contract Documents. The City will record the bonds in the public records at the CONTRACTOR’s expense. These Bonds shall remain in effect at least until one (1) year after the date of final payment, except as otherwise provided by law. All bonds shall be deemed to contain all of the Conditions of Section 255.05, Florida Statutes, even if such language is not directly contained within the bond. CONTRACTOR shall also furnish such other Bonds as are required by the Supplementary Conditions. All Bonds shall be in the forms prescribed by the bidding documents or Supplementary Conditions and be executed by such Sureties as (i) are licensed to conduct business in the State of Florida, and (ii) are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Audit Staff Bureau of Accounts, U.S. Treasury Department. All Bonds signed by an agent must be accompanied by a certified copy of the authority to act.

5.2. If the Surety on any Bond furnished by CONTRACTOR is declared bankrupt or becomes insolvent or its right to do business is terminated in the State of Florida or it ceases to meet the requirements of clauses (i) and (ii) of paragraph 5.1, CONTRACTOR shall within five (5) days after notice thereof, substitute another Bond and Surety, both of which shall meet the requirements of clauses (i) and (ii) of paragraph 5.1.

CONTRACTOR's Liability Insurance:

5.3. CONTRACTOR and on-site Subcontractors shall purchase and maintain such Commercial General Liability and other insurance as will provide protection from claims set forth below which may arise out of or result from CONTRACTOR's performance of the Work and CONTRACTOR's other obligations under the Contract Documents, whether such performance is by CONTRACTOR, by any Subcontractor, by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable;

5.3.1. Claims under workers' compensation, disability benefits and other similar employee benefit acts;

5.3.2. Claims for damages because of bodily injury, occupational sickness or disease, or death of CONTRACTOR's employees;

5.3.3. Claims for damages because of bodily injury, sickness or disease, or death of any person other than CONTRACTOR's employees.

5.3.4. Claims for damages insured by personal injury liability coverage which are sustained (i) by any person as a result of an offense directly or indirectly related to the employment of such person by CONTRACTOR, or (ii) by any other person for any other reason.

5.3.5. Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom; and

5.3.6. Claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

The insurance required by this paragraph 5.3 shall include the specific coverages and be written for not less than the limits of liability and coverages provided in the **Supplementary Conditions**, or required by law, whichever is greater. The Commercial General Liability insurance shall include completed operations insurance. All such insurance shall contain a provision that the coverage afforded will not be canceled, materially changed or renewal refused until at least **sixty** (60) days prior written notice of such cancellation, non-renewal or change (except for nonpayment of premium, which shall be fifteen (15) days) has been given to OWNER. All such insurance shall remain in effect until final payment and at all times thereafter when CONTRACTOR may be correcting, removing or replacing defective Work in accordance with paragraph 13.12. In addition, CONTRACTOR shall maintain such completed operations insurance for at least two years after final payment and furnish OWNER with evidence of continuation of such insurance at final payment and one year thereafter.

Contractual Liability Insurance:

5.4. The Commercial General Liability insurance required by paragraph 5.3 will include contractual liability insurance applicable to CONTRACTOR's obligations under paragraphs 6.15 and 6.16. The OWNER shall be named as “Additionally Insured” under the CONTRACTOR's

Commercial General Liability insurance policy.

Owner's Liability Insurance:

5.5. OWNER may, at its option, purchase and maintain its own liability insurance and, at its option, may purchase and maintain such insurance as will protect OWNER against claims which may arise from operations under the Contract Documents.

Property Insurance:

5.6. CONTRACTOR shall purchase and maintain property insurance upon the Work at the site to the full insurable value thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by law). This insurance shall include the interests of OWNER, CONTRACTOR, and Subcontractors in the Work, shall insure against the perils of fire and extended coverage and shall include "all risk" insurance for physical loss and damage including theft, vandalism and malicious mischief, collapse and water damage, and such other perils as may be provided in the Supplementary Conditions, and shall include damages, losses and expenses arising out of or resulting from any insured loss or incurred in the repair or replacement of any insured property (including fees and charges of engineers, architects, attorneys and other professionals). If not covered under the "all risk" insurance or otherwise provided in the Supplementary Conditions, CONTRACTOR shall purchase and maintain similar property insurance on portions of the Work stored on and off the site or in transit when such portions of the Work are to be included in the Application for Payment. The policies of insurance required to be purchased and maintained by CONTRACTOR in accordance with paragraphs 5.6 and 5.7 shall contain provisions that the coverage afforded will not be canceled or materially changed until at least **sixty** (60) days prior written notice has been given to OWNER.

5.7. CONTRACTOR shall purchase and maintain such boiler and machinery insurance as may be required by the Supplementary Conditions or by law. This insurance shall include the interests of OWNER, CONTRACTOR and Subcontractors in the Work.

5.8. OWNER shall not be responsible for purchasing and maintaining any property insurance to protect the interests of CONTRACTOR or Subcontractors in the Work to the extent of any deductible amounts that are provided in the Supplementary Conditions. If CONTRACTOR wishes property insurance coverage within the limits of such amounts, CONTRACTOR may purchase and maintain it at his own expense.

5.9. If CONTRACTOR requests in writing that other special insurance be included in the property insurance policy, OWNER shall, if possible, include such insurance, and the cost thereof shall be charged to CONTRACTOR by appropriate Change Order. Prior to commencement of the Work at the site, OWNER shall in writing advise CONTRACTOR whether or not such other insurance has been procured by OWNER.

Waiver of Rights:

5.10. OWNER and CONTRACTOR waive all rights against each other and the Subcontractors and their agents and employees and separate contractors (if any) and their subcontractors' agents and employees, for damages caused by fire or other perils to the extent covered by insurance provided under paragraphs 5.6 and 5.7, inclusive, or any other property insurance applicable to the Work, except such rights as they may have to the proceeds of such insurance held by OWNER as trustee. OWNER shall require similar written waivers from each separate contractor, and CONTRACTOR shall require similar written waivers from each Subcontractor (in accordance with paragraph 6.8 as applicable); each such waiver will be in favor of all other parties enumerated in this paragraph 5.10.

Receipt and Application of Proceeds:

5.11. Any insured loss under the policies of insurance required by paragraphs 5.6 and 5.7 shall be adjusted with CONTRACTOR and made payable to CONTRACTOR as trustee for the insured, as their interests may appear, subject to the requirements of paragraph 5.12. CONTRACTOR shall deposit in a separate account any money so received, and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof and the Work and the cost thereof covered by an appropriate Change Order.

5.12. CONTRACTOR as trustee shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within fifteen days after the occurrence of loss to CONTRACTOR's exercise of this power. If such objection be made, CONTRACTOR as trustee shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If required in writing by any party in interest, CONTRACTOR as trustee shall upon the occurrence of an insured loss, give bond for the proper performance of his duties.

Acceptance of Bonds and Insurance:

5.13. If OWNER has any objection to the coverage afforded by or other provisions of the Bonds or Insurance required to be purchased and maintained by CONTRACTOR in accordance with Article 5 on the basis of non-conformance with the Contract Documents, OWNER shall so notify CONTRACTOR in writing within ten days after receipt of the certificates (or other evidence requested) required by paragraph 2.6. CONTRACTOR shall provide to OWNER such additional information in respect of insurance provided as OWNER may reasonably request. If CONTRACTOR does not purchase or maintain all of the Bonds and Insurance required of CONTRACTOR by the Contract Documents, CONTRACTOR shall notify OWNER in writing of such failure to purchase prior to the start of the Work, or such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, OWNER may elect to obtain equivalent Bonds or Insurance to protect OWNER's interests at the expense of CONTRACTOR, and a Change Order shall be issued to adjust the Contract Price accordingly.

Partial Utilization - Property Insurance:

5.14. If OWNER finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, such use or occupancy may be accomplished in accordance with paragraph 14.7; provided that no such use or occupancy shall commence before the insurers providing the property insurance have acknowledged notice thereof and in writing effected the changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies that the property insurance shall not be canceled or lapse on account of any such partial use of occupancy.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

Supervision and Superintendence:

6.1. CONTRACTOR shall supervise and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences and procedures of construction. CONTRACTOR shall be responsible to see that the finished Work complies accurately with the Contract Documents.

6.2. CONTRACTOR shall keep on the Work at all times during its progress a competent resident superintendent, who shall not be replaced without written notice to OWNER except under extraordinary circumstances. The superintendent will be CONTRACTOR's representative at the site and shall have authority to act on behalf of CONTRACTOR. All communications given to the superintendent shall be as binding as if given to CONTRACTOR.

Materials and Equipment:

6.3. All materials and equipment installed in the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment.

Equipment manufacturers/suppliers must agree to OWNER'S terms of purchase. In no event will OWNER accept terms of sale that limit OWNER'S ability to reasonably recover in the event of equipment failure/defect such as, but not limited to; mandatory arbitration clauses, venue of court proceedings and applicable law outside of Volusia County, Florida, or damage limitations that preclude recovery for failed or defective equipment that would be less than full compensation for OWNER's loss.

6.4. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable manufacturer, fabricator, supplier or distributor, except as otherwise provided in the Contract Documents.

Concerning Subcontractors:

6.5. CONTRACTOR shall not employ any Subcontractor or other person or organization (including those who are to furnish the principal items of materials or equipment), whether initially or as a substitute, to which OWNER may have any reasonable objection. CONTRACTOR shall submit with his Bid in writing the names, mailing addresses, and work classifications of all Subcontractors proposed for the Work. The failure to list all Subcontractors proposed for the Work may result in the Bid being rejected as incomplete and nonresponsive. A Subcontractor or other person or organization identified in writing to OWNER by CONTRACTOR prior to the Notice of Award and not objected to in writing by OWNER prior to the Notice of Award will be deemed acceptable to OWNER. Acceptance of any Subcontractor, other person or organization of OWNER shall not constitute a waiver of any right of OWNER to reject defective Work. If OWNER after due investigation has reasonable objection to any Subcontractor, other person or organization proposed by CONTRACTOR after the Notice of Award because the qualifications and experience of the Subcontractor, other person or organization indicate that he cannot perform or provide work, materials or equipment which will perform the specified functions, CONTRACTOR shall submit an acceptable substitute and the Contract Price shall be increased or decreased by the difference in cost occasioned by such substitution, and an appropriate Change Order may be issued. CONTRACTOR shall not be required to employ any Subcontractor, other person or organization to which CONTRACTOR has any reasonable objection. Whether objections are reasonable shall be determined as specified in paragraph 9.8.

6.6. CONTRACTOR shall be fully responsible for all acts and omissions of his Subcontractors and of persons and organizations directly or indirectly employed by them and of persons and organizations for whose acts any of them may be liable to the same extent that CONTRACTOR is responsible for the acts and omissions of persons directly employed by CONTRACTOR. Nothing in the Contract Documents shall create any contractual relationship between OWNER and any Subcontractor or other person or organization having a direct contact with CONTRACTOR, nor shall it create any obligation on the part of OWNER to pay or to see to the payment of any moneys due any Subcontractor or other person or organization, except as may otherwise be required by law. OWNER may furnish to any Subcontractor or other person or organization, to the extent practicable, evidence of amounts paid to CONTRACTOR on account of specific Work done.

6.7. The divisions and sections of the Specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing the Work among Subcontractors or delineating the Work to be performed by any specific trade.

6.8. All Work performed for CONTRACTOR by a Subcontractor will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor which specifically binds the Subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and contains waiver provisions as required by paragraph 5.10. CONTRACTOR shall pay each Subcontractor an appropriate share of any insurance proceeds received by CONTRACTOR on account of losses under policies issued pursuant to paragraphs

5.6 through 5.8.

6.9. Neither the OWNER nor the ENGINEER will undertake to settle any differences between CONTRACTOR and his Subcontractors or between Subcontractors.

Patent Fees and Royalties:

6.10. CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of OWNER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by OWNER in the Contract Documents. CONTRACTOR shall **indemnify** and **hold harmless** OWNER and anyone directly or indirectly employed by either of them from and against all claims, damages, losses and expenses (including attorneys' fees) arising out of any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product or device not specified in the Contract Documents, and shall defend all such claims in connection with any alleged infringement of such rights. OWNER will promptly notify CONTRACTOR of any such allegation of infringement of such rights.

Safety and Protection:

6.11. Precaution shall be exercised at all times by the CONTRACTOR for the protection of all persons, including employees, and property. The CONTRACTOR shall comply with all laws, regulations or ordinances related to safety and health, shall make special effort to detect hazardous conditions, and shall take prompt action where loss control/safety measures are reasonably expected. The OWNER may order work to be stopped if conditions exist that present on immediate danger to persons or property. The CONTRACTOR acknowledges that such stoppage will not shift responsibility for any damages from the CONTRACTOR to the OWNER.

6.12. CONTRACTOR be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

6.12.1. All employees on the Work and other persons who may be affected thereby.

6.12.2. All the Work and all materials or equipment to be incorporated therein, whether in storage on or off the site, and

6.12.3. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

6.12.4. CONTRACTOR shall comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property and utilities when prosecution of the Work may affect them. All damage, injury or loss to any property referred to in paragraph 6.12.2 or 6.12.3 caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR. CONTRACTOR's duties and responsibilities for the safety and protection of the Work shall continue until such time as all the Work is completed and ENGINEER has issued a notice to OWNER and CONTRACTOR in accordance with paragraph 14.12 that the Work is acceptable.

6.13. CONTRACTOR shall designate a responsible member of his organization at the site whose duty shall be the prevention of accidents. This person shall be CONTRACTOR's superintendent unless otherwise designated in writing by CONTRACTOR to OWNER.

Emergencies:

6.14. In emergencies affecting the safety or protection of persons or the Work or property at the site or adjacent thereto, CONTRACTOR, without special instruction or authorization from OWNER, is obligated to act to prevent threatened damage, injury or loss. CONTRACTOR shall give OWNER prompt written notice of any significant changes in the Work or deviations from the Contract Documents caused thereby.

Indemnification/Hold Harmless:

6.15 The parties recognize that the CONTRACTOR is an independent contractor. The CONTRACTOR agrees to assume liability for and indemnify, hold harmless, and defend the CITY, its commissioners, mayor, officers, employees, agents, and attorneys of, from, and against all liability and expense, including reasonable attorney's fees, in connection with any and all claims, demands, damages, actions, causes of action, and suits in equity of whatever kind or nature, including claims for personal injury, property damage, equitable relief, or loss of use, to the extent caused by the negligence, recklessness, or intentionally wrongful conduct of the CONTRACTOR, its agents, officers, contractors, subcontractors, employees, or anyone else utilized by the CONTRACTOR in the performance of this Agreement. The CONTRACTOR's liability hereunder shall include all attorney's fees and costs incurred by the CITY in the enforcement of this indemnification provision. This includes claims made by the employees of the CONTRACTOR against the CITY and the CONTRACTOR hereby waives its entitlement, if any, to immunity under Section 440.11, Florida Statutes. Such obligations contained in this provision shall survive termination of this Agreement and shall not be limited by the amount of any insurance required to be obtained or maintained under this Agreement.

In the event of any claim arising out of the paragraph above, the CITY will elect, in its sole discretion, that either:

1) The CONTRACTOR assume control of the defense of any claim asserted by a third party against the CITY and, in connection with such defense, shall appoint lead counsel,

in each case at the CONTRACTOR's expense. The CITY shall have the right, at its option, to participate in the defense of any third party claim, without relieving CONTRACTOR of any of its obligations hereunder. If the CONTRACTOR assumes control of the defense of any third party claim in accordance with this paragraph, the CONTRACTOR shall obtain the prior written consent of the CITY before entering into any settlement of such claim. If the CONTRACTOR assumes control of the defense and the CONTRACTOR has failed or is failing to prosecute or defend vigorously the third party claim, the CITY may assume the control of the defense as provided by sub (2); or

2) The CITY will assume control of the defense of any third party claim, but CONTRACTOR shall pay the fees of counsel retained by the CITY and all expenses, including experts' fees.

Each party shall cooperate, and cause its agents to cooperate, in the defense or prosecution of any third party claim and shall furnish or cause to be furnished such records and information, and attend such conferences, discovery proceedings, hearings, trials, or appeals, as may be reasonably requested in connection therewith. It is further the specific intent and agreement of said parties that all the Contract Documents on this Project are hereby amended to include the foregoing indemnification. CONTRACTOR expressly agrees that it will not claim, and waives any claim, that this indemnification violates Section 725.06, Florida Statutes or is unenforceable pursuant to Section 725.06, Florida Statutes.

Nothing contained in the foregoing indemnification shall be construed as a waiver of any immunity or limitation of liability the CITY may have under the doctrine of sovereign immunity or Section 768.28, Florida Statutes.

Precaution shall be exercised at all times by the CONTRACTOR for the protection of all persons, including employees and property. The CONTRACTOR shall comply with all applicable laws, regulation and ordinances related to safety and health, shall make special efforts to detect hazardous conditions, and shall take prompt action with loss control/safety measures as are reasonably necessary. The CITY may order work to be stopped if conditions exist that present an immediate danger to persons or property. The CONTRACTOR acknowledges that such work stoppage will not shift responsibility for any damages from the CONTRACTOR to the CITY.

Payment on Behalf of OWNER:

6.16. The CONTRACTOR agrees to pay on behalf of the OWNER, and to pay the cost of the OWNER's legal defense, as may be selected by the OWNER, for all claims described in the Hold Harmless paragraph. Such payment on behalf of the OWNER shall be in addition to any and all other legal remedies available to the OWNER and shall not be considered to be the OWNER's exclusive remedy.

ARTICLE 7 - WORK BY OTHERS

7.1. OWNER may perform additional work related to the Project by itself, or have additional work performed by utility service companies, or let other direct contracts therefor which shall contain General Conditions similar to these. CONTRACTOR shall afford the utility service companies and the other contractors who are parties to such direct contracts (or OWNER, if OWNER is performing the additional work with OWNER's employees) reasonable opportunity for the introduction and storage of materials and equipment and the execution of work, and shall properly connect and coordinate his Work with theirs.

7.2. If any part of CONTRACTOR's Work depends for proper execution or results upon the work of any such other contractor or utility service company (or OWNER), CONTRACTOR shall inspect and promptly report to ENGINEER in writing any patent or apparent defects or deficiencies in such work that render it unsuitable for such proper execution and results. CONTRACTOR's failure so to report shall constitute an acceptance of the work as fit and proper for integration with CONTRACTOR's Work except for latent or non-apparent defects and deficiencies in the other work.

7.3. If the performance of additional work by other contractors or utility service companies or OWNER was not noted in the Contract Documents, written notice thereof shall be given to CONTRACTOR prior to starting any such additional work. If CONTRACTOR believes that the performance of such additional work by OWNER or others involves additional expense to CONTRACTOR or requires an extension of the Contract Time, CONTRACTOR may make a claim therefor as provided in Articles 11 and 12.

7.4. Should any other contractor having, or who shall hereafter have, a contract with OWNER for the performance of work upon the site of the Work to be performed hereunder sustain any damage through any act or omission of CONTRACTOR hereunder or through any act or omission of any Sub-contractor of CONTRACTOR, CONTRACTOR agrees to reimburse such other contractor for all such damages and to indemnify, defend and hold OWNER harmless from all such claims.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

8.1. OWNER shall issue all communications to CONTRACTOR through ENGINEER.

8.2. OWNER shall furnish the data required of OWNER under the Contract Documents promptly and shall make payments to CONTRACTOR promptly after they are due as provided in paragraphs 14.3 and 14.10.

8.3. OWNER's duties with respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.1 and 4.4. Paragraph 4.2 refers to OWNER's identifying and making available to CONTRACTOR copies of reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting performance of the Work which have been relied upon by ENGINEER in preparing the Drawings and Specifications.

8.4. OWNER's responsibilities with respect to the purchase and maintenance of liability insurance are set forth in paragraph 5.5.

8.5. In connection with OWNER's rights to request changes in the Work in accordance with Article 10, OWNER (especially in certain instances as provided in paragraph 10.4) may execute Change Orders.

8.6 OWNER's responsibility with respect to certain inspections, tests and approvals is set forth in paragraph 13.4.

8.7 The provisions relative to the OWNER's right to stop Work or suspend Work are set forth in paragraphs 6.11, 13.10 and 15.1.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

9.1. ENGINEER will be OWNER's representative during the construction period. The authority of ENGINEER shall, under no circumstances, relieve CONTRACTOR from CONTRACTOR's responsibilities to perform the Work in accordance with this Contract.

Clarifications and Interpretations:

9.2. ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the Contract Documents (in the form of Drawings or otherwise) as ENGINEER may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents. If CONTRACTOR believes that a written clarification or interpretation justifies an increase in the Contract Price or Contract Time, CONTRACTOR may make a claim therefor as provided in Article 11 or Article 12.

Rejecting Defective Work:

9.3. ENGINEER will have authority to disapprove or reject WORK which is defective, and will also have authority to require special inspection or testing of the Work as provided in paragraph 13.9, whether or not the Work is fabricated, installed or completed.

Change Orders and Payments:

9.4. In connection with ENGINEER's responsibilities as to Change Orders, see Articles 10, 11 and 12.

9.5. In connection with ENGINEER's responsibilities as to Applications for Payment, etc., see Article 14.

Project Representation:

9.6. ENGINEER may designate a Project Representative to assist ENGINEER in inspecting the performance of the Work. The duties, responsibilities and limitations of authority of any such Project Representative and assistants will be as provided in paragraphs 9.6.1 through 9.6.3.

9.6.1. General: Project Representative is ENGINEER's Agent. He shall have the authority to do anything which the ENGINEER could do. His dealings in matters pertaining to the on-site work will in general be only with OWNER, ENGINEER and CONTRACTOR. His dealings with subcontractors will only be through or with the full knowledge of CONTRACTOR or his superintendent.

9.6.2. Duties and Responsibilities: Project Representative shall:

9.6.2.1. Schedules: Review the progress schedule, schedule of Shop Drawing submissions, schedule of values and other schedules prepared by CONTRACTOR and consult with ENGINEER concerning their acceptability.

9.6.2.2. Conferences: Attend preconstruction conferences.

9.6.2.3. Liaison: Serve as ENGINEER's liaison with CONTRACTOR, working principally through CONTRACTOR's superintendent, and assist him in understanding the intent of the Contract Documents. Assist in obtaining from OWNER additional details or information, when required at the job site for proper execution of the Work.

9.6.2.4. Shop Drawings and Samples: Receive and record date of receipt of Shop Drawings and samples which have been furnished by CONTRACTOR. Review the Shop Drawings for conformance with the information given in the Contract Documents. Provide office review and approval of Shop Drawings (as that term is defined in Article 1) and samples, the results of tests and inspections and other data which any contractor is required to submit, but only for conformance with the design concept of the project and compliance with the information given in the Contract Documents; determine the acceptability of substitute materials and equipment proposed by CONTRACTOR(S); and receive and review (for general content as required by the Specifications) maintenance and operating instructions, schedules, guarantees, bonds and certificates of inspection which are to be assembled by CONTRACTOR(S) in accordance with the Contract Documents.

9.6.2.5. Review of Work, Rejection of Defective Work, Inspections and Tests: Conduct on- site inspections of the Work in progress to assist ENGINEER in determining that the Project is proceeding in accordance with the Contract Documents and that completed Work will conform to the Contract Documents. Report to ENGINEER whenever he believes that any Work is unsatisfactory, faulty or defective or does not conform to the Contract Documents, or has been damaged, or does not meet the requirements of any inspections, tests or approvals required to be made; and advise ENGINEER when he believes Work should be corrected or rejected or should be uncovered for observation, or requires special testing or inspection. Verify that tests, equipment and systems start-ups and operating and maintenance instructions are conducted as required by the Contract Documents and in the presence of the required personnel, and that CONTRACTOR maintains adequate records thereof; observe, record and report appropriate details relative to the test procedures and start-ups.

9.6.2.6. Modifications: Consider and evaluate CONTRACTOR's suggestions for modifications in Drawings or Specifications and report them to ENGINEER with recommendations. Prepare change orders as required; he may, as OWNER's representative, require special inspection or testing of the work; he shall act as interpreter of the requirements of the Contract Documents, judge of the performance thereunder by the parties thereto, and transmitter of clarification and interpretation of the Contract Documents. Process contract change orders to reflect final measured contract quantities and to reflect changes in the contract Drawings and Specifications.

9.6.2.7. Payment Requisitions: Based on his on-site observations and on his review of CONTRACTOR(S) applications for payment and the accompanying data and schedules, determine the amounts owed the CONTRACTOR(S). The ENGINEER will then approve in writing payments to CONTRACTOR(S) in such amounts; such approvals of payment will constitute a presentation to OWNER, based on such observations and review, that the Work has progressed to the point indicated and that, to the best of his knowledge, information and belief, the quality of the Work is in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning Project upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, and to any qualifications stated in his approval).

9.6.2.8. Guarantees, Certificates, Maintenance and Operation Manuals: During the course of the Work verify that guarantees, certificates, maintenance and operation manuals and other data required to be assembled and furnished by CONTRACTOR are applicable to the items actually installed; and deliver this data to ENGINEER for his review prior to final acceptance of the Project.

9.6.2.9. Completion: Before ENGINEER issues a Certificate of Substantial Completion, submit to CONTRACTOR a list of observed items requiring correction. Conduct final inspection in the company of CONTRACTOR and prepare a final list of items to be corrected. Verify that all items on final list have been corrected and make recommendations to ENGINEER concerning acceptance.

9.6.3. Limitations of Authority: The Project Representative; shall not undertake any of the responsibilities of CONTRACTOR, subcontractors or CONTRACTOR's superintendent; shall not expedite Work for CONTRACTOR; shall not advise on or issue directions as to safety precautions and programs in connection with the Work; and shall not assist CONTRACTOR in maintaining up-to-date copies of Record Drawings.

Decisions on Disagreements:

9.7. ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating to the acceptability of the Work or the interpretation of the requirements of the Contract Documents pertaining to the execution and progress of the Work shall be referred initially to ENGINEER in writing with a request for a formal decision in accordance with this paragraph, which ENGINEER will render in writing within a reasonable time. Written notice of each such claim, dispute and other matter shall be delivered by the claimant to ENGINEER and the other party to the Agreement within fifteen days of the occurrence of the event giving rise thereto, and written supporting data will be submitted to ENGINEER and the other party within forty-five days of such occurrence unless ENGINEER allows an additional period of time to
ascertain more accurate data. Failure to give the required notice constitutes a waiver of the claim.

9.8. The rendering of a decision by ENGINEER pursuant to paragraph 9.7 with respect to any such claim, dispute or other matter (except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.13) will be a condition precedent to any exercise by OWNER or CONTRACTOR of such rights or remedies as either may otherwise have under the Contract Documents or at law in respect of any such claim, dispute or other matter. If the Owner agrees to pay all or part of a claim for which notice was not timely made, such agreement shall not be deemed a waiver of the right to enforce notice requirements in connection with any other claim.

Limitations on ENGINEER's Responsibilities:

9.9. Neither ENGINEER's authority to act under this Article 9 or elsewhere in the Contract Documents nor any decision made by ENGINEER in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of ENGINEER to CONTRACTOR, any Subcontractor, any manufacturer, fabricator, supplier or distributor, or any of their agents or employees or any other person performing any of the Work.

9.10. Whenever in the Contract Documents the terms "as ordered", "as directed", "as required", "as allowed" or terms of like effect or import are used, or the adjective "reasonable", "suitable" , "acceptable", "proper" or "satisfactory" or adjectives of like effect or import are used, to describe requirements, decision, review or judgment of ENGINEER as to the Work, it is intended that such requirement, direction, review or judgment will be solely to evaluate the Work for compliance with the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective never indicates that ENGINEER shall have authority to supervise or direct performance of the Work or authority to undertake responsibility

contrary to the provisions of paragraphs 9.11 or 9.12.

9.11. ENGINEER will not be responsible for CONTRACTOR's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, and ENGINEER will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.

9.12. ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractors, or of the agents or employees of any CONTRACTOR or Subcontractor, or of any other persons at the site or otherwise performing any of the Work.

ARTICLE 10 - CHANGES IN THE WORK

10.1. Without invalidating the Agreement, OWNER may, at any time or from time to time, order additions, deletions or revisions in the Work; these will be authorized by Change Orders. Upon receipt of a Change Order, CONTRACTOR shall proceed with the Work involved. All such Work shall be executed under the applicable conditions of the Contract Documents. If any Change Order causes an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, an equitable adjustment will be made as provided in Article 11 or Article 12 on the basis of a claim made by either party.

10.2. ENGINEER may authorize minor changes in the Work not involving an adjustment in the Contract Price of the Contract Time, which are consistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order and shall be binding on OWNER, and also on CONTRACTOR who shall perform the change promptly. If CONTRACTOR believes that a Field Order justifies an increase in the Contract Price or Contract Time, CONTRACTOR may make a claim therefor as provided in Article 11 or Article 12.

10.3. Additional Work performed without authorization of a Change Order will not entitle CONTRACTOR to an increase in the Contract Price or an extension of the Contract Time, except in the case of an emergency as provided in paragraph 6.14 and except as provided in paragraphs 10.2 and 13.9.

10.4. OWNER may execute appropriate Change Orders covering changes in the Work which are required by OWNER, or required because of unforeseen physical conditions or emergencies, or because of uncovering Work found not to be defective or as provided in paragraph 11.9, or because of any other claim of CONTRACTOR for a change in the Contract Time or the Contract Price which is recommended by ENGINEER.

10.5. If notice of any change affecting the general scope of the Work or change in the Contract Price is required by the provisions of any Bond to be given to the Surety, it will be CONTRACTOR's responsibility to so notify the Surety, and the amount of each applicable Bond shall be adjusted accordingly. CONTRACTOR shall furnish proof of such adjustment to OWNER.

ARTICLE 11 - CHANGE OF CONTRACT PRICE

11.1. The Contract Price constitutes the total compensation (subject to authorized adjustments) payable by OWNER to CONTRACTOR for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by CONTRACTOR shall be at his expense without change in the Contract Price.

11.2. The Contract Price may only be changed by a Change Order. Any claim for an increase in the Contract Price shall be based on written notice delivered to ENGINEER within fifteen days of the occurrence of the event giving rise to the claim. Notice of the amount of the claim with supporting data shall be delivered within forty-five days of such occurrence unless ENGINEER allows an additional period of time to ascertain accurate cost data.

11.3. The value of any Work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:

11.3.1. Where the Work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of the items involved (subject to the provisions of paragraph 11.9).

11.3.2. By mutual acceptance of a lump sum.

11.3.3. On the basis of the Cost of the Work (determined as provided in paragraphs 11.4 and 11.5) plus a Contractor's Fee for overhead and profit (determined as provided in paragraph 11.6).

Cost of the Work:

11.4. The term Cost of the Work means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. Except as otherwise may be agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items and shall not include any of the costs itemized in paragraph 11.5:

11.4.1. Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon in advance by OWNER and CONTRACTOR. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis for their time spent on the Work. Payroll cost shall include, but not be limited to, salaries and wages plus the cost of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, workers' compensation, health and retirement benefits, sick leave, vacation and holiday pay applicable thereto. Such employees shall include superintendents and foremen at the site.

11.4.2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and manufacturers' field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash

discounts shall accrue to OWNER. All trade discounts, rebates and refunds, and all returns from sale of surplus materials and equipment shall accrue to OWNER and CONTRACTOR shall make provisions so that they may be obtained.

11.4.3. Payments made by CONTRACTOR to the Subcontractors for Work performed by Subcontractors. CONTRACTOR shall obtain competitive bids from Subcontractors acceptable to CONTRACTOR and shall deliver such bids to OWNER who will then determine which bids will be accepted. If a subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work Plus a Fee, the Subcontractor's Cost of the Work shall be determined in the same manner as CONTRACTOR's Cost of the Work. All subcontracts shall be subject to the other provisions of the Contract Documents insofar as applicable.

11.4.4. Costs of special consultants (including, but not limited to, engineers, architects, testing laboratories, surveyors, lawyers and accountants) employed for services specifically related to the Work. Any such special consultants covered by the Consultants' Competitive Negotiations Act (Section 287.055, Florida Statutes), shall be selected in accordance with such Act.

11.4.5. Supplemental costs including the following:

11.4.5.1. The proportion of necessary transportation, travel and subsistence expenses of CONTRACTOR's employees incurred in discharge of duties connected with the Work.

11.4.5.2. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the site and hand tools not owned by the workmen, which are consumed in the performance of the Work, and cost less market value of such items used but not consumed which remain the property of CONTRACTOR.

11.4.5.3. Rentals of all construction equipment and machinery and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements approved by OWNER, and the costs of transportation, loading, unloading, installation, dismantling and removal thereof - all in accordance with terms of said rental agreements. The rental of any such equipment, machinery or parts shall cease when the use thereof is no longer necessary for the Work.

11.4.5.4. Sales, use or similar taxes related to the Work, and for which CONTRACTOR is liable, imposed by any government authority.

11.4.5.5. Deposits lost for causes other than CONTRACTOR's negligence, royalty payments and fees for permits and licenses.

11.4.5.6. Losses and damages (and related expenses), not compensated by insurance or otherwise, to the Work or otherwise sustained by CONTRACTOR in connection with the execution of the Work, provided they have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages and expenses shall be

included in the Cost of the Work for the purpose of determining Contractor's Fee. If, however, any such loss or damage requires construction and CONTRACTOR is placed in charge thereof, CONTRACTOR shall be paid for services a fee proportionate to that stated in paragraph 11.6.2.

11.4.5.7. The cost of utilities, fuel and sanitary facilities at the site.

11.4.5.8. Minor expenses such as telegrams, long distance telephone calls, telephone service at the site, expressage and similar petty cash items in connection with the Work.

11.4.5.9. Cost of premiums for additional Bonds and insurance required because of changes in the Work.

11.5. The term Cost of the Work shall not include any of the following:

11.5.1. Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnership and estimators, lawyers, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks and other personnel employed by CONTRACTOR whether at the site or in his principal or a branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in subparagraph 11.4.1. - all of which are to be considered administrative costs covered by the Contractor's Fee.

11.5.2. Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the site.

11.5.3. Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the Work and charges against CONTRACTOR for delinquent payments.

11.5.4. Cost of premiums for all Bonds and for all insurance whether or not CONTRACTOR is required by the Contract Documents to purchase and maintain the same (except for additional Bonds and insurance required because of changes in the Work).

11.5.5. Costs, including damages, due to the negligence of intentional acts of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied and making good any damage to property.

11.5.6. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraph 11.4.

Contractor's Fee:

11.6. The Contractor's Fee allowed to CONTRACTOR for overhead and profit shall be determined as follows:

11.6.1. A mutually acceptable fixed fee; or if none can be agreed upon,

11.6.2. A fee based on the following percentages of the various portions of the Cost of the Work;

11.6.2.1. For costs incurred under paragraphs 11.4.1. and 11.4.2., the Contractor's Fee shall be ten percent,
11.6.2.2. For costs incurred under paragraph 11.4.3., the Contractor's Fee shall be five percent; and if a subcontract is on the basis of Cost of the Work Plus a Fee, the maximum allowable to the Subcontractor as a fee for overhead and profit shall be ten percent, and

11.6.2.3. No fee shall be payable on the basis of costs itemized under paragraphs 11.4.4., 11.4.5. and 11.5.

11.7. The amount of credit to be allowed by CONTRACTOR to OWNER for any such change which results in a net decrease in costs, will be the amount of the actual net decrease. When both additions and credits are involved in any one change, the combined overhead and profit shall be figured on the basis of the net increase, if any.

Adjustment of Unit Prices:

11.8. Whenever the cost of any Work is to be determined pursuant to paragraphs 11.4. and 11.5., CONTRACTOR will submit in form acceptable to ENGINEER an itemized cost breakdown together with supporting data.

11.9. Where the quantity of Work with respect to any item that is covered by a unit price differs materially and significantly from the quantity of such Work indicated in the Contract Documents, an appropriate Change Order may be issued on recommendation of ENGINEER to adjust the unit price.

ARTICLE 12 - CHANGE OF THE CONTRACT TIME

12.1. The Contract Time may only be changed by a written Change Order. Any claim for an extension in the Contract Time shall be based on written notice delivered to ENGINEER within fifteen days of the occurrence of the event giving rise to the claim. Notice of the extent of the claim with supporting data shall be delivered within forty-five days of such occurrence unless ENGINEER allows an additional period of time to ascertain more accurate data. All claims for adjustment in the Contract Time shall be determined by ENGINEER if OWNER and CONTRACTOR cannot otherwise agree. Any change in the Contract Time resulting from any such claim shall be incorporated in a written Change Order.

12.2. The Contract Time will be extended in an amount equal to time lost due to delays beyond the control of CONTRACTOR if a claim is made therefor as provided in paragraph 12.1. Such delays shall include, but not be limited to, acts or neglect by OWNER or others performing additional Work as contemplated by Article 7, or fires, floods, labor disputes, epidemics,

abnormal weather conditions, or acts of God.

12.3. All time limits stated in the Contract Documents are of the essence of the Agreement. The CONTRACTOR shall not be entitled to any claim for damages on account of hindrances or delays from any cause whatsoever, but if occasioned by an act of God, or by any act or omission on the part of the Owner, such act, hindrance or delay may entitle the CONTRACTOR to an extension of time in which to complete the work which shall be determined by the ENGINEER, provided that the CONTRACTOR will give notice in writing of the cause of such act, hindrance or delay within ten (10) days after its occurrence.

ARTICLE 13 - WARRANTY AND GUARANTEE; TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

Warranty and Guarantee:

13.1. CONTRACTOR warrants and guarantees to OWNER that all Work will be in accordance with the Contract Documents and will not be defective. Prompt notice of all defects shall be given to CONTRACTOR. All defective Work, whether or not in place, may be rejected, corrected or accepted as provided in this Article 13.

Access to Work:

13.2. ENGINEER and ENGINEER's representatives, other representatives of OWNER, testing agencies and governmental agencies with jurisdictional interests will have access to the Work at reasonable times for their observation, inspection and testing. CONTRACTOR shall provide proper and safe conditions for such access.

Tests and Inspections:

13.3. CONTRACTOR shall give ENGINEER timely notice of readiness of the Work for all required inspections, tests or approvals.

13.4. If any law, ordinance, rule, regulation, code, or order of any public body having jurisdiction requires any Work (or part thereof) to specifically be inspected, tested or approved, CONTRACTOR shall assume full responsibility therefor, pay all costs in connection therewith and furnish ENGINEER the required certificates of inspection, testing or approval. CONTRACTOR shall also be responsible for and shall pay all costs in connection with any inspection or testing required in connection with OWNER's acceptance of a manufacturer, fabricator, supplier, or distributor of materials or equipment proposed to be incorporated in the Work, or of materials or equipment submitted for approval prior to CONTRACTOR's purchase thereof for incorporation in the Work. The cost of all other inspections, tests and approvals required by the Contract Documents shall be paid by OWNER (unless otherwise specified).

13.5. All inspections, tests or approvals other than those required by law, ordinance, rule, regulation, code or order of any public body having jurisdiction shall be performed by organizations acceptable to OWNER and CONTRACTOR.

13.6. If any Work that is to be inspected, tested or approved is covered without written concurrence of ENGINEER, it must, if requested by ENGINEER, be uncovered for observation. Such uncovering shall be at CONTRACTOR's expense unless CONTRACTOR has given ENGINEER timely notice of CONTRACTOR's intention to cover such Work and ENGINEER has not acted with reasonable promptness in response to such notice.

13.7. Neither observations by ENGINEER, nor inspections, tests or approvals by others shall relieve CONTRACTOR from his obligations to perform the Work in accordance with the Contract Documents, and in all events in no less than a workmanlike manner.

Uncovering Work:

13.8. If any Work is covered contrary to the written request of ENGINEER, it must, if requested by ENGINEER, be uncovered for ENGINEER's observation and replaced at CONTRACTOR's expense.

13.9. If ENGINEER considers it necessary or advisable that covered Work be observed by ENGINEER or inspected or tested by others, CONTRACTOR, at ENGINEER's request, shall uncover, expose or otherwise make available for observation, inspection or testing as ENGINEER may require, that portion of the Work in question, furnishing all necessary labor, material and equipment. If it is found that such Work is defective, CONTRACTOR shall bear all the expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction, including compensation for additional professional services, and an appropriate deductive Change Order shall be issued. If, however, such Work is not found to be defective, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction if he makes a claim therefor as provided in Articles 11 and 12.

Owner May Stop the Work:

13.10. If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workmen or suitable materials or equipment, OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause of such order has been eliminated; however, this right of OWNER to stop the Work shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR or any other party.

Correction or Removal of Defective Work:

13.11. If required by ENGINEER, CONTRACTOR shall promptly, without cost to OWNER and as specified by ENGINEER, either correct any defective Work, whether or not fabricated, installed or completed, or, if the Work has been rejected by ENGINEER, remove it from the site and replace it with non-defective Work.

One Year Correction Period:

13.12. If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents, any Work is found to be defective, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER's written instructions, either correct such defective Work, or, if it has been rejected by OWNER, remove it from the site and replace it with nondetective Work. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the defective Work corrected or the rejected Work removed and replaced, and all direct and indirect costs of such removal and replacement, including compensation for additional professional services, shall be paid by CONTRACTOR.

Acceptance of Defective Work:

13.13. If, instead of requiring correction or removal and replacement of defective Work, OWNER prefers to accept it, OWNER may do so. In such case, if acceptance occurs prior to ENGINEER's recommendation of final payment, a Change Order shall be issued incorporating the necessary revisions in the Contract Documents, including appropriate reduction in the Contract Price; or, if the acceptance occurs after such recommendation, an appropriate amount shall be paid by CONTRACTOR to OWNER.

OWNER May Correct Defective Work:

13.14. If CONTRACTOR fails, within a reasonable time after written notice of ENGINEER to proceed, to correct and to correct defective Work or to remove and replace rejected Work as required by ENGINEER in accordance with paragraph 13.11., or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents (including any requirements of the progress schedule), OWNER may, after seven days' written notice to CONTRACTOR, correct and remedy any such deficiency. In exercising his rights under this paragraph OWNER shall proceed expeditiously. To the extent necessary to complete corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of the site, take possession of all or part of the Work, and suspend CONTRACTOR's services related thereto, take possession of CONTRACTOR's tools, appliances, construction equipment and machinery at the site and incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER's representatives, agents and employees such access to the site as may be necessary to enable OWNER to exercise his rights under this paragraph. All direct and indirect costs of OWNER in exercising such rights shall be charged against CONTRACTOR in an amount verified by ENGINEER, and a Change Order shall be issued incorporating the necessary revisions in the Contract Documents and a reduction in the Contract Price. Such direct and indirect costs shall include, in particular but without limitation, compensation for additional professional services required and all costs of repair and replacement of work of others destroyed or damaged by correction, removal or replacement of CONTRACTOR's defective Work. CONTRACTOR shall not be allowed an extension of the Contract Time because of any delay in performance of the Work attributable to the exercise by OWNER of OWNER's rights hereunder.

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

Application for Progress Payment:

14.1. At least ten days before each progress payment falls due (but not more often than once a month), CONTRACTOR shall submit to ENGINEER for review an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents and also as ENGINEER may reasonably require. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the site or at another location agreed to in writing, the Application for Payment shall also be accompanied by such data, satisfactory to OWNER, as will establish OWNER's title to the material and equipment and protect OWNER's interest therein, including applicable insurance. Each subsequent Application for Payment shall include an affidavit of CONTRACTOR stating that all previous progress payments received on account of the Work have been applied to discharge in full all of CONTRACTOR's obligations reflected in prior Applications for Payment. The amount of retainage with respect to progress payments will be as stipulated in the Form of Agreement, Article 5.

CONTRACTOR's Warranty of Title:

14.2. CONTRACTOR warrants and guarantees that title to all Work, materials and equipment covered by an Application for Payment, whether incorporated in the project or not, will pass to OWNER at the time of payment free and clear of all liens, claims, security interests and encumbrances (hereafter in these General Conditions referred to as "Liens").

Review of Applications for Progress Payment:

14.3. ENGINEER will, within ten days after receipt of each Application for Payment, either indicate in writing a recommendation of payment, or return the Application to CONTRACTOR indicating in writing ENGINEER's reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application. OWNER shall, within ten days of presentation to him of the ENGINEER's recommendation of payment, pay CONTRACTOR the amount recommended.

14.4. ENGINEER may refuse to recommend the whole or any part of any payment if, in his opinion, it would be incorrect to make such representations to OWNER. He may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended to such extent as may be necessary in ENGINEER's opinion to protect OWNER from loss because:

14.4.1. The Work is defective, or completed Work has been damaged requiring correction or replacement;

14.4.2. Written claims have been made against OWNER or Liens have been filed in connection with the Work;

14.4.3. The Contract Price has been reduced because of Modifications;

14.4.4. OWNER has been required to correct defective Work or complete the Work in accordance with paragraph 13.14;

14.4.5. Of CONTRACTOR's unsatisfactory prosecution of the Work in accordance with the Contract Documents, including failure to clean up;

14.4.6. Of liquidated damages payable by CONTRACTOR; or

14.4.7. CONTRACTOR's failure to make payment to Subcontractors, or for labor, materials or equipment.

Substantial Completion:

14.5. When CONTRACTOR considers the entire Work ready for its intended use CONTRACTOR shall, in writing to ENGINEER, certify that the entire Work is substantially complete and request that ENGINEER issue a certificate of Substantial Completion. Within a reasonable time thereafter, CONTRACTOR and ENGINEER shall make an inspection of the Work to determine the status of completion. If ENGINEER does not consider the Work substantially complete, ENGINEER will notify CONTRACTOR in writing giving his reasons therefor. If ENGINEER considers the Work substantially complete, ENGINEER will prepare a certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a list of items to be completed or corrected before final payment.

14.6. OWNER shall have the right to exclude CONTRACTOR from the Work after the date of Substantial Completion, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the list.

Partial Utilization:

14.7. Use by OWNER of completed portions of the Work may be accomplished prior to Substantial Completion of all the Work subject to the following:

14.7.1. OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any part of the Work which OWNER believes to be substantially complete and which may be so used without significant interference with construction of the other parts of the Work. If CONTRACTOR agrees, CONTRACTOR will certify to ENGINEER that said part of the Work is substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time thereafter CONTRACTOR and ENGINEER shall make an inspection of that part of the Work to determine its status of completion. If ENGINEER does not consider that part of the Work to be substantially complete, ENGINEER will notify CONTRACTOR in writing giving his reasons therefor. If ENGINEER considers that

part of the Work to be substantially complete, ENGINEER will execute and deliver to CONTRACTOR a certificate to that effect, fixing the date of Substantial Completion as to that part of the Work, attaching thereto a list of items to be completed or corrected before final payment. OWNER shall have the right to exclude CONTRACTOR from any part of the Work which ENGINEER has so certified to be substantially complete, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the list.

14.7.2. In lieu of the issuance of a certificate of Substantial Completion as to part of the Work, OWNER may take over operation of a facility constituting part of the Work whether or not it is substantially complete if such facility is functionally and separately usable; provided that prior to any such takeover, OWNER and CONTRACTOR have agreed as to the division of responsibilities between OWNER and CONTRACTOR for security, operation, safety, maintenance, correction period, heat, utilities and insurance with respect to such facility.

14.7.3. No occupancy of part of the Work or taking over of operations of a facility will be accomplished prior to compliance with the requirements of paragraph 5.14 with regard to property insurance.

Final Inspection:

14.8. Upon written notice from CONTRACTOR that the work is complete, ENGINEER will make a final inspection with CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to remedy such deficiencies.

Final Application for Payment:

14.9. After CONTRACTOR has completed all such corrections to the satisfaction of ENGINEER and delivered all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, marked-up record documents and other documents - all as required by the Contract Documents, and after ENGINEER has indicated that the Work is acceptable (subject to the provisions of paragraph 14.13), CONTRACTOR may make application for final payment following the procedure for progress payments. The final Application for Payment shall be accompanied by all documentation called for in the Contract Documents and such other data and schedules as ENGINEER may reasonably require, together with complete and legally effective releases or waivers (satisfactory to OWNER) of all Liens arising out of or filed in connection with the Work. In lieu thereof and as approved by OWNER, CONTRACTOR may furnish receipts or releases in full; an affidavit of CONTRACTOR that the releases and receipts include all labor, services, material and equipment for which a Lien could be filed, and that all payrolls, material and equipment bills, and other indebtedness connected with the Work for which OWNER or his property might in any way be responsible, have been paid or otherwise satisfied; and consent of the Surety, if any, to final payment. If any Subcontractor, manufacturer, fabricator, supplier or distributor fails to furnish a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Lien.

Final Payment and Acceptance:

14.10. If, on the basis of ENGINEER's observation of the Work during construction and final inspection, and ENGINEER's review of the final Application for Payment and accompanying documentation - all as required by the Contract Documents, ENGINEER is satisfied that the Work has been completed and CONTRACTOR has fulfilled all of his obligations under the Contract Documents, ENGINEER will, within ten days after receipt of the final Application for Payment, indicate in writing his recommendation of payment and present the Application for payment. Thereupon ENGINEER will give written notice to CONTRACTOR that the Work is acceptable subject to the provisions of paragraph 14.13. Otherwise, ENGINEER will return the Application to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application. If the Application and accompanying documentation are appropriate as to form and substance, OWNER shall, within thirty days after receipt thereof pay CONTRACTOR the amount recommended by ENGINEER.

14.11. If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed and if ENGINEER so confirms, OWNER shall, upon receipt of CONTRACTOR's final Application for Payment and recommendation of ENGINEER, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by OWNER for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 5.1, the written consent of the Surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to ENGINEER with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

CONTRACTOR's Continuing Obligation:

14.12. CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. Neither recommendation of any progress or final payment by ENGINEER, nor the issuance of a certificate of Substantial Completion, nor any payment by OWNER to CONTRACTOR under the Contract Documents, nor any use or occupancy of the Work or any part thereof by OWNER, nor any act of acceptance by OWNER nor any failure to do so, nor the issuance of a notice of acceptability by ENGINEER pursuant to paragraph 14.10, nor any correction of defective Work by OWNER shall constitute an acceptance of Work not in accordance with the Contract Documents or a release of CONTRACTOR's obligation to perform the Work in accordance with the Contract Documents.

Waiver of Claims:

14.13. The making and acceptance of final payment shall constitute:

14.13.1. A waiver of all claims by OWNER against CONTRACTOR, except claims arising

from unsettled or unfiled Liens, from defective Work appearing after final inspection pursuant to paragraph 14.8 or from failure to comply with the Contract Documents or the terms of any special guarantees specified therein; however, it shall not constitute a waiver by OWNER of any rights in respect of CONTRACTOR's continuing obligations under the Contract Documents; and

14.13.2. A waiver of all claims by CONTRACTOR against OWNER other than those previously made in writing and still unsettled or unfiled.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

Owner May Suspend Work:

15.1. OWNER may, at any time and without cause, suspend the Work or any portion thereof for a period of not more than ninety days by notice in writing to CONTRACTOR and Surety which shall fix the date on which Work shall be resumed. CONTRACTOR shall resume the Work on the date so fixed. CONTRACTOR may be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension of work at OWNER's request if he makes a claim therefore as provided in Articles 11 and 12.

Owner May Terminate:

15.2. Upon the occurrence of any one or more of the following events:

15.2.1. If CONTRACTOR is adjudged a bankrupt or insolvent;

15.2.2. If CONTRACTOR makes a general assignment for the benefit of creditors;

15.2.3. If a trustee or receiver is appointed for CONTRACTOR or for any of CONTRACTOR's property;

15.2.4. If CONTRACTOR files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or similar laws;

15.2.5. If CONTRACTOR repeatedly fails to supply sufficient skilled workmen or suitable materials or equipment;

15.2.6. If CONTRACTOR repeatedly fails to make prompt payments to Subcontractors or for labor, materials or equipment;

15.2.7. If CONTRACTOR violates any laws, ordinances, rules, regulations or orders of any public body having jurisdiction;

15.2.8. If CONTRACTOR disregards the authority of ENGINEER; or

15.2.9. If CONTRACTOR otherwise violates in any substantial way any provisions of the Contract Documents.

OWNER may after giving CONTRACTOR and his Surety seven (7) days' written notice, terminate the services of CONTRACTOR, exclude CONTRACTOR from the site and take possession of the Work and of all CONTRACTOR's tools, appliances, construction equipment and machinery at the site and demand the Surety to finish the Work by whatever methods he may deem expedient but subject to the approval of OWNER. The Surety shall use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work as OWNER may require. In such case CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds the direct and indirect costs of completing the Work, including compensation for additional professional services, such excess shall be paid to CONTRACTOR. If such costs exceed such unpaid balance, CONTRACTOR and the Surety shall be jointly and severely liable to pay the difference to OWNER. Such costs incurred by OWNER shall be incorporated in a Change Order, but in finishing the Work OWNER shall not be required to accept the lowest figure for the Work to be performed by the Surety.

15.3. Where CONTRACTOR's services have been so terminated by OWNER, the termination shall not affect any rights of OWNER against CONTRACTOR or the Surety then existing or which may thereafter accrue. Any retention or payment of moneys due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

15.4. Upon seven (7) days' written notice to CONTRACTOR and Surety, OWNER may, without cause and without prejudice to any other right or remedy, elect to abandon the Work and terminate the Agreement. In such case, CONTRACTOR shall be paid for all Work executed, any expense sustained plus reasonable termination expenses.

CONTRACTOR May Stop Work or Terminate:

15.5. If, through no act or fault of CONTRACTOR, the Work is suspended for a period of more than ninety (90) days by OWNER or under an order of court or other public authority, or ENGINEER fails to act on any Application for Payment within thirty (30) days after it is submitted, or OWNER fails for thirty days to pay CONTRACTOR any sum finally determined to be due, the CONTRACTOR may, upon seven (7) days' written notice to OWNER, terminate the Agreement and recover from OWNER payment for all Work executed and any expense sustained plus reasonable termination expenses. In addition and in lieu of terminating the Agreement, if ENGINEER has failed to act on an Application for Payment or OWNER has failed to make any payment as aforesaid, CONTRACTOR may upon seven (7) days' notice to OWNER stop the Work until payment of all amounts then due. The provisions of this paragraph shall not relieve CONTRACTOR of his obligations to carry on the Work in accordance with the progress schedule and without delay during disputes and disagreements with OWNER.

ARTICLE 16 - MISCELLANEOUS

Giving Notice:

16.1. Whenever any provision of the Contract Documents requires the giving of written notice it shall be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

Computation of Time:

16.2. When any period of time is referred to in the Contract Documents by days, it shall be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day shall be omitted from the computation.

General:

16.3. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon CONTRACTOR by paragraphs 6.15, 13.1, 13.11, 13.14, 14.2, and 15.2, and all of the rights and remedies available to OWNER thereunder, shall be in addition to, and not in limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by law or contractor, by special warranty or guarantee or by other provisions of the Contract Documents, and the provisions of this paragraph shall be as effective as if repeated specifically in the contract Documents in connection with each particular duty, obligation, right and remedy to which they apply. All representations, warranties and guarantees made in the Contract Documents shall survive final payment and termination or completion of this Agreement.

Liquidated Damages:

16.4. OWNER and CONTRACTOR recognize that time is of the essence to complete this Project and that OWNER will suffer financial loss if the Work is not substantially complete within the time specified in Agreement, plus any extensions thereof allowed in accordance with Article 12. They also recognize the delays, expense and difficulties involved in proving in a legal proceeding the actual loss suffered by OWNER if the Work is not substantially complete on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty) CONTRACTOR shall pay OWNER the amount stated in the Contract for each day that expires after the time specified in the Contract for Substantial Completion until the Work is substantially complete. After Substantial Completion, if CONTRACTOR shall neglect, refuse or fail to complete the remaining Work within the time specified in the Contract or any proper extension thereof granted by OWNER, CONTRACTOR shall pay the OWNER an amount equal to all actual expenses incurred by the OWNER as a

direct result of the CONTRACTOR'S negligence, refusal, or failure to so complete the remaining Work. In the event the CONTRACTOR is terminated or abandons the Work prior to the scheduled date for final completion, the CONTRACTOR may be liable for both liquidated damages attributable to delay and for excess completion costs.

Reports of Investigations and Tests of Subsurface and Latent Physical Conditions:

16.5. Reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the work which have been relied upon by ENGINEER in preparing the Drawings and Specifications are as listed in the Supplementary Conditions. OWNER will make such reports available for inspection to any Bidder or copies may be obtained from the ENGINEER by the Bidder at reproduction cost. These reports are not guaranteed as to accuracy or completeness, nor are they part of the Contract Documents.

Performance of Work by CONTRACTOR:

16.6. Contract Assignment. The successful bidder (or bidders) will be required to perform the work as a prime contractor. CONTRACTOR shall not sublet, sell, transfer, assign or otherwise dispose of the contract or any portion thereof, or of his right, title, or interest therein. CONTRACTOR shall perform on the site and with his own organization work equivalent to not less than fifty (50%) percent of the total dollar value of the work to be performed under this contract except that work designated in the Supplementary Conditions as specialty work may be performed by subcontractors and the cost of any such specialty work so performed by subcontracts may be deducted from the total contract amount before computing the amount of work required to be performed by CONTRACTOR with his own organization.

Limitation of Remedy and Liability:

16.7 Contractor and Owner expressly waive any claim for consequential damages against the other including but not limited to, a waiver of claims for diminished bonding capacity, loss of financing, loss of business reputation, lost profits on other projects or other lost opportunity damage claims.

Contractor expressly agrees that any claim (tort, contract, claim in equity, or otherwise) by Contractor for damages against Owner shall not exceed the total amount of the contract price, less any amounts actually paid to the Contractor by the Owner (or by an insurer of the Owner).

All liability of the City allegedly resulting from, arising out of or connected with this Agreement, or from the performance or breach thereof, shall terminate three years from the execution of this Agreement.

Waiver of Right to Jury Trial:

16.8 THE PARTIES HEREBY KNOWINGLY, VOLUNTARILY AND INTENTIONALLY WAIVE ANY RIGHT WHICH ANY PARTY MAY HAVE TO TRIAL BY JURY IN RESPECT

OF ANY PROCEEDING, LITIGATION OR COUNTERCLAIM BASED ON, OR ARISING OUT OF, UNDER OR IN CONNECTION WITH THIS AGREEMENT OR ANY COURSE OF CONDUCT, COURSE OF DEALING, STATEMENTS (WHETHER VERBAL OR WRITTEN) OR ACTIONS OF ANY PARTY. IF THE SUBJECT MATTER OF ANY LAWSUIT IS ONE IN WHICH THE WAIVER OF JURY TRIAL IS PROHIBITED, NO PARTY TO THIS AGREEMENT SHALL PRESENT AS A NON-COMPULSORY COUNTERCLAIM IN ANY SUCH LAWSUIT ANY CLAIM BASED ON, OR ARISING OUT OF, UNDER OR IN CONNECTION WITH THIS AGREEMENT. FURTHERMORE, NO PARTY TO THIS AGREEMENT SHALL SEEK TO CONSOLIDATE ANY SUCH ACTION IN WHICH A JURY TRIAL CANNOT BE WAIVED.

END OF SECTION

SECTION 00800
SUPPLEMENTARYCONDITIONS

The following supplements modify, change, delete from, or add to the General Conditions of the Construction Contract (Section 00700). Where any article of the General Conditions is modified or any paragraph, subparagraph or clause thereof is modified or deleted by these supplements, the unaltered provisions of that article, paragraph, subparagraph or clause shall remain in effect.

ARTICLE 16 - MISCELLANEOUS

Section 16.5 – Reports of Investigations and Test of Subsurface and Latent Physical Conditions

Add the following subparagraph:

16.5.1 The list of reports of investigations and tests of subsurface and latent physical conditions as referred to in General Conditions Section 16.5 are as follows:

- Geotechnical Evaluation is not available for this project.

Add the following:

16.7 Minimum Requirements for the provision and maintenance of Payment and Performance Bonds, and Contractor's Insurance

In accordance with Resolution 2010-125 as it presently exists or may hereafter change, or applicable state, federal or local law, whichever is stricter, the following minimum requirements have been established:

A. Payment and Performance Bonds

1. Except as otherwise provided herein, the Contractor shall, prior to beginning performance, deliver to the City, and the City shall record in the public records of Volusia County, Florida, the Contractor's Payment and Performance Bond in an amount equal to the full amount of the Contract.

2. **(a)** Payment and Performance Bonds shall not be required for any contract except those which are for the construction of a public building, for the prosecution and completion of a public work (as described in Section 180.06, **Florida Statutes,** as amended from time to time) or for repairs upon a public building or public work (as described in Section 180.06, **Florida Statutes**, as amended from time to time).

(b) With respect to those Contracts for which Payment and Performance Bonds are otherwise required:

i. Unless the City Manager, or his designee, determines such Bond to be necessary to protect the interests of the City, no Contractor shall

be required to provide a Payment and Performance Bond for any Contract which is for $25,000.00 or less.

ii. Upon the request of the contractor, good cause shown by the Contractor, and a determination that the public health, safety and welfare will be sufficiently protected, the City Commission may exempt the contractor from the requirement of providing a Payment and Performance Bond for any Contract which is for more than $25,000.00 but is less than $200,000.00.

3. The Payment and Performance Bond shall list the Contractor as Principal and be issued by a surety insurer authorized to do business in Florida as a surety and listed as an acceptable surety in the Federal Register.

4. The Payment and Performance Bond shall be executed pursuant to Section 255.05, **Florida Statutes**, and be in a form substantially similar to the form set forth in Section 255.05(3), **Florida Statutes**.

5. The Payment and Performance Bond shall specifically provide coverage for delay damages due to a default by the Contractor.

6. The Payment and Performance Bond shall not make the Contract part of the Bond agreement.

7. In lieu of the Payment and Performance Bond, the Contractor may file with the Finance Director of the City, in an amount equal to the full amount of the Contract, cash, a money order, a certified check, a cashier's check, an irrevocable letter of credit, or a security of a type listed in Part II, Chapter 625, **Florida Statutes**.

8. In the event the surety on any Payment and Performance Bond furnished by the Contractor is declared bankrupt or becomes insolvent, or its right to do business in the State of Florida is terminated, the Contractor shall, within five (5) working days thereafter, substitute another Payment and Performance Bond and surety acceptable to the City.

9. The Contractor is totally and solely responsible for keeping its surety informed as to the Base Contract Price as bid, significant changes in the Project Scope, and the overall progress and completion of the Project for the entire life of the Contract.

10. The payment and performance bond requirements stated herein above shall not be applicable to service-related contracts unless otherwise determined by the City Manager in order to protect the health, safety and welfare of the general public.

B. Contractual Provisions Relative to Risk Management

All contracts for any public works to be performed, and service-related contracts, for or on behalf of the City shall include at a minimum, the following, or substantially similar, provisions:

1. Hold Harmless and Indemnity

The Contractor, including service-related contractors, shall purchase and maintain for the entire life of the Project, including any and all approved time extensions, until its final acceptance by the City, such insurance as will protect the Contractor from claims under Workers' Compensation, disability benefit laws or other similar employee benefit laws; from claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees; from claims insured by usual or unusual injury liability coverage; from claims or injury to or destruction of tangible property and from claims insured by usual Commercial General Liability coverage. This includes loss of use resulting therefrom, any or all of which may arise out of the Contractor's operations under the Contract Documents, whether such operations be by the Contractor, by any Subcontractor, or by anyone directly or indirectly employed by any of them or for whose acts any of them may be legally liable. The Contractor's deductibles/self-insured retentions shall be disclosed to the City and may be disapproved by the City, and may be reduced or eliminated at the sole discretion of the City. The Contractor is responsible for the amount of any deductible or self-insured retention.

2. Payment on Behalf of City

The Contractor shall pay all costs of the City's legal defense, as may be selected by the City, for all claims described in the Hold Harmless paragraph.

Such payment on behalf of the City shall be in addition to any and all other legal remedies available to the City and shall not be considered to be the City's exclusive remedy.

3. Loss Control/Safety

Precaution shall be exercised at all times by the Contractor for the protection of all persons, including employees and property. The Contractor shall comply with all applicable laws, regulations and ordinances related to safety and health, shall make special efforts to detect hazardous conditions, and shall take prompt action when loss control/safety measures are reasonably necessary.

The City may order work to be stopped if conditions exist that present an immediate danger to persons or property. The Contractor acknowledges that such work stoppage will not shift responsibility for any damages from the Contractor to the City.

4. Service Bond

For Service-related contracts only, the City may require the Contractor to secure a service bond with a minimum $25,000 coverage limit for the period of the service

agreement. The service bond covers dishonest acts of the contractor's employees against the City. A copy of the bond shall be provided to the City when the agreement commences.

Service-related contracts include and are not limited to businesses providing janitorial, pest control, general repair, security, carpet cleaning, locksmith, temporary employment, painting, moving services or other contracts as determined in the discretion of the Risk Manager as necessary to minimize loss.

C. Contractor's Insurance

1. General

The Contractor, including service-related contractors, shall purchase and maintain for the entire life of the Project, including any and all approved time extensions, until its final acceptance by the City, such insurance as will protect the Contractor from claims under Workers' Compensation, disability benefit laws or other similar employee benefit laws; from claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees; from claims insured by usual or unusual injury liability coverage; from claims or injury to or destruction of tangible property and from claims insured by usual Commercial General Liability coverage. This includes loss of use resulting therefrom, any or all of which may arise out of the Contractor's operations under the Contract Documents, whether such operations be by the Contractor, by any Subcontractor, or by anyone directly or indirectly employed by any of them or for whose acts any of them may be legally liable. The Contractor's deductibles/self-insured retentions shall be disclosed to the City and may be disapproved by the City, and may be reduced or eliminated at the sole discretion of the City. The Contractor is responsible for the amount of any deductible or self-insured retention.

2. Types of Insurance and Limits of Liability

The insurance required herein shall be written for not less than any limits of liability specified and incorporated as part of the Contract Documents or as required by law, whichever is greater, and shall include and not limited to the following:

(a) Workers' Compensation Insurance in statutory limits for the State of Florida with Coverage B - Employer's Liability limits of not less than:

$100,000 Each Accident Bodily Injury by Accident
$100,000 Each Employee Bodily Injury by Disease
$500,000 Policy Limit Bodily Injury by Disease

Certificate of Exemptions. If the contractor has a State-issued Certificate of Exemption, the contractor may provide a copy in place of the requirement for coverage. However, if the contractor subcontracts or retains any other person or entity to perform under the contract, that person or entity must provide proof of workers' compensation insurance as required by law or

provide a Certificate of Exemption.

It is the intent of the City that any individual who either contracts directly with the city or performs any work on behalf of any such contractor be covered by workers' compensation insurance or have a valid exemption from said coverage.

(If applicable to the Project, the policy must include benefits under the United States Longshoremen's and Harbor Workers' Act and the Jones Act coverage--all maritime coverage.)

(b) Commercial General Liability Insurance shall be written on a coverage form as broad as Insurance Services Office (ISO) Form CG 00 01 11 85, or its successor form, including but not limited to the following coverage (any deviation shall be noted on the Certificates of Insurance):

a. Premises, Operations, Products and Completed Operations
b. Owners' & Contractors' Protective
c. Products & Completed Operation
d. Explosion, Collapse & Underground Conditions
e. Blanket Contractual Liability
f. Personal Injury Liability
g. Broad Form Property Damage Endorsement, including Completed Operations
h. Independent Contractors
i. Watercraft--Owned and Non-Owned (if applicable, endorsement must be included in General Liability policy or a separate Protection & Indemnity Policy must be written)
j. Pollution Liability (if applicable)
k. Asbestos Abatement (if applicable)
l. Fire Damage Liability

Certain coverage outlined above may not be required if they do not relate to the Project, as may be determined at the sole discretion of the City.

Commercial General Liability Coverage shall be written on an occurrence basis and the limits shall be no less and not limited to the following amounts:

Limits (not less than)

$1 Million Each Occurrence
$2 Million General Aggregate
$1 Million Aggregate Products & Completed Operations

NOTE: Commercial General Liability Coverage must be purchased on either a project basis (separate policy per contract) or an endorsement allocating an aggregate limit per location or specified project.

(c) Automobile Liability Insurance is required if an Automobile(s) is used in the performance of the contract.

ISO Symbol 1 (Any Auto), or alternatively a combination of Symbol 2 (Owned Autos), Symbol 8 (Hired Autos), and Symbol 9 (Non-Owned Autos), and limits shall be no less than:

$1 Million	Combined Single Limit for Bodily Injury and Property Damage

(d) Excess Liability

For contracts $250,000 or greater an Excess Liability Policy of at least but not limited to $1,000,000 in addition to the scheduled underlying policies for Commercial General Liability, Automobile Liability and Employers' Liability, the Contractor shall also provide an Excess Liability Policy with a maximum self-insured retention not to exceed $25,0000 per occurrence.

(e) Builder's Risk

Contractor shall purchase Builder's Risk Insurance for any contracts that are deemed to be vertical construction on an All-Risk policy, and shall also include coverage for wind, hail, and named storm. Limits of coverage shall be at least and not limited to the value of the project.

(f) Professional Liability, Malpractice and/or Errors and Omissions (N/A for construction contracts)

The Contractor shall purchase and maintain professional liability, malpractice, or errors or omissions insurance with minimum limits of $1,000,000 per occurrence. If a claims made form of coverage is provided, the retroactive date of coverage shall be no later than the inception date of claims made coverage, unless the prior policy was extended indefinitely to cover prior acts. Coverage shall be extended beyond the policy year either by a supplemental extended reporting period (ERP) of as great a duration as is available, and with no less coverage and with reinstated aggregate limits, or by requiring that any new policy provides a retroactive date no later than the inception date of claims made coverage.

D. Requirements for Certificates of Insurance

1. With the execution of the Contract Documents, the Contractor, including service-related contractors, shall provide certificates of such insurance acceptable to the City. These certificates and insurance policies shall contain an endorsement that the coverage under the policies will not be canceled, non-renewed or materially changed until at least thirty (30) days' prior written notice of such cancellation, non- renewal or change (except for nonpayment of premium, which shall be ten (10) days) and a copy of the cancellation endorsement signed by an authorized

representative of the insurer, be given to the City. The contractor shall be required to replace any expired or canceled policies in like amount and coverage to the satisfaction of the City. The Certificate of Insurance shall be the ACORD FORM 25-S (7/90), or its successor form, and shall be made a part of the Contract Documents.

2. New certificates of insurance shall be provided to the City at least fifteen (15) days prior to coverage renewals.

3. If requested by the City, the contractor shall immediately furnish complete copies of the Contractor's insurance policies, forms and endorsements.

4. For Commercial General Liability coverage the Contractor shall, at the option of the City, provide an indication of the amount of claims payments or reserves chargeable to the aggregate amount of liability coverage. If the Commercial General Liability form of coverage includes an annual aggregate limitation on the amount of insurance provided, a separate project aggregate limit may be required by the City for the given contract.

5. If the Contractor fails to obtain and maintain for the life of the Project the insurance required hereby or to replace any such expired or canceled policy, the City may obtain and maintain such insurance with such company as it deems satisfactory. Any amounts expended by the City in payment of premiums for such insurance shall be deducted by the City form the amount due the Contractor for the work covered by the Contract.

E. Policies of Insurance

1. Except as otherwise provided in this Agreement, all insurance policies shall be issued by insurers licensed to do business in the State of Florida on an admitted basis or which is an eligible surplus lines insurer in the State of Florida, and any such insuring company is required to have a minimum financial rating of (A-) in the latest edition of "Best's Key Rating Guide", published by A. M. Best Co., Inc., or some similarly nationally recognized rating authority, including Standard and Poors and Demotech.

2. For Workers' Compensation coverage only, self-insurance programs are acceptable with a minimum A- rated reinsurance carriers; written confirmation is required.

3. All policies of insurance or certificates thereof referred to in this Agreement shall be deposited with the City Clerk.

4. The City shall be named an Additional Insured on General Liability and Automobile Liability policies of insurance and certificates thereof.

END OF SECTION

LIEN WAIVER

The undersigned does hereby certify that through_____, 2024, the undersigned has performed labor and/or furnished materials for the construction of the _____ Located at_____owned by_____, at a price of $_____, and in consideration of the payment to the undersigned of such sum, the receipt of which is hereby acknowledged, the undersigned does hereby release and waive all liens and claims to liens which the undersigned may have as a result of the performance of such labor and/or the furnishing of such materials, and that the undersigned has paid in full for all materials purchased by the undersigned in connection with such project and for all labor furnished by the undersigned in connection with such project. The undersigned further certifies that the last date on which the undersigned furnished such labor and/or materials was , 2024.

CONTRACTOR

By:_____ DATE:_____

TITLE:_____

THE STATE OF_____

COUNTY OF _____

Before me, the undersigned authority, on this day personally appeared _____, the _____ of_____, a corporation, known to me to be the person and officer whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and consideration therein expressed, and as the act and deed of said corporation, and in capacity therein stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this_____day of _____, 2024.

_____
Notary Public in and for
said County and State

SECTION 01010
SUMMARY OFWORK

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

Work Covered by Contract Documents:

Work under this Contract is described as: CASSEN PARK REDEVELOPMENT, Bid No. 2025-02

The work consists of paving boat trailer and car parking areas along with construction of a new bait shop and restroom building with associated stormwater management systems, potable water service, and sanitary sewer service.

The Specification Divisions and Drawings are an integrated part of the Contract Documents and as such will not stand alone if used independently as individual Sections, Divisions or Drawings sheets.

The Specifications and Drawings establish minimum standards of quality for this project. They do not purport to cover all details entering into the design and construction of materials or equipment.

The CONTRACTOR is advised that the equipment arrangements as shown on the drawings may vary with different manufacturers and the CONTRACTOR is responsible at no cost to the OWNER for making the changes necessary to accommodate the specific equipment installed.

Omission of a specific item or component part of a system obviously necessary for the proper functioning of the system shall not relieve the CONTRACTOR of the responsibility of furnishing the item as part of the work at no additional cost to the OWNER.

Contracts:

Construct work under a unit price contract.

1.2 QUALITYASSURANCE

Laws and Regulations:

The CONTRACTOR shall give all notices and comply with all laws, ordinances, rules and regulations applicable to the work. If the CONTRACTOR observes that the Specifications or Drawings are at variance therewith, the CONTRACTOR shall give the ENGINEER prompt written notice thereof, and any necessary changes shall be adjusted by an appropriate modification. If the CONTRACTOR performs any work knowing or having reason to know that it is contrary to such

laws, ordinances, rules and regulations, and without such notice to ENGINEER, the CONTRACTOR shall bear all costs arising therefrom; however, it shall not be the CONTRACTOR's primary responsibility to make certain that the Specifications and Drawings are in accordance with such laws, ordinances, rules andregulations.

1.3 JOB CONDITIONS

Taxes:
The CONTRACTOR shall pay all sales, consumer, use and other similar taxes required to be paid by him in accordance with the law of the place of the project.

Permits and Business Tax Receipts:

The CONTRACTOR shall obtain and pay for all construction permits and business tax receipts. The OWNER shall assist the CONTRACTOR, when necessary, in obtaining such permits and business tax receipts. The CONTRACTOR shall provide OWNER with copies of all permits prior to commencing work.

The CONTRACTOR shall pay all charges of utility service companies for connections to the work, and the OWNER shall pay all charges of such companies for capital costs related thereto.

It shall be the responsibility of the CONTRACTOR to verify the existence of all necessary permits and business tax receipts prior to the start of work. The OWNER will obtain permits involving interagency agreements, i.e., State Highway Crossing Permits, Railroad Crossing Permits, and similar permits.

Fees for building permits and impact fees are the responsibility of CONTRACTOR.

The CONTRACTOR and each Subcontractor must be Registered with Volusia County or with the City of Ormond Beach. Requirements for registering a business are as follows:

STATE CERTIFIED CONTRACTORS

1. Register with Volusia County Contractor Licensing (386-248-8158)

OR

2. Provide City with:
   Copy of local business tax receipt (where your business is located)
   Copy of State License (if applicable)
   Certificate of Insurance

For additional information regarding registration, permits or business tax receipts, please call: (386) 676-3233

Labor, Materials and Equipment:

The CONTRACTOR shall provide competent, suitably qualified personnel to survey and lay out the work and perform construction as required by the Contract Documents. The CONTRACTOR shall at all times maintain good discipline and order at the site. Except in connection with the safety or protection of persons or the work or property at the site or adjacent thereto, and except as otherwise indicated in the Supplementary Conditions, all work at the site shall be performed during regular working hours, and the CONTRACTOR will not permit overtime work or the performance of work on Saturday, Sunday or any legal holiday without the OWNER's written consent given after prior written notice to the ENGINEER.

Unless otherwise shown, the CONTRACTOR shall furnish all materials, equipment, labor transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water and sanitary facilities and all other facilities and incidentals necessary for the execution, testing, initial operation and completion of the work.

The CONTRACTOR shall be responsible for all materials furnished by him and shall replace at his own expense all such material found to be defective in manufacture or damaged in handling. This shall include the furnishing of all material and labor required for the replacement of installed material discovered defective prior to the final acceptance of the work.

Contractor Use of Premises:

The CONTRACTOR shall confine construction equipment, the storage of materials and equipment and the operations of workmen to areas permitted by law, ordinances, permits or the requirements of the Contract Documents, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment.

The CONTRACTOR shall not enter upon private property for any purpose without first securing the permission of the property owner in writing and furnishing the ENGINEER with a copy of said permission. This requirement will be strictly enforced, particularly with regard to such vacant properties as may be utilized for material storage.

The CONTRACTOR shall conduct his work in such a manner as to avoid damage to adjacent private or public property. Any damage to existing structures or work of any kind, including permanent reference markers or property corner markers, or the interruption of utility service, shall be repaired or restored promptly at no additional expense to the OWNER.

The CONTRACTOR shall preserve and protect all existing vegetation such as trees, shrubs and grass on or adjacent to the site which do not reasonably interfere with the construction, as determined by the ENGINEER. The CONTRACTOR will be responsible for all unauthorized cutting or damaging of trees and shrubs, including damage due to careless operation of equipment, stockpiling of materials or tracking of grass by equipment. The CONTRACTOR will be liable for, or will be required to replace or restore at no additional expense to the OWNER, all vegetation not protected or preserved as required herein that may be destroyed or damaged.

The CONTRACTOR will not be required to move or remove any utilities except as specifically required by the Drawings and Specifications.

During the progress of the work, the CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from work. At the completion of the work, the CONTRACTOR shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, appliances, construction equipment and machinery, and surplus materials, and shall leave the site clean and ready for occupancy by the OWNER. The CONTRACTOR shall restore to their original condition those portions of the site not designated for alteration by the Contract Documents.

The CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall the CONTRACTOR subject any part of the work or adjacent property to stresses or pressures that will endanger it.

Subsurface Reports:

A geotechnical report is included in Appendix A of this document.

Notification of Construction:

The CONTRACTOR shall notify, in writing, all residents and businesses adjacent to the project work area of pending construction no later than 48 hours prior to commencement of actual construction. Copies of the written Notice shall be provided to the ENGINEER for approval of wording prior to public distribution.

Notification of Street Closure:

The CONTRACTOR is required to obtain permission from the City Engineer prior to initiating street closures.

In the event a street closure is required, the CONTRACTOR shall notify, in writing, all emergency services and agencies, residents and businesses directly affected by any partial or full street closure caused by the construction no later than 48 hours prior to actual closure.

Below is a list of the agencies that are required to be notified in the event of a street closure:

Agency:	Contact phone number:
EVAC Ambulance Service	(386) 252-4911
Ormond Beach City Hall	(386) 677-0311
Ormond Beach Fire Dept. Administration	(386) 676-3255
Ormond Beach Police Dept. Dispatch	(386) 676-3508
Ormond Beach Public Works Department	(386) 676-3220
Ormond Beach Postmaster (US Postal Service)	(386) 676-0693

Volusia County School Board - Transportation	(386) 239-6360
Volusia County VOTRAN	(386) 756-7496

If a **County** or **State Road** is to be closed, add the following agencies to the list:

Volusia County Department of Public Works	(386) 239-6535
Volusia County Emergency Management	(386) 254-1500
Volusia County Fire Services	(386) 254-4657
Florida Highway Patrol Dispatch	(407) 737-2200

If the closure will last longer than 5 days, the CONTRACTOR shall also notify the general public of such closures by placing an advertisement in the "Area" section of the local newspaper no later than 48 hours prior to the closure. The advertisement shall include information describing the extent of the closure (i.e. between which streets; detour routes, etc.), the date the closure will begin, and estimated date the road will be reopened. Provide a copy of the proposed notification, for approval by the ENGINEER, before placing the advertisement.

The CONTRACTOR shall maintain full compliance with the traffic regulations found in Paragraph 1.06, Section 01500 of this Contract.

Contractor's Hours of Operation:

Except in the event of an emergency, no work shall be done between the hours of 7:00 P.M. and 7:00 A.M., or on Saturdays and Sundays. If the proper and efficient execution of the work requires operations during the night or on week-ends, the written permission of the ENGINEER shall be obtained prior to starting such items of the work.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION

SECTION 01025
MEASUREMENT AND PAYMENT

PART 1 – GENERAL

1.1 DESCRIPTION OF WORK

This section defines the method which will be used to determine the quantities of work performed or a material supplied, and establishes the basis upon which payment will be made.

1.2 ESTIMATED QUANTITIES

Where quantities are shown, they are approximate and are given only as a basis of calculation upon which the award of the Contract is to be made. OWNER or ENGINEER do not assume any responsibility for the final quantities, nor shall CONTRACTOR claim misunderstanding because of such estimate of quantities. Final payment will be made only for the satisfactorily completed quantity of each item.

1.3 MEASUREMENT STANDARDS

All work completed under the Contract shall be measured according to United States Standard Methods.

1.4 METHOD OF MEASUREMENT

Measurement of Length:

Unless otherwise specified for the particular items involved, all measurements of distance for items to be paid for on the basis of length shall be taken horizontally or vertically.

Measurement of Area:

In the measurement of items paid for on the basis of area of finished work, the lengths and/or widths to be used in the calculations shall be the actual dimensions measured along the surface of the completed work within the neat lines shown or designated. At intersections, the measurement used for length of side area will be measured from the outside edge of the width allowed along the main trench.

1.5 PAYMENT

Lump Sum Items:

Where payment for items is shown to be paid for on a lump sum basis, no separate payment will be made for any item of work required to complete the lump sum item within the limits of work shown or specified.

Unit Price Items:

Where payment for items is shown to be paid for on a unit price basis, separate payment will be made for the items of work described herein and listed on the Bid Form. Any related work not specifically listed, but required for satisfactory completion of the work, shall be considered to be included in the scope of the appropriate listed work items.

1.6 COSTS INCLUDED IN PAYMENT ITEMS

No separate payment will be made for the following items and the cost of such work shall be included in the applicable pay items of work.

Clearing and grubbing (including disposal of material).
Trench excavation, including necessary pavement removal and removal of vegetative surfaces.
Dewatering and disposal of surplus water.
Structural fill, backfill, and grading.
Replacement of unpaved roadways, grass and shrubbery plots.
Cleanup.
Foundation and borrow materials, except as hereinafter
specified. Testing and placing system in operation.
Any material and equipment required to be installed and utilized for tests.
Pipe, structures, pavement replacement, restoration and/or appurtenances included within the limits of lump sum work, unless otherwise shown.
Maintaining or detouring of the traffic.
Appurtenant work as required for a complete and operable system.
Surface restoration including removal and replacement of trees (under 4-inch diameter), shrubs, and sod disturbed by construction activities.
Relocation and/or replacement of irrigation systems disturbed by construction.
Relocation and/or replacement of mail boxes disturbed by construction.
Furnishing adequate sanitary facilities for
workers. Supporting of existing utilities during
construction

1.7 APPLICATIONS FOR PAYMENT

Applications for payment shall be prepared by the CONTRACTOR and submitted to the ENGINEER in accordance with the schedule established by the Conditions of the Contract and the Agreement. The Applications for Payment shall be submitted in the number and form established by the ENGINEER at the Preconstruction Conference. The form shall be completely filled out and executed by an authorized representative of the CONTRACTOR. Supporting data such as schedules of stored materials shall be attached to each copy of the application.

1.8 CHANGE ORDER PROCEDURE

As defined in the General Conditions, a Change Order is a written order to the CONTRACTOR signed by the OWNER authorizing an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Time which is issued after the execution of the Agreement.

The following procedure shall be used in processing Change Orders:

For Additions to the Work:

The OWNER shall issue a written order to the CONTRACTOR directing him to accomplish the additional work. The CONTRACTOR shall review the order and if he feels that the additional work entitles him to additional payment or additional time, he may submit a claim as prescribed in the Conditions of the Contract.

For Deletions from the Work:

The OWNER shall issue a written order to the CONTRACTOR directing him to make the change. If the OWNER feels that the Contract price should be reduced as a result of the change, the OWNER shall make a claim for the reduction as provided in the Conditions of the Contract.

Cost of the changes in the work shall be determined in accordance with the requirements spelled out in the Conditions of the Contract. Modifications to incorporate the changes in cost will be made as the amount of any change is determined.

PART 2 – PRODUCTS
(Not Applicable)

PART 3 – EXECUTION

3.01 BID ITEMS

PART 1 – General Construction

Bid Item No. 101 – Mobilization/Demobilization

Definition. Mobilization shall be the preparatory work and operations in mobilizing for beginning work on the project, including, but not limited to, those operations necessary for the movement of personnel, equipment, supplies and incidentals to the project site, and for the establishment of temporary offices, buildings, safety equipment and first aid supplies, sanitary and other facilities, as required by the Contract Documents and applicable laws and regulations. The costs of bonds, required insurance, permits and any other preconstruction expense necessary for the start of the work, excluding the cost of construction materials, shall also be included in this item. Demobilization shall be the work of removing temporary facilities from the site.

Payment. Partial payments for this item will be made in accordance with the following schedule:

Percent of Original Contract Amount Earned	Allowable Percent of the Lump Sum Price for the Item
Contract Approval	25
10	50
25	75
50	100

These payments will be subject to the standard retainage provided in the agreement. Payment of the retainage will be made after completion of the work and demobilization.

Bid Item No. 102 – Survey and Layout

Payment. Payment of the applicable lump sum price shall be full compensation for furnishing all plant, labor, materials and equipment necessary for the establishment of any temporary or permanent control during the extent of the project. Should any existing permanent control be disturbed during construction, the CONTRACTOR shall direct his licensed surveyor to replace the control at no additional cost to the OWNER shall be full compensation for furnishing all plant, labor, materials and equipment for tree protection. The tree protection shall be per City of Ormond Beach Land Development Code.

Bid Item No. 103 – Submit Certified "As-Built" Drawings

Payment. Payment of the applicable lump sum price shall be full compensation for furnishing all plant, labor, materials and equipment necessary to submit the "as-built" Drawings, certified by a

registered land surveyor or professional engineer. The Contractor's attention is directed to Section 01700, Paragraph 1.4, which addresses the requirements for maintaining up-to-date "as- built" Drawings. Payment shall include furnishing one set of reproducible mylars, three sets of sealed bond prints and one AutoCAD (2013 or newer version) diskette or CD.

Bid Item No. 104 – Maintenance of Traffic

Definition. Maintenance of traffic shall include furnishing all plant, labor, materials and equipment necessary to provide the maintenance of traffic (MOT) required by the Florida Department of Transportation and the City of Ormond Beach and to provide all other maintenance of traffic required as shown in the Contract Documents, including electronic message signs, detour routes, notifications, etc. as required by the City of Ormond Beach Traffic Division.

Payment. Partial payments for this item will be made in accordance with the following schedule:

Percent of Original Contract Amount Earned	Allowable Percent of the Lump Sum Price for the Item
10	25
25	50
50	75
75	100

Bid Item No. 105 – Construction Entrance

Payment. Lump sum payment shall be full compensation for furnishing all plant, labor, materials and equipment necessary to construct the construction entrance within the limits shown on the Drawings and noted on the Bid Form.

Bid Item No. 106 – Erosion, Sedimentation and Turbidity Control

Payment. Payment of the applicable lump sum price shall be full compensation for furnishing all plant, labor, materials and equipment necessary to provide the required erosion, sedimentation and turbidity control called out in the specifications and as shown on the detail drawings of this set and in accordance with the requirements of the City of Ormond Beach.

Bid Item No. 107 – Clearing and Grubbing

Payment: Lump sum payment will be full compensation for all clearing and grubbing required for the utility installation, storm facility construction, canal construction, etc. as required for the construction of the interconnection portion of the project, including all necessary hauling, furnishing equipment, equipment operation, furnishing any areas required for disposal of debris, leveling of terrain and the landscaping work of trimming, etc., as specified herein, except for any areas designated to be paid for separately or to be specifically included in the costs of other work under the Contract.

Bid Item No. 108 – Demolition

Payment. Lump sum payment will be full compensation for demolition of existing site features outside the existing pavement area. Such price and payment shall be full compensation for furnishing all plant, labor, materials, and equipment necessary for demolition of existing site features outside the existing pavement area

Bid Item No. 109 – Pavement Removal

Measurement. The quantity for payment under this item shall be the unit of square yard of the actual area of existing pavement satisfactorily removed and disposed of.

Payment. Payment will be made at the unit price per square yard for the actual quantity of existing pavement surface satisfactorily removed and replaced. Such price and payment shall be full compensation for furnishing all plant, labor, materials, and equipment necessary to remove and dispose of existing concrete or asphalt pavement surface.

Bid Item No. 110 – Tree Protection

Payment. Payment of the applicable lump sum price shall be full compensation for furnishing all plant, labor, materials and equipment for tree protection. The tree protection shall be per City of Ormond Beach Land Development Code.

Bid Item No. 111 – Removal and Replacement of Unsuitable Materials

Definition. The term Unsuitable Material is defined as the excavation of material which is not suitable for use for pipe embedment or foundation or underlying storm water facilities or for use as backfill between the elevation of one foot above the top of the pipe and the bottom surface of the pavement or pavement base course in paved areas. Material which is unsuitable for use in these locations is muck, silt, plastic clays, organic materials or any other material which will not provide adequate support for the pipe or pavement. Material encountered above the pipe embedment zone in trenches which are outside of roadbed areas will not be classified as subsoil for purposes of payment under this item.

Measurement. Measurement of subsoil excavation shall be the number of cubic yards, within the following limitations, of excavated material hereinbefore defined as subsoil excavation.

Where material is encountered at the bottom of the trench below the pipe embedment zone, the area of subsoil excavation per linear foot of pipe will be computed by multiplying the actual thickness of the material removed below the bottom of the pipe by a 36-inch width for pipe 12-

inches or less in diameter, and by a width of 24-inches greater than the outside diameter of the pipe for pipes greater than 12-inches in diameter. Where material is encountered in the pipe embedment zone, the trench area of subsoil excavation per linear foot of pipe will be computed by multiplying the actual thickness of the material removed by a 30-inch width for pipe 12- inches or less in diameter, and by a width of 16-inches greater than the outside diameter of the pipe for pipes greater than 12-inches in diameter.

Where material is encountered in layers above the pipe, the area will be computed by multiplying the actual thickness of the material removed times the actual width of the material removed, but not exceeding the pipe width plus one foot for every vertical foot between the top of the material and the invert of the sewer pipe.
In excavation for manholes and other appurtenances, one foot will be allowed outside the wall lines of the structures.

In excavation for roadway, three feet beyond the pavement limits.

In excavation for storm water facilities, 2-feet below proposed facility grade bottom elevation or to the level of removal of the unsuitable soil layer to allow for percolation of the facility.

Unsuitable Material will ultimately be determined by the Owner or his designated geotechnical engineer.

Payment. Payment for subsoil excavation will be made as an extra over and above the price bid for pipeline work and will include all work of removing, separating, stockpiling, re-handling and all incidentals necessary to satisfactorily excavate and dispose of subsoil materials. No extra payment will be made for refill replacing subsoil excavation, and these costs shall be included in the unit price bid for subsoil excavation. Payment will be made at the appropriate unit price per cubic yard listed in the Bid.

Bid Item No. 112 – Removal and Replacement of Rock Material

Definition. Rock Material excavation is defined as the excavation, removal and disposal of boulders or masses of concrete, other than slabs, measuring one-half cubic yard or more in volume, rock material in ledges, bedded deposits and un-stratified masses, and conglomerate masses which require blasting, wedging, sledging, barring or breaking up with power-operated hand tools or machines for removal.

Measurement. Measurement of rock excavation shall be the number of cubic yards within the following limitations, of excavated material defined hereinbefore as rock excavation.

Where rock is encountered at the bottom of trench, the area of rock excavation per linear foot of pipe will be computed by multiplying the actual thickness of the rock removed to a depth of 6-inches below the bottom of the pipe by a 30-inch width for pipe 12-inches or less in diameter and by width of 16-inches greater than the outside diameter of the pipe for pipes greater than 12- inches in diameter. Where rock is encountered in ledges above the pipe, the area will be computed by multiplying the actual thickness of the rock removed times the actual width of the rock removed.

Thickness shall be based upon the top of the rock to 6-inches below the bottom of the pipe; width shall be based upon the pipe outside diameter plus 16-inches.

In rock excavation for manholes and other appurtenances, one-foot will be allowed outside of the wall lines of the structures.

In excavation for roadway, three feet beyond the pavement limits. Unsuitable Material will ultimately be determined by the Owner or his designated geotechnical engineer.

Payment. Payment for rock excavation shall include all necessary drilling and all incidentals necessary to satisfactorily excavate and dispose of rock materials. No extra payment will be made for refill replacing rock excavation, and these costs shall be included in the Contractor's unit price for rock excavation. Payment shall be made at the applicable unit price indicated.

Bid Item No. 113 – Import Fill (Fill, Spread and Compacted)

Measurement. The quantity for payment shall be the actual number of cubic yards of suitable fill material used on site, spread and compacted to establish finished grade for the roadway, walks, etc. acceptably, measured along the centerline of the road or walk and of the actual width of material installed.

Payment. Payment for suitable fill material shall be made at the applicable unit price per cubic yard for the actual quantity for satisfactorily installed to the maximum width shown and specified. Such payment shall be full compensation for furnishing all plant, labor, materials, equipment and incidentals accepted in place.

Bid Item No. 114 – FDOT (4'-Dia.) Sanitary Sewer Manhole

Measurement. Measurement under this item will be for construction of the number of FDOT (4' diameter) sanitary sewer manholes as shown on the Drawings and listed in the Bid Form.

Payment. Payment of the applicable unit price shall be full compensation for furnishing all plant, labor, materials and equipment necessary to construct the precast FDOT (4' diameter) sanitary sewer manholes, including constructing the bench, frame and cover and applying exterior coating.

Bid Item No. 115 – 8" PVC (SDR-26), ASTM D-3034 Sanitary Sewer Main

Measurement. Measurement under this item shall be furnishing and installing 8" PVC (SDR-26) sanitary sewer main as shown on the Drawings and listed in the Bid Form.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for furnishing all plant, labor, materials and equipment necessary to furnishing and install 8" PVC (SDR-26) sanitary sewer main.

Bid Item No. 116 – 6" PVC (SDR-26), ASTM D-3034 Sanitary Sewer Service

Measurement. Measurement under this item shall be furnishing and installing 6" PVC (SDR-26) sanitary sewer service as shown on the Drawings and listed in the Bid Form.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for furnishing all plant, labor, materials and equipment necessary to furnishing and install 6" PVC (SDR-26) sanitary sewer service.

Bid Item No. 117 – Connection to Existing Sanitary Sewer Manhole

Measurement. The quantity for payment shall be the unit price per connection for new sanitary sewer piping connected to the existing sanitary sewer manhole.

Payment. Payment shall be made at the unit price per connection of the newly installed 8" sanitary sewer main to the existing sanitary sewer manhole. Such price and payment shall be full compensation for furnishing all plant, labor, materials and equipment necessary to complete the connection.

Bid Item No. 118 – 2" PVC Potable Water Service

Measurement. Measurement under this item shall be furnishing and installing 2" PVC Potable Water service as shown on the Drawings and listed in the Bid Form.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for furnishing all plant, labor, materials and equipment necessary to furnishing and install 2" PVC Potable Water Service.

Bid Item No. 119 – 6" PVC Potable Water Main

Measurement. Measurement under this item shall be furnishing and installing 6" PVC Potable Water Main as shown on the Drawings and listed in the Bid Form.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for furnishing all plant, labor, materials and equipment necessary to furnishing and install 6" PVC Potable Water Main.

Bid Item No. 120 – 4" PVC Fire Main

Measurement. Measurement under this item shall be furnishing and installing 4" PVC Fire Main as shown on the Drawings and listed in the Bid Form.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for furnishing all plant, labor, materials and equipment necessary to furnishing and install 4" PVC Fire Main.

Bid Item No. 121 – 6" PVC Fire Main

Measurement. Measurement under this item shall be furnishing and installing 6" PVC Fire Main as shown on the Drawings and listed in the Bid Form.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for furnishing all plant, labor, materials and equipment necessary to furnishing and install 6" PVC Fire Main.

Bid Item No. 122 – 6" Tapping Sleeve and Valve

Measurement. Measurement under this item will be for construction of the number of 6" Tapping Sleeve and Valves as shown on the Drawings and listed in the Bid Form.

Payment. Payment of the applicable unit price shall be full compensation for furnishing all plant, labor, materials and equipment necessary to construct the 6" Tapping Sleeve and Valve.

Bid Item No. 123 – 6" Gate Valve

Measurement. Measurement under this item will be for construction of the number of 6" Gate Valves as shown on the Drawings and listed in the Bid Form.

Payment. Payment of the applicable unit price shall be full compensation for furnishing all plant, labor, materials and equipment necessary to construct the 6" Gate Valve.

Bid Item No. 124 – 2" Potable Water Meter

Measurement. Measurement under this item will be for construction of the number of 2" Potable Water Meters as shown on the Drawings and listed in the Bid Form.

Payment. Payment of the applicable unit price shall be full compensation for furnishing all plant, labor, materials and equipment necessary to construct the 2" Potable Water Meter.

Bid Item No. 125 – 2" RPZ Backflow Preventer

Measurement. Measurement under this item will be for construction of the number of 2" RPZ

Backflow Preventers as shown on the Drawings and listed in the Bid Form.

Payment. Payment of the applicable unit price shall be full compensation for furnishing all plant, labor, materials and equipment necessary to construct the 2" RPZ Backflow Preventer.

Bid Item No. 126 – Fire Standpipe Assembly

Measurement. Measurement under this item will be for construction of the number of Fire Standpipe Assemblies as shown on the Drawings and listed in the Bid Form.

Payment. Payment of the applicable unit price shall be full compensation for furnishing all plant, labor, materials and equipment necessary to construct the Fire Standpipe Assembly.

Bid Item No. 127 – Fire Hydrant Assembly

Measurement. Measurement under this item will be for construction of the number of Fire Hydrant Assemblies as shown on the Drawings and listed in the Bid Form.

Payment. Payment of the applicable unit price shall be full compensation for furnishing all plant, labor, materials and equipment necessary to construct the Fire Hydrant Assembly.

Bid Item No. 128 – 12" PVC Storm Pipe

Measurement. Measurement under this item shall be furnishing and installing the 12" PVC Storm Pipe as shown on the Drawings and listed in the Bid Form.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for furnishing all plant, labor, materials and equipment necessary to furnishing and install the 12" PVC Storm Pipe.

Bid Item No. 129 – 12" Yard Drain w/ Circular Grate

Measurement. Measurement under this item will be for construction of the number of 12" Yard Drains w/ Circular Grates as shown on the Drawings and listed in the Bid Form.

Payment. Payment of the applicable unit price shall be full compensation for furnishing all plant, labor, materials and equipment necessary to construct the 12" Yard Drain w/ Circular Grate.

Bid Item No. 130 –Class III Reinforced Concrete Pipe (RCP) - Various Sizes

Measurement. Measurement under this item shall be furnishing and installing Class III Reinforced

Concrete Pipe (RCP) of various sizes as shown on the Drawings and listed in the Bid Form.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for furnishing all plant, labor, materials and equipment necessary to furnishing and install various size class III reinforced concrete pipe (RCP).

Bid Item No. 131 –Class III Elliptical Reinforced Concrete Pipe (ERCP) - Various Sizes

Measurement. Measurement under this item shall be furnishing and installing Class III Elliptical Reinforced Concrete Pipe (RCP) of various sizes as shown on the Drawings and listed in the Bid Form.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for furnishing all plant, labor, materials and equipment necessary to furnishing and install various size class III elliptical reinforced concrete pipe (RCP).

Bid Item No. 132 – FDOT Type "C" Inlet with Steel Grate

Measurement. Measurement under this item shall be for the construction of the number of new FDOT Type "C" inlet, complete with a steel grate as shown on the Drawings and listed in the Bid Form.

Payment. Payment of the Contract unit price per each shall be full compensation for furnishing all plant, labor materials and equipment necessary to construct the FDOT Type "C" inlet and exterior coating. Measurement under this item will be for the number of new FDOT Type "C" inlets, complete with steel grates, satisfactorily installed as shown on the Drawings and listed in the Bid Form.

Bid Item No. 133 – FDOT Type "D" Inlet with Steel Grate

Measurement. Measurement under this item shall be for the construction of the number of new FDOT Type "D" inlet, complete with a steel grate as shown on the Drawings and listed in the Bid Form.

Payment. Payment of the Contract unit price per each shall be full compensation for furnishing all plant, labor materials and equipment necessary to construct the FDOT Type "D" inlet and exterior coating. Measurement under this item will be for the number of new FDOT Type "D" inlets, complete with steel grates, satisfactorily installed as shown on the Drawings and listed in the Bid Form.

Bid Item No. 134 –FDOT Type-J Storm Drain Junction Box – Various Sizes

Measurement. Measurement under this item will be for construction of the number of FDOT Type-J storm drain Junction boxes as shown on the Drawings and listed in the Bid Form.

Payment. Payment of the applicable unit price shall be full compensation for furnishing all plant, labor, materials and equipment necessary to construct the precast FDOT Type-J storm drain junction boxes, including constructing the bench, frame and cover and applying exterior coating.

Bid Item No. 135 – 14”x23” ERCP Mitered End Section

Measurement. Measurement under this item will be for construction of the number of 14”x23” ERCP Mitered End Sections inclusive of rip-rap erosion protection as shown on the Drawings and listed in the Bid Form.

Payment. Payment of the applicable unit price shall be full compensation for furnishing all plant, labor, materials and equipment necessary to construct the 14”x23” ERCP Mitered End Sections inclusive of rip-rap erosion protection.

Bid Item No. 136 – Drainage Control Structure

Measurement. Measurement under this item will be for construction of the number of drainage control structures as shown on the Drawings and listed in the Bid Form.

Payment. Payment of the applicable unit price shall be full compensation for furnishing all plant, labor, materials and equipment necessary to construct the drainage control structures.

Bid Item No. 137 – Stormwater Backflow Preventer

Measurement. Measurement under this item will be for construction of the number of stormwater backflow preventers as shown on the Drawings and listed in the Bid Form.

Payment. Payment of the applicable unit price shall be full compensation for furnishing all plant, labor, materials and equipment necessary to construct the stormwater backflow preventer.

Bid Item No. 138 – Sodded Overflow Weir

Measurement. Measurement under this item will be for construction of the number of Sodded Overflow Weirs inclusive of rip-rap erosion protection as shown on the Drawings and listed in the Bid Form.

Payment. Payment of the applicable unit price shall be full compensation for furnishing all plant, labor, materials and equipment necessary to construct the Sodded Overflow Weirs inclusive of rip-rap erosion protection

Bid Item No. 139 – Connection to Existing Storm Piping

Measurement. The quantity for payment shall be the unit price per connection for new storm sewer structures connected to the existing storm sewer piping.

Payment. Payment shall be made at the unit price per connection of the new storm sewer

structures connected to the existing storm sewer piping. Such price and payment shall be full compensation for furnishing all plant, labor, materials and equipment necessary to complete the connection.

Bid Item No. 140 – Connection to Existing Headwall

Measurement. The quantity for payment shall be the unit price per connection for new storm sewer piping connected to the existing storm sewer endwall.

Payment. Payment shall be made at the unit price per connection of the newly installed storm sewer pipe to the existing storm sewer endwall. Such price and payment shall be full compensation for furnishing all plant, labor, materials and equipment necessary to complete the connection.

Bid Item No. 141 – Asphaltic Concrete Pavement, Surface Course, Type SP-9.5 (2.5")

Measurement. Asphaltic Concrete Pavement, Surface Course, Type SP-9.5 (2.5") will be measured on a per ton basis.

Payment. Payment for constructing asphaltic concrete surface course shall be made at the Contract unit price per ton in place and accepted. Payment shall be full compensation for all labor, material and equipment required to do the work. Payment includes cleaning, tack coat, and prime coat and replacement of any temporary traffic or lane markings and reflectors. Determining the quantity, the tonnage shall be the quantity used to establish the required grade and shall be accurate to the 10^{th} of a ton. No extra payment will be allowed for asphalt greater than the 2" compacted thickness, unless directed by the OWNER or OWNER's representative. No extra payment will be made for temporary traffic striping.

Bid Item No. 142 – Furnish and Install 8-inch Crushed Concrete Base Course

Measurement. The quantity for payment shall be the actual number of square yards of 8-inch crushed concrete base course successfully installed.

Payment. Payment for 8-inch crushed concrete base shall be made at the applicable unit price per square yard satisfactorily installed. Such payment shall be full compensation for furnishing all plant, labor, materials, equipment and incidentals for complete successful installation of the base

Bid Item No. 143 – Furnish and Install 12-inch Sub-base Stabilized to LBR 40, 98% AASHTO

Measurement. The quantity for payment shall be the actual number of square yards of 12-inch sub-base Stabilized successfully installed.

Payment. Payment for 12-inch sub-base stabilized shall be made at the applicable unit price per square yard satisfactorily installed. Such payment shall be full compensation for furnishing all plant, labor, materials, equipment and incidentals for complete successful installation of the base.

Bid Item No. 144 – Decorative Concrete Pavement

Payment. Lump sum payment shall be full compensation for furnishing all plant, labor, materials and equipment necessary to construct the Decorative Concrete Pavement within the limits shown on the Drawings and noted on the Bid Form.

Bid Item No. 145 – Furnish & Install FDOT Curbs – Various Sizes

Measurement. Measurement under this item shall be the actual number of linear feet of FDOT curbs of various sizes that is satisfactorily furnished and installed.

Payment. Payment for concrete FDOT curbs of various sizes shall be made at Contract Unit Price per linear foot, and shall be full compensation for all materials required to complete the work. Payment includes full compensation for all materials required, excavation, form work, concrete and furnishing all equipment and labor necessary to furnish and install curbs as specified. Length of curbing is to be determined in the field and approved by ENGINEER. Payment for base and stabilized subgrade beneath and behind curbing will be paid for on a square yard basis for that Bid Item.

Bid Item No. 146 – Rumble Strip

Measurement. Measurement under this item shall be the actual number of linear feet of Rumble Strip that is satisfactorily furnished and installed.

Payment. Payment for concrete Rumble Strip shall be made at Contract Unit Price per linear foot, and shall be full compensation for all materials required to complete the work. Payment includes full compensation for all materials required, excavation, form work, concrete and furnishing all equipment and labor necessary to furnish and install Rumble Strips as specified.

Bid Item No. 147 – Furnish and Install Concrete Sidewalks – Various Styles

Measurement. The quantity for payment shall be the actual number of square foot of Concrete Sidewalks – Various Styles successfully installed.

Payment. Payment for Concrete Sidewalks – Various Styles shall be made at the applicable unit price per square foot satisfactorily installed. Such payment shall be full compensation for furnishing all plant, labor, materials, equipment and incidentals for complete successful installation of the base.

Bid Item No. 148 – ADA Ramp

Measurement. Measurement under this item will be for construction of the number of ADA ramps as shown on the Drawings and listed in the Bid Form.

Payment. Payment of the applicable unit price shall be full compensation for furnishing all plant, labor, materials and equipment necessary to construct the ADA ramps.

Bid Item No. 149 – Furnish and Install Retaining Wall w/ Railing

Payment. Payment of the applicable lump sum price shall be full compensation for furnishing all plant, labor, materials and equipment necessary to assemble and construct the Retaining Wall w/ Railing. Payment includes the necessary shop drawing preparation and cost for structural detailing (signed and sealed) necessary to secure a City of Ormond Beach building permit.

Bid Item No. 150 – Furnish & Install FDOT Handrailing

Measurement. Measurement under this item shall be the actual number of linear feet of FDOT index 515-070 Handrailing that is satisfactorily furnished and installed.

Payment. Payment for concrete FDOT Handrailing shall be made at Contract Unit Price per linear foot, and shall be full compensation for all materials required to complete the work. Payment includes full compensation for all materials required and labor necessary to furnish and install handrailing as specified.

Bid Item No. 151 – Striping and Signage

Payment. Payment of the applicable lump sum price shall be full compensation for furnishing all plant, labor, materials and equipment necessary for the installation of all Striping and Signage as shown on the Drawings and noted on the Bid Form. The striping and signage shall be per City of Ormond Beach Land Development Code.

Bid Item No. 152 – Sod

Measurement. The quantity for payment shall be the actual number of square yards of sod installed successfully per Drawings and listed in Bid form.

Payment. Payment for sod shall be made at the applicable unit price per square yard satisfactorily installed per Drawings. Such payment shall be full compensation for furnishing all plant, labor, materials, equipment and incidentals for complete successful installation of the sod.

Bid Item No. 153 – Landscaping

Payment. Payment of the applicable lump sum price shall be full compensation for furnishing, plant, labor, materials, and equipment necessary for the installation of all Landscaping as shown on the Drawings and noted on the Bid Form.

Bid Item No. 154 – Tree Relocation

Payment. Payment of the applicable lump sum price shall be full compensation for furnishing, plant, labor, materials, and equipment necessary for Tree Relocations as shown on the Drawings and noted on the Bid Form.

Bid Item No. 155 – Site Furnishings

Payment. Payment of the applicable lump sum price shall be full compensation for furnishing, plant, labor, materials, and equipment necessary for all site furnishings as shown on the Drawings and noted on the Bid Form.

Bid Item No. 156 – Planters

Payment. Payment of the applicable lump sum price shall be full compensation for furnishing, plant, labor, materials, and equipment necessary for the installation of all Planters as shown on the Drawings and noted on the Bid Form.

Bid Item No. 157 – Architectural Features (Park Sign)

Payment. Payment of the applicable lump sum price shall be full compensation for furnishing, plant, labor, materials, and equipment necessary for the installation of Architectural Features (Park Sign) as shown on the Drawings and noted on the Bid Form.

END OF SECTION

SECTION 01027
APPLICATIONS FOR PAYMENT

PART 1 – GENERAL

Coordinate the Schedule of Values and Applications for Payment with the CONTRACTOR'S Construction Schedule, Submittal Schedule, and List of Subcontracts.

Schedule of Values: Coordinate preparation of the Schedule of Values with preparation of the CONTRACTOR'S Construction Schedule.

Correlate line items in the Schedule of Values with other required administrative schedules and forms, including:

a. CONTRACTOR'S Construction Schedule.
b. Application for Payment forms, including Continuation Sheets.
c. List of subcontractors.
d. List of products.
e. List of principal suppliers and fabricators.
f. Schedule of submittals.

Submit the Schedule of Values at the earliest possible date but no later than 7 days before the date scheduled for submittal of the initial Applications for Payment.

Format and Content: Use the Project Manual table of contents as a guide to establish the format for the Schedule of Values. Provide at least one line item for each Specification Section.

Include the following Project identification:

a. Project name and location.
b. Name of ENGINEER.
c. Project number.
d. CONTRACTOR'S name and address.
e. Date of submittal.

Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:

a. Related Specification Section or Division.
b. Description of Work.
c. Name of subcontractor.
d. Change Orders (numbers) that affect value.
e. Dollar value.
f. Percentage of Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.

Provide a breakdown of the Contract Sum in sufficient detail to facilitate evaluation of Applications for Payment. Break subcontract amounts down into several line items. Round amounts to nearest whole dollar; the total shall equal the Contract Sum.

Update and resubmit the Schedule of Values when Change Orders or Construction Change Directives change the Contract Sum.

Applications for Payment shall be consistent with previous applications and payments as certified by the ENGINEER and paid for by the OWNER.

Payment Application Times: Payment dates are indicated in the Agreement. The period covered by each application is the period indicated in the Agreement.

Payment Application Forms: Use AIA Document G702 and Continuation Sheets G703 as the form for Applications for Payment.

Application Preparation: Complete every entry, including notarization and execution by a person authorized to sign on behalf of the CONTRACTOR. The ENGINEER will return incomplete applications without action.

Entries shall match data on the Schedule of Values and the Contractor's Construction Schedule. Use updated schedules if revisions were made.

Include amounts of Change Orders and Construction Change Directives issued prior to the last day of the construction period covered by the application.

Transmittal: Submit 3 executed original copies of each Application for Payment to the ENGINEER within 24 hours. One copy shall be complete, including waivers of lien and similar attachments.

Transmit each copy with a transmittal listing attachments and recording appropriate information related to the application.

Waivers of Mechanics Lien: With each Application for Payment, submit waivers of lien from every entity who may file a lien arising out of the Contract and related to the Work covered by the previous payment.

Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of the first Application for Payment include the following:

List of subcontractors.
List of principal suppliers and fabricators.
Schedule of Values.
CONTRACTOR'S Construction Schedule (preliminary if not final).
Submittal Schedule (preliminary if not final).

List of CONTRACTOR'S staff assignments.
Copies of building permits.
Copies of licenses from governing authorities.
Certificates of insurance and insurance policies.
Performance and payment bonds.

Application for Payment at Substantial Completion: Following issuance of the Certificate of Substantial Completion, submit an Application for Payment. This application shall reflect Certificates of Partial Substantial Completion issued previously for OWNER occupancy of designated portions of the Work.

Administrative actions and submittals that shall precede or coincide with this application include the following:

a. Occupancy permits.
b. Warranties and maintenance agreements.
c. Test/adjust/balance records.
d. Maintenance instructions.
e. Meter readings.
f. Changeover information related to OWNER'S occupancy.
g. Final cleaning.
h. Application for reduction of retainage and consent of surety.

Final Payment Application: Administrative actions and submittals that must precede or coincide with submittal of the final Application for Payment include the following:

Completion of Project closeout requirements and submittals including As-Built Survey.
Completion of items specified for completion after Substantial Completion.
Transmittal of Project construction records to the OWNER.
Certified property survey.
Proof that taxes, fees, and similar obligations were paid.
Removal of temporary facilities and services.
Change of door locks to OWNER'S access.

PART 2 – PRODUCTS
(Not Applicable)

PART 3 – EXECUTION
(Not Applicable)

END OF SECTION

SECTION 01050
COORDINATION

PART 1 - GENERAL

1.1 PROJECT COORDINATION

A. The Contractor shall provide for the complete coordination of the construction efforts. This shall include, but not necessarily be limited to, coordination of the following:

1. the work of subcontractors
2. the flow of material and equipment from suppliers
3. the interrelated work with public utilities companies
4. the interrelated work with the Owner where tie-ins to existing facilities are required
5. the effort of independent testing agencies.
6. coordination and interaction with citizens affected by project work.
7. notification of residence of upcoming work, on-going work and changes in previously published work, including changes in project locations. This includes neighborhood notices, website updates (monthly) and communication with the City Engineer.

B. The Contractor will be allowed the widest practicable latitude in establishing his work plan. Contractor shall submit a plan of work to Owner and Engineer.

1.2 CUTTING AND PATCHING

A. The Contractor shall do all cutting, fitting and patching of his work that may be required to make its several parts come together properly and integrate with such other work. The Contractor shall not endanger any work of others by cutting, excavating or otherwise altering their work and will only cut or alter their work with the written consent of the Engineer and the others whose work will beaffected.

PART 2 - MATERIALS AND EQUIPMENT

(Not Applicable)

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION

SECTION 01050
FIELD ENGINEERING

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

The Contractor shall provide and pay for field engineering service required for the project. Such work shall include survey work to establish lines and levels and to locate and lay out site improvements, structures, and controlling lines and levels required for the construction of the work. Also included are such Engineering services as are specified or required to execute the Contractor's construction methods. Engineers and Surveyors shall be licensed professionals under the laws of the state where the project is located.

1.2 GRADES, LINES AND LEVELS

Existing basic horizontal and vertical control points for the project are those designated on the Drawings. The Contractor shall locate and protect control points prior to starting site work and shall preserve all permanent reference points prior to starting site work and shall preserve all permanent reference points during construction. In working near any permanent property corners or reference markers, the Contractor shall use care not to remove or disturb any such markers. In the event that markers must be removed or are disturbed due to the proximity of the construction work, the Contractor shall have them referenced and reset by a Land Surveyor qualified under the laws of the state of the project.

1.3 LAYOUT DATA

The Contractor shall lay out the work at the location and to the lines and grades shown on the Drawings. Survey notes indicating the information and measurements used in establishing locations and grades shall be kept and furnished with the record drawings for the project.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION

SECTION 01070
CODES, ABBREVIATIONS AND SYMBOLS

PART 1 – GENERAL

1.1 DEFINITIONS

When words which have a well-known technical or trade meaning are used to describe work, materials or equipment such words shall be interpreted in accordance with such meaning unless a specific definition is included in the Contract Documents.

1.2 CODES, STANDARDS AND REGULATORY REQUIREMENTS

This project has been designed in conformance with the following codes and standards:

Standard Building Code (SBC) National Electric Code (NEC)

This project has been designed in conformance with the requirements of the Florida Department of Regulation.

Materials and workmanship shall conform to the requirements of the applicable codes and regulations.

1.3 ABBREVIATIONS ANDSYMBOLS

The following is a partial listing of abbreviations and symbols employed in the Contract Documents to identify publications, standards and reference specifications:

AAMA American Architectural Manufacturers' Association
1540 East Dundee Road
Suite 310
Palatine, Illinois 60067

AASHTO American Association of State Highway and Transportation Officials
2700 River Road
Des Plaines, Illinois 60018

ACI American Concrete Institute
Post Office Box 19150
Detroit, Michigan 48219

AISC American Institute of Steel Construction
400 N. Michigan Avenue
The Wrigley Bldg., 8th Floor
Chicago, Illinois 60611

AMA	Acoustical Materials Association 335 East 45th Street New York, New York 10017
AMCA	Air Movement and Control Association, Inc. 30 West University Drive Arlington Heights, Illinois 60004
AWPA	American Wood Preserves Association Post Office Box 849 Stevensville, Maryland 21666
AA	Aluminum Association, Inc. 900 19th Street N.W. Suite 300 Washington, D.C. 20006
ANSI	American National Standards Institute,Inc. 1430 Broadway New York, New York 10018
APA	American Plywood Association 1119 "A" Street Post Office Box 11700 Tacoma, Washington 98401
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc. 1791 Tullie Circle, N.E. Atlanta, Georgia 30329
ASME	American Society of Mechanical Engineers United Engineering Center 345 East 47th Street New York, New York 10017
ASTM	American Society for Testing and Materials 1916 Race Street Philadelphia, Pennsylvania 19103
AWMA	Aluminum Window Manufacturer's Association 75 West Street New York, New York 10006
AWS	American Welding Society, Inc. 550 N.W. 42nd Avenue Post Office Box 351040

Miami, Florida 33126

AWWA American Water Works Association
6666 West Quincy Avenue
Denver, Colorado 80235

CS Commercial Standards and National Bureau of Standards
Superintendent of Documents
United States Government Printing Office
Washington, D. C.

H I Hydraulic Institute
30200 Detroit Road
Cleveland, Ohio 44145

IEEE Institute of Electrical and Electronic Engineers
345 East 47th Street
New York, New York 10017

NAAMM National Association of Architectural Metal Manufacturers
600 S. Federal Street, Suite400
Chicago, Illinois 60605

NBFU National Board of Fire Underwriters
85 John Street
New York, New York 10038

NEMA National Electrical Manufacturers' Association
2101 L Street, N.W.
Suite 300
Washington, D.C. 20037

NFoPA National Forest Products Association
Technical Services Division
1250 Connecticut Avenue, N.W.
Suite 200
Washington, D. C. 20036

NFiPA National Fire Protection Association
1 Battery March Park
Post Office Box 9101
Quincy, Massachusetts02269

NWMA National Woodwork Manufacturers' Association
400 West Madison Street
Chicago, Illinois 60606

NSF National Sanitation Foundation
3475 Plymouth Road
Post Office Box 1468
Ann Arbor, Michigan 48106

PCA Portland Cement Association
5420 Old Orchard Road
Skokie, Illinois 60077

SDI Steel Door Institute
712 Lakewood Center North
14600 Detroit Avenue
Cleveland, Ohio 44107

SJI Steel Joist Institute
1205 48th Avenue North
Suite A
Myrtle Beach, South Carolina 29577

SMACCNA Sheet Metal and Air Conditioning Contractors' National Association, Inc.
8224 Old Courthouse Road
Tyson's Corner
Vienna, Virginia 22182

SPIB Southern Pine Inspection Bureau
Post Office Box 846
Pensacola, Florida 32502

SSPC Steel Structures Painting Council
4400 Fifth Avenue
Pittsburgh, Pennsylvania 15213

TCA Tile Council of American
Post Office Box 326
Princeton, New Jersey 08540

UL Underwriters Laboratories, Inc.
333 Pfingsten Road
Northbrook, Illinois 60062

1.4 CODES AND GOVERNMENTAL DEPARTMENTS

ANSI/NFiPA-101 Life Safety Code

ARM	(Florida) Accessibility Requirements Manual
CFR	Code of Federal Regulations
DER	Department of Environmental Regulation (Florida)
DOT	Department of Transportation(Florida)
EPA	Environmental Protection Agency
FAC	Florida Administrative Code
NEC	National Electric Code (Published by NFiPA)
OSHA	Occupational Safety and Health Act

The following are all part of:

Southern Building Code Congress International, Inc.
900 Montclair Road
Birmingham, Alabama 35213-1206

SBC	Standard Building Code
SFPC	Standard Fire Prevention Code
SGC	Standard Gas Code
SMC	Standard Mechanical Code
SPC	Standard Plumbing Code

PART 2 – MATERIALS AND EQUIPMENT
(Not Applicable)

PART 3 – EXECUTION
(Not Applicable)

END OF SECTION

SECTION 01200
PROJECT MEETINGS

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

Project meetings shall be scheduled as needed (bi-weekly at a minimum) throughout the progress of the work. Those responsible for scheduling the meetings shall prepare the agenda, distribute written notice of each meeting not less than four days in advance of the meeting date, make physical arrangements for the meeting, preside at the meeting, record the minutes (include all significant proceedings and decisions), and reproduce and distribute copies of the minutes to all participants, all parties affected by decisions made, and the Engineer.

Representatives attending the meetings shall be qualified and authorized to act on behalf of the entities they represent.

1.2 PRE CONSTRUCTION CONFERENCE

Before the Contractor starts the work at the site, the Engineer will schedule a preconstruction conference which will be held for review and acceptance of the schedules referred to in Section 01300, to establish procedures for handling shop drawings and other submittals and for processing Applications for Payment, and to establish a working understanding among the parties as to the work.

The date for the start of construction shall be established at this conference.

PART 2 - PRODUCTS
(Not Applicable)

PART 3 - EXECUTION
(Not Applicable)

END OF SECTION

SECTION 01300
SUBMITTALS

PART 1 - GENERAL

1.1 DESCRIPTION OFREQUIREMENTS

The type of submittal requirements specified in this section include the following:

Progress Schedules and Reports
Product Data
Shop Drawings
Manufacturer's Data
Miscellaneous

Submittals shall be clear and legible, printed or typed. Submittals received that are not so, shall be returned to be resubmitted when in legible form.

1.2 PROGRESS SCHEDULES AND REPORTS

Within 10 days after the effective date of the Agreement, the Contractor shall submit to the Engineer for review and acceptance an estimated progress schedule indicating the starting and completion dates of the various stages of the work, a preliminary schedule of shop drawing submissions, and a preliminary schedule of values of the work. Include sub-schedules of related activities which are essential to its progress. No formal work can begin on the project until this information has been submitted to the Engineer.

Revised schedules shall be submitted periodically as changes become apparent.

Unless other format or use of a network analysis system is required, schedules shall be prepared in the form of a horizontal bar chart. A separate horizontal bar shall be provided for each trade or operation. The first work day of each week shall be identified on the horizontal time scale. Scale and spacing will be such as to allow space for notations and revisions.

Schedules shall show the complete sequence of construction by activity with dates for the beginning and completion of each major element of construction. Projected percentage of completion for each item as of the first day of each month shall be shown.

Progress Reports:

The Contractor shall prepare and submit a monthly progress report. The report shall indicate the progress at the date of submission of each activity shown on his progress schedule. It shall show changes occurring since previous submissions, activities modified since previous submissions, and

revised projections of progress and completion. The submittal shall include a narrative report to define: problem areas, anticipated delays, and the impact on the schedule, and corrective action recommended and its effect.

1.3 PRODUCT DATA (Shop Drawings and Manufacturer's Data)

The Contractor shall prepare and submit to the Engineer a schedule of the shop drawings, product data and samples which are required for the work together with anticipated submittal time. Any drawings which require critical timing for maintaining delivery or construction schedules shall be so noted. Shop drawing submittal schedule shall be coordinated with the requirements of construction progress schedules.

Those submittals required under various sections of the specifications, but not listed on the Contract Submittal List shall be submitted as "RECORD SUBMITTALS" and given to the Engineer along with the Record Drawings as specified in Section 01700 - Contract Closeout.

Product data submitted for substitutions shall be handled as specified in Section 01630 - Substitutions and Product Options.

Definitions:

Work-related submittals of this section are categorized for convenience as follows:

Shop drawings include specially-prepared technical data for this project, including drawings, diagrams, performance curves, data sheets, schedules, templates, patterns, reports, calculations, instructions, measurements and similar information not in standard printed form for general application to several projects.

Product data include standard printed information on materials, products and systems; not specially-prepared for this project, other than the designation of selections from among available choices printed in the information.

Miscellaneous submittals related directly to the work (non-administrative) include warranties, maintenance agreements, workmanship bonds, project photographs, survey data and reports, physical work records, quality testing and certifying reports, copies of industry standard, record drawings, field measurement data, operating and maintenance materials, overrun stock, and similar information, devices and materials applicable to the work and not processed as shop drawings, product data or samples.

1.4 GENERAL SUBMITTALREQUIREMENTS

After checking and verifying all field measurements, the Contractor shall submit to the Engineer for review and approval, in accordance with the accepted schedule of shop drawing submissions, five copies of all shop drawings, which shall have been checked by and stamped with the approval of

the Contractor and identified as the Engineer may require. The data shown on the shop drawings will be complete with respect to dimensions, design criteria, materials of construction and like information to enable the Engineer to review the information as required.

The Contractor shall also submit to the Engineer for review and approval with such promptness as to cause no delay in work, all samples required by the Contract Documents. All samples will have been checked by and stamped with the approval of the Contractor, identified clearly as to material, manufacturer, and pertinent catalog numbers and the use for which intended. At the time of each submission, the Contractor shall, in writing, call the Engineer's attention to any deviations that the shop drawings or samples may have from the requirements of the Contract Documents.

The Engineer will review and approve with reasonable promptness shop drawings and samples, but the Engineer's review and approval shall be only for conformance with the design concept of the project and for compliance with the information given in the Contract Documents and shall not extend to means, methods, sequences, techniques or procedures of construction or to safety precautions or programs incident to the work. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions. The Contractor shall make any corrections required by the Engineer and shall return the required number of corrected copies of shop drawings and resubmit new samples for review and approval. The Contractor shall direct specific attention, in writing, to revisions other than the corrections called for by the Engineer on previous submittals. The Contractor's stamp of approval on any shop drawing or sample shall constitute a representation to the Owner and the Engineer that the Contractor has either determined and verified all quantities, dimension, field construction criteria, materials, catalog numbers, and similar data or assumes full responsibility for doing so, and that the Contractor has reviewed or coordinated each shop drawing or sample with the requirements of the work and the Contract Documents.

Where a shop drawing or sample is required by the Specifications, no related work shall be commenced until the submittal has been reviewed and approved by the Engineer.

The Engineer's review and approval of shop drawings or samples shall not relieve the Contractor from responsibility for any deviations from the Contract Documents unless the Contractor has in writing called the Engineer's attention to such deviations at the time of submission and the Engineer has given written concurrence and approval to the specific deviation, nor shall any concurrence or approval by the Engineer relieve the Contractor from responsibility for errors or omissions in the shop drawings.

Systems to be submitted in the shop drawing submittal shall include but not necessarily be limited to:

1. each item of equipment and/or materials listed in the project equipment and material schedules;

Certifications:

Whenever a standard of quality is established by a reference specification, the Contractor shall submit a certificate by the manufacturer that the material supplied meets the requirements of both the project and reference specification.

Schedule of Values:

At least 10 business days prior to submitting the first Application for a progress payment, the Contractor shall submit to the Engineer a schedule of values of the work. This schedule shall be satisfactory in form and substance to the Engineer. The schedule of values shall include quantities and unit prices aggregating the contract price, and shall subdivide the work into component parts in sufficient detail to serve as the basis for progress payments during construction. Upon acceptance of the schedule of values by the Engineer, it shall be incorporated into a form of Application for Payment acceptable to the Engineer.

Where estimated quantities and unit prices are shown in the Bid Form as the basis of payment, the quantities shown in the Bid Form are approximate and are given only as a basis of calculation upon which the award of the contract is to be made. The Owner or Engineer do not assume any responsibility that the final quantities will remain in accordance with estimated quantities, nor shall the Contractor claim misunderstanding or deception because of such estimate of quantities. Final payment will be made on the basis of the actual completed quantities of each item.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION

SECTION 01380
CONSTRUCTION GRAPHIC RECORD

PART 1 – GENERAL

1.1 REQUIREMENTS INCLUDED

Employ a competent, professional, photographer to take construction record photographs during course of the Work.

1.2 GRAPHIC RECORDREQUIRED

Provide photographs taken on cutoff date for each scheduled Application for Payment.

Provide photographs taken:

During normal construction activities
Any abnormal conditions encountered during construction

Views and Quantities Required. At each specified time, photograph Project from three different views, as approved by ENGINEER.

Provide three prints of each view. Provide negative in envelope.

Color Audio Video DVD of Construction Area. Prior to beginning any construction, the CONTRACTOR shall engage the services of a professional electrographer. The color audio-visual tapes shall be prepared by a responsible commercial firm known to be skilled and regularly engaged in the business of preconstruction color audio-video tape documentation.

The audio video DVD shall be done within the two-week period prior to placement of materials or equipment on the construction area and furnished one week prior to the start of construction.

The total audio/video system and the procedures employed in its use shall be such as to produce a finished product that will fulfill the technical requirements of the project. The video portion of the recording shall produce bright, sharp, clear pictures with accurate colors and shall be free from distortion, tearing, rolls or any other form of picture imperfection. All video recordings shall, by electronic means, display on the screen the time of day, the month, day and year of the recording. The audio portion of the recording shall produce the commentary of the camera operator with proper clarity and be free from distortion.

The recording shall be made to be able to be played back on any standard DVD player.

DVD coverage shall include all surface features located within the zone of influence of construction supported by appropriate audio description. Audio description shall be made simultaneously with video coverage. Such coverage shall include, but not be limited to all existing driveways, sidewalks, curbs, ditches, roadways, landscaping, trees, culverts, headwalls, and retaining walls, or buildings located within such zone of influence.

Detailed DVD coverage of concrete ditch checks, headwalls, culverts and pavement areas that will be affected by construction operations shall be provided.

The simultaneously recorded audio track shall exclusively contain the commentary of the camera operator and shall assist in viewer orientation and in any needed identification, differentiation, clarification, or objective description of the features being shown in the video portion of the recording.

Houses and buildings shall be identified visually by house number, when visible, in such a manner that structures of the proposed system, i.e., manholes on a sewer system, and hydrants on a water system can be located by reference. In all instances, however, location shall be identified by audio or visual means at intervals not to exceed 100 linear feet in the general direction of travel.

The rate of speed in the general direction of travel of the conveyance used during taping shall not exceed 48 feet per minute. Panning rates and zoom-in, zoom-out rates shall be controlled sufficiently such that during playback will produce clarity of the object viewed.

All taping shall be done during times of good visibility. No taping shall be done during periods of visible precipitation, unless otherwise directed by the ENGINEER.

All DVD’s shall be permanently labeled and shall be properly identified by DVD number and project title. Each DVD shall have a log (run sheet) of that DVD's contents. The log shall describe the various segments of coverage contained on that DVD in terms of the names of the streets or easements, coverage beginning and end, directions of coverage, DVD unit counter numbers, project engineering stationing numbers and the date of the recording.

The OWNER shall have the authority to reject all or any portion of DVD recordings not conforming to specifications.

The OWNER shall have the authority to designate what areas may be omitted or added for audio DVD coverage.

When conventional wheeled vehicles are used, the distance from the camera lens to the ground shall not be more than twelve feet to insure proper perspective.

Areas which lie within the zone of influence of construction and which are accessible by conventional wheeled vehicles shall be recorded by audio DVD on both sides of the right-of-way, easement or street.

In some instances, audio/video DVD coverage will be required in areas not accessible by conventional wheeled vehicles. Such coverage shall be obtained by walking or special conveyance approved by the ENGINEER.

Photographs of Line Work. The CONTRACTOR shall make provision at his expense for photographs to be taken just prior to construction and for unusual conditions during construction. The photographs shall show pertinent physical features along the line of construction prior to start of construction. Two 4-inch x 6-inch prints of all pictures shall be furnished to the OWNER'S representative.

Photographs of unusual conditions shall be 8-inch x 10-inch glossy prints.

PART 2 – MATERIALS AND EQUIPMENT

2.1 PRINTS

Color Prints. Paper: Double weight.
Finish: Smooth surface, glossy.
Size: 8-inch x 10-inch

Identify each print on back, listing: Name of Project
Orientation of View
Date and time of exposure
Name and address of photographer

Include CD for all project photos.

PART 3 – EXECUTION

3.1 TECHNIQUE

Factual presentation.

Correct exposure and focus.

High resolution and sharpness.
Maximum depth-of-field.
Minimum distortion.

3.2 DELIVERY OF PRINTS

Deliver prints and CD to ENGINEER to accompany each Application for Payment.

END OF SECTION

SECTION 01400
QUALITY CONTROL

PART 1 - GENERAL

1.1 TESTING LABORATORY SERVICES

Arrangements for testing laboratory services will be made by the Owner. Payment for testing to show compliance with specified requirements will be paid for by the Owner. The cost for tests, when materials and workmanship fail to meet specified requirements (failed tests), will be billed directly to the Contractor by the soils testing laboratory, or deducted from monies due the Contractor.

1.2 INSPECTION SERVICES

The authorized representative of all applicable Federal and/or State agencies, including Environmental Protection Agency, Corps of Engineers and Department of Environmental Regulation, shall be permitted to inspect all work, materials, payrolls, records of personnel, invoice of materials, and other relevant data and records. The Owner and his authorized representatives shall be permitted free access and every reasonable facility for the inspection of all work and materials, including the removal or uncovering of such portions of the finished work as may be directed. The Owner and his authorized representative shall also be permitted to inspect payrolls, invoices of materials and other relevant data and records.

1.3 INSPECTION OF WORK AWAY FROM SITE

If work to be done away from the construction site is to be inspected on behalf of the Owner during its fabrication, manufacture or testing or before shipment, the Contractor shall give notice to the Engineer of the time and place where such fabrication, manufacturing, testing or shipping is to be done. Such notice shall be in writing and delivered to the Engineer in ample time so that the necessary arrangements for the inspection can be made.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION

SECTION 01500
TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

This section specifies the minimum requirements for temporary facilities, utilities to be brought to the site, refuse/waste collection and control required to enable the construction of the project to progress adequately. The providing of adequate facilities at every stage of performing the work is the Contractor's sole responsibility, and is not limited by the requirement of this section.

Except as otherwise indicated, the Contractor may, at his option, provide stand-alone utility plants to provide needed services, in lieu of connected services from available public utilities, provided such stand-along plant facilities comply with governing regulations. Prior to availability of temporary utility services, provide trucked-in/trucked-out containerized or unitized services for startup of construction operations at the site.

Except as otherwise indicated, the costs of providing and using temporary utility services are included in the Contract Sum.

1.2 TEMPORARY FACILITIES

The types of utility services required for general temporary use at the project site include the following (other specific services may be required for specific construction methods or operations):

Electrical Power Service
Water Service (potable for certain uses)
Sanitary
Storm Sewer or Open Drainage/Run-off Control
Refuse/Waste Collection

Temporary Electricity:

The Contractor shall make necessary applications and arrangements and pay all fees and charges for electrical energy for power and light necessary for proper completion of the work and during its entire progress up to time of final acceptance by the Owner. The Contractor shall provide and pay for all temporary switches, connections and meters.

Temporary Water:

The Contractor shall make all necessary application and arrangements, and pay all fees and charges for water necessary for the proper completion of the project up to the time of final acceptance. The Contractor shall provide and pay for any temporary piping and connections.

Temporary Sanitary Facilities:

The Contractor shall provide adequate sanitary facilities for the use of those employed on the work. Such facilities shall be made available when the first employees arrive on the site of the work, shall be properly secluded from public observation, and shall be constructed and maintained during the progress of the work in suitable numbers and at such points and in such manner as may be required or approved.

The Contractor shall provide these portable sanitary facilities "on-site" for use by workers. Transporting workers to the nearest "public" sanitary facility will not be considered an acceptable alternative to these requirements.

The Contractor shall maintain the sanitary facilities in a satisfactory and sanitary condition at all times and shall enforce their use. He shall rigorously prohibit the committing of nuisances on the site of the work, on the lands of the Owner, or on adjacent property. The cost of providing these sanitary facilities shall be included in the Contractor's applicable pay items of work and no separate payment shall be made thereof.

Temporary Refuse/Waste Collection

The Contractor shall provide for adequate refuse/waste collection and disposal. City ordinance requires that all rental open-top roll off container units or rental cubic-yard container units must be rented from the City's designated solid waste hauler. The solid waste hauler currently under contract with the City is:

Waste Pro of Florida, Inc.
925 South Clyde MorrisBlvd.
Daytona Beach, FL 32114
Phone: (386) 788-8890

It will be the Contractor's responsibility to make all necessary arrangements for refuse/waste collection and disposal. The cost of providing for such refuse/waste collection and disposal shall be included in the Contractor's applicable pay items of work and no separate payment shall be made thereof.

Termination and Removal:

At the time the need for temporary utility service or a substantial portion thereof has ended, or when its service has been replaced by use of permanent services, or not later than the time of substantial completion, promptly remove the installation unless requested by the Engineer to retain it for a longer period. Complete and restore work which may have been delayed or affected by the installation and use of the temporary utility, including repairs to construction and grades and restoration and cleaning of exposed surfaces. Replace work damaged beyond acceptable restoration.

1.3 TEMPORARYCONTROLS

Noise Control:

The Contractor shall provide adequate protection against objectionable noise levels caused by the operation of construction equipment.

Dust Control:

The Contractor shall provide for adequate protection against raising objectionable dust clouds caused by moving construction equipment, high winds or any other cause.

Water Control:

The Contractor shall provide for satisfactory disposal of surplus water and shall submit a plan to the Engineer for his review prior to initiation and implementation of the plan. Prior approval shall be obtained from the proper authorities for the use of public or private lands or facilities for such disposal.

Pollution Control:

The Contractor shall provide for adequate protection against polluting any public or private lands, lakes, ponds, rivers, streams, creeks, and other such areas, by the disposal of surplus material in the form of solids, liquids, or gases or from any other cause. The Contractor shall provide for adequate refuse/waste collection and disposal as described in Part 1, paragraph 1.02 of this Section.

The Contractor shall evaluate and assess the impact of any adverse effects on the natural environment which may result from construction operations and shall operate to minimize pollution of air, ground or surface waters vegetation, and afford the neighboring community the maximum protection during and up to completion of the construction project.

The Contractor shall take sufficient precautions to prevent pollution of streams, lakes and reservoirs with fuels, oils, bitumens, calcium chloride or other harmful materials. He shall conduct and schedule his operations so as to avoid or otherwise prevent pollution of siltation of streams, lakes and reservoirs and to avoid interference with movement of migratory fish.

All chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant or of other classification, must show approval of either EPA or USDA. Use of all such chemicals and disposal of residues shall be in strict conformance with instructions.

Erosion Control:

The Contractor shall not expose, by construction operations, a larger area of erosive land at any one time than the minimum necessary for efficient construction operations, and the duration of exposure of the uncompleted construction to the elements shall be as short as practicable.

Erosion control features shall be constructed concurrently with other work and at the earliest practicable time.

1.4 STORAGE FACILITIES

All products, materials and equipment shall be stored in accordance with the manufacturer's instructions, with seals and labels intact and legible. Products subject to damage by the elements shall be stored in weathertight enclosures. Temperature and humidity shall be maintained within the ranges required by the manufacturer's instructions. Fabricated products shall be stored above the ground on blocking or skids. Products which are subject to deterioration shall be covered with impervious coatings with adequate ventilation to avoid condensation. Loose granular materials shall be stored in a well-drained area on solid surfaces to prevent mixing with foreign matter. Any products which will come in contact with potable water shall be stored off the ground so as to prevent contamination.

Storage shall be arranged in such a manner to provide easy access for inspection. Periodic inspections shall be made of all stored products to assure that they are maintained under specified conditions, and free from damage or deterioration.
After installation, Contractor shall provide substantial coverings as necessary to installed products to protect from damage from traffic and subsequent construction operations. Coverings shall be removed when no longer needed.

1.5 PRESERVATION OF PROPERTY

Preserve from damage all property along the line of the work, or which is in the vicinity of or in any wise affected by the work, the removal or destruction of which is not called for by the plans. Wherever such property is damaged due to the activities of the Contractor, it shall be immediately restored to its original condition by the Contractor at no cost to the Owner.

In case of failure on the part of the Contractor to restore such property, or make good such damage or injury, the Owner may, after 48 hours notice to the Contractor, proceed to repair, rebuild or otherwise restore such property as may be deemed necessary and the cost thereof will be deducted from any monies due or which may become due the Contractor under this Contract.

The Contractor shall be responsible for the protection of property, in the areas in the vicinity of the project; and for the protection of his equipment, supplies, materials and work, against any damage resulting from the elements, such as flooding, by rainstorm, wind damage, or other elemental cause resulting from the project configuration. The Contractor shall take all precautions against any such damage occurrence, and shall be responsible for damage resulting from same. The Contractor shall provide adequate drainage facilities, tie-downs, or other protection, throughout the Contract period, for the protection of his, the Owner's, and other properties from such damage.

1.6 TRAFFIC REGULATION

Signs, marking barricades and procedures shall conform to the requirements of the Florida Department of Transportation Manual on Traffic Controls and Safe Practices for Street and Highway Construction, Maintenance and Utility Operations.

The Contractor shall maintain one-lane, two-way traffic at all times and maintain customer access to local businesses at all times throughout the course of the work.

The Contractor shall provide and maintain adequate barricades, construction signs, torches, flashers, guards and flagmen as required in pedestrian and vehicular traffic areas. Regulations of local authorities shall be complied with.

The contractor shall provide suitable crossings at street intersections and driveways, and supply such aid as may be required for pedestrians and motorists, including delivery vehicles, to safely negotiate the construction areas.

The Contractor shall carry on the work in a manner that will cause the least interruption in traffic. Closing to through travel of more than two consecutive blocks, including the cross streets intersected will not be permitted without specific authorization from the local authorities. Where traffic must cross open trenches, the Contractor shall provide suitable bridges at street intersections and driveways and provide adequate ingress and egress to dwellings, business facilities, utilities and services. At any time the streets are required to be closed, the Contractor shall notify, in writing, law enforcement agencies, fire departments, and parties operating emergency vehicles before the street is closed and again as soon as it is opened. Access to fire hydrants and other fire extinguishing equipment shall be provided and maintained at all times. Refer to Section 01010 of these Specifications for "Notification of Construction" and "Notification of Street Closure" requirements.

On completion of work, the Contractor shall remove all debris, excess materials, barricades and temporary work leaving walkways and road clear of obstructions.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION

SECTION 01568
EROSION & SEDIMENTATION CONTROL

PART 1 – GENERAL

1.1 DESCRIPTION

A. In addition to the requirements of Division 1:

1. All erosion, sedimentation and water pollution control features shall be in place or relocated as necessary prior to the start of any clearing, grading or construction. CONTRACTOR shall be responsible for the installation and maintenance of all temporary erosion control features.

2. Location of the control features shall be as required to facilitate drainage and control erosion and sedimentation within and adjacent to the site.

3. Control features are defined as, but not limited to, swales, berms, silt fences, silt barriers and temporary fences.

1.2 QUALITY ASSURANCE

A. The provisions for prevention, control and abatement of erosion, sedimentation and water pollution shall be as stated in the FDOT Standard Specifications for Road and Bridge Construction, Section 104, latest edition, and as required by the St. John's River Water Management District and the City of Ormond Beach.

1.3 SUBMITTALS

A. Procedures shall be in accordance with General Conditions.

B. Product data: Manufacturers' literature, application instructions and samples.

C. List of materials and their characteristics for other erosion control items.

1.4 START OF WORK

A. Do not start work until erosion control measures are in place.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Silt Barriers

1. Silt barriers shall be installed in accordance with the plans.

2. Filter fabric shall be synthetic and contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six (6) months of expected usable construction life at a temperature range of zero degree Fahrenheit (0^{o} F) to one hundred twenty degrees Fahrenheit (120^{o} F). Hay bales shall not be used for silt barriers, unless specifically approved by the City.

3. Filter fabric shall be a pervious sheet of propylene, nylon or polyester and shall be certified by the manufacturer or supplier to conform to the following specifications:

Filter efficiency(Test VTM-51):	75%
Minimum tensile strength at 20% elongation (Test ASTM-D-1682):	120 lbs.
Tear strength (TestASTM D2263):	50 lbs.

4. CONTRACTOR shall submit further filter fabric specifications and installation configuration prior to start of construction.

5. Silt barriers shall be maintained in place until substantial completion of the Project.

6. Filter fabric shall be purchased in a continuous roll cut to the length of the barrier to avoid use of joints. When joints are necessary filter fabric shall be spliced together only at a support post, with a six-inch (6“) overlap, and securely sealed.

7. The following items shall be installed and maintained in accordance with the applicable sections of the FDOT Standard Specifications:

   a. Temporary silt fences and staked silt barriers

   b. Floating silt barrier

B. Temporary Fence

1. Brightly colored fence as manufactured by Mirafi, product Mirasafe, or approved equal.

2. Material shall be four feet (4') high, attached to six feet (6') metal posts at twelve feet (12') centers. Posts shall be driven eighteen inches (18") into ground.

C. Filter Fabric for Placement Beneath Rip-Rap

1. Filter Fabric should be Mirafi 600X or approved equal.

D. Rip-Rap

1. Rubble type rip-rap consisting of broken stone meeting the requirements of Section 530-2.2.3 of the FDOT Standard Specifications for Road and Bridge Construction, Latest Edition.

PART 3 – EXECUTION

3.1 GENERAL

A. Temporary erosion control features shall consist of, but not be limited to, temporary grassing, temporary sodding, temporary mulching, sandbagging, slope drains, sediment basins, artificial coverings, berms, baled hay or straw, floating silt barriers, staked silt barriers, and staked silt fences. Design details for some of these items may be found in the Water Quality Section of the applicable edition of the FDOT Roadway and Traffic Design Standards. All of these items shall be constructed in accordance with applicable sections of the FDOT Standard Specifications.

B. Incorporate permanent erosion control features into the project at the earliest practical time. Correct conditions, using temporary measures, which develop during construction to control erosion prior to the time it is practical to construct permanent control features.

C. Construct temporary and permanent erosion and sediment control measures and maintain them to prevent the pollution of adjacent water ways in conformance with the laws, rules and regulations of Federal, State and local agencies.

D. Copies of approved permits will be provided to the CONTRACTOR for his review and use. CONTRACTOR shall be required to comply with all General and Special Conditions noted within the permit by the particular permitting agency. The CONTRACTOR shall maintain copies of these permits on the job site at all times.

3.2 INSTALLATION

A. The following items shall be installed and in accordance with the FDOT Standard Specifications. The procedures are only generally described herein.

1. Temporary Grassing: This work shall consist of furnishing and placing grass seed.

2. Temporary Sod: This work shall consist of furnishing and placing sod.

3. Temporary Mulching: This work shall consist of furnishing and applying a two-inch to four-inch thick blanket of straw or hay mulch and then mixing or forcing the mulch into the top two inches of the soil in order to temporarily control erosion. Only decayed straw or hay, which can readily be cut into the soil, shall be used. Other measures for temporary erosion control such as hydro-mulching, chemical adhesive soils stabilizers, etc., may be substituted for mulching with straw or hay with the approval of the City. When permanent grassing operations begin, temporary mulch materials shall be plowed under in conjunction with preparation of the ground.

4. Sandbagging: This work shall consist of furnishing and placing sandbags in configurations, so as to control erosion and siltation.

5. Slope Drains: This work shall consist of constructing slope drains, utilizing pipe, fiber mats, rubble, cement concrete, asphaltic concrete, plastic sheeting, or other acceptable materials, in accordance with the details shown in FDOT's Roadway and Traffic Design Standards or as suitable to adequately perform the intended function.

6. Sediment Basins: Sediment basins shall be constructed in accordance with the details shown in FDOT's Roadway and Traffic Design Standards or as suitable to adequately perform the intended function. Sediment basins shall be cleaned out as necessary.

7. Artificial Coverings: This work shall consist of furnishing and applying fiber mats, netting, plastic sheeting, or other approved covering to the earth surfaces.

8. Berms: This work shall consist of construction of temporary earth berms to divert the flow of water from an erodible surface.

    a. This work shall consist of construction of baled hay or straw dams or earth berms to protect against downstream accumulations of silt. The baled hay or straw dams shall be constructed in accordance with the details shown in FDOT's Roadway and Traffic Design Standards.
    b. The berm dam shall be placed so as to effectively control silt dispersion under conditions present on this project. Alternate solutions and usage of materials may be used if approved.

9. Filter Fabric for placement beneath rip-rap:

   a. Unroll filter fabric adequately longitudinally with the swale.

   b. Install anchoring pins in the fabric to protect the material from wind uplift.

   c. Toe filter fabric into soil a minimum of twelve inches (12") at the top and bottom of the slope.

10. Rubble Rip-Rap:

   a. Rip-rap should be placed carefully to not damage or displace the filter fabric. Filter fabric which rips or becomes displaced during rip-rap placement should be repaired. The placement of the rip-rap should proceed from the bottom up to the top of the slope. At no time should the rip-rap be dumped onto the fabric from the tip of the slope and allowed to roll down the surface of the fabric.

   b. Placement of rip-rap shall be in accordance with Section 530-3.3 of the FDOT Standard Specifications for Road and Bridge Construction 1991 edition.

   c. Minimum thickness of rip-rap layer is two feet (2').

3.3 SILT BARRIERS

A. Silt barriers shall be installed and maintained at the locations shown on the Drawings. The CONTRACTOR is required to prevent the possibility of silting onto any adjacent parcel.

B. Silt barrier shall be of the staked type and stakes shall be installed as indicated in the Drawings.

C. The height of the silt barrier fabric shall be a minimum of forty-two inches (42").

D. The stakes shall be two inch (2") x four inch (4") wood, five feet (5') long and shall be spaced a maximum of ten feet (10) apart at the barrier location and driven securely into the ground.

E. A trench shall be excavated approximately four inches (4") wide by four (4") deep along the line of stakes. The filter fabric shall be tied or stapled to the wooden stakes and eight inches (8") of fabric shall be extended into the trench. The staples

shall be heavy duty wire and at least one-half inch (1/2”) long. The trench shall then be backfilled and the soil compacted over the filter fabric.

3.4 FLOATING SILT BARRIERS

A. Floating silt barriers shall be located as shown on the Drawing and shall be in place prior to the start of any construction or grading.

B. Floating silt barriers shall meet or exceed the Florida Department of Transportation Roadway and Traffic Design Standards, Index No. 102, Floating Silt Barrier. CONTRACTOR shall submit fabric filter material specifications and installation configuration for approval prior to the start of construction.

3.5 TEMPORARY FENCE

A. Furnish, install and maintain on wetland lines, buffer lines, tree save lines and otherwise as shown on Drawings. Attach silt barrier to the temporary fence.

B. Follow manufacturer's installation recommendations.

3.6 MAINTENANCE

A. Silt barriers and temporary fences shall be inspected immediately after each rainfall and at least once a day during periods of prolonged rainfall. Any repairs shall be made immediately.

B. Should the fabric on a silt barrier or temporary fence decompose or become ineffective, the installation shall be repaired or replaced immediately at no additional cost to the City. If the CONTRACTOR fails to repair or replace the items as above, the City shall have the right to stop work without additional cost to the City in accordance with Article 15 of the General Conditions until such time as the repair or replacement has been made.

C. Sediment deposits shall be removed after each storm event. The CONTRACTOR will repair and restore the installations to a working and effective condition to the satisfaction of the City.

D. At the completion of all work, the silt barriers and the temporary fences will be removed unless otherwise directed by the City.

E. Any sediment deposits in place after the silt fence or filter barrier is no longer required shall be dressed to conform to the existing grade and prepared for seeding or sodding.

3.7 CONTROL OF CONTRACTOR'S OPERATIONS WHICH MAY RESULT IN WATER POLLUTION

A. Take sufficient precautions to prevent pollution of streams, canals, lakes, reservoirs, wetlands and other sensitive areas with silt, sediment, fuels, oils, bitumens, calcium chloride, or other harmful materials. Conduct and schedule operations so as to avoid or otherwise minimize pollution or siltation of such streams, etc. and to avoid interference with movement of migratory fish. Do not pump the residue from dust collectors or washers into any water body.

B. Construction operations in rivers, streams, lakes, tidal waters, reservoirs, canals, and other impoundments shall be restricted to those areas where it is necessary to perform filling or excavation to accomplish the work shown in the Contract Documents and to those areas which must be entered to construct temporary or permanent structures. As soon as conditions permit, promptly clear rivers, streams, and impoundments of all obstructions placed therein or caused by construction operations.

C. Except as necessary for construction, do not deposit excavated material in rivers, streams, canals, or impoundments, or in a position close enough thereto, to be washed away by high water or run-off.

D. Where pumps are used to remove highly turbid waters from enclosed construction areas such as cofferdams or forms, treat the water prior to discharge into State or other waters. Pump the water into grassed swales, appropriately vegetated areas, or sediment basins, or confine it by an appropriate enclosure such as siltation curtains when other methods are not considered appropriate. Do not contaminate State or other waters.

E. Do not disturb lands or waters outside the limits of construction, unless approved in advance and in writing by the City. No operations within non-permitted wetlands or upland buffers are allowed.

3.8 PROTECTION DURING SUSPENSION OF CONTRACT TIME

A. In the event that it is necessary that the construction operations be suspended for any appreciable length of time, shape the top of the earthwork in such a manner as to permit run-off of rainwater and construct earth berms along the top edges of embankments to intercept run-off water. Provide temporary slope drains to carry run-off from cuts and embankments which are located in the vicinity of rivers, streams, canals, lakes and impoundments. Should such preventative measures fail, immediately take such other action as necessary to effectively prevent erosion and siltation.

END OF SECTION

SECTION 01600
MATERIALS AND EQUIPMENT

PART 1 - GENERAL

1.1 DESCRIPTION OFREQUIREMENTS

Materials and equipment furnished by CONTRACTOR shall be new and shall not have been in service at any other installation unless otherwise provided. Materials and equipment shall conform to applicable specifications and standards and comply with the size, make, type and quality specified, or as specifically approved in writing by ENGINEER.

Manufactured and fabricated items shall be designed, fabricated and assembled in accordance with the best engineering and shop practices. Like parts of duplicate units shall be manufactured to standard sizes and gauges to be interchangeable.

Two or more things of the same kind shall be identical, by the same manufacturer.

Materials and equipment shall be suitable for service conditions shown or specified.

Equipment which requires auxiliary devices or equipment in order to operate properly shall have such auxiliary devices or equipment included as a part of its system.

Equipment sizes, capacities and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.

Materials and equipment shall not be used for any purpose other than that for which it is designed or is specified.

Where existing materials or equipment is specifically shown or specified to be reused in the work, special care shall be used in removal, handling, storage, and reinstallation, to assure proper function in the completed work.

CONTRACTOR shall arrange for transportation, storage and handling of products which require off-site storage, restoration or renovation.

Salvaged Materials. In the absence of special provisions to the contrary, salvaged materials, equipment or supplies are the property of OWNER and shall be cleaned and stored as directed by ENGINEER.

Manufacturer's Instructions. The installation of all work shall comply with manufacturer's written instructions. CONTRACTOR shall obtain and distribute copies of such instructions to parties involved in the installation including two copies to ENGINEER. One complete set of instructions shall be maintained at the job site during installation and until completion All

products and equipment shall be handled, installed, connected, cleaned, conditioned and adjusted in accordance with the manufacturers instructions and specified requirements. Should job conditions or specified requirements conflict with manufacturers instructions, such conflicts shall be called to ENGINEER'S attention for resolution and revised instructions.

Equipment Guarantee. All mechanical and electrical equipment, together with devices of whatever nature and all components, which are furnished and/or installed by CONTRACTOR shall be guaranteed. The guarantee shall be against manufacturing and/or design inadequacies, materials and workmanship, improper assembly, hidden damage, failure of devices and/or components, excessive leakage or other circumstances which would cause the equipment to fail under normal design and/or specific operating conditions for a period of one year or such longer period as may be shown and/or specified from and after the date of acceptance of the equipment by OWNER. Each piece of equipment, device or component which shall fail within the above specified term shall be replaced with reasonable promptness by CONTRACTOR without cost to OWNER.

Operating Characteristics. Rotating machinery shall be designed and fabricated to provide satisfactory operation without excessive wear and without excessive maintenance during its operating life. Rotating parts shall be statically and dynamically balanced and shall operate without excessive vibration.

Lubrication System. The minimum design criteria for lubrication of moving parts of the equipment shall include one week of continuous operation during which no lubricants shall be added to the system. The system shall also be designed to receive lubricants whether in operation or shut down, and shall not leak or waste lubricants under either condition. The manufacturer's recommendations of grade and quality and a supply of the lubricants so recommended in quantities sufficient to conduct startup and testing operations shall be furnished with the equipment.

Safety Requirements. Screens, guards or cages shall be provided for all exposed, rotating or moving parts in accordance with accepted practices of applicable governmental agencies.

Nameplates. Each major component of equipment shall have the manufacturers name, catalog and/or model number, serial number and applicable performance requirements and characteristics embossed, stamped, or engraved on a stainless steel plate securely attached to the item of equipment.

Anchor Bolts. The manufacturer shall provide stainless steel anchor bolts for each piece of equipment furnished.

1.2 TRANSPORTATION ANDHANDLING

Materials and equipment shall be loaded and unloaded by methods affording adequate protection against damage. Every precaution shall be taken to prevent injury to the materials or equipment during transportation and handling. Suitable power equipment will be used and the materials or

equipment shall be under control at all times. Under no condition shall the materials or equipment be dropped, bumped or dragged. When a crane is used, a suitable hook or lift sling shall be used. The crane shall be so placed that all lifting is done in a vertical plane. Materials or equipment skid loaded, palletized or handled on skidways shall not be skidded or rolled against materials or equipment already unloaded.

Materials and equipment shall be delivered to the job site by means that will adequately support it and not subject it to undue stresses. Contractor shall promptly inspect the products for damage and defects and conformance with the specification. Materials and equipment damaged or injured in the process of transportation, unloading or handling will be rejected and shall be immediately removed from the site.

1.3 STORAGE AND PROTECTION

All materials and equipment shall be stored in accordance with the manufacturer's instructions, with seals and labels intact and legible. Items subject to damage by the elements shall be stored in weathertight enclosures. Temperature and humidity shall be maintained within the ranges required by the manufacturers instructions. Fabricated items shall be stored above the ground on blocking or skids. Items which are subject to deterioration shall be covered with impervious coatings with adequate ventilation to avoid condensation. Loose granular materials shall be stored in a well-drained area on solid surfaces to prevent mixing with foreign matter. Any items which will come in contact with potable water shall be stored off the ground so as to prevent contamination.

Storage shall be arranged in such a manner to provide easy access for inspection. Periodic inspections shall be made of all stored items to assure that they are maintained under specified conditions, and free from damage or deterioration.

After installation, CONTRACTOR shall provide substantial coverings as necessary to protect installed items from damage, from traffic, and subsequent construction operations. Coverings shall be removed when no longer needed.

PART 2 - MATERIALS AND EQUIPMENT

(Not Applicable)

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION

SECTION 01630
SUBSTITUTIONS AND PRODUCT OPTIONS

PART 1 - GENERAL

1.1 REQUESTS FOR REVIEW

A. Requests to review substitute items of material and equipment will not be accepted by the Engineer from anyone other than the Contractor. If the Contractor wishes to furnish or use a substitute or equivalent item of material or equipment, the Contractor shall make written application to the Engineer for acceptance, certifying that the proposed substitute will perform adequately the functions called for by the general design, be similar and of equivalent substance to that specified and be suited to the same use and capable of performing the same function as that specified. The application will state whether or not acceptance of the substitute for use in the work will require a change in Drawings or Specifications to adapt the design to the substitute and whether or not incorporation or use of the substitute in connection with the work is subject to payment of any license fee or royalty. All variations of the proposed substitute from that specified shall be identified in the application and available maintenance, repair and replacement service will be indicated. The application will also contain an itemized estimate of all costs that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which shall be considered by the Engineer in evaluating the proposed substitute. The Engineer may require the Contractor to furnish at the Contractor's expense additional data about the proposed substitute. The Engineer will be the sole judge of acceptability, and no substitute will be ordered or installed without the Engineer's prior written acceptance. The Owner may require the Contractor to furnish at the Contractor's expense, a special performance guarantee or other surety with respect to any substitute.

1.2 SUBSTITUTION AFTER EXECUTION OF AGREEMENT

A. After execution of the Agreement, substitution of materials or equipment supplied by manufacturers or suppliers other than those listed, will be considered only if it is demonstrated by the Contractor that:

1. the material or equipment proposed for substitution is superior in design, construction and/or efficiency to that of the listed manufacturer or supplier;

2. the material proposed for substitution is in every way equal to that of the listed supplier, and that availability and/or delivery of listed materials within the time frame scheduled cannot be met; or

3. the material proposed for substitution is in every way equal to that of the listed

supplier and is available at a lower cost. In the event such a substitution is allowed, the Contractor shall accept and execute a Change Order reducing the Contract Price by an amount equal to the cost differential.

1.3 EQUIVALENT MATERIALS AND EQUIPMENT

A. Whenever materials or equipment are specified or described in the Drawings or Specifications by using the name of a proprietary item or the name of a particular manufacturer, fabricator, supplier or distributor, the naming of the item is intended to establish the type, function, and quality required. Unless the name is followed by words indicating that no substitution is permitted, materials or equipment of other manufacturers, fabricators, suppliers or distributors may be accepted by the Engineer to determine that the material or equipment proposed is equivalent to that named.

B. It is not the intent of the Contract Documents to function as proprietary specifications. Where a particular manufacturer make and model are cited and specifically required for interchangeability of parts and/or match existing equipment, this has been so stated in the Specifications.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION

SECTION 01650
DISINFECTION

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

This section covers materials and methods of cleaning, disinfecting, sampling and obtaining approval for placing the different components of potable water systems in operation. Included is work necessary in order to obtain bacteriological clearances as required by law.

1.2 SUBMITTALS

The CONTRACTOR shall submit planned procedures to ENGINEER for review prior to beginning work. Submit certificates of compliance with specified standards for all materials to be used. The CONTRACTOR shall obtain sterile sample containers, collect samples and submit to the approved laboratory. Provide two copies of laboratory test reports to ENGINEER.

1.3 QUALITY CONTROL

Laboratories used for bacteriological testing of samples shall be certified by the Florida Department of Environmental Protection (DEP) as acceptable to that agency.

Methods shall conform to the requirements of the Florida Department of Environmental Protection (DEP).

PART 2 - MATERIALS AND EQUIPMENT

2.01 MATERIALS FOR DISINFECTION

The disinfecting agent shall be liquid chlorine conforming to AWWA B301 or sodium hypochlorite or calcium hypochlorite conforming to the requirements of AWWA B300.

PART 3 - EXECUTION

3.1 DISINFECTION OF WATERMAINS

Flushing. Flush mains prior to application of disinfecting agent. Flushing shall continue until clear water flows from the nearest available point closest to the end of the line.

Disinfection. Disinfection of all piping valves and appurtenances shall be by the continuous feed method or the Slug Method in accordance with AWWA C651.

Continuous Feed Method. A solution containing not less than 75 mg/l of chlorine shall be applied to all piping, valves, fittings, hydrants and appurtenances. Solution shall remain in the pipelines for a minimum period of twenty-four hours. A free chlorine residual of 10 mg/l is required after the 24-hour holding period.

Slug Method. Calcium hypochlorite granules shall be placed in the main. A slug of highly chlorinated water, not less than 100 mg/l, shall be moved through the main. All parts of the main and appurtenances shall be exposed to the highly chlorinated water for a period of not less than 3-hours. If at any time during the 3-hour period the free chlorine residual drops to less than 50 mg/l, chlorine shall be added to restore the free chlorine residual to 100 mg/l.

For all methods of disinfection, valves shall be opened and closed several times during the contact period to insure that all parts are contacted by the disinfecting solution.

After one of the disinfection methods described above have been completed, the main shall be flushed with potable water until the chlorine residual stabilizes and matches the chlorine residual of the flushing water. Chlorine residual determination shall be made in accordance with Standard Methods using the DPD Colormetric Method.

Sampling and Testing. Samples of water shall be collected from the mains by the CONTRACTOR in sterile containers and delivered to an approved laboratory for bacteriological testing. Sampling and testing shall be continued until satisfactory results are obtained on two consecutive days.

The interior of pipe, fittings, valves and appurtenances used for cutting into or repairing existing mains shall be swabbed or sprayed with a one percent hypochlorite solution before being installed.

3.2 REDISINFECTION

If consistently unsatisfactory bacteriological test results are reported, the facilities shall be re-cleaned and re-disinfected.

3.3 DISPOSAL OF HEAVILY CHLORINATED WATER

Chlorinated water shall be disposed of in a manner that will not harm the environment.

Heavily chlorinated water must be neutralized in a separate vessel or pipe prior to being discharged.

One of the chemicals listed in AWWA C651 Appendix B, or C652 Appendix A, shall be used for neutralization.

END OF SECTION

SECTION 01657
START-UP

PART 1 - GENERAL

1.1 WORK INCLUDED

A. The work may be segmented into several phases of construction in a logical order to meet the project schedule. Portions of the Work may be utilized prior to Substantial Completion of all the Work.

1.2 PRODUCTS

(NOT USED)

PART 2 - EXECUTION

2.1 PRELIMINARY MATTERS

A. Start-up Certification: Prior to system start-up, successfully complete all testing required of the individual components of work in the presence of the Engineer or his representative.

B. Demonstrate to the Engineer that all temporary jumpers and/or bypass have been removed and that all components are operating under their own controls as designated.

C. Coordinate start-up activities with equipment suppliers, subcontractors, and the Owner's operating personnel at the site and with the Engineer prior to commencing system start-up. All coordination is the responsibility of the Contractor.

2.2 START-UP

A. Confirm that all equipment is properly energized and that all switches are set to their normal operating condition and that the flow path through the new work is unobstructed.

B. Slowly fill each hydrostatic structure in the process flow stream with clean water.

C. Initiate start-up in accordance with the operation and maintenance manual.

D. Observe the component operation and make adjustments as necessary to optimize the performance of the Work.

E. Coordinate with Owner before performing any adjustments desired or operational problems requiring debugging.

F. Make adjustments as necessary.

2.3 START-UP DEMONSTRATION AND TESTING

A. After all Work components have been constructed, field tested and started up in accordance with the individual specifications and manufacturer requirements perform the Start-Up Demonstration and Testing in the presence of the Engineer and the Owner. The demonstration shall be held upon completion of all systems at a date to be agreed upon in writing with the Owner.

B. The start-up testing shall be conducted for seven consecutive days. The Work must operate successfully during the seven day testing period in the manner intended. If the Work does not operate successfully, or if the start-up is interrupted due to other contracts, the problems will be corrected and the test will start over from day one.

C. During the start-up, operate the Work, instruct designated plant operating personnel in the function and operation of the Work, and cause various operational circumstances to occur. Demonstrate the essential features of the equipment and its relationship to other equipment. Prior to the substantial completion, the Contractor shall submit a detailed schedule of operational circumstances. Coordination of the various contract schedules will be accomplished through the Engineer.

D. Acceptability of the Work's performance will be based on the Work performing as specified, under these actual and simulated operating conditions as defined in the Contract Documents. The intent of the start-up demonstration and testing is for the Contractor to demonstrate to the Owner and the Engineer that the Work will function as a complete and operable system under normal as well as emergency operating conditions and is ready for acceptance.

E. Certificate of Completed Demonstration: Submit five (5) copies of Demonstration Certification memo signed by the Contractor, Subcontractor and Owner and insert one copy in each Operation and Maintenance Manual.

EQUIPMENT TRAINING & STARTUP CHECKLIST

PROJECT: _____

OWNER: _____

ENGINEER: _____

CONTRACTOR: _____

DATE: _____

STRUCTURE: _____

EQUIPMENT DESCRIPTION: _____

_____

_____

VENDOR: _____

REPRESENTATIVE: _____ INIT.: _____

# of training days required: _____ #received: _____

STARTUP/TRAININGDESCRIPTION: _____

_____

_____

ACCEPTABLE: _____ PARTIALLY ACCEPTABLE: _____ NON-ACCEPTABLE: _____

ATTENDEES: NAME	**AFFILIATION**	**DATE**

END OF SECTION

SECTION 01660
PRESSURE TESTING OF PIPING

PART 1 – GENERAL

1.1 DESCRIPTION

A. Scope of Work: This section specifies the leakage and pressure testing of piping.

B. Testing Records:

1. Provide record of each piping installation during the testing. These records shall include:

   a. Date of test.
   b. Identification of pipeline tested or re-tested.
   c. Identification of pipeline material.
   d. Identification of pipe section tested.
   e. Test pressure
   f. Remarks: Leaks identified (type and location), types of repairs, or corrections made.
   g. Certification by CONTRACTOR that the leakage rate measured conformed to the Specifications.
   h. Signature of Project Manager witnessing pipe test.

1.2 SUBMITTALS

A. Submit five (5) copies of the test records to the Owner/Engineer upon completion of the testing.

PART 2 – MATERIALS AND EQUIPMENT

2.1 GENERAL:

A. Testing fluid shall be water, unless specified otherwise.

B. All testing shall be performed in accordance with applicable AWWA Standards (C-600) latest edition.

2.2 MATERIALS AND EQUIPMENT

A. Provide pressure gauges, pipes, pipe fittings, bulkheads, hydraulic force pumps, meters and graduated containers to perform the hydrostatic testing.

B. Pressure gauges used shall have been calibrated just prior to their use.

PART 3 – EXECUTION

3.1 TESTINGPREPARATION

A. Pipes shall be in place and anchored before commencing pressure testing.

B. Conduct hydrostatic tests on exposed and above ground piping after the piping has been installed and attached to the pipe supports, hangers, anchors, expansion joints, valves and meters.

C. Before conducting hydrostatic tests, flush pipes with water to remove dirt and debris.

D. Test new pipelines which are to be connected to existing pipelines by isolating the new line from the existing line by means of pipe caps, plugs, special flanges, or blind flanges. After the new line has been successfully tested, and all other tests/certifications/releases have been obtained, remove caps or flanges and connect to the existing piping.

3.2 PIPE FLUSHING

A. GENERAL

All pressure mains shall be thoroughly flushed of sand and debris prior to pressure leakage testing. Flushing shall continue until clear water flows from the available point closest to the ends of the mains or at the end of the main itself.

Pressure mains 10-inches in diameter and larger shall be cleaned during flushing using a polyurethane plug manufactured of eight (8) lb./cubic foot density blown elastomer with open cell construction. The plug ("pig") shall have a resilient surface that engages the inner surface of the main with a sliding seal. The plug shall be able to reduce itself a minimum of 35 percent of its original cross-sectional area, negotiate bends, short radius elbows, pass through tees, crosses, multiple pipe sizes and valves and shall be abrasion resistant and capable of traveling in either direction.

3.3 HYDROSTATIC TESTS (DUCTILE IRON, PVC AND PCCP PIPE)

A. GENERAL

Hydrostatic tests shall consist of a pressure test and a leakage test. Hydrostatic tests shall be conducted on all newly installed pressure pipes, joints, valves and all service lines from tapped connection of main to the curb stops. AIR TESTING of pressure pipes WILL NOT BE PERMITTED under any circumstance. Tests may

be made on sections not exceeding 2,000 feet, or as field conditions dictate. Length of the pipe to be tested shall be acceptable to the CITY. CONTRACTOR shall furnish all necessary equipment and material, make all taps, and furnish all closure pieces in the pipe as required.

The CONTRACTOR may conduct hydrostatic tests after the trench has been partially backfilled with the joints left exposed for inspection for his informational purposes only. The hydrostatic tests for acceptance shall only be conducted after the trenches have been completely backfilled and compacted as specified. Where any section of pipe is provided with concrete thrust blocking or encasement, pressure test will not be made until at least seven days have elapsed after the thrust blocking is installed. If high-early cement is used for the concrete thrust blocking, the time may be reduced to 3 days if the CITY concurs that the concrete has cured and reached adequate strength. When testing mortar-lined or PCCP pipe, fill the pipe to be tested with water and allow it to soak for at least 48 hours to absorb water before conducting the pressure test.

B. TESTING CRITERIA

All pipe sections to be pressure tested, including water mains, reuse mains and force mains, shall be subjected to a hydrostatic pressure of 150 psi. The duration of each pressure test shall be for a period of 2 hours. If during the test, the integrity of the tested line is in question, the CITY may require a 6-hour pressure test. The basic provisions of AWWA C-600 and C-605/M23 shall be applicable.

C. PROCEDURE FOR PRESSURE TEST

Each section of pipe to be tested, as determined by the CITY, shall be slowly filled with water and the specified test pressure shall be applied by means of a pump connected to the pipe in a satisfactory manner. Before applying the specified test pressure, all air shall be expelled from the pipe. To accomplish this, taps shall be made, and appropriate valves installed to ensure bleeding of all air from the main. If defective pipes, fittings, valves, or hydrants are discovered in consequence of this pressure test, all such items shall be removed and replaced by the CONTRACTOR with sound material and the test shall be repeated until satisfactory results are obtained. Provisions of AWWA C600 and C605/M23, where applicable, shall apply.

D. PROCEDURE FOR LEAKAGE TEST

After completion of the pressure test, a leakage test shall be conducted to determine the quantity of water lost by leakage under the specified test pressure. Applicable provisions of AWWA C600 and C605/M23 shall apply.

For DUCTILE IRON PIPE, allowable leakage in gallons per hour shall not be greater than that determined by the formula:

$$L = \frac{SD(P)^{1/2}}{133{,}200}$$

Where:

L	=	Allowable leakage, in gallons per hour.
S	=	Length of pipe tested, in feet.
D	=	Nominal diameter of the pipe, in inches.
P	=	Average test pressure during leakage test, in pounds per square inch (gauge).

For PVC PIPE, allowable leakage in gallons per hour shall not be greater than that determined by the formula:

$$L = \frac{ND(P)^{1/2}}{7{,}400}$$

Where:

L	=	Allowable leakage, in gallons per hour.
N	=	Number of joints in the length of pipeline tested.
D	=	Nominal diameter of the pipe, in inches.
P	=	Average test pressure during leakage test, in pounds per square inch (gauge).

Leakage is defined as the quantity of water to be supplied in the newly installed pipe or any valved section under test, which is necessary to maintain the specified leakage test pressure after the pipe has been filled with water and the air expelled. Should any test of pipe installed disclose leakage greater than that allowed, CONTRACTOR shall locate and replace or repair the defective joints, pipe or valve until the leakage from subsequent testing is within the specified allowance.

3.4 HYDROSTATIC TESTS (HDPE PIPE)

A. GENERAL

CONTRACTOR shall test pipelines installed under this Contract in accordance with these specifications prior to acceptance of the pipeline by the CITY. All field tests shall be made in the presence of the CITY. Except as otherwise directed, all pipelines shall be tested. All piping to operate under liquid pressure shall be tested in sections of approved length. The pressure testing of an HDPE line section shall be tested separately from the PVC and DIP line sections. Where impractical, the HDPE test section shall include only a minimum amount of PVC and ductile iron pipe within the test section. If at all possible, the PVC and DIP test sections shall be left exposed during the pressure test for visual leakage

observation. For these tests, the CONTRACTOR shall furnish clean water, suitable temporary testing plugs or caps, and other necessary equipment, and all labor required. If the CONTRACTOR chooses to pressure test against an existing CITY water main / valve, the new water main must be disinfected prior to connection to the CITY line. The CITY will not be responsible for failure of the pressure test due to the existing valve leaking. The CITY may elect to furnish suitable pressure gauges for these tests. If not, the CONTRACTOR will furnish suitable pressure gauges, calibrated by an approved testing laboratory, which increments no greater than 2 psi. Gauges used shall be of such size that pressures tested will not register less than 10 percent or more than 90 percent of the gauge capacity. All valved sections shall be hydrostatic tested to insure sealing (leak allowance) of all line valves.

Unless it has already been done, the section to pipe to be tested shall be filled with potable water and air shall be expelled from the pipe. If blow-offs or other outlets are not available at high points for releasing air, the CONTRACTOR shall provide 1-inch [minimum taps and blow-off valves (at the 12:00 position)], as necessary. The cost of constructing blow-off valves and plugging them, after a successful pressure test, shall be included in the unit price bid amount for the HDPE pipe.

B. TESTING CRITERIA

Hydrostatic testing shall consist of a 150 psig test pressure, based on the elevation of the highest point of the line or section under test. Pressure shall be applied by means of a pump connected to the pipe in a manner satisfactory to the CITY. The pump, pipe connection and all necessary apparatus shall be furnished by the CONTRACTOR and shall be subject to the approval of the CITY.

Maximum duration for pressure test, including initial and final phase of the test, shall not exceed eight (8) hours. If the test is not completed due to leakage, equipment failure, etc., depressurize the test section, and then allow it to "relax" for at least eight (8) hours before bringing the test section up to test pressure again.

C. PROCEDURE FOR PRESSURE TEST

Initial Phase of Pressure Testing: First, all air must be removed from the test section. The pressure test shall be completed after the line is backfilled. If possible, all flanged or mechanical joint valves and fittings shall be left exposed for visual leak inspection. If possible all PVC and DIP test sections shall be left exposed for visual leak inspection. Initially, the pressure within the test section shall be raised to approximately 160 psi and then allowed to be idle (no additional make-up water / pressure to be injected), for approximately 3 hours. During this 3-hour period, the test section shall be allowed to stabilize and come to an equilibrium stage. No additional make-up water / pressure shall be applied to the test section during this 3-

hour stabilization period unless the line pressure drops below 140 psi. In this case, make-up water / pressure shall only be applied to the test section to maintain a minimum of 140 psi (during the 3-hour stabilization period).

Final Phase of Pressure Testing: The final phase of the pressure test shall involve applying make-up water / pressure to achieve an "Initial test pressure" of 150 psi (minimum) / 155 psi (maximum). The test section is then allowed to be idle (no make-up water / pressure is added) for a period of 2 hours. After this 2-hour period, make-up water / pressure is applied and measured to re-establish the "initial test pressure." The quantity of water utilized to re-pump the line shall be measured and compared to the allowable quantities as determined by TABLE 1, shown below. If the actual make-up water quantity is equal to or less than the allowable amount, the pressure test passes. If the actual make-up water quantities are greater than the allowable amount, the pressure test fails.

TABLE 1: ALLOWABLE MAKE-UP AMOUNT (HDPE PIPE)

Nominal Pipe Size (inches)	Make-up Water Allowance (U.S. Gallons /100 ft. of Pipe) 2-Hour Test
6	0.30
8	0.50
10	0.65
12	1.15
14	1.40
16	1.65
18	2.15
20	2.75
22	3.50
24	4.40
26	5.00
28	5.55
30	6.35
32	7.15
34	8.10
36	9.00
42	11.55
48	13.50
54	15.70

In the event a section fails to pass the tests, the CONTRACTOR shall do everything necessary to locate, uncover (even to the extent of uncovering the entire section), and replace the defective pipe, valve, fitting or joint. Visible leaks shall be corrected regardless of total leakage. Lines which fail to meet these tests shall be retested as necessary until test

requirements are complied with. All testing shall be performed at the CONTRACTOR'S expense.

3.5 TESTS FOR NON-PRESSURE PIPING

A. GENERAL

Testing of non-pressure gravity flow pipe shall be accomplished by infiltration or exfiltration testing. Non-pressure piping which has a crown elevation below the groundwater table shall be tested by measuring the infiltration. Non-pressure piping which has a crown elevation above the groundwater table shall be tested by measuring the exfiltration.

B. INFILTRATION TESTING

The CONTRACTOR shall identify and prepare each section of piping to be tested. The designated piping shall be monitored for a minimum period of four (4) hours. Any accumulated liquid shall be measured; the line shall not be accepted until this measured quantity is less than 25 gallons per inch of diameter of pipe per mile of pipe per 24 hours. All buried leaks shall be located and repaired immediately and retested. All visible leaks must be repaired regardless of the measured leakage.

C. EXFILTRATION TESTING

The CONTRACTOR shall close all openings in the section of pipe to be tested. The hydrostatic water level of the pipe system shall be raised to a height equal to the maximum design submergence, but in no case less than 3 feet above the highest point in the line. The closed system shall be maintained for a minimum duration of 4 hours. Any loss of volume shall be noted. The line will not be accepted until this measured quantity is less than 25 gallons per inch of diameter of pipe per mile of pipe per 24 hours. All buried leaks shall be located and repaired as soon as possible. All visible leaks must be repaired regardless of the measured leakage.

D. LOW PRESSURE TESTING

If impractical to conduct the infiltration or exfiltration tests as specified, the line can be pressurized for low pressure air testing. The air test shall be made by attaching an air compressor or testing apparatus to a suitable opening. After closing all other inlets and outlets to the system, force air into the system until there is a uniform gauge pressure of 5 psi. This pressure shall be held constant without introduction of additional air for a period of at least 30 minutes.

E. MANDREL TESTING

Perform mandrel testing throughout the entire length of the gravity pipe system. The mandrel size shall be 95% of the inside diameter of the pipe.

F. MANHOLE TESTING

The allowable limits of infiltration or exfiltration of manholes shall not exceed a rate of 0.165 gallons per manhole per hour.

G. RE-TESTING

Should any test fail, necessary repairs shall be accomplished by the CONTRACTOR and the test repeated until within the established limits. The CONTRACTOR shall furnish the necessary labor, water and all other items required to conduct the required testing and shall perform the necessary system repairs required to comply with the specified test.

END OF SECTION

SECTION 01670
OPERATING AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Scope of Requirements:

1. Compile product data and related information appropriate for Owner's maintenance and operation of products furnished under Contract.

2. Prepare operating and maintenance data as specified in this Section and as referenced in other pertinent sections of the Specifications.

3. Instruct Owner's personnel in maintenance of products and in operation of equipment and systems.

1.2 QUALITY ASSURANCE

A. Preparation of data shall be done by personnel:

1. Trained and experienced in maintenance and operation of described products.

2. Familiar with requirements of this Section.

3. Skilled as a technical writer to the extent required to communicate essential data.

4. Skilled as draftsman competent to prepare required drawings.

1.3 FORMAT OF SUBMITTALS

A. Prepare data in form of an instructional manual for use by Owner's personnel.

B. Format:

1. Size: 8 1/2 inches x 11 inches

2. Paper: 20 pound minimum, white, for typed pages.

3. Text: Manufacturer's printed data, or neatly typewritten.

4. Drawings:

a. Provide reinforced punched binder tab, bind in with text.

b. Reduce larger drawings and fold to size of text pages but not larger than 14 inches x 17 inches.

5. Provide fly-leaf for each separate product, or operating equipment.

   a. Provide typed description of products and major component parts of equipment.

   b. Provide indexed tabs.

6. Cover: Identify each volume with typed or printed title **"OPERATING AND MAINTENANCE INSTRUCTIONS"**.
   List:

   a. Title of project

   b. Identity of separate structure as applicable.

   c. Identity of general subject matter covered in the manual.

C. Binders:

1. Commercial quality three-post binders with durable and cleanable plastic covers.

2. Maximum post width: 2 inches.

3. When multiple binders are used, correlate the data into related consistent groupings.

1.4 CONTENT OF MANUAL

A. Neatly typewritten table of contents for each volume, arranged in systematic order.

1. Contractor, name of responsible principal, address and telephone number.

2. A list of each product required to be included, indexed to content of the volume.

3. List, with each product, name, address and telephone number of:

   a. Subcontractor or installer

   b. A list of each product required to be included, indexed to content of the volume.

c. Identify area of responsibility of each Subcontractor/Installer.

d. Local source of supply for parts and replacement

4. Identify each product by product name and other identifying symbols as set forth in Contract Documents.

B. Product Data:

1. Include only those sheets which are pertinent to the specified product.

2. Annotate each sheet to:

a. Clearly identify specific product or part installed

b. Clearly identify data applicable to installation

c. Delete references to inapplicable information.

C. Drawings:

1. Supplement product data with drawings as necessary to clearly illustrate:

a. Relations of component parts of equipment and systems

b. Control and flow diagrams.

2. Coordinate drawings with information in Project Record Documents to assure correct illustration of completed installation.

3. Do not use Project Record Documents as maintenance drawings.

D. Written text, as required to supplement product data for the particular installation:

1. Organize in consistent format under separate headings for different procedures.

2. Provide logical sequence of instructions of each procedure.

E. Copy of each warranty, bond and service contract issued.

1. Provide information sheet for Owner's personnel, give:

a. Proper procedures in event of failure

b. Instances which might affect validity of warranties or bonds.

1.5 MANUAL FOR EQUIPMENT AND SYSTEMS

A. Submit four copies of complete manual in final form.

B. Content, for each unit of equipment and system, as appropriate:

1. Description of unit and component parts.

    a. Function, normal operating characteristics, and limiting conditions.

    b. Performance curves, engineering data and tests.

    c. Complete nomenclature and commercial number of replaceable parts.

2. Operation procedures:

    a. Start-up, break-in, routine and normal operating instructions.

    b. Regulation, control, stopping, shut-down and emergency instructions.

    c. Summer and winter operating instructions.

    d. Special operating instructions.

3. Maintenance procedures:

    a. Routine operations

    b. Guide to "trouble-shooting"

    c. Disassembly, repair and reassembly

    d. Alignment, adjusting and checking.

4. Servicing and lubrication required:

    a. Complete lubrications schedule.

    b. List of all lubricants required and acceptable products from three manufacturers for each lubricant.

5. Manufacturer's printed operating and maintenance instructions.

6. Description of sequence of operation by control manufacturer.

7. Original manufacturer's parts list, illustrations, assembly drawing and diagrams required for maintenance.

    a. Predicted life of parts subject to wear.

    b. Items recommended to be stocked as spare parts.

8. As installed control diagrams by controls manufacturer.

9. Each Contractor's coordination drawings.

10. List of original manufacturer's spare parts, manufacturer's current prices and recommended quantities to be maintained in storage.

11. Other data as required under pertinent sections of specifications.

C. Content, for each electric and electronic system, as appropriate:

1. Description of system and component parts.

    a. Function, normal operating characteristics, and limiting conditions.

    b. Performance curves, engineering data and tests.

    c. Complete nomenclature and commercial number of replaceable parts.

2. Circuit directories and panel boards.

    a. Electrical service

    b. Controls

    c. Communications.

3. As installed color coded wiring diagrams.

4. Operating procedures:

    a. Routine and normal operating instructions

    b. Sequences required

    c. Special operating instructions.

5. Maintenance procedures:

    a. Routine operations

    b. Guide to "trouble-shooting"

    c. Disassembly, repair and reassembly

    d. Adjustment and checking.

6. Manufacturer's printed operating and maintenance instructions.

7. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.

8. Other data as required under pertinent sections of the Specifications.

D. Prepare and include additional data when the need for such data becomes apparent during instruction of Owner's personnel.

E. Additional requirements for operating and maintenance data: Respective sections of Specifications.

1.6 SUBMITTAL SCHEDULE

A. Submit two copies of preliminary draft of proposed formats and outlines of contents of Operation and Maintenance Manuals within 90 days after Notice to Proceed.

1. Engineer will review the preliminary draft and return one copy with comments.

B. Submit two copies of completed data in final form no later than 30 days following Engineer's review of the last shop drawing and/or other submittal specified in Section 01300. One copy will be returned with comments to be incorporated into final copies.

C. Submit four (4) copies of approved manual in final form directly to the offices of the Owner within 30 calendar days of product shipment to the project site and preferably within 30 days after the reviewed copy is received.

D. Provide four (4) copies of addenda to the operation and maintenance manuals as applicable and certificates as specified within 30 days after final inspection.

1.7 INSTRUCTION OF OWNER'S PERSONNEL

A. Prior to demonstration test, fully instruct Owner's designated operating and maintenance personnel in operation, adjustment and maintenance of products, equipment and systems.

B. Operating and maintenance manual shall constitute the basis of instruction. Review contents of manual with personnel in full detail to explain all aspects of operations and maintenance.

C. Instructors shall be fully qualified personnel as outlined within the individual equipment specifications. If so specific training specifications are listed with the equipment, the Contractor shall provide the instruction with qualified Contractor personnel.

D. The instructors shall provide for and prepare lessons scopes and handouts for up to five individual designated by the Owner that outline the items to be covered. Separate sessions for operation and maintenance instruction shall be provided consecutively. Handouts shall be submitted to the Owner with at least one week's notice prior to the training session.

PART 2 - PRODUCTS

(NOT USED)

PART 3 - EXECUTION

(NOT USED)

END OF SECTION

SECTION 01700
CONTRACTCLOSEOUT

PART 1 – GENERAL

1.1 DESCRIPTION OFREQUIREMENTS

Definition. Closeout is defined to include general requirements near end of Contract Time, in preparation for final acceptance, final payment, normal termination of contract, occupancy by OWNER and similar actions evidencing completion of the work. Specific requirements for individual units of work are specified in sections of Divisions 2 through 16. Time of closeout is directly related to "Substantial Completion", and therefore may be either a single time period for entire work or a series of time periods for individual parts of the work which have been certified as substantially complete at different dates. That time variation (if any) shall be applicable to other provisions of this Section.

1.2 PREREQUISITES TO SUBSTANTIAL COMPLETION

When the CONTRACTOR considers the work to be substantially complete, he shall submit to the ENGINEER a written notice that the work, or designated portion thereof, is substantially complete; and a list of items to be completed or corrected.

Within a reasonable time after receipt of such notice, the ENGINEER will make an inspection to determine the status of completion.

Should the ENGINEER determine that the work is not substantially complete, the ENGINEER will promptly notify the CONTRACTOR, in writing, giving the reasons. The CONTRACTOR shall remedy the deficiencies in the work and send a second written notice of substantial completion to the ENGINEER. The ENGINEER will re-inspect the work.

When the ENGINEER finds that the work is substantially complete, he will prepare and deliver to the OWNER a tentative Certificate of Substantial Completion with a tentative list of items (“punch list”) to be completed or corrected before final payment. After consideration of any objections made by the OWNER as provided in Conditions of the Contract, and when the ENGINEER considers the work substantially complete, he will execute and deliver to the OWNER and the CONTRACTOR a definite Certificate of Substantial Completion with a revised tentative list of items to be completed or corrected.

When the CONTRACTOR considers the work complete, he shall submit written certification that the Contract Documents have been reviewed, the work has been inspected for compliance with the Contract Documents, the work has been completed in accordance with the Contract Documents, equipment and systems have been tested in the presence of the Owner's representative and are operational, and the work is completed and ready for final inspection.

With reasonable promptness after receipt of such certification, the ENGINEER will make an inspection to verify the status of completion.

Should the ENGINEER consider that the work is incomplete or defective, he will promptly notify the CONTRACTOR, in writing, listing the incomplete or defective work. The CONTRACTOR shall take immediate steps to remedy the stated deficiencies and send a second written certification to the ENGINEER that the work is complete. The ENGINEER will reinspect the work.

Should the ENGINEER perform re-inspections due to failure of the Work to comply with the claims of status of completion made by the CONTRACTOR, the OWNER will compensate the ENGINEER for such
additional services and the OWNER will deduct the amount of such compensation from the final payment to the CONTRACTOR.

1.3 CLOSEOUT SUBMITTALS

When the ENGINEER finds that the work is acceptable under the Contract Documents, he shall request the CONTRACTOR to make closeout submittals.

The CONTRACTOR'S closeout submittals shall include:

1. Evidence of compliance with requirements of governing authorities.
2. Project Record Documents.
3. Warranties and Bonds.
4. Evidence of Payment and Release of Liens.
5. Certificate of Insurance for Products and Completed Operations.

1.4 ADDITIONAL CLOSEOUT REQUIREMENTS

Project Record Documents. The CONTRACTOR shall keep one record copy of all specifications, Drawings, Addenda, modifications, shop drawings, field test records, and samples at the site in good order and annotated to show all changes made during the construction process. These shall be available to the ENGINEER for examination and shall be delivered to the ENGINEER for the OWNER upon completion of the work. This material shall include any shop drawings or other information items that are not required to be reviewed or were provided to the ENGINEER for record purposes.

Documents and samples shall be stored in the Contractor's field office apart from documents used for construction. The CONTRACTOR shall provide files and racks for storage of documents, and a locked cabinet or secure storage space for storage of samples.

Documents shall be maintained in a clean, dry, legible condition and in good order. Record documents shall not be used for construction purposes.

Each document shall be labeled "PROJECT RECORD" in neat, large printed letters.

Information shall be recorded concurrently with construction progress.

No work shall be concealed until required information is recorded.

Drawings shall be legibly marked to record actual construction information on: depths of various elements of foundation in relation to finish first floor datum; horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements; location of internal utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure; field changes of dimension and detail; changes made by Field Order or by Change Order; and details not on original contract drawings.

Specifications and Addenda shall have each section legibly marked to record: manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed; and changes made by Field Order or by Change Order.

At contract closeout Record Documents, certified by Registered Land Surveyor or Engineer, one set of Mylar reproducibles, three sets of sealed paper bond copies and one AutoCAD 2000 diskette or CD shall be delivered to the ENGINEER for the OWNER. The submittal shall be accompanied with a transmittal letter in duplicate, containing:

1. Date
2. Project title and number
3. Contractor's name and address
4. Title and number of each Record Document
5. Signature of CONTRACTOR or his authorized representative

1.5 WARRANTIES AND BONDS

The CONTRACTOR shall compile and submit to the ENGINEER in duplicate, for review and transmittal to the OWNER, warranties, bonds, service and maintenance contracts as specified in the respective sections of Specifications. Submittal shall be made within ten days after Substantial Completion and prior to final request for payment.

1.6 FINAL STATEMENT OFACCOUNTING

The CONTRACTOR shall submit a final statement of accounting to the ENGINEER. The statement shall reflect all adjustments to the Contract Sum:

1. The original Contract Sum

2. Additions and deductions resulting from:
   Previous Change Orders
   Allowances
   Unit Prices
   Deductions for uncorrected work
   Penalties and Bonuses
   Deductions for liquidated damages
   Deductions for re-inspection payments
   Other adjustments

3. Total Contract Sum, as adjusted

4. Previous payments

5. Sum remaining due

1.7 FINAL CHANGE ORDER

The ENGINEER will prepare a final Change Order, reflecting approved adjustments to the Contract Sum which were not previously made by Change Orders.

1.8 FINAL APPLICATION FORPAYMENT

The CONTRACTOR shall submit the final Application for Payment in accordance with procedures and requirements stated in the Conditions of the Contract.

PART 2 – MATERIALS AND EQUIPMENT

(Not Applicable)

PART 3 – EXECUTION

(Not Applicable)

END OF SECTION

SECTION 01710
FINAL CLEANING

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

The CONTRACTOR shall execute cleaning, during progress of the work, and at the completion of the work, as required by General Conditions.

Cleaning and disposal operations shall comply with all applicable codes, ordinances, regulations, and anti-pollution laws.

Refer to Section 01500 - Temporary Facilities and Controls for additional requirements.

PART 2 - MATERIALS

The CONTRACTOR shall:

Use only those materials which will not create hazards to health or property and which will not damage surfaces.

Use only those cleaning materials and methods recommended by manufacturer of the surfaces to be cleaned.

Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 - EXECUTION

3.1 CLEANING DURING CONSTRUCTION

The CONTRACTOR shall:

Execute periodic cleaning to keep the work, the site and adjacent properties free from accumulations of waste materials, rubbish and windblown debris, resulting from construction operations.

Provide on-site containers for the collection of waste materials, debris and rubbish. Rental of refuse/waste containers must fully comply with the requirements of Section 01500 - Temporary Facilities and Controls.

Remove waste materials, debris and rubbish from the site at least once a week and dispose of at legal disposal areas away from the site.
Prior to final completion, CONTRACTOR shall conduct an inspection of work areas, to verify that the entire work is clean.

3.2 FINAL CLEANING

The CONTRACTOR shall:

Employ skilled workmen for final cleaning.

Remove grease, mastic, adhesives, dust, dirt, stains, and other foreign materials from sight-exposed surfaces.

Broom clean exterior paved surface; rake clean other surfaces of the grounds.

Except as otherwise indicated or requested by the ENGINEER, remove temporary protection devices and facilities which were installed during the course of the work to protect previously completed work during the remainder of the construction project.

Prior to final completion, CONTRACTOR shall conduct an inspection of work areas, to verify that the entire work is clean.

Where extra materials of value remaining after completion of the associated work have become the OWNER's property, dispose or store at the site, as directed by the ENGINEER.

END OF SECTION

SECTION 01740
WARRANTIES

PART 1 – GENERAL

All work performed under this contract shall be warranted for labor and materials for a minimum period of one year after date of Substantial Completion. Specific warranties are noted in specific Sections.

Standard product warranties are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the OWNER.

Special warranties are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the OWNER.

1. Refer to the General Conditions for terms of the CONTRACTOR'S period for correction of the Work.

Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the CONTRACTOR of the warranty on the Work that incorporates the products. Manufacturer's disclaimers and limitations on product warranties do not relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the CONTRACTOR.

Related Damages and Losses: When correcting failed or damaged warranted construction, remove and replace construction that has been damaged as a result of such failure or must be removed and replaced to provide access for correction of warranted construction.

Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.

Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of the Contract Documents. The CONTRACTOR is responsible for the cost of replacing or rebuilding defective Work regardless of whether the OWNER has benefited from use of the Work through a portion of its anticipated useful service life.

OWNER'S Recourse: Expressed warranties made to the OWNER are in addition to implied warranties and shall not limit the duties, obligations, rights, and remedies otherwise available under the law. Expressed warranty periods shall not be interpreted as limitations on the time in which the OWNER can enforce such other duties, obligations, rights, or remedies.

1. **Rejection of Warranties:** The OWNER reserves the right to reject warranties and to limit selection to products with warranties not in conflict with requirements of the Contract Documents.

2. Where the Contract Documents require a special warranty, or similar commitment, the OWNER reserves the right to refuse to accept the Work, until the CONTRACTOR presents evidence that entities required to countersign such commitments are willing to do so.

Submit written warranties to the ENGINEER prior to the date certified for Substantial Completion. If the ENGINEER'S Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion, submit written warranties upon request of the ENGINEER.

1. When a designated portion of the Work is completed and occupied or used by the OWNER, by separate agreement with the CONTRACTOR during the construction period, submit properly executed warranties to the ENGINEER within 15 days of completion of that designated portion of the Work.

When the Contract Documents require the CONTRACTOR, or the CONTRACTOR and a subcontractor, supplier or manufacturer to execute a special warranty, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the OWNER, through the ENGINEER, for approval prior to final execution.

1. Refer to Divisions 2 through 16 Sections for specific content requirements and particular requirements for submitting special warranties.

Bind warranties and bonds in heavy-duty, commercial-quality, durable 3-ring, vinyl-covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (115-by-280-mm) paper.

1. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product, and the name, address, and telephone number of the Installer.

2. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project title or name, and name of the CONTRACTOR.

3. When warranted construction requires operation and maintenance manuals, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

PART 2 – PRODUCTS
(Not Applicable)

PART 3 – EXECUTION
(Not Applicable)

END OF SECTION

SECTION 02010
SUBSURFACE INVESTIGATION

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A soils investigation report has NOT been prepared for the site of this work.

1.02 QUALITY ASSURANCE

Bidders should visit the site and acquaint themselves with all existing conditions. Prior to bidding, bidders may make their own subsurface investigations to satisfy themselves as to site and subsurface conditions, but all such investigations shall be performed under time schedules and arrangements approved in advance by the Owner.

Soils Engineer will be retained by the Owner to observe performance of work in connection with excavating, trenching, filling, backfilling and grading.

PART 2 - MATERIALS AND EQUIPMENT
(Not Applicable)

PART 3 - EXECUTION
(Not Applicable)

END OF SECTION

SECTION 02050
DEMOLITION

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

A. The work includes, but is not limited to, demolition and removal of, but not limited to the following: sidewalk, driveways, piping, structures, trees, vegetation, mailboxes and ancillary items that are shown to be reconstructed within the project limits either identified in the plan set or necessary for the construction of the items shown within the plan set in order to accomplish the project.

1.2 QUALITY ASSURANCE

A. Accomplish all demolition work so there is no injury to any persons and no damage to adjacent structures or property. All demolition methods shall be in full compliance with municipal, county, state, and federal ordinances. Demolition work shall comply with the requirements of the Occupational Safety and Health Administration (OSHA).

B. The Contractor shall comply with all municipal, county, state, and federal ordinances regarding the disposal of rubble, scrap metal, and refuse.

C. Demolition procedures shall provide for safe conduct of the work, protection of property which is to remain undisturbed, and coordination with other work in progress.

1.3 JOB CONDITIONS

A. General:

1. It shall be the responsibility of the Contractor to visit the site and inspect the nature and condition of the items to be removed and salvaged before submitting his bid.

B. Dust Control:

1. Control the amount of dust resulting from demolition to prevent the spread of dust to occupied portions of buildings and to avoid creation of a nuisance in the surrounding area. Do not use water when it will result in, or create, hazardous or objectionable conditions such as flooding and pollution.

C. Protection of Existing Work:

1. Protect existing work. Work damaged by the Contractor shall be repaired at no cost to Owner to match existing work.

PART 2 - PRODUCTS

NONE

PART 3 - EXECUTION

3.1 DISPOSAL

A. Equipment, piping, and materials which are designated to remain the property of the Owner shall be moved to a location within the project site designated by the Owner.

B. All removed materials not specifically designated to remain the property of the Owner shall become the property of the Contractor and shall be removed from the site and disposed of in a lawful manner.

C. Do not allow debris and rubbish to accumulate on the site. Remove debris and rubbish from the site.

3.2 CLEAN-UP

A. Clean-up in areas where other work is to be done following demolition shall be as specified in the applicable Sections.

B. Clean-up the job site in areas where no other work is to be done under this Contract following demolition. Remove all debris and rubbish, temporary facilities, and equipment. Level surface irregularities to eliminate depressions. Leave the work in a neat and presentable condition.

END OF SECTION

SECTION 02100
CLEARING AND GRUBBING

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

A. The work consists of clearing and grubbing, within the limits of construction shown on the drawings. Included is the removal and disposal of all trees, stumps, roots and other such protruding objects necessary to prepare the area for the proposed construction and landscaping. No additional payment will be made for this work effort but should be included within various work task.

B. The removal and disposal of all, structures, appurtenances, existing pavement and other facilities is described in Section 02050, Demolition.

1.2 PROTECTION OF PROPERTY REMAINING IN PLACE

A. Property obstructions which are to remain in place, such as buildings, sewers, drains, water or gas pipes, conduits, poles, walls, posts, bridges, and similar items are to be carefully protected from injury and are not to be displaced. Restore damaged or temporarily removed elements that allow for construction improvements to their original condition, as acceptable to parties having jurisdiction.

B. Protection of Existing Trees and Vegetation:

1. Protect existing trees and other vegetation indicated to remain in place, against unnecessary cutting, breaking or skinning of roots, skinning and bruising of bark, smothering of trees by stockpiling construction materials or excavated materials within drip lines, excess foot or vehicular traffic, or parking of vehicles within drip line.

2. When ground is to be excavated under the drip line of any existing protected tree (as defined in the City of Ormond Beach Land Development Code), roots shall be pruned at the juncture of the grade excavation to reduce tree root shock and dieback. The depth of the pruning shall be equal to the depth of the excavation. The location of root pruning shall be marked with two (2)-inch by four (4)-inch fencing. The City of Ormond Beach Parks Department shall supervise all root pruning activities.

3. Provide temporary guards to protect trees and vegetation to be left standing.

4. Contractor shall water trees and other vegetation remaining within the limits of the Contract work as required to maintain their health during the course of construction operations.

5. Provide protection for roots over ½-inch diameter cut during construction operations. Coat the cut faces with an emulsified asphalt, or other acceptable coating, formulated for use on damaged plant tissues. Temporarily cover exposed roots with wet burlap to prevent roots from drying out; cover with earth as soon as possible.

6. Repair or replace trees and vegetation damaged by construction operations, in a manner acceptable to the Engineer. Repair tree damage with the services of a qualified tree surgeon.

7. Replace trees which cannot be repaired and restored to full-growth status, as determined by the tree surgeon.

C. Improvements on Adjoining Property:

1. Authority for performing removal and alteration work on property adjoining the Owner's property will be obtained by the Owner prior to award of Contract.

D. Salvageable Improvements:

1. Carefully remove items indicated to be salvaged, and store on the Owner's premises where indicated, unless otherwise directed.

1.3 OWNERSHIP OFMATERIALS

A. Except as may be otherwise called for on the drawings or elsewhere in the specifications, all materials removed by the Contractor shall become the property of the Contractor and shall be disposed of in a lawfulmanner.

PART 2 – PRODUCTS

(Not Applicable)

PART 3 – EXECUTION

3.1 STANDARD CLEARING AND GRUBBING

A. Standard clearing and grubbing shall consist of the complete removal and disposal of all timber, brush, stumps, roots, rubbish and debris and all other obstructions resting on or protruding through the surface of the existing ground and the surface of excavated areas, and of all other obstructions necessary to be removed and for which the removal is not specified to be done under other items of the contract, including pipes and demolition.

B. Unless otherwise shown on the drawings, standard clearing and grubbing shall be done within the following areas:

1. All areas where retention areas will be modified or constructed.

2. Any other areas specifically called for on the drawings to have standard clearing and grubbing.

C. In all areas where excavation is to be done, roots and other debris shall be removed to a depth of at least one-foot below the finished ground surface. The surface shall then be plowed to a depth of at least 6-inches and all roots thereby exposed shall be removed to a depth of at least one-foot. All stumps within the area of standard clearing and grubbing shall be completely removed and disposed of by the Contractor.

D. Where excavation is done within the standard clearing and grubbing area and where excavation for structures is done, all roots and similar items, protruding through or appearing on the surface of the completed excavation shall be removed to a depth of at least one-foot below the excavation surface.

E. Within all other areas where standard clearing and grubbing is to be done, roots and other debris, projecting through or appearing on the surface of the original ground, shall be removed to a depth of one-foot below the surface, but no plowing and harrowing will be required in these areas.

F. As an exception to the above provisions where so directed by the Engineer, desirable trees within the clearing and grubbing area shall be trimmed, protected and left standing. Trees shown on the drawings to be relocated shall be relocated to a location identified by the Engineer.

G. Any boulders encountered in the site excavation or found on the surface of the ground, shall be removed and placed in neat piles at a location approved by the Engineer.

H. For pipeline construction the Contractor shall only remove trees, shrubs and grass which interfere with the construction. All other vegetation shall be protected, preserved and/or replaced.

3.2 DISPOSAL OF MATERIALS

A. General Disposal:

1. Timber, stumps, brush, roots, rubbish, and other objectionable material resulting from clearing and grubbing shall be disposed of by the Contractor in locations and by methods approved by the Engineer.

2. In some instances, materials may be disposed of on the Owner's property at a location and by a method approved by the Engineer, but only with advance written permission of the Owner.

B. Burning Debris:

1. Burning will not be permitted on the Owner's property.

2. Where burning is prohibited by law, ordinance, or regulation, the Contractor shall dispose of the materials within areas provided by him and approved by the Engineer.

C. Disposal in areas Adjacent to Project:

1. Materials may be disposed of on private property, provided the Engineer is furnished with a written statement from the owner of the property giving permission for the disposal of the materials on his property. All disposal areas for materials resulting from clearing and grubbing, both on private property and on property owned by the Contractor, shall be in areas out of sight of the project and at least 300 feet from the nearest right-of-way line of the project, unless such materials are buried, in which case the requirement that the areas be 300 feet distant will be waived.

END OF SECTION

SECTION 02140
DEWATERING

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

A. Scope: In general, the work specified in this section of the specifications shall consist of supplying labor, materials, and plant, and performing all work necessary to lower and control the groundwater levels and hydrostatic pressures to permit all excavations and construction specified under this Contract to be performed in the dry with approval from the St. Johns River Water Management District.

B. Examination of Site: The Contractor shall take all steps that he considers necessary to familiarize himself with the site conditions, the ground conditions and the groundwater conditions. It is expressly understood that neither the Owner nor the Engineer will be held responsible for any interpretations or conclusions drawn by the Contractor.

PART 2 - PRODUCT

2.1 METHOD AND EQUIPMENT

A. The Contractor may use any dewatering method he deems feasible so long as it results in working in the dry and in stable soil conditions. It is the intent of these specifications that an adequate dewatering system be installed to lower and control the groundwater in order to permit excavation, construction of the structures, construction of pipelines, and the placement of the fill materials, all to be performed under dry conditions. The dewatering system shall be adequate to pre-drain the water-bearing strata above and below the bottom of the foundations, the drains, the sewers and all other excavations. An adequate weight of fill material shall be in place prior to discontinuing operation of dewatering to prevent buoyancy of the structure.

PART 3 - EXECUTION

3.1 GENERAL

A. The Contractor shall be solely responsible for the arrangement, location and depths of the dewatering system necessary to accomplish the work described under this section of the specifications. The dewatering shall be accomplished in a manner that will reduce the hydrostatic head below any excavation to the extent that the water level and piezometric water levels in the construction area are below the prevailing excavation surface; will prevent the loss of fines, seepage, boils, quick conditions, or softening of the foundation strata; will maintain stability of the sides and bottom of the excavation; and will result in all construction operations being performed in the dry.

B. Disposal of Water: The Contractor shall promptly dispose of all water removed from the excavations in such a manner as will not endanger public health, damage public or private property, or affect adversely any portion of the work under construction or completed by him or any other Contractor. Contractor shall obtain written permission from the Owner of any property involved before digging ditches or constructing water courses for the removal of water.

C. Siltation and Erosion:

1. The Contractor shall take steps and make suitable provisions to minimize siltation and erosion which may result from, or as a result of, his operations during the course of construction of this project.

2. The methods and provisions utilized by the Contractor to minimize siltation and erosion shall be approved by the Engineer and shall be in conformance with current Florida Department of Environmental Protection and St. Johns River Water Management District practices and regulations.

D. Inadequate System: If the dewatering requirements are not satisfied due to inadequacy or failure of the dewatering system, then loosening of the foundation strata, or instability of the slopes, or damage to the foundations or structures may occur. The supply of all labor, materials, and plant, and the performance of all work necessary to carry out additional work for reinstatement of the structures of foundation soil resulting from such inadequacy or failure shall be undertaken by the Contractor to the approval of the Engineer, and at no additional expense to the Owner.

END OF SECTION

SECTION 02200
EARTHWORK

PART 1 – GENERAL

1.1 DESCRIPTION OF WORK

This Section includes digging of excavations for structures, piping and roadways; backfilling around structures and piping; shaping and contouring the ground surface to conform to established grades and elevations; compacting of earth or rock materials to specified densities; bracing, sheeting and shoring; dewatering; removal of surplus excavated materials; and related work as shown on the Drawings and as specified.

1.2 DEFINITIONS

Excavation. Removal of earth and rock to form cavities for the construction of foundations and structures and to form trenches for the installation of piping or conduits.

Cavity formed by the removal of earth and rock.

Earth. Unconsolidated material in the crust of the earth derived by weathering and erosion. Earth includes:

Materials of both inorganic and organic origin;

Boulders less than 1/3 cubic yard in volume, gravel, sand, silt, and clay;

Materials which can be excavated with a backhoe, trenching machine, drag line, clam shell, bulldozer, highlift, or similar excavating equipment without the use of explosives, rock rippers, rock hammers, or jack hammers.

Rock. A natural aggregate of mineral particles connected by strong and permanent cohesive forces. Rock includes:

Coquina, Limestone, sandstone, dolomite, granite, marble, and lava;

Boulders 1/3 cubic yard or more in volume;

Materials which cannot be excavated by equipment which is used to remove earth overburden without the use of explosives, rock rippers, rock hammers, or jack hammers.

Undercutting. Excavation of rock and unsuitable earth below the bottom of a foundation, structure, pipe or conduit to be constructed or installed.

Subgrade. Undisturbed bottom of an excavation.
Bedding. Earth placed in trench to support pipe and conduit.

Backfill and Fill. Earth placed around structures from the bottom of an excavation to finished grade, or to the subbase of pavement.

Earth placed in a trench from the top of bedding to finished grade, or to subbase of pavement.

Topsoil. Earth containing sufficient organic materials to support the growth of grass.

1.3 JOB CONDITIONS

Carefully maintain bench marks, monuments and other reference points, and if disturbed or destroyed, replace as directed.

Should the CONTRACTOR encounter unusual subsurface and/or latent conditions at the site, he shall immediately give notice to the ENGINEER of such conditions before they are disturbed. The ENGINEER will promptly investigate the conditions and he will at once make such changes in the Plans and/or Specifications as he may find necessary. Any increase or decrease in cost resulting from such changes will be adjusted in the manner provided in the General Conditions.

1.4 QUALITY ASSURANCE

Codes and Standards. Perform excavation and landfilling work in compliance with applicable requirements of governing authorities having jurisdiction.

Testing and Inspection Service. The OWNER will retain a Soils Engineer to perform soil testing and inspection service for quality control testing of earthwork operations. Tests revealing satisfactory results will be paid for by the OWNER. The cost of tests revealing unsatisfactory results will be deducted from monies due the CONTRACTOR.

PART 2 – MATERIALS AND EQUIPMENT

2.01 MATERIALS

Earth for Fill and Backfill. Earth used for fill or backfill shall be of such gradation and moisture content that it will compact to the specified density and remain stable.

Pipe Cover Material. Pipe cover material shall consist of durable particles ranging in size from fine to coarse (No. 200 to 1-inch) in size, in a substantially uniform combination. Unwashed bank run sand and crushed bank-run gravel will be considered generally acceptable. Bedding material may be used for cover material.

Special Backfill. Special backfill shall be the following soils, classified by the Unified Soil Classification System, ASTM D-2487:

Group Symbols	Typical Name
GW	Well-graded gravels and gravel-sand mixtures, little or no fines
GP	Poorly graded gravels and gravel-sand mixtures, little or no fines
SW	Well-graded sands and gravelly sands, little or no fines
SP	Poorly graded sands and gravelly sands, little or no fines

Suitable Backfill. Suitable backfill shall be the following soils, classified by the Unified Soil Classification System, ASTM D-2487:

Group Symbols	Typical Name
GW	Well-graded gravels and gravel-sand mixtures, little or no fines
GP	Poorly graded gravels and gravel-sand mixtures, little or no fines
SP	Poorly graded sands and gravelly sands, little or no fines
SP-SM	Poorly graded sand/silt mixtures, no plasticity, less than 12% silt
SP-SC	Poorly graded sand/clay mixtures, no plasticity, less than 12% clay
SW	Well-graded sands and gravelly sands, little or no fines

Unsuitable Materials. Materials which are unsuitable for backfill include stones greater than 2-inches in their largest dimension, pavement, rubbish, debris, wood, metal, plastic, and the following soils, classified by the Unified Soil Classification System, ASTM D-2487:

Group Symbols	Typical Name
CH	Inorganic clays of high plasticity, fat clays
CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
GC	Clayey gravels, gravel-sand-clay mixtures
GM	Silty gravels, gravel-sand-silt mixtures
MH	Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts
ML	Inorganic silts, very fine sands, rock flour, silty or clayey fine sands
OH	Organic clays of medium to high plasticity
OL	Organic silts and organic silty clays of low plasticity
PT	Peat, muck, and other highly organic soils
SC	Clayey sands, sand-clay mixtures
SM	Silty sands, sand-silt mixtures

PART 3 – EXECUTION

3.1 PROTECTION OF EXISTING FACILITIES

Support and protect all poles, fences, utility pipes, wire, conduits, buildings and structures.

Proceed with caution during excavation so the exact location of underground utilities and structures, both known and unknown, may be determined. CONTRACTOR shall be responsible for the repair of utilities and structures when broken or otherwise damaged.

Wherever water, or other pipes or conduits cross the excavation, the CONTRACTOR shall support said pipes and conduits without damage to them and without interrupting this Contract. The manner of supporting such pipes, or similar items, shall be subject to the approval of the ENGINEER.

When utility lines that have to be removed or relocated are encountered within the areas of operations, the CONTRACTOR shall notify the ENGINEER in ample time for the necessary measure to be taken to prevent interruption of the service.

The CONTRACTOR shall so conduct the work that no equipment, material, or debris will be placed or allowed to fall upon private property in the vicinity of the work, unless he shall have first obtained the property owner's written consent to do so and shall have shown said written consent to the OWNER.

All excavated material shall be piled in a manner that will not obstruct driveways. Hydrants under pressure, valve pit covers, valve boxes, curb stop boxes, or other utility controls shall be left unobstructed and accessible until the work is completed. Drainageways shall be kept clear or other satisfactory provisions made for drainage.

Natural watercourses shall not be obstructed, except where specifically permitted for the construction of outfall and subaqueous crossings.

3.2 EXCAVATING

Make excavations to elevations and dimensions necessary to permit bracing, sheeting, erection of forms, inspection of foundation and installation of piping or conduits. Excavate trenches to the required alignment, depth and width. Excavate trenches in advance of pipe and conduit installation only as far as necessary to provide proper alignment and grade. Plan trenching operations to cause a minimum of danger to adjacent property and a minimum of inconvenience to the public.

The width of trenches at the top of the pipe shall be ample to permit the pipe to be laid and joined properly and to allow the backfill to be placed and compacted as specified. Maximum trench width shall be such that design loadings on pipe will not be exceeded. Trenches shall be of such extra width, when required, to permit the placement of supports, sheeting, bracing, and appurtenances.

Depth of trenches shall be such as to allow installation of pipelines at the grades or elevations shown.

Trees, boulders, and other surface encumbrances, located so as to create a hazard to anyone involved in the excavation work or who is in the vicinity of the work at anytime during operations, shall be removed or made safe before excavating is begun.

CONTRACTOR shall be responsible for the determination of the angle of repose of the soil in which the excavating is to be done. Excavate all slopes to at least the angle of repose except for areas where solid rock allows for line drilling or presplitting. Excavation shall be conducted in accordance with applicable OSHA specifications.

Sides, slopes, and faces of all excavations shall meet accepted engineering requirements by scaling, benching, barricading, rock bolting, wire meshing, or other equally effective means. Give special attention to slopes which may be adversely affected by weather or moisture content.

Flatten the excavation sides when an excavation has water conditions, silty materials, loose boulders, and areas where erosion and slide planes appear.

Shore or otherwise support sides of excavations in hard or compact soil when the excavation is more than five feet in depth. In lieu of shoring, the sides of the excavation above the five-foot level may be sloped to preclude collapse, but shall not be steeper than a one-foot rise to each 1/2-foot horizontal (or in accordance with OSHA specifications, whichever dictates flatter slope).

Use diversion ditches, dikes, or other suitable means to prevent surface water from entering an excavation and to provide adequate drainage of the area adjacent to the excavation. Do not allow water to accumulate in an excavation. If possible, the grade should be away from the excavation.

Excavations shall be inspected by a competent contractor's representative after every rainstorm or other hazard-increasing occurrence, and the protection against slides and cave-ins shall be increased if necessary.

Do not store excavated or other material nearer than four feet from the edge of any excavation. Store and retain materials as to prevent materials from falling or sliding back into the excavation. Install substantial stop log or barricades when mobile equipment is utilized or allowed adjacent to excavations.

3.3 SHEETING

The CONTRACTOR has the option of sheeting excavations.

Supporting systems, such as piling, cribbing, shoring, and bracing shall be designed by a qualified contractor's representative and meet accepted engineering requirements. When tie rods are used to restrain the top of sheeting or other retaining systems, securely anchor the tie rods well back of the angle of repose. When tight sheeting or sheet piling is used, assume full loading due to groundwater table, unless prevented by weep holes or drains or other means. Provide additional stringers, ties, and bracing to allow for any necessary temporary removal of individual supports.

Materials used for sheeting, sheet piling, cribbing, bracing, shoring and underpinning shall be in good, serviceable condition. Timbers shall be sound, free from large or loose knots, and ofproper dimensions.

Take special precautions in sloping or shoring the sides of excavations adjacent to a previously backfilled excavation or a fill, particularly when the separation is less than the depth of the excavation. Pay particular attention to joints and seams of material comprising a face and to the slope of such seams and joints.

If it is necessary to place or operate power shovels, derricks, trucks, materials, or other heavy objects on a level above or near an excavation, sheet-pile, shore, and brace the side of the excavation as necessary to resist the extra pressure due to such superimposed loads.

If the stability of adjoining buildings or walls is endangered by excavations, provide shoring, bracing, or underpinning as necessary to ensure the safety of adjoining buildings or walls. Such shoring, bracing or underpinning shall be inspected daily or more often, as conditions warrant, by a competent contractor's representative and the protection effectively maintained.

The CONTRACTOR shall be held responsible for the sufficiency of all sheeting and bracing used, and for all damage to persons or property resulting from the improper quality, strength, placing, maintaining, or removing of the same. This includes damage to trees, sidewalks, and other property on the project site as well as on the private grounds.

Drive sheeting ahead of excavation. Do not remove sheeting until the excavation backfill has reached within two feet of the top of the excavation, except that the lower course of sheeting may be removed from a double sheeted excavation. When sheeting is drawn, completely fill all cavities remaining in or adjoining the excavation. When sheeting is left in place, completely fill all cavities behind such sheeting.

3.4 ROCK REMOVAL

Rock, boulders or other hard, lumpy or unyielding materials encountered in trench bottoms shall be removed to a depth at least 12-inches below the bottom of any pipes to be installed. All rock and other hard foundation material under structures shall be freed of all loose material, cleaned, and cut to a firm surface; either level, stepped vertically and horizontally or serrated, as may be directed. All seams shall be cleaned out and filled with concrete or mortar.

Blasting of rock or other hard to remove materials will not be permitted on this project.

3.5 SUBGRADES

Do not construct foundations, footings, slabs, or piping on loose soil, mud, or other unstable or unsuitable soil.

Fill excess cuts under foundations, footings, and slabs with concrete.

Fill excess cuts under piping with compacted bedding as specified in this Section.

3.6 BACKFILLING FOUNDATION AND STRUCTURE EXCAVATIONS

Remove debris and other unstable or unsuitable materials from excavations before backfilling is started.

Place backfill in uniform lifts and compact. In areas below proposed paving, the backfill shall be compacted to a minimum density of 98% of the proctor modified maximum density (AASHTO-180). In areas that will not be paved, minimum densities of 95% of AASHTO T-180 shall be achieved. Compaction shall be by drum roller (static or vibratory) or hand-operated equipment (for smaller/confined areas). Loose lifts of backfill shall not exceed 12 inches for drum roller compaction and shall not exceed 6 inches for compaction with hand-operated equipment. The soil, at the time of compaction, should exhibit a moisture content with 2% of the soil's optimum moisture content, as provided by AASHTO T-180. The contractor shall take the necessary precautions in order to avoid damaging nearby structures as a result of vibrations from the compaction equipment.

If suitable, use stored excavated material for backfill and fill. Provide additional material, if required, to complete backfill and fill. Additional backfill and fill material shall be provided at no additional cost to the OWNER.

3.7 BACKFILLING PIPINGTRENCHES

Do not backfill trenches and excavations until all utilities have been inspected by the OWNER'S representative and until all underground utilities and piping systems are installed in accordance with the requirements of the specifications and the drawings.

Remove debris and other unsuitable materials from excavations before backfilling is started.

Place and tamp bedding and backfilling in a manner which will not damage pipe coating, wrapping, or encasement.

Bedding procedures shall be as specified in the particular Section for the applicable pipe material.

If bedding does not cover the pipe, place pipe cover material from the top of bedding to 12-inches over the pipe. Compact pipe cover material to the density required to allow backfill over the pipe cover material to be compacted to the density specified. Compaction shall be conducted under the guidelines of section 3.06.

3.8 FINISH GRADING

Shape the surface of all earthwork to conform to the lines, grades, contours and cross-sections shown on the drawings. Hand dressing may be required in certain areas or in confined areas where equipment operation is restricted.

In final shaping of the surface of the earthwork a tolerance of 0.1 foot above or below the plan elevation will be allowed with the following exceptions:

Earthwork shall be shaped to slope away from all buildings and structures.

Earthwork shall be shaped to match adjacent pavement, curb, sidewalks, and similar appurtenances.

Ditch bottoms and swales shall be shaped so that no water will be impounded except in areas designated for impoundment.

3.9 CLEANUP AND MAINTENANCE

Cleanup the job site as grading is completed. Remove excess earth, rock, bedding, materials, and backfill materials. Remove unused piping materials, structure components, and appurtenances. Restore items moved, damaged, or destroyed during construction.

Maintain the job site until the work has been completed and accepted. Fill excavations which settle when settlement is visible. Restore items damaged by construction or improper restorations. Keep dust conditions to a minimum.

3.10 STORAGE AND REMOVAL OF EXCAVATED MATERIAL

Suitable excavated material required for filling and backfilling operations may be stockpiled on the job site.

Remove unsuitable materials from the job site as unsuitable materials are excavated. Remove surplus suitable materials from the job site as excavations are backfilled.

Excavated suitable surplus materials shall remain the OWNER'S property and shall be stockpiled at the location(s) designated by the OWNER.

END OF SECTION

SECTION 02222
TRENCHING, BACKFILLING AND COMPACTING

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

A. The extent of trenching, backfilling and compacting is shown on the drawings.

B. This section includes furnishing equipment, labor and materials, and performing all operations necessary and incidental to perform the required work.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

3.1 CLEARING OF THE SITE

A. The site of the work shall be cleared of all trees, shrubs, paving and objectionable material which interfere with the prosecution of the proposed work. Trees and shrubs which will not interfere with construction shall be protected from damage. Clearing shall be considered as an incidental item of excavation.

3.2 EXCAVATION

A. General:

1. Perform excavation described of whatever substance encountered to the dimensions and depths specified or shown on the drawings. Undercutting will not be permitted, except when ordered by the ENGINEER. Material suitable for backfill shall be stockpiled near the site. Rock or other material undesirable for backfill shall be spoiled outside the area in a neat manner, as directed by the ENGINEER. Where it is necessary to cut roots projecting into an excavation or where it is necessary to trim branches for equipment clearance, all severed root ends or cuts to branches over 1/2-inch diameter shall be treated with an asphalt base pruning paint. Backfill over exposed roots as soon as possible.

B. Rock:

1. Where encountered in the trench bed, rock shall be excavated to a depth of 1/4 of the pipe diameter below the bottom of the pipe but in no case less than 4-inches. All undercut trench excavation shall be backfilled and tamped with materials as specified in the following paragraphs under Unstable Subgrade.

C. Unstable Subgrade:

1. In the event that unsuitable material is encountered at or below the excavation depth specified or shown on the drawings, the ENGINEER shall be notified. Such material shall be removed and replaced with suitable material. Methods and materials used for replacement shall be one of the following as directed by the ENGINEER in writing.

a. Suitable earth or sand, compacted in the trench. Materials shall be furnished as a part of the Bid Proposal item covering excavation and backfill.

b. Gravel or crushed limerock, compacted in the trench and paid for under the appropriate item.

c. Existing materials, stabilized after removal and then replaced and compacted in the trench at no additional cost to the OWNER.

2. The ENGINEER shall determine the methods and materials to be used, based upon the condition of the excavation, the pipe structure to be supported, and the availability and character of stabilizing materials.

D. Trenches:

1. Keep pipe laying operation as close to the excavation operation as possible during the prosecution of the work. The ENGINEER reserves the right to stop the excavation at any time when, in his opinion, the excavation is opened too far in advance of the pipe laying.

2. Pipe trenches shall be only of sufficient width to provide a free working space on each side of the pipe. To prevent excess pressure on the pipe, the maximum width of trench at the top of the pipe and at the bottom of the trench shall not be greater than 2-feet more than the greatest exterior diameter of the pipe. If this maximum width is exceeded, it shall be the CONTRACTOR's responsibility to provide, at no additional cost to the OWNER, such additional bedding or select backfill materials as the ENGINEER may require. The excavation below the spring line shall be made to conform as near as possible to the shape of the lower third of the pipe. To protect the pipe lines from unusual stresses, all work shall be done in open trenches. Excavation shall be made for bells of all pipes and of sufficient depth to permit access to the joint for construction and inspections. In no case will the bells be used to support the body of the pipe.

3. In order to avoid existing utilities, at times it may be necessary for the pipe to be laid deeper than the minimum cover specified in the preceding paragraph. At such time the CONTRACTOR will not be allowed extra compensation for additional excavation involved.

4. In case excavation has been made deeper than necessary, a layer of concrete, fine gravel or other material satisfactory to the ENGINEER shall be placed, at no extra cost, to secure a firm foundation for the lower third of each pipe. Where possible, excavated material shall be placed so as not to interfere with public travel. Bridging shall be provided to afford necessary access to public or private premises. Bridging shall be considered as part of the excavation operation and shall be supplied at no additional cost to the OWNER.

E. Structural: (For inlets, manholes, and similar structures)

1. Remove sufficient material to allow proper space for erecting and removing forms. The elevations of the bottoms of footings, if shown on the drawings, shall be considered as approximate only, and the ENGINEER may order, in writing, such changes in dimensions or elevations of footings as may be deemed necessary to secure a satisfactory foundation. Excavation for structures shall be sufficient to leave at least 12-inches in the clear between their outer surfaces and the embankment or timber that may be used to protect them. Backfill of earth under structures will not be permitted. Excess excavation for structures shall be filled with thoroughly compacted sand, gravel, or concrete at the expense of the CONTRACTOR.

2. After excavation for a structure is completed, the CONTRACTOR shall notify the ENGINEER to that effect. No concrete or reinforcing steel shall be placed until the ENGINEER has approved the depth of the excavation and the character of the foundation material.

F. Sheeting and Shoring:

1. The CONTRACTOR shall provide all trench and structural bracing, sheeting or shoring necessary to construct and protect the excavation, existing utilities, structures and private property of all types and as required for the safety of the employees. Sheeting shall be removed or cut off by the CONTRACTOR during backfilling operations as directed by the ENGINEER. Removal of shoring for structures shall be done in such a manner as not to disturb or mar finished masonry or concrete surfaces.

3.3 DRAINAGE

A. Grading shall be controlled in the vicinity of excavations so that the surface of the ground will be properly sloped to prevent water from running into trenches or other excavated areas. Any water which accumulates in the excavations shall be removed promptly by well point or by other means satisfactory to the ENGINEER in such a manner as to not create a nuisance to adjacent property or public thoroughfare. Trenches shall be kept dry while pipe is being laid. Bridging of dewatering pipe shall be provided where necessary. Pumps and engines for well point systems shall be operated with mufflers, and at a minimum noise level suitable to a residential area. The CONTRACTOR will not be allowed to discharge water into the OWNER's storm drainage system without the written approval of the ENGINEER. Approval will be subject to the condition that the storm sewer be returned to its original condition.

The CONTRACTOR is responsible for carrying the water to the nearest ditch or body of water and for obtaining the necessary permission to use same. The CONTRACTOR shall be financially responsible for any nuisance created due to carrying off water from his drainage system.

3.4 BACKFILL

A. Trenches:

1. Trenches shall be backfilled immediately after the pipe is laid unless other protection for the pipe line is provided. Clean earth, sand, crushed limerock or other material approved by the ENGINEER shall be used for backfill. Backfill material shall be selected, deposited and compacted (simultaneously on both sides of the pipe) so as to eliminate the possibility of lateral displacement of the pipe. Backfill material shall be solidly tamped around the pipes in layers to a level at least 1-foot above the top of the pipe. Each layer shall be compacted to a maximum thickness of 6-inches.

2. In unpaved areas, the remainder of the backfill shall be deposited and then compacted by puddling, water flooding or mechanical tampers. Mechanical tamping of layers in unpaved areas shall be to a maximum thickness of 12-inches. In areas to be paved or repaved, the entire depth of backfill shall be deposited in layers and compacted by hand or mechanical tampers to a maximum thickness of 6-inches. Compaction shall be carried out to achieve a density of at least 98% of the maximum density as determined by AASHTO, Method T-180. Under areas to be paved, puddling may be used for backfill consolidation after tamping to 1-foot over the pipe, as specified, provided the method is first approved by the ENGINEER and the density requirements are met.

3. In areas to be paved, density tests for determination of the specified compaction shall be made by a testing laboratory and spaced one in every 300-feet of trench cut. It is the intent of this specification to secure a condition where no further settlement of trenches will occur. When backfilling is completed, the roadway base for pavement replacement may be placed immediately. It will be the responsibility of the CONTRACTOR to restore the surface to the original grade wherever settlement occurs.

B. Structural:

1. After completion of foundation footings and walls and other construction below the elevation of the final grades, and prior to backfilling, forms shall be removed and the of excavation shall be cleared of all trash and debris. Material for backfilling shall consist the excavation, borrow sand or other approved materials, and shall be free of trash, lumberor other debris. Backfill shall be placed in horizontal layers not in excess of 9- inches in thickness, and have a moisture content such that a density may be obtained to prevent excessive settlement or shrinkage. Each layer shall be compacted by hand or approved machine tampers with extreme care being exerted not to damage pipe or structures. Backfill shall be placed and compacted evenly against the exposed surfaces to prevent undue stress on any surface.

3.5 RESTORATION OF SURFACE IMPROVEMENTS

A. Roadways, including shoulders, alleys and driveways of shell, limerock, stabilized soil or gravel, grass plots, sod, shrubbery, ornamental trees, signs, fences, or other surface improvements on public or private property which have been damaged or removed in excavating, shall be restored to conditions equal to or better than conditions existing prior to beginning work. Restoration of shoulders shall consist of sodding, seeding and mulching, or stabilizing with limerock as selected by the ENGINEER. The cost of doing this work shall be included in the cost of the various applicable items.

B. Materials for unpaved roadways, road shoulders, alleys, or drive-ways, shall be compacted to a minimum of 98% of the maximum density as determined by AASHTO, Method T-180. The cost of this work and furnishing new materials shall be included in the cost of the applicable items of work as no separate payment will be made, unless a separate bid item is provided.

3.6 FINE GRADING

A. Finished areas around structures shall be graded smooth and hand raked and shall meet the elevations and contours shown on the drawings. Lumber, earth clods, rocks and other undesirable materials shall be removed from the site.

3.7 DISPOSAL OF MATERIAL

A. Such portions of the excavated materials as needed and as suitable, shall be used for backfilling and grading about the completed work to the elevations as shown on the drawings or as directed. Excavated material in excess of the quantity required for this purpose shall be disposed of by the CONTRACTOR. The CONTRACTOR shall leave the earth over the trenches or other excavations in a neat and uniform condition acceptable to theOWNER.

3.8 TESTS

A. The CONTRACTOR shall furnish facilities for making all density tests and make such restorations as may be necessary due to test operations. All density tests on backfill or base replacement will be made by a commercial testing laboratory employed by the OWNER and at such locations as may be recommended by the ENGINEER. The CONTRACTOR shallpay for all tests where the densities, as determined by the specified tests, fall below the required minimums (failed tests).

END OF SECTION

SECTION 02500
PAVING

PART 1 - GENERAL

1.01 DESCRIPTION

This Section provides paving requirements (by reference) and base and curbing requirements for the roadway resurfacing project.

1.02 QUALITY ASSURANCE

CONTRACTOR shall be responsible for employing an independent testing laboratory to prepare required design mixes and to monitor his quality control procedures. CONTRACTOR shall be responsible for all asphalt plant testing.

CONTRACTOR shall provide a certificate that all materials and workmanship provided by him conform to Contract Requirements.

OWNER will retain an independent testing laboratory to field verify quality of materials used in paving work.

Where the "Standard Specifications" require that materials be from a source approved by the Department of Transportation, CONTRACTOR may provide proof of such source approval or he may employ an independent testing laboratory to perform necessary sampling and testing and to certify that all source meets requirements for Department approval.

1.03 REFERENCE STANDARDS

The "Standard Specifications" referred to in this Section are the Florida Department of Transportation, Standard Specifications for Road and Bridge Construction. The most current edition shall be used unless a specific edition is referred to. Those paragraphs in the "Standard Specifications" referring to Measurement and Payment are not applicable to work under this contract.

References to AASHTO shall mean the American Association of State Highway and Transportation Officials.

1.04 SUBMITTALS

Submit Certificate of Compliance with specified requirements in duplicate for OWNER's and ENGINEER's file.
Design mixes, complete with back-up data, shall be submitted before paving begins in quadruplicate for use by OWNER, ENGINEER, Quality Control Laboratory and field inspector.

1.05 JOB CONDITIONS

Alignment and Elevations. Establish and maintain alignment and elevations as shown or specified.

Weather Limitations. Conform to weather limitations specified for each component of the paving system.

PART 2 - MATERIALS AND EQUIPMENT

2.01 STABILIZED SUBGRADE

Materials for use in constructing the stabilized subgrade shall conform to the requirements of Section 160 of the "Standard Specifications".

2.02 MATERIALS FOR CRUSHED CONCRETE BASE COURSE

The minimum percentage of carbonate of calcium and magnesium in the crushed concrete material shall be 60. The maximum percentage of water-sensitive clay mineral shall be 3. Determination shall be at the option of the ENGINEER.

Crushed concrete material shall not contain cherty or other extremely hard pieces, or lumps, balls, or pockets of sand or clay size material in sufficient quantity as to be deleterious to the proper bonding, finishing, or strength of the crushed concrete base.

2.03 MATERIALS FOR ASPHALTIC CONCRETE MIXTURES

Materials for use in asphaltic concrete mixtures shall conform to the requirements listed in "Standard Specifications", of Florida Department of Transportation.

The use of recycled asphaltic concrete may be allowed, given that the mix design submitted by the Contractor which is intended to be used on this project, conform to the technical provisions (based on Florida Department of Transportation, unless stated otherwise) for the type of mix specified in the drawings, bid or other sections of the specifications.

CONTRACTOR shall employ an independent testing laboratory to test materials and prepare a design mix for the type of mix to be used on the project and to monitor plant asphalt production for quality control, as specified by OWNER.

The asphaltic concrete manufacturing plant, used for the asphaltic concrete mixture, shall be a maximum of fifty (50) miles from the project site.

2.04 MATERIALS FOR PRIME AND TACK COATS FOR BASE COURSES

Materials used for prime and tack coats shall conform to the requirements of Section 300 of the "Standard Specifications", Latest Edition.

2.05 CONCRETE CURB AND CURB AND GUTTER

Concrete for use in concrete curb and curb and gutter shall be non structural concrete conforming to the requirements of Section 520 of the "Standard Specifications".

PART 3 - EXECUTION

3.01 INSPECTION

Examine areas where pavements are to be constructed. Ensure that clearing and grubbing has been satisfactorily completed. Verify that subgrade has been constructed to proper elevations and that fill in embankment has been properly compacted.

3.02 STABILIZED SUBGRADE

The stabilized subgrade shall be constructed in accordance with the requirements of Section 160 of the "Standard Specifications", Latest Edition, for a Type B Stabilized Subgrade.

At least 3-inches (loose measurement) of a suitable commercial or local stabilizing material, as described in the "Standard Specifications", Section 914, shall be mixed into the subgrade for stabilization in accordance with the "Standard Specifications", Sections 160-1, 3 and 8. The Limerock Bearing Ratio (LBR) shall be 40. Density tests will be paid for by the OWNER except that all retests required due to failure to meet specifications shall be paid for by the CONTRACTOR.

After the subgrade has been prepared, it shall be kept free from ruts, depressions and any damage resulting from the hauling or handling of tools and equipment.

3.03 CRUSHED CONCRETE BASE COURSE

Samples of base course material shall be supplied by the CONTRACTOR at his expense, and all materials shall be approved by the ENGINEER prior to use in the work. Additional samples of base course materials shall be furnished during construction as required by the ENGINEER.

The material shall be transported to the point where it is to be used, over material previously placed, and dumped on the end of the preceding spread. No hauling shall be done over the subgrade.

At least 97% (by weight) of the material shall pass a 3 ½-inch sieve and the material shall be graded uniformly down to dust. The fine materials shall consist entirely of dust or fracture. All crushing or breaking-up which might be necessary in order to meet such size requirements shall be done before the material is placed on the road. The base shall be bladed and shaped to conform to the typical sections shown on the Drawings. The base shall then be compacted by rolling with a combination of steel wheel and rubber tired rollers until an average density of 98% of the maximum density obtainable under AASHTO Method T-180 is reached. The base shall have an average LBR of not less than 100. The LBR value of material produced at a particular source shall be determined in accordance with an approved quality control procedure.

3.04 ASPHALTIC CONCRETE PAVING

Asphaltic concrete mixtures for use in leveling and surface courses shall be prepared, placed, compacted and finished in compliance with “Standard Specifications”, Latest Edition.

3.05 PRIME AND TACK COATS

Equipment for application, preparation of surfaces, weather limitations, methods and rates of application shall conform to the requirements of section 300-3 through 300-7 of the “Standard Specifications”, Latest Edition.

3.07 CONCRETE CURB AND CURB AND GUTTER

Concrete curb and curb and gutter shall be constructed in compliance with the requirements of Section 520 of the “Standard Specifications”, Latest Edition.

3.08 STREET RECONSTRUCTION

Where street reconstruction is indicated on the Drawings it shall require complete removal of street surface and base and replacement with materials to the limits shown on the Drawings. If existing base and surface contain strips of concrete or asphaltic base used in prior street repairs these materials shall be completely removed and disposed of by the CONTRACTOR. Where curb and gutter removal is called for on the Drawings, complete removal and disposal shall be accomplished by the CONTRACTOR.

After removal of base material the subgrade shall be tested for bearing value as specified. If the subgrade does not have adequate bearing value it shall be stabilized in accordance with Section 160 of the “Standard Specifications” Latest Edition. Materials removed from existing base may be used in stabilizing subgrade with the approval of the ENGINEER. No separate payment will be made for stabilizing the subgrade.

END OF SECTION

SECTION 02580
ROADWAY STRIPING AND MARKING

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

This Section includes roadway striping and reflective marking as specified for this project.

1.02 QUALITY ASSURANCE

Standards. Materials and workmanship shall conform to the requirements of the following:

Florida Department of Transportation, Standard Specifications for Road and Bridge Construction, 1996 edition, hereinafter called the Standard Specifications.

PART 2 - MATERIALS AND EQUIPMENT

2.01 MATERIALS

Lane Marking Paint. Thermoplastic traffic stripes in accordance with Section 711 of the Standard Specifications.

Color: White or Yellow as required.

Reflective Paving Markers. Reflective pavement markers shall conform with the requirements of Section 706 of the Standard Specifications.

PART 3 - EXECUTION

3.01 MARKING TRAFFIC STRIPES

Cleaning. Sweep and clean the surface to eliminate loose material and dust.

Application. Apply in accordance with the plans and Section 711 of the Standard Specifications. Stop bars shall be provided at all "stop" intersections, as directed in the project manual (Section 01025 - Measurement and Payment). Replace all traffic striping to match existing stripes, including sidewalk crossing striping.

Width of Stripe. Unless otherwise shown or directed by the Engineer: stripes shall be 4- inches wide; stop bars shall be 24-inches wide, and sidewalk striping shall match existing width.

3.02 REFLECTIVE PAVEMENT MARKERS

Reflective pavement markers shall be installed in accordance with the plans and Section 706 of the Standard Specifications. Reflective markers shall be considered an integral part of Roadway Striping and no separate payment will be made therefor.

END OF SECTION

SECTION 02605
PRECAST CONCRETE MANHOLES AND STRUCTURES

PART 1 GENERAL

1.01 SCOPE OF WORK

A. Furnish all labor, materials and equipment required and install precast concrete stormwater manholes, stormwater structures, frames and covers, access hatches, manhole rungs, ladders and appurtenances as shown on the Drawings and as specified herein.

1.02 RELATED WORK

A. Excavation and backfill is included in Section 02200 and 02222.

B. Drainage structures and piping are included in Section 02720.

1.03 SUBMITTALS

A. Submit to the ENGINEER, in accordance with Section 01300, shop drawings, product data, materials of construction, and details of installation. Submittals shall include at least the following:

1. Base sections, riser sections, eccentric and concentric conical top sections, flat slab tops, grade rings with notarized certificate indicating compliance with ASTMC478.

2. Pipe connection to manhole.

3. Manhole rungs, including method of installation and notarized certificate indicating compliance with pull-out resistance test specified herein.

4. Manhole frame and cover with notarized certificate indicating compliance with ASTM A48, Class 30.

5. Method of repair for minor damage to precast concrete sections.

6. Building brick with notarized certificate indicating compliance with ASTM C62.

B. Samples

C. Design Data

1. Precast concrete structures:

a. Six copies of sectional plan(s) and elevations showing dimensions and reinforcing-steel placement.

b. Six copies of structural calculations including assumptions.

c. Six copies of concrete design mix.

D. Test Reports

1. Precast concrete structures:

a. Six copies of concrete test cylinder reports from an approved testing laboratory certifying conformance with this Section.

E. Certificates

F. Manufacturers Installation (or Application) Instructions

G. Statement of Qualifications

H. Manufacturer's Field Report

I. Project Record Documents

J. Operation and Maintenance Data

K. Warranties

1.04 REFERENCE STANDARDS

A. American Society for Testing and Materials (ASTM)

1. ASTM A48 - Standard Specification for Gray Iron Castings.

2. ASTM A615 - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.

3. ASTM C32 - Standard Specification for Sewer and Manhole Brick (Made from Clay or Shale).

4. ASTM C33 - Standard Specification for Concrete Aggregates.
5. ASTM C62 - Standard Specification for Building Brick (Solid Masonry Units Made from Clay or Shale)
6. ASTM C 150 - Standard Specification for Portland Cement
7. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes
8. ASTM C443 - Standard Specification for Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets
9. ASTM C478 - Standard Specification for Precast Reinforced Concrete Manhole Sections
10. ASTM D4101 - Standard Specification for Propylene Plastic Injection and Extrusion Materials.

B. American Concrete Institute (ACI)

1. ACI 318 - Building Code Requirements for Reinforced Concrete
2. ACI 350R - Environmental Engineering Concrete Structures

C. American Association of State Highway and Transportation Officials (AASHTO)

1. Standard Specifications for Highway Bridges

D. Occupational Safety and Health Administration (OSHA)

E. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

1.05 QUALITY ASSURANCE

A. All material shall be new and unused.

B. Materials' quality, manufacturing process and finished sections are subject to inspection and approval by ENGINEER or other OWNER representative. Inspection may be made at place of manufacture, at work site following delivery, or both.

C. Materials will be examined for compliance with ASTM standards, this Section and approved manufacturer's drawings. Additional inspection criteria shall include: appearance, dimensions(s), blisters, cracks and soundness.

D. Materials shall be rejected for failure to meet any requirements specified herein. Rejection may occur at place of manufacture, at work site, or following installation. Mark for identification rejected materials and remove from work site immediately. Rejected materials shall be replaced at no cost to OWNER.

E. Repair minor damage to precast concrete sections by approved method, if repair is authorized by ENGINEER.

PART 2 PRODUCTS

2.01 GENERAL

A. Reference to a manufacturer's name and model or catalog number is for the purpose of establishing the standard of quality and general configuration desired.

B. Like items of materials/equipment shall be the end products of one manufacturer in order to provide standardization for appearance, operation, maintenance, spare parts and manufacturer's service.

C. Provide lifting lugs or holes in each precast section for proper handling.

2.02 PRECAST CONCRETE MANHOLE SECTIONS

A. Precast concrete base sections, riser sections, transition top sections, flat slab tops and grade rings shall conform to ASTM C478 and shall be in accordance with FDOT standards.

1. Top section shall be eccentric cone where cover over pipe exceeds 4-ft. Top section shall be a flat slab where cover over top of pipe is 4-ft or less. Top section shall be a plastic lined flat slab where manhole riser sections are to be plastic lined.

2. Base, riser and transition top sections shall have tongue and groove joints.

3. Sections shall be cured by an approved method.

4. Precast concrete sections shall be shipped after concrete has attained 3000 psi compressive strength.

5. Design precast concrete base, riser, transition top, flat slab top and grade ring for a minimum H-20 loading plus earth load. Calculate earth load with a unit weight of 130 pcf.

6. Mark date of manufacture, name and trademark of manufacturer on the inside of each precast section.

7. Construct and install precast concrete base as shown on the Drawings and specified in FDOT standards.

8. Provide integrally cast knock-out panels in precast concrete manhole sections at locations, and with sizes shown on Drawings. Knock-out panels shall have no steel reinforcing.

2.03 PRECAST CONCRETE STRUCTURES

A. Refer to FDOT Standards for inside dimensions, headroom requirements and minimum thickness of concrete.

B. Manufacturer shall notify ENGINEER at least 5 working days prior to placing concrete during manufacturing process. ENGINEER may inspect reinforcing steel placement prior to placing concrete.

C. Structural design calculations and Drawings shall be prepared and stamped by a professional engineer registered in Florida.

D. Design Criteria

1. Precast concrete

a. Minimum compressive strength shall be 5,000 psi at 28 days.

b. Maximum water-to-cement ratio shall be 0.40 by weight.

c. Minimum cement content shall be 600 lbs of cement per cubic yard of concrete.

2. Manufactured products

a. Conform to ACI 318 and ACI 350R.

b. Analyze walls and slabs using accepted engineering principals.

c. When "fy" exceeds 40,000 psi, "z" (ACI 318) shall not exceed 95,000 psi. "fs" shall not exceed 50 percent of "fy".

d. Design products to support their own weight, weight of soil at 120 pcf, and a live load equal to AASHTO HS-20 applied to top slab.

e. Cast base slab and walls together to form a monolithic base section.

f. Design structure walls for a water pressure of 90 psf. Originate pressure diagram at finished ground surface. Include lateral pressure from vehicles in accordance with AASHTO.

g. Consider discontinuities in structure produced by openings and joints. Provide additional reinforcing around openings. Frame openings to carry full design loads to support walls.

h. Prevent flotation, with ground water level at finished ground surface, by dead weight of structure and soil load above structure. Do not consider skin friction, soil friction, or weight of equipment in structure.

i. Locate horizontal wall joints 18-in minimum from horizontal centerline of wall openings.

j. Design structure with a minimum number of joints. Maximum number of structure sections, including top slab, shall be four.

k. Provide lifting hooks for top slab.

1. Locate access openings, wall sleeves and pipe penetrations as shown on Drawings.

m. Wall sleeves shall be provided by the precast concrete manufacturer.

2.04 BRICK MASONRY

A. Bricks shall be sound, hard, uniformly burned, regular and uniform in shape and size. Underburned or salmon brick shall not be acceptable. Only whole brick shall be used.

1. Bricks for channels and shelves shall conform to ASTM C32, Grade SS except that the mean of five tests for absorption shall not exceed 8 percent and no individual brick exceed 11 percent.

2. Bricks for raising manhole frames to finished grade shall conform to ASTM C62.

B. Mortar shall be composed of 1 part portland cement, 2 parts sand, and hydrated lime not to exceed 10-lbs to each bag of cement. Portland cement shall be ASTM C150, Type II; hydrated lime shall conform to ASTM C207.

C. Sand shall be washed, cleaned, screened, well graded with all particles passing a No.4 sieve and conform to ASTM C33.

2.05 JOINTING PRECAST MANHOLE SECTIONS AND STRUCTURES

A. Seal tongue and groove joints of precast manhole and structure sections with either rubber O-ring gasket or preformed flexible joint sealant. O-ring gasket shall conform to ASTM C443. Preformed flexible joint sealant shall be Kent Seal No.2 by Hamilton-Kent; Ram-Nek by K.T. Snyder Company or equal.

B. Completed joint shall withstand 15 psi internal water pressure without leakage or displacement of gasket or sealant.

2.06 PIPE CONNECTIONS TO MANHOLE

A. Connect pipe to manhole in the following ways:

1. Grout in place - Precast manhole section shall have a formed, tapered circular opening larger than the pipe outside diameter. Grout shall be non-shrink and waterproof equal to Hallemite, Waterplug or Embeco. Plastic pipe shall have a waterstop gasket secured to pipe with a stainless steel clamp.

2. Flexible sleeve - Integrally cast sleeve in precast manhole section or install sleeve in a formed or cored opening. Fasten pipe in sleeve with stainless steel clamp(s). Coat stainless steel clamp(s) with bituminous material to protect from corrosion. Flexible sleeve shall be Lock Joint Flexible Manhole Sleeve; Kor-N-Seal connector; PSX Press-Seal Gasket or equal.

3. Compression gasket - Integrally cast compression gasket in precast manhole section. Insert pipe into compression gasket. Compression gasket shall be A-Lok or equal.

2.07 DAMPPROOFING

A. Dampproofing shall be Hydrocide 648 by Sonneborn Building Products; Dehydratine 4 by A. C. Horn Inc; RIW Marine Liquid by Toch Brothers or equal.

PART 3 EXECUTION

3.01 INSTALLATION

A. Manhole and Structure Installation.

1. Manhole and structure shall be constructed to the dimensions shown on the Drawings and as specified in FDOT standards. Protect all work against flooding and flotation. Construct cast-in-place bases in accordance with the requirements of Division 3 and the details shown on the Drawings.

2. Place manhole base on a bed of 12-in screened gravel as shown on the Drawings. Set manhole base grade so that a maximum grade adjustment of 8-in is required to bring the manhole frame and cover to final grade.

a. Use precast concrete grade rings or brick and non-shrink mortar to adjust manhole frame and cover to final grade.

3. Set precast concrete barrel sections and structures plumb with a 1/4-in maximum out of plumb tolerance allowed. Seal joints of precast barrel sections with either a rubber O-ring set in a recess or preformed flexible joint sealant in sufficient quantity to fill 75 percent of the joint cavity. Fill the outside and inside joint with non-shrink mortar and finished flush with the adjoining surfaces. Caulk the inside of any leaking barrel section joint with lead wool or non-shrink grout to the satisfaction of the ENGINEER.

4. Allow joints to set for 14 hours before backfilling unless a shorter period is specifically approved by the ENGINEER.

5. Plug holes in the concrete barrel sections required for handling with a non-shrinking grout or non-shrinking grout in combination with concrete plugs. Finish flush on the inside.

6. Cut holes in precast sections to accommodate pipes prior to setting manhole sections in place to prevent jarring which may loosen the mortar joints.

7. Backfill carefully and evenly around manhole sections.

B. Manhole Pipe Connections

1. Construct manhole pipe connections, including pipe stubs, as specified above. Close or seal pipe stubs for future connections with a gasketed watertight plug.

C. Manhole Rung Installation

1. Aluminum Manhole Rungs

a. Grout aluminum manhole rungs into precast sections, on 12-in centers. Preform holes in riser and cone sections for rungs during casting. Holes for rungs shall be 1-1/8-inch in diameter and a minimum of 3-1/2-in deep.

b. Grout rungs into precast sections immediately after casting and placing in the curing area, or immediately after coring holes for manhole rungs into base section. Fill holes with grout consisting of Portland Type II cement and mortar sand in a 1 to 1/2 ratio mixed to a putty consistency.

c. Paint those parts of the rungs which are embedded with a heavy coating of zinc chromate or other approved paint.

2. Steel Reinforced Polypropylene Plastic Manhole Rungs

a. Preform holes for manhole rungs during casting of the riser and cone sections, using tapered form pins specifically made for preforming manhole rung holes.

b. Drive manhole rungs into preformed holes after concrete has developed a compressive strength of 3,000 psi.

c. Alternatively, cast manhole rungs into riser and cone sections when concrete is placed.

d. Drilling holes for manhole rungs may be used to accommodate field conditions when approved by the ENGINEER. Drill holes of diameter, spacing and depth required by manhole rung manufacturer.

3. Pull-out resistance test

a. All manhole rung installation methods shall withstand a pull-out resistance test of 1,500 pounds.

D. Brickwork

1. Mix mortar only in such quantity as may be required for immediate use. Use mortar before initial set has taken place. Mortar shall be used within 1-1/2 hours and shall be constantly worked with hoe or shovel until used. Anti-freeze mixtures shall not be included in the mortar. Install masonry when the outside temperature is above 40 degrees F unless provisions are made to protect the mortar, bricks and finished work from frost by heating and enclosing the work with tarpaulins or other suitable material. ENGINEER's decision regarding the adequacy of protection against freezing shall be final.

2. Construct channels and shelves of brick and concrete as shown on the Drawings and as specified in FDOT standards. Brick lined channels shall correspond in shape with the lower half of the pipe. Set shelf elevation at crown of highest pipe and slope 1- in/ft to drain toward the flow through channel. Construct brick surfaces exposed to sewage flow with nominal 2-in by 8-in face exposed (i.e. bricks on edge).

E. Setting Manhole Frame and Cover

1. Set manhole covers and frames in a full mortar bed. Utilize bricks or precast concrete grade rings, a maximum of 8-in thick, to assure frame and cover are set to the finished grade. Set manhole frame and cover to final grade prior to placement of permanent paving.

F. Damp proofing

1. Paint outer surfaces of precast and cast-in-place manholes and structures with two coats of bituminous damp proofing at the rate of 30 to 60 sq ft per gallon, in accordance with manufacturer's instructions.

3.02 LEAKAGE TESTS

A. Test each manhole for leakage. ENGINEER shall observe each test. Perform exfiltration test as described below:

B. Assemble manhole in place; fill and point all lifting holes and exterior joints within 6-ft of the ground surface with an approved non-shrinking mortar. Test prior to placing the shelf and invert and before filling and pointing the horizontal joints below 6-ft of depth. Lower ground water table below bottom of the manhole for the duration of the test. Plug all pipes and other openings into the manhole and brace to prevent blow out.

C. Fill manhole with water to the top of the cone section. If the excavation has not been backfilled and no water is observed moving down the surface of the manhole, the manhole is satisfactorily water-tight. If the test, as described above is unsatisfactory as determined by the ENGINEER, or if the manhole excavation has been backfilled, continue the test. A period of time may be permitted to allow for absorption. Following this period, refill manhole to the top of the cone, if necessary and allow at least 8 hours to pass. At the end of the test period, refill the manhole to the top of the cone again, measuring the volume of water added. Extrapolate the refill amount to a 24-hour leakage rate. The leakage for each manhole shall not exceed one gallon per vertical foot for a 24- hour period. If the manhole fails this requirement, but the leakage does not exceed three gallons per vertical foot per day, repairs by approved methods may be made as directed by the ENGINEER. If leakage due to a defective section of joint exceeds three gallons per vertical foot per day, the manhole shall be rejected. Uncover the rejected manhole as necessary and to disassemble, reconstruct or replace it as directed by the ENGINEER. Retest the manhole and, if satisfactory, fill and paint the interior joints.

D. No adjustment in the leakage allowance will be made for unknown causes such as leaking plugs, absorptions, etc. It will be assumed that all loss of water during the test is a result of leaks through the joints or through the concrete.

E. An infiltration test may be substituted for an exfiltration test if the ground water table is above the highest joint in the manhole. If there is no leakage into the manhole as determined by the ENGINEER, the manhole will be considered water-tight. If the ENGINEER is not satisfied, testing shall be performed as described hereinbefore.

F. Leakage Tests for Structures

1. The ENGINEER will visually inspect structure(s) for possible leaks before backfilling of structures is allowed. Seal all joints to the satisfaction of the ENGINEER.

2. The ENGINEER may require an exfiltration test as described for manholes on any structure for which he/she deems the test appropriate.

3.03 CLEANING

A. Thoroughly clean all new manholes of all silt, debris and foreign matter of any kind, prior to final inspections.

END OF SECTION

SECTION 02616
DUCTILE-IRON PIPE AND FITTINGS FOR PRESSURE SERVICE

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

This Section includes furnishing and installing buried pressure piping systems.

1.2 QUALITY ASSURANCE

Pipe fittings and components shall be manufactured in the USA in accordance with the listed standards and requirements of this specification. All piping and fittings to conform to the City of Ormond Beach Land Development Code. Conflicts between these specifications and the LDC; the LDC controls.

1.3 SUBMITTALS

Provide manufacturer's Certificate of Compliance with specified requirements.

1.4 HANDLING AND STORAGE

All pipe, fittings, and accessories shall be loaded and unloaded by lifting with hoists or skidding in order to avoid shock or damage. Under no circumstances shall such material be dropped. Pipe handled on skidways shall not be rolled or skidded against pipe on the ground. Slings, hooks or pipe tongs shall be padded and used in such a manner as to prevent damage to the exterior surface or internal lining of the pipes.

Materials, if stored, shall be kept safe from damage. Pipe to be used for potable water service shall be stored so as to prevent contamination by animals and their wastes. The interior of all pipe and fittings shall be kept free from dirt or foreign matter at all times.

Pipe shall not be stacked higher than the limits shown in the tables in AWWA C600. The bottom tiers shall be kept off the ground on timbers, rails, or concrete. Pipe in tiers shall be alternated: bell, plain end, bell, plain end.

At least two rows of 4-inch x 4-inch timbers shall be placed between tiers and chocks affixed to each end in order to prevent movement.

Gaskets for joints shall be placed in a cool location out of direct sunlight. Gaskets shall not come in contact with petroleum products. Gaskets shall be used on a first-in, first-out basis. Joint bolts shall be handled and stored in a manner that will ensure proper use with respect to types and sizes.

PART 2 - MATERIALS AND EQUIPMENT

2.1 - DUCTILE-IRON PIPE

Pipe for Trench Installation. Pipe for pressure service to be installed in trenches shall be ductile-iron designed in accordance with ANSI/AWWA C150/A21.50. Pipe shall conform to the requirements of ANSI/AWWA C151/A21.51. Pipe shall have push-on joints conforming to the requirements of ANSI/AWWA C111/A21.15. Pipe Pressure Class and Trench Type shall conform with the following:

BURIED DUCTILE-IRON PIPING

Pipe Size	Trench Type	Pressure Class
3-12	2	350
14-20	2	250
24	2	200
30-64	2	150

If mechanical joint pipe is furnished, the minimum acceptable pipe class shall be Class 51.

Pipe for Installation on Supports. Pipe for pressure service to be installed on supports shall be flanged ductile-iron piping conforming to the requirements of ANSI/AWWA C115/A21.15 with a minimum thickness of Class 53. Flanges shall be ductile-iron.

2.2 FITTINGS

Fittings 3-inch through 24-inch diameter may be ductile-iron fittings conforming to the requirements of ANSI/AWWA C153/A21.53 or cast iron fittings conforming to the requirements of ANSI/AWWA C110/A21.10.

Fittings 30-inch through 48-inch diameter shall be cast-iron fittings conforming to the requirements of ANSI/AWWA C110/A21.10.

Fittings shall be provided with joints suitable for use with the pipe with which they are to be installed.

Only those fittings and accessories that are of domestic (USA) manufacture will be acceptable.

2.3 RESTRAINED JOINTS

Thrust Restraint. Thrust restraint for buried piping shall be provided by restrained joints for all buried piping.

Restrained Joints. Restrained joints shall be of the essentially boltless type which rely on metal lugs, rotating retainer rings, or stainless steel gaskets for joint restraint. All welded retainer rings shall be factory installed. Generally joints shall be of the type which can be removed without damage to the joint if necessary to separate the joint after the initial installation. Stainless steel gasket type insert type shall be limited to locations not normally subjected to possible joint separation. A restrained joint shall be installed on each side of all buried valves. The length of restrained joints shall be as detailed on the Drawings. Ductile-iron retainer glands shall not be accepted.

Restrained joints connecting ductile-iron pipe to ductile-iron fittings shall be Megalug Joint Restraint as manufactured by EBBA Iron, Inc.

Concrete Thrust Blocks. Concrete thrust blocks shall be installed at all tees, bends, dead ends and fire hydrants. Concrete thrust blocks should not be used if the soil is saturated or not suitable to resist the piping reactions.

2.4 GASKETS

Gaskets for use with mechanical or push-on joints shall conform to the requirements of ANSI/AWWA C111/A21.11.

Gaskets for use with flanged joints shall be of rubber, either ring or full-face, 1/8 inch thick and shall conform to the dimensions shown in the Appendix to ANSI/AWWA C115/A21.15.

2.5 BOLTS AND NUTS

Bolts and nuts for use with flanged joints shall be hex-head conforming to the requirements of ANSI B18.2.1 and B18.2.2.

Bolts for use with mechanical joints shall be tee-head bolts with hexagonal nuts conforming to the requirements of ANSI/AWWA C111/A21.11.

2.6 COATINGS

Coatings. Pipe and fittings which are to be buried or installed in concealed locations shall have a bituminous coating approximately 1 mil thick applied to the outside. The finished coating shall be continuous, smooth, neither brittle when cold nor sticky when exposed to the sun and shall be strongly adherent to the pipe.

Pipe and fittings in interior or exposed locations which are to be painted shall be furnished with no exterior coating or with a primer coat which will be compatible with the finish coat to be applied.

Marking. All buried reuse piping shall be marked with three identifying purple stripes permanently attached to the outside of the pipe. Each stripe shall be the length of the pipe and a minimum of 2-inches wide. The stripes shall be located at 10 o'clock, 12 o'clock and 2 o'clock positions at the time of installation.

Marking tape shall be an adhesive backed (pressure sensitive) non-detectable underground marking tape suitable for direct placement on the pipe.
Tape shall be an approved APWA color code for pipeline identification. Marking tape to be Shieldbond Thor Enterprises, Inc., or approved equal.

2.7 LININGS

Cement Mortar Lining. Pipe and fittings which are to be used for potable water service or effluent reuse service shall have a cement mortar lining conforming to the requirements of ANSI/AWWA C104/A21.4.

Pipe and fittings which are to be used to handle sewage or aggressive chemical wastes shall be lined with one of the following:

Coal Tar Epoxy Lining. Pipe and fittings shall be lined with a coal tar epoxy, composed of a two component coal tar epoxy compound capable of at least 50 mils dry film build in a one-coat multi-pass application process. The material must also meet the following minimum performance requirements:

A direct impact resistance as measured by ASTM D-2794 at 35 mils dry film thickness on ductile-iron panels. The material shall pass 100 inch pounds of impact.

A dielectric strength of at least 300 volts per mil when fully cured.

An abrasion resistance of 25 liters per mil as measured in ASTM D-968.

Following immersion tests without failure of any kind. The lining must be on ductile-iron panels at 35 mils minimum dry film thickness.

Test	Duration
Tap water 160 degrees F.	1000 Hrs.
3% Sulfuric Acid 120degrees F.	1500 Hrs.
25% Sodium Hydroxide 70degrees F.	500 Hrs.
Continuous moisture condensation in Hydrogen Sulfide atmosphere	1000 Hrs.

The lining shall be applied under the supervision of the pipe manufacturer.

All surface areas which will be exposed to liquids and gases shall be cleaned and deleterious materials removed. After cleaning, the lining compound shall be applied to all surface areas which will be exposed to liquids and gases. The lining compound shall be applied so as to obtain a continuous and relatively uniform and smooth lining. The barrel of the pipe shall be coasted to achieve a 45 mils minimum dry film thickness when measured with a dry film thickness magnetic gage; lining will be tapered at pipe ends. After clearing, all joint surface areas and spigot ends exposed to the liquids and gases shall receive one cost of the lining material brushed on at a rate to achieve 10 mils minimum dry film thickness when measured with a magnetic dry film thickness gage.

Any damaged lined areas shall be repaired in accordance with the manufacturer's recommendations so that the repaired area is equal to the undamaged lined areas.

Polyethylene Lining. The lining shall be a blend of high-density and low-density polyethylene powders complying with ASTM D1248 compounded with carbon black to provide resistance to ultraviolet rays during storage above ground. The pipe shall be heated to an adequate temperature to provide uniform fusing of the polyethylene powders and proper bonding to the pipe. The polyethylene lining shall be 40 mils thick.

2.8 POLYETHYLENEENCASEMENT

Where polyethylene encasement is required it shall be either tube or sheet material conforming to the requirements of ANSI/AWWA C105/A21.5.

2.9 PIPE COUPLINGS

Pipe couplings used to joint two pieces of plain end pipe shall be sized to suit the outside diameter of the pipe ends to be jointed. Transition couplings shall be used to join pipes of different outside diameters. Pipe couplings shall be bolted type with steel middle ring and end followers. The couplings shall be restrained for the test pressure of line using approved retaining system.

All carbon steel parts of coupling shall be coated on the interior and exterior with a fusion bonded thermosetting epoxy coating with a 12 mil nominal coating thickness. The coating shall be equal to AL-CLAD as manufactured by Dresser Industries, Inc., or approved equal.

Gaskets for the coupling shall be wedge type manufactured of Buna-N resilient rubber.

Bolts shall be manufactured of high strength Type 304 stainless steel with Type 316 stainless steel hexagonal nuts. Bolts and nuts shall conform dimensionally to ANSI/AWWA C111, latest revision.

PART 3 - EXECUTION

3.1 INSPECTION

Inspect for defects, damage, dirt and debris in pipe. Clean if necessary. Discard and remove defective materials. Reject materials found unsatisfactory.

3.2 TRENCH CONSTRUCTION

Excavation. Excavate trenches as specified in Section 02200.

Alignment and Grade. Lay pipelines to lines and grades established by Drawings and Specifications, with fittings and valves at the required locations unless otherwise approved by the Engineer. Valve-operating stems shall be oriented to allow proper operation. Install Hydrants plumb.

Underground Conflicts. Prior to excavation, investigate to the extent necessary to determine the location of existing underground structures and conflicts. Exercise care to avoid damage to existing structures. When obstructions that are not shown on the drawings are encountered during the progress of the work and interfere so that an alteration of the Drawings is required, the Engineer will alter the Drawings or order a deviation in line and grade or arrange for removal, relocation, or reconstruction of the obstructions. When crossing existing pipelines or other structures, alignment and grade shall be adjusted as necessary, with the approval of the Engineer, to provide clearance as required by federal, state, or local regulations or as deemed necessary by the Engineer to prevent future damage or contamination of either structure.

Trench Preparation. Trench preparation shall proceed in advance of pipe installation for only as far as necessary to allow proper pipe installation. The width of the trench at the top of the pipe shall be ample to permit the pipe to be laid and joined properly and allow the backfill to be placed as specified.

Holes for the bells shall be provided at each joint but shall not be larger than necessary for joint assembly and assurance that the pipe barrel will lie flat on the trench bottom. Other than noted previously, the trench bottom shall be true and even in order to provide support for the full length of the pipe barrel, except that slight depressions may be provided to allow withdrawal of pipe slings or other lifting tackle.

When excavation of rock is encountered, all rock shall be removed to provide a clearance of at least 6-inches below and on each side of all pipe, valves, and fittings for pipe sizes 24-inches or smaller, and 9-inches for pipe 30-inches and larger. When excavation is completed, a bed of sand, crushed stone or earth that is free from stones, large clods, or frozen earth shall be placed on the bottom of the trench to the previously mentioned depths, leveled, and tamped. These clearances and bedding procedures shall also be observed for pieces of concrete or masonry and other debris or subterranean structures, such as masonry walls, piers, or foundations that may be encountered during excavation.

This installation procedure shall be followed when gravel formations containing loose boulders greater than 8-inches in diameter are encountered. In all cases, the specified clearances shall be maintained between the bottom of all pipe and appurtenances and any part, projection, or point of rock, boulder, or stones of sufficient size and placement which, in the opinion of the Engineer could cause fulcrum point.

Should the trench pass over a sewer or other previous excavation, the trench bottom shall be sufficiently compacted to provide support equal to that of the native soil or conform to other regulatory requirements in a manner that will prevent damage to the existing installation.

When the subgrade is found to be unstable or to include ashes, cinders, refuse, organic material, or other unsuitable material, such material shall be removed, to a minimum of at least 3-inches, or to the depth ordered by the Engineer and replaced under the directions of the Engineer with clean, stable backfill material. The bedding shall be consolidated and leveled in order that the pipe may be installed as specified.

When the bottom of the trench or the subgrade is found to consist of material that is unstable to such a degree that, in the judgment of the Engineer, it cannot be removed, a foundation for the pipe and/or appurtenance shall be constructed using piling, timber, concrete, or other materials at the direction of the Engineer.

3.3 PIPE INSTALLATION

Provide and use proper implements, tools, and facilities for the safe and convenient performance of the work. All pipe, fittings, valves, and hydrants shall be lowered carefully into the trench by means of a derrick, ropes, or other suitable tools or equipment in such a manner as to prevent damage to pipeline material and protective coatings and linings. Under no circumstances shall pipeline materials be dropped off or dumped into the trench. Dewater trench prior to installation of the pipe.

Examine all pipe fittings, valves, and other appurtenances carefully for damage and other defects immediately before installation. Defective materials shall be marked and held for inspection by the Engineer who may prescribe corrective repairs or reject the materials.

Remove all lumps, blisters, and excess coating from the socket and plain ends of each pipe. Wipe the outside of the plain end and the inside of the bell clean, dry and free from dirt, sand, grit, or any foreign material before the pipe is laid.

Foreign material shall be prevented from entering the pipe while it is being placed in the trench. During laying operations, no debris, tools, clothing, or other materials shall be placed in the pipe.

As each length of pipe is placed in the trench, the joint shall be assembled and the pipe brought to correct line and grade. The pipe shall be secured in place with approved backfill material.

At times when pipe laying is not in progress, the open ends of pipe shall be closed by a watertight plug or other means approved by the Engineer. When practical, the plug shall remain in place until the trench is pumped completely dry. Care shall be taken to prevent pipe flotation should the trench fill with water.

Trench width at the top of pipe, bedding conditions, and backfill placement and compaction shall be such that design loadings on the pipe will not be exceeded.

Joint Assembly. Pipe joints shall be assembled in accordance with the Manufacturer's instructions and the requirements of ANSI/AWWA C600.

Pipe Deflection. When it is necessary to deflect pipe from a straight line in either the vertical or horizontal plane, or where long radius curves are permitted, the amount of deflection shall not exceed that shown in ANSI/AWWA C600.

Pipe Cutting. Cutting pipe for the insertion of valves, fittings, or closure pieces shall be done in a neat, workmanlike manner without creating damage to the pipe or lining. Ductile cast iron may be cut using an abrasive pipe saw, rotary wheel cutter, guillotine pipe saw, milling wheel saw, or oxyacetylene torch. Cut ends and rough edges shall be ground smooth and for push-on joint connections, the cut end shall be beveled.

Thrust Restraint. Thrust restraint of buried piping shall be provided by restrained joints.

Restrained Joints. All plugs, caps, tees and bends shall be suitably restrained by restrained joints as specified.

Concrete Thrust Blocks. All plugs, caps, tees, bends, and fire hydrants shall be provided with concrete thrust blocks.

Vertical and horizontal reaction backing shall be made of concrete having a compressive strength of not less than 3,000 psi after 28 days.

Backing shall be placed between solid ground and the fitting to be anchored; the area of bearing on the pipe and this ground in each instance shall be that shown or directed. The backing shall, unless otherwise shown or directed, be so located as to contain the resultant thrust force and so that the pipe and fitting joints will be accessible for repair. Concrete thrust blocks shall not cover or encase bolts.

Thrust Restraint Design Pressure. Thrust restraint design pressure shall be equal to 1.5 times the design pressure of the line or 150 psi, whichever is greater.

3.4 POLYETHYLENEENCASEMENT

Where shown on the Drawings or where directed when corrosive soil conditions are encountered install polyethylene encasement in accordance with requirements of ANSI/AWWA C105/A215.

3.5 TESTING

Test completed piping system in accordance with the requirements of Section 01660, Pressure Testing.

3.6 DISINFECTION

Disinfect pipelines to be used for potable water in accordance with requirements of Section 01650, Disinfection.

END OF SECTION

SECTION 02622
PLASTIC PIPE
FOR GRAVITY SERVICE

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

This Section includes materials and methods of installation of Plastic Pipe and fittings for gravity service.

1.02 SUBMITTALS

Provide manufacturer's Certificate of Compliance with specified requirements.

1.03 HANDLING AND STORAGE

All pipe, fittings and accessories shall be loaded and unloaded by lifting with hoists or by skidding in order to avoid shock or damage. Under no circumstances shall materials be dropped. Pipe handled on skidways shall not be rolled or skidded against pipe on the ground. Slings, hooks or pipe tongs shall be padded and used in such a manner as to prevent damage to the exterior surface or interior of the pipe.

Materials, if stored, shall be kept safe from damage. The interior as well as all sealing surfaces of all pipe, fittings, and other appurtenances shall be kept free from dirt or foreign matter at all times.

Pipe stored outside and exposed to prolonged periods of sunlight shall be covered with canvas or other opaque material. Air circulation shall be provided under covering.

Pipe shall not be stacked higher than the limits recommended by the manufacturer. The bottom tiers shall be kept off the ground on timbers, rails, or concrete. Pipe in tiers shall be alternated: bell, plain end; bell, plain end. Pipe shall not be stored close to heat sources.

Gaskets shall be placed in a cool location out of direct sunlight. Gaskets shall not come in contact with petroleum products. Gaskets shall be used on a first-in, first-out basis. Mechanical-joint bolts shall be handled and stored in a manner that will ensure proper use with respect to types and sizes.

PART 2 - MATERIALS AND EQUIPMENT

2.01 PLASTIC PIPE

Pipe for gravity service shall meet the requirements of ASTM D 3034 for SDR 35.

PVC pipe color shall be blue for potable water main, white for sewer force main, and purple for reuse main.

2.02 FITTINGS

Fittings for use with PVC pipe shall meet the requirements of ASTM D 3034 for SDR 35.

2.03 JOINTS

Pipe and fittings shall have integral wall bell and spigot joints with flexible elastomeric seals. Joints shall provide a permanent seal against exfiltration or infiltration. The gasketed joint shall be designed so that when assembled the elastomeric gasket located within the bell is compressed radially on the pipe spigot to form a positive seal. The joint shall be designed to avoid displacement of the gasket from the joint during assembly and when in service. If a lubricant is required to facilitate assembly, it shall have no detrimental effect on the gasket or on the pipe.

2.04 GASKETS

Gaskets shall be molded into a circular form or extruded to the proper section and then spliced into circular form. They shall consist of a properly processed high grade elastomeric compound of natural rubber, a synthetic elastomer or a blend of both. The gasket shall provide an adequate compressive force against the sealing surfaces of the bell and spigot so as to affect a positive seal under all combinations of joint tolerances. The gasket shall be the only element depended upon to make the joint flexible and water tight.

PART 3 - EXECUTION

3.01 EXAMINATION

All pipe and appurtenances shall be examined at the point of delivery. Material found to be defective due to manufacture or damage in shipment shall be rejected. Tests as specified in the applicable material standard may be performed to ensure conformance with the standard.

3.02 TRENCH CONSTRUCTION

Alignment and Grade. The pipelines shall be laid and maintained to the lines and grades established by the Drawings and Specifications, with fittings at the required locations unless otherwise approved by the Engineer.

Underground Conflicts. Prior to excavation, investigation shall be made to the extent necessary to determine the location of existing underground structures and conflicts. Care shall be exercised to avoid damage to existing structures. When obstructions that are not shown on the drawings are encountered during the progress of work and interfere so that an alteration of the plans is required, the Engineer will alter the Drawings or order a deviation in line and grade or arrange for removal, relocation, or reconstruction of the obstructions. When crossing existing pipelines or other structures, alignment and grade shall be adjusted as necessary, with the approval of the Engineer, to provide clearance as required by the Engineer to prevent future damage or contamination of either structure.

Trench Construction. The trench shall be excavated to the required alignment, depth, and width. Trench preparation shall proceed in advance of pipe installation for only as far as necessary to allow proper pipe installation. The width of the trench at the top of the pipe shall be ample to permit the pipe to be laid and joined properly and allow the backfill to be placed as specified.

Material used in the pipe embedment zone shall be Class I, Class II or Class III material as identified in ASTM D-2321, standard recommended practice for underground installation of flexible thermoplastic sewer pipe. Bedding material shall be of the class required to support the trench backfill loads for the depth of cover shown with maximum long term deflection limited to
5.0 percent and compaction ranges of 80 to 90 percent standard proctor density. If material meeting this requirement is not available from the trench, satisfactory material shall be furnished and placed without additional compensation.

Holes for the bells shall be provided at each joint but shall not be larger than necessary for joint assembly and assurance that the pipe barrel will lie flat on the trench bottom. Other than noted previously, the trench bottom shall be true and even in order to provide support for the full length of the pipe barrel, except that a slight depression may be provided to allow withdrawal of pipe slings or other lifting tackle.

When excavation of rock is encountered, all rock shall be removed to provide a clearance of at least 6-inches below and on each side of all pipe, valves and fittings. When excavation is completed, a bed of sand, crushed stone or earth that is free from stones, large clods, or frozen earth, shall be placed on the bottom of the trench to the previously mentioned depths; leveled, and tamped. This installation procedure shall be followed when gravel formations containing loose boulders greater than 8-inches in diameter are encountered. In all cases, the specified clearances shall be maintained between the bottom of all pipe and appurtenances and any part, projection, or point or rock, boulder, and stones of sufficient size and placement which, in the opinion of the Engineer could cause a fulcrum point.

Should the trench pass over a sewer or other previous excavation, the trench bottom shall be sufficiently compacted to provide support equal to that of the native soil or conform to other regulatory requirements in a manner that will prevent damage to the existing installation.

When the subgrade is found to be unstable or to include ashes, cinders, refuse, organic material, or other unsuitable material, such material shall be removed, to a minimum of at least 4-inches, or to the depth ordered by the Engineer and replaced under the directions of the Engineer with clean, stable backfill material. The bedding shall be consolidated and leveled in order that the pipe may be installed as specified.

When the bottom of the trench or the subgrade is found to consist of material that is unstable to such a degree that, in the judgment of the Engineer it cannot be removed, a foundation for the pipe and/or appurtenance shall be constructed using piling, timber, concrete, or other materials at the direction of the Engineer.

3.03 PIPE INSTALLATION

Proper implements, tools, and facilities shall be provided and used for the safe and convenient performance of the work. All pipe and fittings shall be lowered carefully into the trench by means of suitable tools or equipment in such a manner as to prevent damage to pipeline materials. Under no circumstances shall pipeline materials be dropped or dumped into the trench. The trench shall be dewatered prior to installation of the pipe.

Foreign material shall be prevented from entering the pipe while it is being placed in the trench. During laying operations, no debris, tools, clothing, or other materials shall be placed in the pipe.

As each length of pipe is placed in the trench, the joint shall be assembled and the pipe brought to correct line and grade. The pipe shall be secured in place with approved backfill material.

At times when pipe laying is not in progress, the open ends of the pipe shall be closed by a watertight plug or other means approved by the Engineer. When practical, the plug shall remain in place until the trench is pumped completely dry. Care shall be taken to prevent pipe flotation should the trench fill with water.

Trench width at the top of pipe, bedding conditions, and backfill placement and compaction shall be such that design loadings on the pipe will not be exceeded.

Joint Assembly. Pipe joints shall be assembled in accordance with the manufacturer's instructions.

Pipe Deflection. When Vertical deflection shall be monitored by the use of a rigid “Go-No-Go” device. The device shall be pulled by hand through each section from manhole to manhole. The pulling motion shall be smooth and easy so as to avoid jamming the device if an obstruction is encountered in the line. When the device is not able to go forward, the distance shall be measured from the last manhole and recorded. The device shall then be pulled backwards and that section of storm sewer main uncovered and recompacted according to these specifications. The “Go-No-Go” device shall be constructed to measure a maximum 5.0 percent deflection.

Pipe Cutting. Cutting pipe for the insertion of fittings, or closure pieces shall be done in a neat, workmanlike manner without creating damage to the pipe. Ends shall be cut square and perpendicular to the pipe axis. Burrs shall be removed from spigots and ends shall be smoothly beveled. Field cut ends shall be marked for proper depth of joint assembly.

Manhole Connections. Plastic pipes shall be connected to manholes in accordance with the details shown and as specified in Section 02605 – Manholes.

END OF SECTION

SECTION 02623
PLASTIC PIPE
FOR PRESSURE SERVICE

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

This Section includes materials and methods of installation of Plastic Pipe for pressure service.

1.2 QUALITY ASSURANCE

Pipe fittings and components shall be manufactured in the USA in accordance with the listed standards and requirements of this specification. All piping and fittings to conform to the City of Ormond Beach Land Development Code. Conflicts between these specifications and the LDC; the LDC controls.

1.3 SUBMITTALS

Provide manufacturer's Certificate of Compliance with specified requirements.

1.4 HANDLING AND STORAGE

All pipe, fittings, valves, hydrants and accessories shall be loaded and unloaded by lifting with hoists or by skidding in order to avoid shock or damage. Under no circumstances shall materials be dropped. Pipe handled on skidways shall not be rolled or skidded against pipe on the ground. Slings, hooks or pipe tongs shall be padded and used in such a manner as to prevent damage to the exterior surface or interior of the pipe.

Materials, if stored, shall be kept safe from damage. The interior as well as all sealing surfaces of all pipe, fittings, and other appurtenances shall be kept free from dirt or foreign matter at all times. Valves and hydrants shall be drained and stored in a manner that will protect them from damage or freezing.

Pipe stored outside and exposed to prolonged periods of sunlight shall be covered with canvas or other opaque material. Air circulation shall be provided under covering.

Pipe shall not be stacked higher than the limits recommended by the manufacturer. The bottom tiers shall be kept off the ground on timbers, rails, or concrete. Pipe in tiers shall be alternated: bell, plain end; bell, plain end. Pipe shall not be stored close to heat sources.

Gaskets shall be placed in a cool location out of direct sunlight. Gaskets shall not come in contact with petroleum products. Gaskets shall be used on a first-in, first-out basis. Mechanical-joint bolts shall be handled and stored in a manner that will ensure proper use with respect to types and sizes.

PART 2 - MATERIALS AND EQUIPMENT

2.1 PLASTIC PIPE

Pipe for pressure service shall be Class 12454-A or B rigid PVC compound in accordance with the requirements of ASTM D1784. Pipe and appurtenances for use in potable water systems shall bear the seal of approval for potable water use of the National Sanitation Foundation or other accredited testing laboratory.

PVC pipe having a nominal diameter less than 2-inches shall be made of 2000 psi hydrostatic design stress compounds designated PVC 1120 and shall conform to the applicable requirements of ASTM D1785. Threaded pipe and fittings shall be Schedule 80. Threaded fittings shall conform to ASTM D2464. Unthreaded pipe and fittings shall be Schedule 40 with solvent cemented joints. Cemented joints and fittings shall comply with ASTM D2466 and D2855.

PVC pressure rated pipe having a nominal diameter 2-inches or greater, but less than 4-inches, shall be made of 2000 psi hydrostatic design stress compounds designated PVC 1120 and shall conform to ASTM D2241. PVC pipe shall be furnished in 20-foot lengths unless otherwise noted. PVC pipe shall have a standard dimension ratio SDR 21 and a water pressure rating of 200 psi. Pipe couplings shall have a SDR 21 and a water pressure rating of 200 psi. Pipe shall have both ends beveled for use with gasketed couplings or one end beveled and one end with a bell. Couplings and gaskets shall be furnished with each length of pipe. Rubber ring gaskets shall conform to ASTM D3139 Nontoxic gasket lubricant shall be as specified by the manufacturer.

Pressure pipe 4-inches through 12-inches in diameter shall conform to the requirements of AWWA C900 for PVC 1120 pipe with cast iron pipe equivalent outside diameter. Pipe shall be pressure class 150 unless otherwise shown. Pipe may be furnished with plain ends for use with elastomeric-gasket couplings or with one end plain and one end with a gasket bell. Couplings and gaskets shall be furnished with the pipe. Gaskets shall conform to ASTM D3139. Nontoxic gasket lubricant shall be as specified by the pipe manufacturer.

Pressure pipe 14-inches through 36-inches in diameter shall conform to the requirements of AWWA C 905 for PVC 1120 pipe with cast iron pipe equivalent outside diameter. Pipe 16-inch through 24-inch shall have minimum wall thickness equivalent to a dimension ration (DR) of 18 unless otherwise shown. Pipe 30-inch through 36-inch shall have a minimum wall thickness equal to a dimension ration (DR) of 21 unless otherwise shown. Pipe may be furnished with plain ends for use with elastometric gasket couplings or with one end plain and one end with a gasket bell. Couplings and gaskets shall be furnished with the pipe. Gaskets shall conform to ASTM 1869. Non-toxic gasket lubricant shall be as specified by the pipe manufacturer.

2.2 FITTINGS

Fittings for use with PVC pipe 3-inches through 24-inches in diameter shall be ductile-iron fittings conforming to the requirements of ANSI/AWWA C153/A21.53. Fittings for use with pipe 30-inch and larger shall be gray iron or ductile-iron conforming to the requirements of ANSI/AWWA C111/A21.11a. Bolts for use with mechanical joints shall conform to the requirements of the joint standard. Fittings shall be suitable for a working pressure of 150 psi. Only those fittings and accessories that are of domestic (USA) manufacture will be acceptable.

Exterior Coating. Fittings for buried service and fittings for installation in exposed locations which are not to be painted shall be coated with a bituminous coating approximately 1 mil thick. The finished coating shall be continuous, smooth, neither brittle when cold nor sticky when exposed to the sun and shall be strongly adherent to the pipe.

Fittings in exposed locations which are to be painted shall be primed with a universal shop primer suitable for use under the finish paint specified.

Lining.

Cement-Mortar Lining. When fittings are required to have a cement-mortar lining, the lining shall conform to the requirements of ANSI A21.4/AWWA C104.

Ductile-iron fittings which are to be used to handle sewage or aggressive chemical wastes shall be lined with one of the following:

Polyethylene Lining. Fittings shall be provided with a special lining to resist septic sewage or aggressive chemical wastes. The lining shall be a blend of high-density and low-density polyethylene powders complying with ASTM D1248 compounded with carbon black to provide resistance to ultraviolet rays during storage above ground. The fittings shall be heated to an adequate temperature to provide uniform fusing of the polyethylene powders and proper bonding. The polyethylene lining shall be 40 mils thick.

Coal Tar Epoxy Lining. The coal tar epoxy lining shall be composed of a two-component coal tar epoxy compound capable of at least 40 mils dry film build in a one-coat multipass application process. The material must also meet the following minimum performance requirements:

A direct impact resistance as measured by ASTM D-2794 at 35 mils dry film thickness on ductile-iron panels. The material shall pass 100 inch pounds of impact.

A dielectric strength of at least 300 volts per mil when fully cured.

An abrasion resistance of 25 liters per mil as measured in ASTM D-968.

Following immersion tests without failure of any kind. The lining must be on ductile-iron panels at 35 mils minimum dry film thickness.

3% Sulfuric Acid 120degrees F.	1500 Hrs.
25% Sodium Hydroxide 70degrees F.	500 Hrs.
Continuous moisture condensation in Hydrogen Sulfide atmosphere	1000 Hrs.

Application of the lining shall be done under the supervision of the pipe manufacturer.

All surface areas which will be exposed to liquids and gasses shall be cleaned and deleterious materials removed. After cleaning the lining compound shall be applied to all surface areas which will be exposed to liquids and gases. The lining compound shall be applied so as to obtain a continuous and relatively uniform and smooth lining. The barrel of the pipe shall be coated to achieve a 45 mils minimum dry film thickness when measured with a dry film thickness magnetic gage; lining will be tapered at pipe ends. After cleaning, all joint surface areas and spigot ends exposed to the liquids and gases shall receive one coat of the lining material brushed on at a rate to achieve 10 mils minimum dry film thickness when measured with a magnetic dry film thickness gage.

Any damaged lined areas shall be repaired in accordance with the manufacturer's recommendations so that the repaired area is equal to the undamaged lined areas.

2.3 POLYETHYLENEENCASEMENT

Materials and methods of installation for polyethylene encasement for fittings, valves and appurtenances shall conform to the requirements of ANSI/AWWA CX105.

2.4 LOCATOR TAPE

Locator tape for use with plastic pipes shall be a two-inch wide tape consisting of polyethylene film with a metallic film to allow detection by electronic means. The tape shall be non- corrodible and shall be continuously marked to identify the use of the pipeline which it protects. The tape shall be installed directly above the pipe at a depth of twelve inches below finished grade.

2.5 LOCATOR WIRE

Locator wire shall be solid copper tracing wire 12 THHN and shall be installed directly below the pipe. Wire shall be brought to the surface at 500 foot minimum intervals and located in a valve box, cleanout, or other approved structure. Refer to drawing details for additional requirements.

2.6 THRUST RESTRAINT

Thrust Restraint. Thrust restraint for buried piping shall be provided by restrained joints for all buried piping larger than 1-inch.

2.7 RESTRAINED JOINTS

Restrained joints for use with PVC pipe shall consist of retainer glands fabricated of ductile-iron conforming to ASTM A536. The gland shall be such that it can replace the standard mechanical joint gland and can be used with the standardized mechanical joint bell conforming to ANSI/AWWA A21.11/C111 and ANSI/AWWA A21-53/C153. The retainer glands shall have a pressure rating equal to that of the PVC pipe on which it is used.

PVC push-on joints adjacent to restrained fittings shall be restrained using harness restraint devices. This harness restraint shall be split to enable installation of the restraint after the spigot has been installed into the bell. The restraint shall consist of a split ring that fits behind the bell, a split restraint ring that installs on the spigot and a number of tie bars to connect the other two parts. Restraint components shall be of ductile-iron conforming to ASTM A536. The restraint ring shall consist of a plurality of individually activated gripping surfaces to hold the spigot and maximize restraint capability.

Twist off nuts, sized same as the tee-head bolts shall be used to insure proper actuating of restraining devices.

PART 3 - EXECUTION

3.1 EXAMINATION

All pipe and appurtenances shall be examined at the point of delivery. Material found to be defective due to manufacture or damage in shipment shall be rejected. Tests as specified in the applicable material standard may be performed to ensure conformance with the standard.

3.2 TRENCH CONSTRUCTION

Alignment and Grade. The pipelines shall be laid and maintained to the lines and grades established by the Drawings and Specifications, with fittings, valves and hydrants at the required locations unless otherwise approved by the Engineer. Valve-operating stems shall be oriented to allow proper operation. Hydrants shall be installed plumb.

Underground Conflicts. Prior to excavation, investigation shall be made to the extent necessary to determine the location of existing underground structures and conflicts. Care shall be exercised to avoid damage to existing structures. When obstructions that are not shown on the drawings are encountered during the progress of work and interfere so that an alteration of the plans is required, the Engineer will alter the Drawings or order a deviation in line and grade or

arrange for removal, relocation, or reconstruction of the obstructions. When crossing existing pipelines or other structures, alignment and grade shall be adjusted as necessary, with the approval of the Engineer, to provide clearance as required by the Engineer to prevent future damage or contamination of either structure.

Trench Construction. The trench shall be excavated to the required alignment, depth, and width. Trench preparation shall proceed in advance of pipe installation for only as far as necessary to allow proper pipe installation. The width of the trench at the top of the pipe shall be ample to permit the pipe to be laid and joined properly and allow the backfill to be placed as specified.

PVC pipe shall be installed with pipe bedding and a compacted envelope as shown on the drawings. Material used as bedding and in the pipe envelope (pipe embedment zone) shall be Class I, Class II or Class III material as identified in ASTM D-2321. Bedding material shall consist of 4-inches minimum of non-cohesive granular material placed uniformly under the pipe. Bedding material shall be lightly compacted.

In unpaved areas, material within the haunching area shall be compacted to 95% density according to AASHTO T-180. In paved areas, material within the haunching area should be compacted to 98% density according to AASHTO T-180. Excessive compaction shall be avoided if any distortion of the pipe wall is observed. Material above the haunching area may be native material if free of particles larger than 1-1/2-inches. At least 6-inches of backfill material shall be placed over the top of the pipe before compacting directly over the crown of the pipe.

Holes for the bells shall be provided at each joint but shall not be larger than necessary for joint assembly and assurance that the pipe barrel will lie flat on the trench bottom. Other than noted previously, the trench bottom shall be true and even in order to provide support for the full length of the pipe barrel, except that a slight depression may be provided to allow withdrawal of pipe slings or other lifting tackle.

When excavation of rock is encountered, all rock shall be removed to provide a clearance of at least 6-inches below and on each side of all pipe, valves and fittings. When excavation is completed, a bed of sand, crushed stone, or earth that is free from stones, large clods, or frozen earth, shall be placed on the bottom of the trench to the previously mentioned depths; leveled, and tamped. These clearances and bedding procedures shall also be observed for pieces of concrete or masonry and other debris of subterranean structures, such as masonry walls, piers, or foundations that may be encountered during excavation. This installation procedure shall be followed when gravel formations containing loose boulders greater than 8-inches in diameter are encountered. In all cases, the specified clearances shall be maintained between the bottom of all pipe and appurtenances and any part, projection, or point or rock, boulder, or stones of sufficient size and placement which, in the opinion of the Engineer could cause a fulcrum point.

Should the trench pass over a sewer or other previous excavation, the trench bottom shall be sufficiently compacted to provide support equal to that of the native soil or conform to other regulatory requirements in a manner that will prevent damage to the existing installation.

When the subgrade is found to be unstable or to include ashes, cinders, refuse, organic material, or other unsuitable material, such material shall be removed, to a minimum of at least 4-inches, or to the depth ordered by the Engineer and replaced under the directions of the Engineer with clean, stable backfill material. The bedding shall be consolidated and leveled in order that the pipe may be installed as specified.

When the bottom of the trench or the subgrade is found to consist of material that is unstable to such a degree that, in the judgment of the Engineer it cannot be removed, a foundation for the pipe and/or appurtenance shall be constructed using piling, timber, concrete, or other materials at the direction of the Engineer.

3.3 PIPE INSTALLATION

Proper implements, tools, and facilities shall be provided and used for the safe and convenient performance of the work. All pipe, fittings, and valves, and hydrants shall be lowered carefully into the trench by means of suitable tools or equipment in such a manner as to prevent damage to pipeline materials. Under no circumstances shall pipeline materials be dropped or dumped into the trench. The trench shall be dewatered prior to installation of the pipe. The sealing surface of the pipe, the inside of the bell and the gasket shall be cleaned immediately before assembly.

Foreign material shall be prevented from entering the pipe while it is being placed in the trench. During laying operations, no debris, tools, clothing, or other materials shall be placed in the pipe.

As each length of pipe is placed in the trench, the joint shall be assembled and the pipe brought to correct line and grade. The pipe shall be secured in place with approved backfill material.

At times when pipe laying is not in progress, the open ends of the pipe shall be closed by a watertight plug or other means approved by the Engineer. When practical, the plug shall remain in place until the trench is pumped completely dry. Care shall be taken to prevent pipe flotation should the trench fill with water.

Trench width at the top of pipe, bedding conditions, and backfill placement and compaction shall be such that design loadings on the pipe will not be exceeded.

Joint Assembly. Pipe joints shall be assembled in accordance with the manufacturer's instructions.

Pipe Deflection. When it is necessary to deflect pipe from a straight line in either the vertical or horizontal plane, or where long radius curves are permitted, the amount of deflection shall not exceed that recommended by the manufacturer.

Pipe Cutting. Cutting pipe for the insertion of valves, fittings, or closure pieces shall be done in a neat, workmanlike manner without creating damage to the pipe. Ends shall be cut square and perpendicular to the pipe axis.

Burrs shall be removed from spigots and ends shall be smoothly beveled. Field cut ends shall be marked for proper depth of joint assembly.

Locator Tape. Install all plastic pipe with a locator tape of the type specified.

Locator Wire. Install in accordance with drawing detail. Prior to acceptance, test to ensure continuous current exists.

Polyethylene Encasement. Provide polyethylene encasement for fittings. It shall be installed in accordance with ANSI/AWWA C105.

Thrust Restraint. All plugs, caps, tees, and bends, unless otherwise specified, shall be provided with reaction backing, or restrained joints as specified. Thrust-restraint design pressure shall be equal to 1.5 times the design pressure of the line.

Vertical and horizontal reaction backing shall be made of concrete having a compressive strength of not less than 2,500 psi after 28 days.

Backing shall be placed between solid ground and the fitting to be anchored; the area of bearing on the pipe and on the ground in each instance shall be that shown or directed. The backing shall, unless otherwise shown or directed, be so located as to contain the resultant thrust force so that the pipe and fitting joints will be accessible for repair.

3.4 TESTING

After completion of installation, perform testing in accordance with requirements of Section 01660 - Pressure Testing.

3.5 DISINFECTION

Disinfect potable water lines in accordance with the requirements of Section 01650 - Disinfection.

END OF SECTION

SECTION 02640
VALVES AND ACCESSORIES (FOR PIPELINE WORK)

PART 1 – GENERAL

1.1 DESCRIPTION OF WORK

This Section includes furnishing and installing valves of the different types and various accessories as shown on the Drawings and as specified in the construction documents.

1.2 SUBMITTALS

Submit certificate of compliance with specified standards.

Submit manufacturer's catalog data and detail construction sheets for record purposes.

PART 2 – MATERIALS AND EQUIPMENT

2.1 JOINTS

Valves shall be fitted with joints suitable for the pipe and fittings with which they are to be used. Bolts and gaskets for making up joints shall conform to the requirements of the joint standard for the pipe and fittings.

2.2 GATE VALVES

Valves exposed above grade outside structures shall be handwheel operated and shall be of a design that will allow operation in any position with respect to the vertical.

Valves buried in earth shall be equipped with 2-inch square operating nuts, valve boxes and covers.

All valves shall open by turning in a counter-clockwise direction.

Pressure Rating. Unless otherwise shown or specified, valves shall be rated for operation at not less than the same pressures of the pipeline in which they are installed or 150 psi, whichever is greater. Valve pressure ratings are for cold water, non-shock service.

The manufacturer's name and pressure rating shall be cast in raised letters on the valve body.

Two and One-Half Inch and Smaller. Gate valves 2-1/2 inch nominal pipe diameter and smaller shall be American made, of brass construction and shall conform to Federal Specification WW-V-54, with screwed joints.

Valves for exterior and buried service shall be Type I, wedge disc, non-rising stem type.
Three-Inch to Twelve-Inch and Sixteen-Inch Diameter. Gate valves, 3-inch to 12-inch diameter, inclusive, and 16-inch shall be suitable for the service intended and shall be iron body resilient-seated gate valves with non-rising stems. Valves shall have O-ring seals and shall conform to ANSI/AWWA C509.

Bypass valves shall be furnished on all gate valves larger than 16 inch.

Fourteen-Inch Diameter. Gate valves of 14-inch diameter shall be suitable for the service intended and shall be iron body, bronze mounted, double disc type with O-ring seals, conforming to ANSI/AWWA C500.
Twenty Inch and Larger. Gate valves 20 inches and larger shall be suitable for the service intended and shall be iron body, bronze mounted, double disc type with O-ring seals 250 psi rating. All valves shall be equipped with steel bevel gears, extended type gear case, rollers, tracks and scrapers and conform to the requirements of ANSI/AWWA C500. Valves shall be suitable for horizontal installation and non-rising stem. All valves shall be equipped with bypass valves and box. Acceptable manufacturer: American R/D or equal.

2.3 TAPPING SLEEVES AND VALVES

Tapping sleeves and valves shall be used to make "wet" taps into existing mains when shown on the Drawings.

Cast iron tapping sleeve shall be of split type with mechanical joints, ductile-iron bolts and flanged outlet for connection to the tapping valve.

Acceptable Manufacturers. ADIPCO, U.S. Pipe, McWane, Clow, Mueller, JCM, Rockwell, Dresser, M&H.

Tapping valves shall conform to the requirements of this Section for gate valves except that they shall have an inlet joint to match the sleeve and an outlet joint suitable for connection to the pipe used.

2.4 EXTENSION STEMS FOR BURIED VALVE OPERATORS

Where the depth of the valve is such that its centerline is more than four feet below grade, provide operating extension stems to bring the operating nut to a point of six-inches below the surface of the ground and/or box cover. Extension stems shall be steel and shall be complete with a two-inch operating nut.

2.5 T-HANDLE WRENCHES

Furnish a sufficient number of T-handle wrenches to permit operation of all gates and valves with square operating nuts, regardless of depth.

Length shall be suitable for operators of average height working in normal positions.

2.6 VALVE BOXES

Valve boxes shall be provided for all buried valves. Valve boxes shall consist of cast iron base and adjustable top section with cover which shall be marked “Sewer”, Water or “Reuse”, depending upon function. Extensions shall be provided as required to meet grade. Valve boxes shall be equivalent to U.S. Foundry USF 7503 with appropriate cover stamping valves.

PART 3 – EXECUTION

3.1 INSPECTION

Prior to installation valves shall be inspected for direction of opening, freedom of operation, tightness of pressure-containing bolting, cleanliness of valve ports and seating surfaces, handling damage and cracks. Defective valves and accessories shall be rejected.

3.2 INSTALLATION

Valves shall be installed so that contact faces bear uniformly on the gasket and then are made up with relatively uniform bolt stress. Valves shall be supported so that undue stress is not placed on flanges. Valves shall not be used to bring misaligned pipe into alignment during installation.

Valves for buried service shall be set plumb with the base of the valve box centered over the valve and resting on compacted backfill. The top section of the box shall be set to allow equal movement above and below finished grade. After being correctly positioned, fill shall be carefully tamped around the valve box for a distance of 4 feet on all sides below the box. In paved areas, top of the cover shall be flush with the finished paving. In off-street areas, the cover shall be set 1 inch above existing grade unless otherwise directed by the ENGINEER. A concrete pad shall be poured around the top of the box as shown in the standard details.

The valve manufacturer shall select and mount the gear operator and accessories on each valve and stroke the valve from fully open to fully closed prior to shipment.

3.3 TESTING

Valves shall be tested as a part of the completed piping system in accordance with the requirements of Section 01660, Pressure Testing.

END OF SECTION

SECTION 02641
PIPE CLEANING AND PIGGING

PART 1 – GENERAL

1.1 SCOPE OF WORK

A. CONTRACTOR shall be required to clean potable water mains 10 inches and larger by pigging prior to testing and disinfection.

B. Provide all supervision, labor, tools, transportation, material and equipment necessary to clean new water mains, using Polly Pigs and an approved Polly Pig procedure. Install all items required, provide Polly Pig launching and retrieval devices as required and furnish all swabs and Polly Pigs required for thorough removal of foreign materials.

1.2 QUALIFICATIONS

A. The materials and work specified herein shall be furnished and performed by firms who are fully experienced, reputable, and qualified in the manufacture, installation and use of the specified items.

1.3 SUBMITTALS

A. The CONTRACTOR shall provide evidence of qualification by providing copies of his/her state certification or license to perform such work as herein described and shall provide verifiable references upon request.

1.4 CONTRACTOR RESPONSIBILITIES

A. Supervision: There shall be on-site at all times during the work, one superintendent with a minimum of three years supervisory experience in cleaning new and old force mains.

B. Cleaning: Cleaning shall be performed using swabs or Polly Pigs to remove all foreign objects and, for old pipe, restore the original flow characteristics without abrading the interior walls of the pipe.

C. Equipment: The CONTRACTOR shall furnish pig launching equipment which will minimize the CONTRACTOR's or OWNER's need to provide for additional valving, fittings and auxiliary water supplies. Said equipment shall be of the latest design and construction and shall include the means to maintain constant monitoring of the in-line flows and pressures of the system being cleaned and the constant location of the cleaning pigs in the system.

The CONTRACTOR shall maintain on site for the duration of the project and have available for immediate use an electronic Polly Pig detector with the appropriately sized cavity Polly Pig for use in the system being cleaned to provide a means of tracking the passage of the pig in the system to locate areas of potential or suspected blockage, and to find "lost" valves and other disparities within the system.

The CONTRACTOR shall also have available auxiliary centrifugal pumps for cleaning.

D. Testing: The CONTRACTOR shall perform pre-cleaning and post-cleaning flow testing to determine sizes, types, densities and numbers of pigs and/or swabs to be used to establish the means and procedures to properly and safely clean the piping, to evaluate the system and to measure the effects of the cleaning operation.

E. Communication: The CONTRACTOR shall provide radio communication and job site transportation between launching and retrieval points.

F. Report upon Completion: The CONTRACTOR shall provide a written report upon completion of line cleaning to outline and detail information acquired during the cleaning progress about the system to confirm existing information.

PART 2 – PRODUCTS

2.1 POLLY PIGS

A. Furnish Polly Pigs in sufficient numbers and sizes of appropriate densities, coatings and configurations to properly clean the system(s) prior to the system(s) being put into service.

B. Polly Pigs shall be those as manufactured by Knapp Polly Pigs of Houston, Texas, or approved equal.

2.2 EQUIPMENT

A. Furnish and install Polly Pig launching and retrieval devices as required.

B. Launching and retrieval device shall be fabricated, designed and manufactured according to ANSI standards and capable of withstanding working pressures of 150 P.S.I.G.

PART 3 – EXECUTION

3.1 LINE PIGGING

A. Equipment shall be installed in accordance with manufacturer's recommendations.

B. Evaluation of new and existing pipeline conditions, selection of the cleaning pigs, cleaning and flushing shall be provided by personnel thoroughly trained, knowledgeable and experienced in the technology and procedures required for the proper and safe "pigging" of this system.

C. New and existing piping shall be thoroughly cleaned of all material, sand, grit, gravel, stones, fluids, construction debris, threats to its sanitation, and other items that can generally be construed as "foreign" material and that would not be found in a properly cleaned system. This cleaning shall provide a smooth interior periphery of the pipe as a consequence of the cleaning procedure and will result in a conduit or pipe virtually free of any material and fluids, other than those used for the cleaning procedure, within the system.

D. The CONTRACTOR shall provide all required material, labor, special fittings, connections, traffic control and temporary facilities necessary to accomplish the work. Night work may be required. The CONTRACTOR shall perform such night work at no additional cost to the OWNER.

END OF SECTION

SECTION 02720
DRAINAGE STRUCTURES AND PIPING

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. The extent of drainage structures and piping is shown on the drawings.

B. Related Work Specified Elsewhere:

Section 02200 - Earthwork.
Section 02641 – Pipe Cleaning and pigging.

1.02 SUBMITTALS

A. A. Submit product literature that includes information on the installation and maintenance recommendations, performance and operation of the valve, materials of construction, dimensions and weights, headloss, flow data and pressure ratings.

B. Upon request, provide shop drawings that clearly identify the valve materials of construction and dimensions.

1.03 QUALITY ASSURANCE

A. All material shall be new and unused.

B. Supplier shall have at least twelve (12) years experience in the design and manufacture of membrane/elastomeric check valves

C. Documented head loss tests are to be provided by the manufacturer. These are to be third party tests performed by a hydraulic testing institute and shall show head loss in open air and submerged conditions.

D. Materials shall be rejected for failure to meet any requirements specified herein. Rejection may occur at place of manufacture, at work site, or following installation. Mark for identification rejected materials and remove from work site immediately. Rejected materials shall be replaced at no cost to OWNER.

PART 2 - PRODUCTS

GENERAL

A. Approved manufactures and product lines are WASTOP INLINE CHECK VALVE and CHECKMATE ULTRAFLEX ELASTOMERIC CHECK VALVES

B. Reference to a manufacturer's name and model or catalog number is for the purpose of establishing the standard of quality and general configuration desired.

2.01 CHECKMATE ULTRAFLEX ELASTOMERIC CHECK VALVES

A. Check Valves are to be all rubber and the flow operated check type with slip-in cuff connection. The entire CheckMate Ultraflex Valve shall be ply reinforced throughoutthe body, saddle and bill, which is cured and vulcanized into a one-piece unibody construction. A separate valve body or pipe used as the housing is not acceptable. The valve shall be manufactured with no metal, mechanical hinges or fasteners, which would be used to secure any component of the valve to a valve housing. The port area of the saddle shall contour into a circumferential sealing area (the "bill") that is concentric with the pipe which shall allow passage of flow in one direction while preventing reverse flow. The entire valve shall fit within the pipe inside diameter. The saddle area of the valve must be flat, not conical, and integral with the rubber body above centerline in order to not produce any areas or voids that can collect or trap debris. The valve must be easily installed in pipes with poor end condition without the need to modify or utilize the headwall or structure to seal and anchor the valve. Once installed, the CheckMate Ultraflex Valve shall not protrude beyond the face of the structure or end of the pipe.

B. The CheckMate Ultraflex Valve shall incorporate multiple concave grooves molded integrally into the flat saddle wall thickness extending longitudinally a minimum of 80%of the length of the saddle to reduce opening resistance and reduce headloss.

C. The CheckMate Ultraflex Valve shall incorporate a customized geometrical notch in the end of the bill to reduce cracking pressure. The notch shall be at the invert/bottom of the bill and symmetrical about the valve centerline. The longitudinal length of the notch shall be no greater than half the length of the bill.

D. The outside diameter of the upstream and downstream sections of the valve must be circumferentially in contact with the inside diameter of the pipe.

E. Slip-in style CheckMate Ultraflex Valves will be furnished with a set of stainless steel expansion clamps. The clamps, which will secure the valve in place, shall be installed in the upstream or downstream cuff of the valve, depending on installation orientation, and shall expand outwards by means of a turnbuckle. Each band shall be pre-drilled allowing for the valve to be pinned and secured into position in accordance with the manufacturer's installation instructions.

F. Manufacturer must have flow test data from an accredited hydraulics laboratory to confirm pressure drop and hydraulic data.

G. Company name, plant location, valve size patent number, and serial number shall be bonded to the check valve.

2.02 WASTOP INLINE CHECK VALVE

A. The check valves shall be designed to operate in installations using flanges, flat irons, slide muffs, joint couplings or custom made brackets. The check valve should be able to be installed on an inlet, or outlet, vertically, horizontally, inside existing pipes, or

between two pipes. The housing of the valve should be of stainless steel and less than or equal to 3mm (l /8") thick to minimize the reduction of the flow area or PVC/PE. The membrane should be conical and should be attached to the housing with bolts or rivets along the top of the membrane, and the outlet side of the housing allowing maximum flow through the membrane.

The check valve should have a pulsating flow, opening and closing at the specific levels specified in the technical specification.

When the pressure on the upstream side of the valve exceeds the opening pressure the valve will open and allow flow through the valve. At a pre-determined pressure the valve will close leaving a pre-determined level of water upstream and prevent the upstream pipe drying out.

2.03 FUNCTION

A. When line pressure exceeds the backpressure, the line pressure forces the bill and saddle of the valve open, allowing flow to pass. When the backpressure exceeds the line pressure, or in the absence of any upstream or downstream pressure, the bill and saddle of the valve is forced closed, preventing backflow.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Installation shall be conducted according to the manufacturers written instructions. All valves shall be marked with a unique serial number and flow direction reference.

END OF SECTION

SECTION 02801
RESTORATION OF SURFACE IMPROVEMENTS

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

The work includes the restoration of driveways, lawn areas, trees and plants, roadways, mailboxes, sprinkler systems, walks and any other existing improvement affected by the proposed work within the project limits regardless if outside the right of way or not.

This section includes furnishing equipment, labor and materials, and performing all necessary and incidental operations to perform the required work.

1.2 QUALITY ASSURANCE

Standards. Florida Grades and Standards for Nursery Plants, Part 1:

Irrigation Contractor Qualifications. Irrigation Competency Card is required for contractor or sub-contractor doing any irrigation repair, including relocation of heads, lines or valves, or any new irrigation work.

PART 2 - MATERIALS AND EQUIPMENT

2.1 SOD

Sod used for restoration shall match the existing sod in the area. St. Augustine sod shall be replaced with St. Augustine Floratam. In areas without irrigation, Argentina Bahia sod shall be used, unless otherwise directed by the Engineer/Landscape Architect.

Sod shall have well matted roots.

The sod shall be sufficiently thick to secure a dense stand of live grass, with a minimum thickness of two-inches. The sod shall be live, fresh and uninjured at the time of planting. It shall be planted as soon as possible after being dug and shall be shaded and kept moist from the time it is dug until it is planted.

The sod shall be commercial size rectangles measuring 12-inches by 24-inches or larger, except where 6-inch strip sodding is called for on the drawings.

Sod shall be planted as soon as possible after being harvested and shall be shaded and kept moist from the time of harvesting until it is planted.

The source of the sod may be inspected and approved by the Engineer/Architect prior to construction.

2.2 PLANTS

Existing damaged plants shall be replaced by plants of equal type, quality and size whenever possible. All new plants shall be sound, healthy, vigorous and free from defects, decay, disfiguring, bark abrasions, plant diseases, insect pests, their eggs or larvae. The new plants shall be approved by the Engineer/Landscape Architect before placing.

Existing plants may be removed, preserved, and replaced at the Contractors option, in which case, the plants shall be handled and maintained by approved nursery staff.

Plants shall be watered and cared for until new growth appears. Dead and dying plants shall be immediately replaced.

Plants used shall be in accordance with the standards for Florida No. 1 or better, as given in the current "Grades and Standards for Nursery Plants," State of Florida, Department of Agriculture, or their equal as approved by the Engineer/Landscape Architect.

Plants shall conform to the sizes indicated by the Owner.

2.3 MULCH

Mulch for all planter areas shall be shredded cypress or eucalyptus, clean, bright and free from weeds, moss, sticks, and other debris.

2.4 WATER

The water used in the performance of this Contract shall be of drinking water quality, clean and free from injurious amounts of oil, acid, alkali, organic matter, or any substance which might be harmful to plant growth or obnoxious to traffic.

2.5 PLANTING MIXTURE

The planting mixture, when required, shall consist of a thorough mixture of 40% peat and 60% sand. The peat shall be Florihome peat or equivalent and the sand shall be clean and free from debris of any kind.

2.6 FERTILIZER

Fertilizer shall be granular 8-8-8, or equivalent.

Commercial fertilizers shall comply with the State fertilizer laws.

Fertilizer may, at the discretion of the Engineer/Architect, upon satisfactory evidence of its feasibility from the manufacturer, be applied in liquid form.

2.7 ASPHALTIC CONCRETE

Asphaltic concrete for surface and base course applications shall be Type SP9.5 as specified in the Florida Department of Transportation's Standard Specifications for Road and Bridge Construction and shall be in accordance with the project specifications and plans.

2.8 PORTLAND CEMENTCONCRETE

Portland cement concrete used in the performance of this Contract shall have a compressive strength of 3000 psi at 28 days and shall conform to the requirements of Section 03300.

PART 3 - EXECUTION

3.1 LANDSCAPING RESTORATION

All grass areas disturbed by construction shall be restored with the same type of sod as was existing prior to disturbance.

Lawn Areas. Any lawn area affected by the required work shall be restored to a condition equal or better than the conditions existing before the commencement of work.

Balled Plants. Plants where required shall be adequately balled with firm natural balls of soil, sized as set forth in “Grades and Standards". Balls shall be firmly wrapped with burlap or equally approved strong cloth. No balled plant will be planted if the ball is cracked or broken before or during the process of planting.

Option. Plants may be furnished as container grown instead of balled if all other requirements are met.

Preparation of Plant Pits. All plant pits shall be circular in outline and have vertical sides. Tree pits shall be two feet wider than the width of the ball and one foot deeper than the depth of the ball. Shrubs that are either B&B or in 3 gallon and under containers shall have pits that are one foot wider than the width of the plant ball and 6-inches deeper than the depth of the ball.

Setting Plants. All plants except as otherwise specified, shall be centered in pits. Deep planting shall be avoided and unless otherwise specified, plants shall be set at such a level that after settlement they will bear the same relation to the required grade as they have to the natural grade before being transplanted.

Balled and burlapped plants and palms shall be placed on 6-inches to 12-inches of tamped planting mixture and adjusted so as to be at the proper level. The rope and burlap shall be cut away and the burlap folded down to the bottom of the pit. Very large B&B plants shall remain wrapped until fully backfilled and then just the upper portion of the burlap shall be removed. Backfill of planting mix shall be placed halfway up the pit and then water tamped. After this water has drained away, backfill around the edge of the pit to form a saucer and fill area three times with water.

Water. Water to be used initially during plant installation shall be furnished by the Contractor. The existing irrigation system, where damaged, shall be promptly repaired after the installation of the plants.

Sod Placement.

The provisions for the preparation of the area to be sodded shall include scarifying and loosening the soil and application of fertilizer.
Sodding shall not be performed when weather and soil conditions are, in the Engineer's opinion, unsuitable for proper results.

The sod shall be placed on the prepared surface with edges in close contact, and shall be firmly and smoothly embedded by light tamping with appropriate tools.

Where sodding is used in drainage ditches or ponds, the setting of the pieces shall be staggered, such as to avoid a continuous seam along the line of flow. Along the edges of such staggered areas, the offsets of individual strips shall not exceed 6-inches.

In order to prevent erosion caused by vertical edges at the outer limits, the outer pieces of sod shall be tamped so as to produce a featheredge effect.

On areas where the sod may slide, due to height and slopes, it shall be pegged, with pegs driven through the sod blocks into firm soil and at intervals as shown on the drawings or as directed by the Engineer/Architect.

Any pieces of sod which, after placing, show appearance of extreme dryness shall be removed from the work.

The sod shall be kept in a moist condition after planting and for the duration of the Contract.

Maintenance. Contractor shall maintain the planted areas in a satisfactory condition until final acceptance of the project. Such maintenance shall include mowing, edging, weed control, watering, filling, leveling and repairing of any washed or eroded areas as may be necessary.

3.2 PAVEMENT REPLACEMENT

Asphalt pavement shall be removed by saw cutting on a straight line with edges as vertical as possible. Concrete pavement or asphalt surfaced concrete shall be removed by cutting with a concrete saw in as straight a line and vertically as possible.

Prior to replacing asphalt pavement, a crushed concrete base shall be laid. The base shall be twelve (12) inches of compacted thickness for City driveways. For State or County roads the thickness shall be as required by that agency's permit. The base course shall be compacted in two equal layers to a minimum of 98% of the maximum density as determined by AASHTO, Method T-180. The Owner will have tests made by an independent testing laboratory to verify compaction results.

Driveway aprons (replacing existing driveways as noted on plans) shall consist of 6 inches of concrete having a compressive strength of 3,000 PSI. The concrete shall bear on a subgrade exhibiting an LBR of at least 40. If required, the stabilization shall be achieved by mixing shell into the subgrade. The subgrade shall have a minimum thickness of 8 inches and compacted to 98% of the maximum dry density as provided by AASHTO T-180.

Unless the base is sealed or other temporary paving applied over driveway areas to be repaved, pavement shall be replaced not later than three weeks after completion of backfill.

3.3 CURB REMOVAL ANDREPLACEMENT

Curb removal and replacement required in the construction of this work shall be done by the Contractor. Reasonable care shall be exercised in removing the curb, and the Contractor shall either stockpile or dispose of this material as directed by the Engineer/Architect. Curb shall be replaced of like material in a manner and condition equal to or better than that existing at the time of removal. Materials and methods of replacing State Highway sidewalks or curbs shall conform to the Department of Transportation specifications.

3.4 TESTS

The Contractor shall furnish facilities for making all density tests and make such restorations as may be necessary due to test operations. All density tests on backfill or base replacement will be made by a commercial testing laboratory employed by the Owner and at such locations as maybe recommended by the Engineer/Architect. If the densities as determined by the specified tests fall below the required minimums, the Contractor shall pay for all retests.

END OF SECTION

SECTION 02802
IDENTIFICATION TAPE FOR BURIED PIPE

PART 1 – GENERAL

1.1 DESCRIPTION

A. Furnish and install identification tape over the centerline of all buried potable water lines, wastewater force mains, raw water mains, gravity sewers and wastewater effluent reuse mains.

B. See also Sections 02616 and 02623 for additional pipe locating marker requirements.

1.2 SUBMITTALS

A. Submit manufacturer's descriptive literature, illustrations, specifications and other pertinent data.

PART 2 – PRODUCTS

2.1 IDENTIFICATION TAPE

A. Identification Tape for Ductile Iron and Steel Pipe.

Identification tape shall be manufactured of inert polyethylene so as to be highly resistant to alkalies, acids and other destructive agents found in soil, and shall have a minimum thickness of 6 mils with a minimum tensile strength of 22 pounds per inch and a maximum adhesive factor of 40 ounces per inch. Tape width shall be 2 inches and shall have background color specified below, imprinted with black letters. Imprint shall be as specified below and shall repeat itself a minimum of once every 2 feet for entire length of tape.

B. Identification Tape for Polyvinyl Chloride Pipe.

Identification tape shall be manufactured of polyethylene with a minimum thickness of 4-mils and shall have a 1-mil thick metallic foil core. The tape shall be highly resistant to alkalies, acids and other destructive agents found in soil. Tape width shall be 3 inches and shall have background color specified below, imprinted with black letters. Imprint shall be as specified below and shall repeat itself a minimum of once every 2 feet for entire length of tape.

C. Tape background colors and imprints shall be as follows.

Imprint	Background Color
"Caution Caution - Potable Water Line Buried Below"	Blue
"Caution Caution - Wastewater Force Main Buried Below"	Green
"Caution Caution - Sewer"	Green
“Caution Caution – Reuse Water Main Buried Below”	Lavender
“Caution Caution – Raw Water Main Buried Below”	White

D. Identification tape shall be "Terra Tape" as manufactured by Reef Industries, Inc., Houston, TX, (800) 231-6074, Allen Systems Inc., Wheaton, IL (800) 323-1749, or approved equal.

2.2 LOCATING WIRE

A. Locating wire shall be #10 THHN solid copper tracing wire.

PART 3 – EXECUTION

3.1 INSTALLATION OF IDENTIFICATION TAPE

A. Identification tape shall be installed for all buried pressure mains in accordance with the manufacturer's installation instructions and as specified herein.

B. For potable, raw, reuse water and force mains, identification tape shall be installed 12 inches below final grade over centerline of pipe.

C. For wastewater gravity sewers, identification tape shall be continuously spiral-wrapped around the pipe with the bands 12 to 18 inches apart.

3.2 INSTALLATION OF LOCATING WIRE

A. Locating wire shall be installed around all buried pressure mains in accordance with plan details. Wire shall be extended to top of all valve boxes as shown on plan details.

END OF SECTION

SECTION 02930
SODDING

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 WORK INCLUDED

A. Provide all labor, materials, equipment and incidentals required to prepare lawn bed, install sodding, and repair existing sod in accordance with the drawings, scheduled mowings, and all work that is part of the 30-day grow-in period, and as specified.

1.3 RELATED WORK

A. Irrigation System
B. Trees, Shrubs, and Groundcover
C. Fine Grading

1.4 QUALITY ASSURANCE

A. Sod shall be grown by certified Florida State Plant Board SOD FARM or as approved by the OWNER'S Representative. The OWNER'S Representative shall inspect sod prior to cutting and delivery to site.

B. The OWNER'S Representative shall have the right at any stage of the construction operation to reject any and all work and materials, which, in his opinion, do not meet the requirements of these specifications. Such rejected work and materials shall be immediately removed from the site and replaced in an acceptablemanner.

1.5 SUBMITTALS

A. Certificates and Guarantee

1. Growers' Certification andGuarantee
   a. All sod shall be Florida Standard Grade sod as defined by the "Florida Turf Producers Association" that is true to botanical variety and 98% free of weeds and foreign grasses.

b. Florida Standard Grade may have no visible broadleaf weeds when viewed from a standing position and the turf shall be visibly consistent with no obvious patches of foreign grasses. In no case may the total amount of foreign grasses or weeds exceed 2% of the total. The sod shall be neatly mowed and be mature enough that when grasped at one end, it can be picked up and handled without damage.
c. Grass species and variety with date and location of field from which sod is cut.
d. One certificate per truckload is required.
e. Compliance with State and Federal quarantine restriction, if applicable.

2. Manufacturer's certification of fertilizer and herbicide composition.

3. CONTRACTOR shall submit all certifications, reports, etc., to the OWNER'S Representative a minimum of one week prior to installation.

B. Provide Florida State Department of Agriculture, Bureau of Plant Industry, inspection certificates at time of delivery of sod.

C. Submit soils tests to LANDSCAPE ARCHITECT for all locations shown on plans. Analysis shall include recommendation for fertilization specific to the soil chemistry of the existing soil.

PART 2 – PRODUCTS

2.1 SOD

A. Sod shall be as shown in plans and shall have a firm texture having a compacted growth and good root development. Sod shall conform to the following:

1. Furnish in pads that are not stretched, broken or torn
2. Sod thickness shall be 1-1/2 inch, minimum (excluding top growth and thatch)
3. Sod shall be uniformly2 inch in height
4. Uniform in color, leaf texture and density.

B. Sod shall be certified to meet Florida State Plant Board specifications, absolutely true to varietal type, and free from weeds or other objectionable vegetation, fungus, insects and disease of any kind.

C. Before being cut and lifted, the sod shall have been mowed to a two-inch length three times with final mowing not more than a week before cuffing into uniform dimensions.

D. Time delivery so that sod will arrive at site within twenty-four (24) hours after being stripped. Do not deliver more sod than can be installed within 24 hours. OWNER'S Representative reserves the right to reject sod left in extended storage on site.

E. Protect sod against drying and breaking.

F. Maintain proper moisture conditions, prior to placing, to insure sod vitality and to prevent the dropping off of soils during handling.

2.2 SOIL CONDITIONERS

A. Fertilizer:

1. Fertilizer shall be complete fertilizer, the elements of which are derived from organic sources. Fertilizer shall be a standard product complying with State and Federal fertilizer laws.

2. For purpose of bidding, assume 8% nitrogen, 8% phosphorus, and 8% potash by weight. At least 50% of the total nitrogen shall contain no less than 3% water-insoluble nitrogen.

3. At the CONTRACTOR'S expense, samples of existing on-site soils will be submitted to a certified testing laboratory for analysis as to the suitability of the fertilizer mix specified above. The findings, together with any recommendations for amending the specified fertilizer mix shall be reviewed and approved by the OWNER prior to delivery and installation of plant materials at the job.

4. At the CONTRACTOR'S expense, fertilizer amendments shall be added in the amount and manner prescribed by a soil analysis. Results from soil analysis and a list of the prescribed amendments shall be presented to the OWNER'S Representative prior to incorporating into the soil.

5. Fertilizer shall be delivered to the site, mixed as specified, in the original unopened standard size bags showing weight, analysis and name of manufacturer. Containers shall bear the manufacturer's guaranteed statement of analysis, or a manufacturer's certificate of compliance covering analysis shall be furnished to the OWNER'S Representative. Store fertilizer in a waterproof place and in such a manner that it will be kept dry and its effectiveness will not be impaired.

B. Superphosphate shall be composed of finely ground phosphate rock as commonly used for agricultural purposes containing not less than 20% available phosphoric acid.

PART 3 - EXECUTION

3.1 LAWN BED PREPARATION

A. Areas specified to receive sod shall be cleared of all rough grass, weeds, and debris and the ground brought to an even grade as approved by OWNER'S Representative.

B. Preparation for Finish Grading:

1. Weeding: Before and during preliminary and finish grading, dig-out all weeds and grasses by the roots and dispose of off-site. Grasses not of the perennial type less than two and one-half inches (2-1/2") high and not bearing seeds, may be turned under. Perennial weeds and grasses are to be removed. Also, remove other noxious or invasive weeds encountered on the site. The use of Round-Up or approved equal is an approved method of removal of weeds.

2. Loosen rough-graded material by roto-tilling to a depth of four to six inches (4"-6") and regrade to maintain proper elevation.

3. Remove all stones over two inches (2") in size, rubbish, and all other extraneous matter from rough grade before beginning finish grading.

C. Superphosphate at a rate for bidding purposes of 5 pounds per 1000 square foot and complete fertilizer at a rate for bidding purposes of 16 pounds per 1000 square foot shall be evenly distributed over entire area and cross-disced in to a depth of 4-6 inches.

D. The areas shall then be brought to proper grade, free of all construction debris, sticks, stones, or other foreign matter over 1-inch in diameter or dimension. The surface shall conform to finish grade, less the thickness of sod, free of water-retaining depressions, the soil friable and of uniformly firm texture.

3.2 SOD HANDLING AND INSTALLATION

A. Sodding Lawns

1. Limits of sod and sod types are delineated on the Drawings.

2. Sod shall be as shown on the Drawings certified to be of high quality in accordance with the standards established by the FTGA.

3. Do not sod areas until the planting of trees, shrubs, and other plants are sufficiently completed in that area, to eliminate the possibility of incurring damage to the lawn areas by tree planting operations.

4. Roto-till soil to a depth of six inches (6"), incorporate specified amendments, and fine grade to remove irregularities.

    a. Lightly roll to firm surface and regrade, as necessary, to even base grade.
    b. During rolling, soil should be sufficiently dry to avoid dense compaction.

5. Prior to sodding, clear the surface of all stones or other objects and of all roots, weeds, brush, wire, and other objects that might be a hindrance to maintenance operations.

6. Leveling: Level out all undulations or irregularities in the surface resulting from tillage, fertilizing, liming, or other operations.

7. Treat soil, as necessary, with approved fumigant or herbicide to control weeds.

8. Pre-irrigate soil to wet it to a depth of two inches (2”). Soil should be damp but not muddy.

9. Lay sod within twenty-four (24) hours after delivery to site and within forty-eight (48) hours after being cut. Do not expose sod to hot sun longer than necessary.

    a. Roll out sod or lay squares carefully. Use a 2'x4' laid on its side as a "kicker' to butt against sod strips and force them into place.
    b. Stagger or offset all joints between sod sections. Butt side and end joints. Ensure that joints are tight, thereby eliminating the need to patch and/or top-dress to eliminate gaps.
    c. Cut sod with a sharp knife or spade to conform to walks, planter beds, header boards, and other characteristics.
    d. Bring new sod into close contact with the soil by thorough rolling with a 100 lb. roller.

10. After laying and rolling, water area thoroughly and deeply.

    a. Keep sod well-watered during the first two (2) weeks after installation to insure good rooting into base soil.

b. Supplement watering from irrigation system by hose, as necessary, to assure adequate water to berms and other critical areas to establish sod.

11. Finish grade of all sod after laying shall not be higher than adjacent paving, curbs, yard boxes, and other on-grade elements of site development.

a. All surfaces shall drain to drainage devices provided without puddling or ponding.
b. The surface of the sod shall be smoothed with gentle curves and transitions. All sodded areas shall be verified that they meet the approval of OWNER'S representative prior to proceeding with subsequent phases of construction. The OWNER'S representative reserves the right to reject uneven areas in order to achieve the intended appearance of the project.

12. Peg sod on slopes greater than one (1) in three (3) with minimum of two (2) stakes per square yard.

3.3 MAINTENANCE

A. The CONTRACTOR shall produce a dense, well-established lawn. The CONTRACTOR shall be responsible for the repair and re-sodding of all eroded or bare spots until project substantial acceptance. Repair sodding shall be accomplished as in the original work except that fertilizing may be omitted.

B. Sufficient watering shall be applied by the CONTRACTOR to maintain adequate moisture for optimum development of the lawn areas. Sodded areas shall receive no less than 1.5 inches of water per week or as directed by the OWNER'S Representative.

C. Areas of sod that are not intended to be watered by the irrigation system shall be hand-watered to receive a minimum of 1.5 inches of water per week for the length of the plant establishment period. The plant establishment period shall be for thirty (30) consecutive calendar days unless otherwise directed by the OWNER'S Representative. Adjust watering frequency and amounts to accommodate prevailing weather conditions.

D. Mow newly sodded lawn area as soon as sod is rooted sufficiently to permit mowing. Also, maintain existing established lawn within phase one limits during the establishment period until accepted by the OWNER'S Representative.

E. Do not permit new lawn areas to grow in excess of three inches high during maintenance period.

F. After the OWNER or his representative has accepted an established stand of grass, the OWNER'S Representative assumes all responsibility for maintenance; however, it is the CONTRACTOR'S responsibility to instruct the OWNER'S Representative in proper maintenance procedures in writing.

3.4 REPAIRS TO LAWN AREAS DISTURBED BY CONTRACTOR'S OPERATIONS

A. Lawn areas planted under this Contract and lawn areas outside the designated areas damaged by CONTRACTOR'S operations Planting, Irrigation, Land Sculpturing, Plant Styling, etc. shall be repaired at once by proper sod bed preparations, fertilizing and re-sodding, in accordance with these specifications.

3.5 ACCEPTANCE

A. A substantial completion inspection shall be conducted with all deficiencies noted and given to the CONTRACTOR as a punch list of items to be corrected. Substantial completion acceptance will not be issued until all punch list items have been completed and a re-inspection by the OWNER is done.

B. For the purpose of establishing an "Acceptance" standard, sod shall be healthy, well-rooted, evenly colored, viable; free of weeds, disease, open joints and bare spots.

1. Perform other operations necessary to complete maintenance and ensure that plants are healthy, vigorous, visually pleasing, and undamaged.
2. Perform all maintenance tasks as specified in this section.

C. Once the re-inspection for compliance with the punch list requirements has been conducted and barring any new deficiencies being noted during the re-inspection, written acceptance will be given for all work of this Section, exclusive of possible replacement of sod subject to warranty.

1. If any deficiencies of requirements exist, they will be noted in writing.

D. Upon written substantial completion acceptance being given, the OWNER will assume all responsibilities for maintenance of landscape work. The CONTRACTOR is responsible for all maintenance as specified in this section up to this point.

E. At the conclusion of the warranty period, an inspection will be made to determine the condition of warranted plant material.

1. Remove all sod material noted as not being in a healthy-growing condition.

2. At no additional cost, replace sod during the following planting season with material of like kind and size, in accord with specifications for original sodding.
3. Warranty period applies also to replaced material.

3.6 GUARANTEE ANDREPLACEMENT

A. Lawns

1. All sodding shall be established or exhibit signs of being established in thirty (30) days or less from the date of installation, or the sod shall be removed and replaced at no additional cost to the OWNER. Sodding installed by the LANDSCAPE CONTRACTOR shall be warranted in writing for a period of six (6) months from the date of substantial completion.

END OF SECTION

SECTION 03100
CAST IN-PLACE AND POURED CONCRETE

PART 1 GENERAL

1.1 WORK INCLUDED

A. The work included under this section consists of furnishing all materials, forms, transportation and equipment, and performing all necessary labor to do all the plain and reinforced concrete work shown on the Drawings, or incidental to the proper execution of the work, or as herein specified.

B. Composition: Concrete shall be composed of cement, fine aggregate, coarse aggregate, and water so proportioned and mixed as to produce a plastic workable mixture in accordance with all requirements under this section suitable to the specific conditions of placement.

1.2 SUBMITTALS

A. All materials specified shall be certified by the producer or manufacturer that the furnished material meets the specific requirements of the specifications. Concrete mix designs shall be submitted for approval prior to placement.

PART 2 MATERIALS AND EQUIPMENT

2.1 PORTLANDCEMENT

Shall comply with the standard specifications for Portland Cement, A.S.T.M. designation C-150, Type II, or Type III (high-early), where indicated on drawings.

2.2 CONCRETE AGGREGATE

Shall conform to standard specifications for concrete aggregate, A.S.T.M. Designation C-33. Maximum size of aggregate shall not exceed one-fifth of the narrowest dimension between reinforcingbars.

A. Fine Aggregate. Fine aggregate shall be clean, hard, strong, durable, uncoated particles of natural sand known as Lake Wales, Interlachen, or approved equal. The source, composition, quality and gradation of the fine aggregate shall be subject aid the approval of the Engineer. Samples of the sand shall be furnished, together with certified copies of the gradation and analysis from the recognized testing laboratory.

1. The weight of extraneous or deleterious substances shall not exceed the following percentages.

Loss by Decantation	3%
Shale	1%
Clay Lumps	1%
Coal and Lignite	1%

2. The fine aggregate shall be reasonable well graded from coarse to fine and when tested by means of laboratory sieves shall meet the following requirements in percent of total weight:

Total Retained On	Percent Retained
No. 4 Sieve	0 - 5
No. 10 Sieve	3 - 30
No. 30 Sieve	30 - 70
No. 50 Sieve	65 - 95
No. 100 Sieve	95 - 100

Deficiencies in the percentages of the fine aggregates passing the No. 50 and No. 100 Sieves may be remedied by the addition of pozzolanic or cementitious materials excepting Portland cement. Such materials must meet the approval of the Engineer.

B. Coarse Aggregate

1. Coarse aggregate shall consist of hard; tough, durable components, free from adherent coatings and vegetable matter, and shall not contain soft, friable, thin or elongated particles in quantities considered deleterious by the Engineer. Coarse aggregate shall be properly graded form fine to coarse to produce concrete of desired strength, density, and workability. The source, composition, quality and gradation of the coarse aggregate shall be subject to the approval of the Engineers. Samples of the coarse aggregate shall be furnished together with certified copies of the gradation and analysis from a recognized testing laboratory.

2. All coarse aggregate shall be washed and shall be free from disintegrated pieces, salt, alkali, vegetable matter and adherent coatings. The total percentage of all deleterious substances shall not exceed 5 percent by weight. The substances designated shall not be presented in excess of the following amounts.

Loss by Decantation	1%
Clay Lumps or Other Soluble Materials	1/4%
Soft Fragments	5%

3. Where the cover over reinforcing is 2 inches or more, the maximum size of aggregate shall be 1 1/2 inches. Where the cover over reinforcing is less than 2 inches, the maximum size of aggregate shall be 3/4 inch. The maximum size of aggregate shall not exceed one-fifth of the narrowest dimension between forms nor three-fourths of the minimum clear spacing between reinforcing bars. The grading of the coarse aggregate in the concrete shall be within the following limits.

Percent Passing

Maximum Size SquareMesh Screen	97 - 100%
1/2 Maximum Size SquareMesh Screen	40 - 70%
No. 4 Sieve	0 - 6%

2.3 WATER

Water shall be clean and free from oil, acids, alkalis, organic materials or other injurious substances.

2.4 REINFORCEMENT

A. Reinforcing Bars: ASTM A615, Grade 60, deformed bars of USA manufacture.

B. Welded Wire Fabric: ASTM A185, gauges, spacing and dimensions as indicated.

C. Metal Bar Supports: CRSI MSP-1, Chapter 3, Class 2, Type B, Stainless Steel Protected Bar Supports, or otherwise approved by the Engineer. Use concrete supports for reinforcement in concrete placed on grade.

D. Tie Wire: 16 gauge minimum, black, soft annealed.

E. Coupler Splice Devices: Cadweld tensions couplers, capable of developing the ultimate strength of the bar as manufactured by Erico Products, Incorporated, Solon, Ohio, or equal.

2.5 FORM WORK

A. Lumber: Douglas Fir or Larch, No. 2 grade, seasoned and surfaced on four sides.

B. Plywood: Plyform, Class 1, BB-Exterior type, mill oiled and edge sealed, with thickness not less than 3/4 inch.

C. Medium Density Overlay (MDO) Plywood Forms: PS-1, B-B High Density Concrete Form Overlay, Class I,unoiled.

1. Butt form panels, make contact surface fully flush and seal butting holes with sponge form tape. Chamfer edges of beams and ceilings.

2. Where MDO plywood is used to form beams, do not use MDO plywood that has been patched or damaged.

D. Drip Forms: Varnished ponderosa pine or equally rigid non-staining plastic, 1/2 inch wide on each leg.

2.6 ADMIXTURES:

A. Air Entraining Admixture: ASTMC260.

B. Water Reducing and Retarding Admixture:

1. Concrete Without Superplasticizer:

a. Water Reducing Admixtures: ASTM C494, Type A, equal to Eucon WR-75 by the Euclid Company, Pozzolith 200 N by Master Builders, Plastocrete 161 by Sika Chemical Corporation, and containing no calcium chloride.

b. Water Reducing and Retarding Admixtures: ASTM C494, Type D, equal to Eucon Retarder-75 by the Euclid Company, Pozzolith 100 XR by Master Builders, Plastiment by Sika Chemical Corporation, and containing no calcium chloride.

c. Accelerating Admixtures: ASTM C494, Type C or E, equal to Accelguard 80 by the Euclid Company, Darex Set Accelerator by W.R. Grace, and containing no calcium chloride.

PART 3 EXECUTION

3.1 PROPORTIONING

A. The proportions of aggregate to cement shall be such as to produce a thoroughly plastic mixture which will work readily into the corners and angles of the forms and around the reinforcement but without permitting the materials to segregate or excess free water to collect on the surface. The percentage of sand shall not be less than thirty (30) no more than fifty (50) percent of the total weight of the aggregate.

B. The total content, including the surface water contained in the aggregate, shall not exceed 5.7 gallons per sack of cement. The slump shall not exceed four (4)inches. Air-entraining admixture shall be Darex AEA as manufactured by the Dewey and Almy Chemical Company.

C. The amount of air entrained in the freshly mixed concrete shall not be less than three (3) percent nor more than six (6) percent. The minimum cement content in sacks per cubic yard of concrete shall not be less than six (6) sacks per cubic yard for Class "A" concrete.

D. Concrete materials shall be accurately measured by weight. Measurement of materials for ready-mixed concrete shall conform to the "Standard Specifications for Ready-Mixed Concrete", (A.S.T.M designation C-94).

1. Class "A" concrete for all structures shall have minimum compressive Strength of 4000 psi at 28 days.

2. Class "B" concrete for sidewalks shall have minimum compressive strength of 3000 psi at 28 days.

3. All concrete shall be Class "A" unless otherwise shown on the drawings.

3.2 MIXING AND PLACING

A. Concrete shall be mixed conveyed and deposited in accordance with the "A.C.I. Building Code" (A.C.I.318).

B. Prior to placing any concrete, the Contractor shall submit for the Engineer's approval a design mix, calculated by a recognized testing laboratory, and using the approved aggregates to produce a workable mix of the desired strength, together with certified copies of 7 days and 28 day tests of cylinders taken from concrete made according to the design mix. The mixes shall be designed to secure concrete having a minimum compressive strength at age 28 days.

C. Ready-mixed concrete delivered shall be accompanied by delivery tickets showing the following.

1. Date and time leaving plant
2. Type of cement and weight
3. Quantity of Water and time added

Additives (if any)
Site arrival time
Site leaving time

D. Concrete

1. Ready-mixed concrete shall be used. All mixing requirements specified herein shall be enforced, and the Owner's laboratory representative and the Engineer shall have free access to the mixing plant at all times.

2. Except for materials and/or procedures otherwise specified herein, ready-mixed concrete shall be mixed and delivered in accordance with the requirements of ASTM C94.

3. No water shall be added to the concrete after it leaves the plant except where part of the design water was purposely omitted at the plant, and then only as approved by the Engineer.

E. Mixer Speed

1. Neither the speed of any mixer nor the quantity of material loaded into any mixer shall exceed the recommendations of the manufacturer.

2. Excessive over-mixing, required addition of water to preserve the required consistency, shall be cause of rejection of the batch.

3. Concrete shall not remain in a transit mixer or agitator truck more than 90 minutes after the water has been introduced, and not for more than 45 minutes if any approved retarding agent is not used.

4. Minimum mixing time shall be 50 revolutions of drum at rated speed.

F. Measurement

1. Equipment necessary to determine and control the actual amounts of all materials entering the concrete shall be provided by the concrete manufacturer.

2. All materials shall be measured by weight, except that water may be measured by volume calculated at 8-1/3 pounds per gallon. One bag of cement will be considered as 94 pounds in weight.

G. Mixes

1. Mix Design: Conform to ACI 318, Section 4.3. Submit data on consecutive tests and standard deviation.

2. Maximum Water-Cement Ratio:

.37 (lbs/lb) - Concrete with superplasticizer
.45 (lbs/lb) - Class A concrete without superplasticizer
.55 (lbs/lb) - Class B concrete without superplasticizer
.65 (lbs/lb) - Class C concrete without superplasticizer

3. Air Content: 5 percent plus or minus 1.5 percent (Class A and B).

4. Slump: 4 inches plus or minus 1 inch for Class A and B without superplasticizer. 7 inches plus or minus 1 inch for Class A and B with superplasticizer. 8 inches plus or minus 1 inch for tremie concrete or as specified by details.

H. Placing Concrete.

1. All concrete shall be placed in clean, damp forms that are not hot to the touch.

2. To prevent segregation, concrete shall be deposited as nearly as practicable in final position and not allowed to drop freely more than necessary and in no case more than five feet, except in an approved funnel or tremie. All concrete shall be placed during daylight unless otherwise authorized at least four hours in advance. Where the reinforcing steel above the top of the concrete being placed becomes coated with laitance or partially set-up concrete, all such concrete shall be removed from the reinforcing steel prior to placing concrete around the bars.

3. Concrete shall be packed carefully and tightly around pipe and other items to secure maximum adhesion.

4. Concrete shall be placed in layers not over 12 inches deep before compacting. Concrete shall be compacted by internal vibrating equipment supplemented by spading and hand-rodding between reinforcing steel and form to eliminate air bubbles and honeycomb. Vibrators shall not be used to more the concrete laterally inside the forms. Duration of vibration shall be limited to the time necessary to provide satisfactory consolidation without causing segregation, not less than five and more than 15 seconds per square foot of exposed top surface. The vibrator shall be constantly relocated and shall be placed in each specific spot only once for each layer. The Contractor shall take steps to assure that sufficient personnel are available to devote full time to operating vibrator, spading and rodding.

5. Wall concrete shall be placed in layers as indicated above, with the first lift preceded by a 1-inch minimum layer of 1:2-1/2 cement-sand grout, with a 6-inch to 8-inch slump, placed on existing concrete not more than 20 minutes before concrete placement. The surface of previously placedhardened concrete shall be clean and wet before grouting, or shall be treated with a bonding agent as required. Puddles of water in horizontal recessed keys shall be avoided by the use of drain recesses to outside edge of concrete. Concrete in walls and deep beams shall be placed in lifts not to exceed three layers at 12 inches each for the full length of the pour before proceeding higher. The placing of concrete shall not be delayed more than 20 minutes between layers or lifts.

3.3 CURING AND PROTECTION

A. Curing:

1. Immediately after surface defects have been repaired, apply a spray coat of curing compound to all exposed surfaces, including slabs, walls, beams and columns in accordance with the manufacturer's recommendations. Protect exposed steel keyways and other embedded items from the curing compound. Water cure, as specified in paragraph B hereunder, all concrete surfaces that are to be exposed to wastewater, surfaces that are to coated with a coal tar epoxy system, and concrete floors requiring a bond for special finishes.

2. Do not apply compound during periods of rainfall. Should the film become damaged from any cause within the required curing period, immediately repair the damaged portions with additional compound. Upon removal of forms, immediately coat the newly exposed surfaces to provide a curing treatment equal to that provided for the surface.

3. Curing and Sealing Compound: Use clear compound conforming to Federal Specification TT-C-800A, 30% solids content minimum, having test data from an independent laboratory indicating a maximum moisture loss of 0.030 grams per sq. cm. when applied at a coverage rate of 300 sq. ft per gallon, and equal to Super Floor Coat or Super Pliocure by The Euclid Chemical Company or Masterseal 66 by Master Builders. Furnish manufacturer's certification asrequired.

4. Apply specified clear curing and sealing compound to all horizontal areas so noted on the Drawings or in the Specifications. Apply immediately after final finishing. Apply this compound to non-structural construction joints of slabs on grade to act as a bond breaker prior to placement of adjacent concrete.

B. Water Curing Method: Cure all concrete that is to be water cured by either the wet burlap method, by continuous fogging or by covering the waterproof sheet.

1. Wet Burlap Method: Cover concrete surface with a double thickness of burlap, cotton mats, or other approved materials, kept thoroughly saturated with water. Keep the forms wet until removed and upon removal, start the curing specified herein immediately. Cure the concrete for a period of 7 days for normal Portland cement or 4 days for high early strength cement. Do not submerge concrete poured in the dry until it has attained sufficient strength to adequately sustain the stress involved and do not subject it to flowing water across its surface until it has cured 4 days.

2. Continuous Fogging: Perform continuous fogging by fogging with a nozzle which so atomizes the flow of water that a mist, and not a spray, is formed. Fog the concrete surface regularly without allowing any part of the surface to become dry. Take all necessary precautions to prevent erosion of the concrete surface by water.

3. Covering the Waterproof Sheets: Keep the entire area to be cured continuously wet by fogging, as specified in the fogging paragraph above, for at least 18 hours and then immediately cover the waterproof curing sheet conforming to ASTM C171, waterproof paper and polyethylene film, free of holes or tears. Keep sheet fully fat, without wrinkles or air bubbles, held down tautly at all edges. Do not use this method on slabs which will be exposed to view.

3.4 PLACING REINFORCEMENT

A. All reinforcement shall be detailed, fabricated and erected in accordance with the A.C.I. "Manual of Standard Practice for Detailing Reinforced Concrete Structure", (A.C.I. 315), including bar supports and spacers. At splices all reinforcing bars shall be lapped a minimum of twenty-four (24) bar diameters but not less than twelve (12) inches.

B. The reinforcing shall be fabricated to the shapes and dimensions shown and shall be placed where indicated on the drawing. Before placing, all reinforced steel shall be thoroughly cleaned of rust, mill scale or coatings, which would reduce or destroy the bond. Reinforcing bars shall conform to the requirements of the latest editions of the A.C.I. Code and the CRSI Manuals.

C. Wire mesh, unless otherwise shown on the drawings or specified, shall be 6" x 6" No. 10 woven or electrically welded wire fabric conforming to the requirements of ASTM Designation A185, latest revision.

D. Space chairs and bolsters in accordance with ACI 315 and 318 using height to furnish cover over reinforcing required. Chairs with plastic feet or stainless steel shall be used in all beams and elevated slabs. Chairs for other concrete adjacent to or on the ground may be pieces of concrete block or concrete brick compressed into subgrade with the rebars bearing directly on the pointed edge of the masonry supports, or chairs set on precast concrete pads compressed into the subgrade.

E. When placed in the forms, reinforcement shall be clean and free of all loose rust, scale, dust, dirt, paint, oil or other foreign material, and shall be accurately and securely positioned both laterally and vertically before placing concrete.

F. The rebars shall be fastened together at every intersection or at intervals not greater than 24 bar diameters by wire ties or by some alternate method acceptable to the Engineer. In areas where large bars are closer together, the wire ties may be spaced not more than 30 bar diameter apart, rather than as specified above.

3.5 FORMS

A. Installation and erection shall be in accordance with ACI 347 and specified hereinafter.

B. Forms shall conform to shape, lines and dimensions of numbers indicated, and shall be sufficiently tight to prevent leakage of mortar. They shall not deflect under dead load weight of construction as a liquid or of construction load. Forms shall be properly braced or tied together so as to maintain position and shape within specified tolerances. Construct forms so that they can be removed steadily without hammering or prying against the concrete. Forms for exposed concrete shall be carefully made and accurately placed to obtain correct shape and line.

C. Forms shall be of wood, metal, or other approved materials. Metal forms shall be of a type and manufacture acceptable to the Engineer. Plywood, fiberboard, or absorptive type form linings may be used where appropriate. Sectional forms shall produce a uniform surface and shall be assembled in a modular pattern. Pours will not be scheduled until all erection and bracing is complete. Walers, ties and braces shall be required for all forms. Chamfer strips made from nominal dimensional 1" x 1" lumber cut on the diagonal shall be installed at the top of the forms on all exposed edges of walls, slabs, beams and other structures above grade.

D. Drip edge shall be made from wood quarter round and installed where shown. Extruded plastic fillets shall be used where detailed. Circular structures shall be formed with special care, and attention to the appearance of the finished structure. Random location of fillers, non-modular sections, and excessive deviations from true circular segments shall be cause for rejection of the forms.

E. The Contractor shall be fully responsible for the adequacy of form work in its entirety. Forms shall support required loads and shall maintain their dimensional and surface correctness to produce members required drawings.

F. Slots, chases, recesses or other openings as shown on the drawings or as needed for the work of any other trades shall be boxed out.

G. Box out for all temporary openings and build forms to seal them up when and as required.

H. After sealing and immediately before the placing of reinforcing, faces of all forms in contact with the concrete shall receive a thorough coating of the liquid form releasing agent, applied in compliance with the Manufacturer's instructions.

I. Reused forms shall be thoroughly cleaned out of dirt, debris, concrete and foreign matter. Forms shall not be reused if they have developed defects which would affect their tightness and strength or desired surface finish. Used forms shall not be used for architectural concrete.

J. Forms shall be removed in a manner that will prevent injury to concrete. Supporting forms or shoring shall not be removed until the members have acquired sufficient strength to support their weight and any load thereon.

K. Removal shall be in sequence as approved by the Engineer. Unless test cylinders warrant another procedure, the forms shall not be removed from members prior to the time listed in the schedule hereinafter unless otherwise directed.

L. Bonding To Existing Surfaces: Clean existing concrete surfaces that are to have new concrete bonded thereto of all grease, oil, dust, dirt and loose particles and coat with an epoxy bonding agent just prior to placing of the new concrete. Apply the bonding agent as recommended by the manufacturer and allow the agent to become tacky before the new concrete is placed. Do not allow the bonding agent to overlap or be spilled on the surfaces to be exposed after the work is completed.

3.6 FORM REMOVAL

A. Maintain formwork in place for the following structural conditions until the concrete has attained the minimum percentage of indicated design compressive strength or for the period of time specified in the following table.

Note: Time periods in the table include all days except those in which the temperature falls below 40 degrees F.

3.7 CONCRETE FINISHINGS

A. Repair of Surface Defects:

1. General: Repair surface defects, including tie holes immediately after form removal. Dampen the area to be patched and an area at least 6inches wide surrounding it to prevent absorption of water from the patching mortar. Notify the Engineer prior to commencing operations.

2. Removal of Defective Concrete: Remove all honeycombed and other defective concrete down to sound concrete. Cut edges perpendicular to the surface or slightly under cut. Sand blast surfaces to receive repair.

3. Bonding Grout: Thoroughly dampen surfaces to be patched and apply a coat of bonding grout consisting of one part cement to one part fine sand passing a No. 30 sieve and having the consistency of thick cream.

4. Placing Patching Mortar: After the bonding grout begins to lose its water sheen, apply a premixed patching mortar, thoroughly consolidating it into place and striking it off so as to leave the patch slightly higher than the surrounding surface. Leave mortar undisturbed for one hour to permit initial shrinkage and then finally finish.

5. Tie Holes: After being cleaned and thoroughly dampened, fill the tie holes solid with patching mortar.

B. Floated Finish: After concrete has been placed, consolidated, struck off and leveled, do not work the surface further until water sheen has disappeared and the surface has hardened sufficiently to permit floating. During the first floating, check the planeness of the slab with a 10 foot straightedge applied at no less than two angles. Cut down all high spots and fill all low spots to produce a surface having the required tolerance. Then refloat the slab to a uniform sandy texture.

C. Light Broomed Finish: After floating, power trowel slabs to receive a light broomed finish to produce a smooth surface, relatively free of defects. Before the surface sets, pass a soft broom drag over the surface to produce a surface uniform in texture and appearance.

D. Troweled Finish: After floating, power trowel slabs to receive a troweled finish to produce a smooth surface, relatively free of defects. Hand trowel after the surface has hardened sufficiently. When a ringing sound is produced as the trowel is moved over the surfaces, perform final troweling by hand to produce a surface which is thoroughly consolidated, free from trowel marks, uniform in texture and appearance and plane to a tolerance of 1/8 inch of 10 feet as

determined by a 10 foot straightedge placed anywhere on the slab in any direction.

E. Hardener Finish: Where indicated to receive a troweled hardener finish, water cure slabs without application of curing and sealing agent. When slab is at least 20 days old and thoroughly dry, apply the hardener in accordance with the manufacturer's recommendations. Where dry-shake hardener or slip resistant finish is required, apply the hardener or slip-resistant product prior to complete curing and finishing, in accordance with the requirements and recommendations of the product manufacturer.

F. Saw Cut Joints: Cut joints that are to be saw cut not sooner than 2 hours after the concrete is poured and not later than 8 hours after the pour.

3.7 TESTS

A. Compressive strength tests shall be made by breaking standard 6-inch diameter by 12-inch high test specimens prepared, cured and broken in accordance with the American Society for Testing Materials Methods C-31 and C-39, latest revision. Four specimen test cylinders shall be taken from each pour of five (5) cubic yards or more. One additional test shall be taken from each thirty (30) cubic yards or fraction thereof in each pour in excess of thirty (30) cubic yards.

B. Test specimens shall be taken from manhole bottom pours of less than five (5) cubic yards as directed by the Engineer. Test specimens shall be taken in the presence of the Engineer. One cylinder from each pour shall be broken at seven (7) days, two at twenty-eight (28) days, and one held in reserve. Additional test cylinders may be ordered for determining the characteristics of a new design mix or changes in equipment or methods, and under adverse weather or curing conditions.

C. Slump test shall be made in accordance with ASTM C143, latest revision, and shall be made with each load and at time of cylinders.

D. The Contractor shall supply all cylinder molds, slump cones, tools and labor for preparing specimen, and shall provide clean, moist sand or burlap for curing. Cylinder shall not be shipped to the testing laboratory until the third day following preparation, and shall be protected from accidental damage at all times.

E. The test cylinders shall be tested in a recognized commercial testing laboratory at the expense of the Contractor.

3.8 EXPANSION JOINTS, CONSTRUCTION JOINTS AND WATER SPOTS

A. Expansion Joins shall be places as indicated on the drawings. Joint materials for surfaces exposed to water and sewage shall conform to ASTM D175, Preformed Joint Filler, non-extruding and resilient (bituminous type), thickness as shown on the drawings. Joint materials for isolation joints, slab-on-grade joints and wall joints not exposed to water and sewage shall conform to ASTM D994, preformed expansion joint filler for concrete (bituminous type), thickness as shown on the drawings.

B. Construction Joins shall be located in accordance with a schedule of pours which shall be prepared and submitted by the Contractor. Vertical construction joints shall be held to the minimum number consistent with good standard practice.

C. Water Stops. Material for water stops shall be 9-inch PVC multi-rib center-bulb type for expansion joints, and 1/4" x 4" and 1/8" x 4" structural steel sheets for construction joints. PVC joint material shall be as manufactured by The Burke Company, or approved equal.

END OF SECTION

SECTION 03300
CONCRETE

PART 1 – GENERAL

1.1 DESCRIPTION OF WORK

This Section includes furnishing all plant, labor, equipment and materials for constructing concrete and reinforced concrete slabs and structures as shown on the Drawings and as normally required by standard practice of the trade.

1.2 QUALITY ASSURANCE

Work shall be performed in accordance with the latest editions of the following standards:

ACI 301 - Specifications for Structural Concrete for Buildings
ACI 318 - Building Code Requirements for Reinforced Concrete
ACI 350R- Environmental Engineering Concrete Structures
Building Codes adopted by local authority.

All materials used in concrete construction shall meet the applicable requirements for design, construction, inspection, testing, maintenance and operations as prescribed in ANSI A10.9, Safety Requirements for Concrete Construction and Masonry Work.

Responsibility for Tests and Reports. The CONTRACTOR shall supply all cylinder molds, slump cones, and tools, and shall provide clean, moist sand or burlap for curing.

The test cylinders shall be molded and tested by a recognized commercial testing laboratory selected by the OWNER. The costs for tests will be paid by the OWNER.

1.3 SUBMITTALS

Mix Design. Prior to the commencement of work, the CONTRACTOR shall submit three copies of the concrete mix designs intended for this work.

Results of Cylinder Tests. The testing laboratory shall submit three copies of results of concrete cylinder tests to ENGINEER together with one copy each to OWNER, CONTRACTOR, and Concrete Supplier.

Reinforcement. Submit shop drawings, and indicate bar sizes, lengths, spacings, locations and quantities of reinforcing steel and wire fabric, bending and cutting schedules, and supporting and spacing devices.

Ready Mixed Concrete. Ready-mixed concrete delivered shall be accompanied by delivery tickets showing the following:

Date and time leaving plant
Type of cement and weight
Quantity of water and time added
Admixtures (if any)
Site arrival time
Site leaving time

1.4 STORAGE

Cement shall be stored in a thoroughly dry, weathertight, and properly ventilated building with adequate provisions for the prevention of the absorption of moisture. Storage shall be such as to permit easy access for inspection and definite identification of each shipment. Cement which has hardened or is, in the opinion of the ENGINEER, otherwise unfit for use shall not be used.

The fine and coarse aggregates shall be stored separately and in such manner as to avoid the inclusion of any foreign material in the concrete. Stockpiles of coarse aggregate shall be built in horizontal layers to avoid segregation.

PART 2 – MATERIALS AND EQUIPMENT

2.1 CEMENT

Cement for use in general concrete construction shall be Portland cement conforming to the requirements of ASTM C150, Type I, IA, II or IIA or Federal Specifications SS-C-192, Type I or II.

Cement for use in all structures where the concrete will be subjected to a hydrogen sulfide environment (i.e., direct contact with soil, groundwater, sewage or effluent) shall be Portland cement conforming to the requirements of ASTM C150, Type II or IIA.

One brand of cement shall be used throughout entire project.

2.2 FINE AGGREGATES

Fine aggregate shall be clean, hard, strong, durable, uncoated particles of natural sand.

The weight of extraneous or deleterious substances shall not exceed the following percentages:

Loss by decantation	3%
Shale	1%
Clay Lumps	1%
Coal and Lignite	1%

The fine aggregate shall be reasonably well graded from coarse to fine and when tested by means of laboratory sieves shall meet the following requirements in percent of total weight:

Total Retained On	Percent
No. 4 Sieve	0 - 5
No. 10 Sieve	3 - 30
No. 30 Sieve	30 - 70
No. 50 Sieve	65 - 95
No. 100 Sieve	95 -100

Deficiencies in the percentages of the fine aggregates passing the No. 50 and No. 100 sieves may be remedied by the addition of pozzolanic or cementitious materials excepting Portland cement.

2.3 COARSE AGGREGATE

Coarse aggregate shall be washed and consist of hard, tough, durable components, free from adherent coatings, salt, alkali, vegetable matter, and shall not contain an excessive number of soft, friable, thin or elongated particles. Coarse aggregate shall be properly graded from fine to coarse to produce concrete of the desired strength, density, and workability.

The total percentage of all deleterious substances shall not exceed 5 percent by weight. The substances designated shall not be present in excess of the following amounts.

Loss by decantation	1%
Clay Lumps or other soluble materials	1/4%
Soft fragments	5%

Where the cover over reinforcing is two inches or more, the maximum size of aggregate shall be 1-1/2 inches. Where the cover over reinforcing is less than two inches, the maximum size of aggregate shall be 3/4-inch. The maximum size of aggregate shall not exceed one-fifth of the narrowest dimension between forms nor three-fourths of the minimum clear spacing between reinforcing bars. The grading of the coarse aggregate in the concrete shall be within the following limits:

Total Passing	Percent
Maximum size square mesh screen	97 - 100
1/2 maximum size square mesh screen	40 - 70
No. 4 Sieve	0 - 6

2.04 WATER

The water used in mixing concrete shall be fresh, clean and free from injurious amounts of oil, acid, alkali, or organic matter.

Water from any source other than a municipal water supply shall be shown by test to comply with Florida State Department of Transportation requirements for mixing water.

2.5 ADMIXTURES

The mix design shall contain admixtures as indicated in PART 3 - EXECUTION, and as may be selected by the designer to improve the workability, plasticity or cure rate of the concrete.

High-Range Water Reducer. High-range water reducer (superplasticizer) shall meet the specifications of ASTM C494 Type A, F & G, and shall be Daracem-100 as manufactured by W.R. Grace Company.

Reinforcing Fibers. Reinforcing fibers shall be collated 100 percent virgin polypropylene, 1/2-inch or 3/4-inch in length, and shall be Grace Fibers as manufactured by W.R. Grace Company. Reinforcing fibers shall be used in accordance with the manufacturer's recommendations and as indicated herein.

Air-Entraining Admixture. Air-Entraining admixtures shall conform to ASTM C 260 and shall be "Darex AEA" as manufactured by W.R. Grace Company.

2.6 REINFORCEMENT

Steel Bar and Wire Fabric Reinforcement. The reinforcing shall be fabricated to the proper shapes and dimensions. Before placing, all reinforcements shall be thoroughly cleaned of rust, scale, mill scale and be free of coatings.

Reinforcing bars shall conform to the requirements of ASTM A615, Grade 60 including hoops and stirrups, and shall be deformed bars unless shown otherwise on drawings.

Reinforcing steel shall be detailed, fabricated and placed according to the methods and standards recommended in the "Manual of Standard Practice for Detailing Reinforced Concrete Structures" of the American Concrete Institute.

Splices in reinforcing mats shall be staggered. Horizontal mats shall be supported on metal chairs with all sills or pads below subgrade. Spacers shall be provided for wall and column steel and shall be removed as the concrete is placed.

Wire fabric, unless otherwise shown or specified, shall be 6 x 6 x W1.4 x W1.4 woven or electrically welded fabric conforming to the requirements of ASTM A185.

2.7 CURING

Burlap. Burlap shall consist either of two layers, weighing 10 to 18 ounces each per ten square feet, or of four layers of 6 to 7 ounces each. Burlap which has been used as a container for sugar shall not be used. Burlap that is being used for the first time shall be thoroughly washed to remove starches used in sizing the material. Burlap shall be in strips of at least three feet and not more than six feet in width, and shall be at least three feet longer than the width of surface to be covered.

Membrane Curing Compound. Membrane curing compound shall conform to the requirements of ASTM C309. The compound shall be of a consistency suitable for spraying at temperatures prevalent at the time of construction operations, and which forms a continuous, uniform film. During hot weather, Type 2 compound shall be used.

Acceptable manufacturers for curing compound and their product designation are:

W.R. Meadows, Inc. "Sealtight CS-309"
Sonneborn/Cantech "Kure-N-Seal"
Standard Dry Wall Products "Thoroglaze Semi-gloss"

Curing compound shall be compatible with applied finishes as indicated in the Finish Schedule and/or shown on the drawings.

Impervious Coatings. Impervious coating materials shall conform to the requirements of Section 925-3, Sheet Materials, of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest Edition.

2.8 EXPANSION AND CONSTRUCTION JOINTS

Expansion Joints. Expansion joints shall be placed as indicated on the Drawings. Joint materials for surfaces exposed to water and sewage shall conform to ASTM D175, Preformed Joint Filler, non-extruding and resilient (bituminous type), thickness as shown on the Drawings. Joint materials or isolation joints, slab-on-grade joints and wall joints not exposed to water and sewage shall conform to ASTM D994, Preformed Expansion Joint Filler for Concrete (bituminous type), thickness as shown on the Drawings.

Construction Joints. Construction joints shall be located as shown. Additional joints to accommodate pour arrangements and schedules desired by the CONTRACTOR may be provided upon specific request.

2.9 ANCHOR BOLTS

Unless noted otherwise, anchor bolts shall be Type 304 stainless steel.

PART 3 – EXECUTION

3.1 PROPORTIONS ANDCONSISTENCY

Mix Design. Prior to placing any concrete, the CONTRACTOR shall submit a mix design, calculated by a recognized testing laboratory using the specified aggregates to produce a workable mix of the desired strength, together with certified copies of 7-day and 28-day tests of cylinders taken from concrete made according to the mix design.

The CONTRACTOR shall pay for the cost of mix design preparation and testing.
The mix shall be designed to secure concrete having the following minimum compressive strength at the age of 7 and 28 days.

Class	7 day	28 day
Structural	2670	4000
Non-Structural	2000	3000

Structural concrete shall be used in all buildings and structures as shown on the Drawings.

Non-structural concrete may be used outside buildings and structures, in miscellaneous slabs and sidewalks.

Proportionings. All materials except water shall be proportioned into the mix by weight. Water may be proportioned either by weight or volume.

Precise control of the proportions and amounts of all materials will be required. Unauthorized changes in proportions or addition of water shall be sufficient cause for rejection of the batch. The proportions of the accepted mix design will not be changed except upon the specific recommendation of the mix designer and approved by the ENGINEER.

Mix design proportions shall meet the following criteria.

Maximum water/cement ratio shall be 0.4.

Mix shall be designed at a slump of 5-inches $^{+}_$1-inch. If high-range water reducer is utilized, slump may be increased to 6-1/2-inches $\pm$ 1-1/2-inches.

For slab on ground applications, reinforcing fibers added at the rate of one and one half lbs. per cubic yard of concrete may be used in lieu of wire fabric.

Use air-entraining admixtures in all concrete, unless otherwise indicated. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having total air content with a tolerance of plus-or-minus 1-1/2% within the following limits:

5.5% for maximum 1-1/2-inch aggregate
6.0% for maximum 1-inch and 3/4-inch aggregate
7.0% for maximum 1/2-inch aggregate

Mixing, Transporting and Placing. Mixing, transporting and placing shall be in accordance with ACI 304 except as modified in this section.

Machine mix all concrete. Begin mixing within 30 minutes after the cement has been added to the aggregates. Introduce all mixing water in the drum before one-fourth of the mixing time has elapsed.

All admixtures must be added separately to assure their prescribed performance.

Ready-Mix concrete shall comply with requirements of ANSI/ASTM C 94, except as modifiedin this section.

Delete references allowing additional water to be added to a batch with insufficient slump. Addition of water to a batch will not be permitted.

During hot weather, or under conditions contributing to rapid setting of concrete, a shorter mixing time than specified in ANSI/ASTM C 94 may be required.

When air temperature is between 85º ?F (30º ?C) and 90º? F (32º?C), reduce mixing and delivery time from 90 minutes to 75 minutes, and when air temperature is above 90?º F (32º? C), reduce mixing and delivery time to 60 minutes.

Job-Site mixing of materials for concrete shall be in an appropriate drum type batch machine mixer. For mixers of one cu. yd., or smaller capacity, continue mixing at least 1-1/2 minutes, but not more than 5 minutes, after ingredients are in mixer before any part of batch is released. For mixers of capacity larger than one cu. yd., increase minimum 1-1/2 minutes of mixing time by 15 seconds for each additional cu. yd., or fraction of cu. yd.

Placing. Concrete shall not be placed until forms and reinforcing have been inspected.

Concrete shall be consolidated with the aid of mechanical vibrating equipment supplemented by hand forking or spading; do not use vibrators to transport concrete inside forms. Vibration shall be transmitted directly to the concrete and not through the forms. The duration of vibration at any location in the forms shall be held to the minimum necessary (10-12 seconds, max.) to produce thorough consolidation.

Concrete shall be compacted and worked in an approved manner into all corners and angles of the forms and around reinforcement and embedded fixtures in such a manner as to prevent segregation of the coarse aggregate.

Before depositing new concrete on or against concrete which has set, the existing surfaces shall be cleaned of all laitance, foreign matter and loose particles, and slushed with a neat cement grout. Grout for horizontal construction joints shall be of cement and fine aggregate in the same proportions as in the concrete to be placed, and shall be from 1/2- to 1-inch in thickness.

The concrete shall be placed by suitable equipment as nearly as possible to its final location without any segregation of the aggregate. Free vertical drop shall not exceed three feet.

Fresh concrete shall be protected from rain, flowing water and mechanical injury.

Hot/Cold Weather Concreting. Concrete work during hot and cold weather shall comply with ACI 305 and ACI 306, respectively.

3.2 CONCRETE FINISHES

Concrete slabs shall be finished in accordance with the following specifications. The dusting of wearing surfaces with dry materials will not be permitted. In preparation for finishing, floor slabs shall be struck off true to the required level at or below the elevation or grade of the finished floors, as shown on the drawings. Floors shall be level within a tolerance of 1/8-inch in 10-feet, except where drains occur, in which case the floors shall be pitched to the drains as indicated on the drawings or as directed by the ENGINEER.

Rough Slab Finish. Unexposed slabs under earth shall be finished by tamping the concrete with special tools to force the aggregate away from the surface, then screeding with straight edges and floating to produce a reasonably true and uniform surface.

Wood-Float Finish. Steps, tops of canopies, wet-well slabs, and exterior platforms and ramps shall be finished by tamping with special tools to force aggregate away from the surface, then screeding with straight edges to bring surface to required line as shown on drawings. While the concrete is still green, but hardened sufficiently to bear the concrete finisher's weight, the surface shall be floated with a wood float to a true and uniform plane with no coarse aggregate visible.

Monolithic Finish. Exposed interior concrete floor surfaces shall be finished by tamping the concrete with special tools to force the coarse aggregate away from the surface, then screeding and floating with straight edges to bring the surface to the required finish level shown on the drawings. While the concrete is still green but sufficiently hardened to bear a man's weight without deep imprint, it shall be wood floated to a true, even plane with no coarse aggregate visible. Sufficient pressure shall be used on the wood floats to bring moisture to the surface. The concrete shall then be hand steel troweled to produce a smooth impervious surface free from trowel marks. An additional steel troweling shall be given the surface for the purpose of burnishing. The final troweling shall produce a ringing sound from the trowel.

Power-Machine Finishing. In lieu of hand finishing, the CONTRACTOR may use a power machine approved by the ENGINEER for finishing concrete floors in accordance with the directions of the machine manufacturer. The preparation of concrete surfaces for finishing by machine shall, in general, shall be as required for hand finishing.

Nonslip Broom Finish. Apply nonslip broom finish to exterior concrete and sidewalks. Immediately after trowel finishing, slightly roughen concrete surface by brooming with a fiber bristle broom perpendicular to main traffic route. Coordinate required final finish with the ENGINEER before application.

3.3 CONCRETE FINISHES, FORMED SURFACES

Rough Finish. Surfaces to receive a stucco or plaster coating and surfaces against which backfill will be placed may remain essentially as poured. Small fins, offsets, holes to 1/2-inch, and minor honeycomb will be acceptable providing that they will increase the bond between the concrete surface and the cement coating and will not be structurally unsound or visible after the coating application. Break-back ties shall be pointed-up to close openings left as ties are snapped off.

Smooth and Rubbed Finish Sample Panels. Prior to providing any of the finishes described below, use a portion of the newly-formed concrete surface to demonstrate the applicable finish or finishes. The area used shall be approximately 4-feet square for each finish and shall indicate the range of texture and workmanship to be expected in the completed work. Obtain acceptance of the ENGINEER for visual qualities of each finish before commencing work. Do not alter or destroy finish panel(s) until work is completed.

Smooth Finish. Such items as exposed concrete beams and columns and surfaces shown or specified to have a smooth finish shall, as the forms are removed, have fins, rough edges and offsets ground smooth. Holes to 3/4-inch, slight honeycomb, and minor defects shall be wetted and filled with a 1:2 mix of cement mortar, matching color of surrounding concrete, and troweled to a uniform plane.

Rubbed Finish. Exposed surfaces, and surfaces to be painted shall be rubbed. As the forms are removed, fins, rough edges, and offsets shall be ground smooth. Holes to 3/4-inch, slight honeycomb, and minor defects shall be wetted and filled with a 1:2 mix of cement mortar, matching color of surrounding concrete, and then troweled to a uniform plane. As soon as they have been troweled, the patched areas shall be sprayed with a curing compound which will not destroy future bonding properties. Three days after application of curing compound, the entire surface shall be finished by wetting and applying a 1:2 cement mortar with a carborundum block. Using the block, mortar shall be rubbed into pits or indentations and excess mortar rubbed off to provide a uniformly textured surface. When the surface has dried, all loose sand and dust shall be removed and the surface then hosed down with water.

3.4 PATCHING

Any concrete which is not formed as shown on the drawings, or is out of alignment or level or shows a defective surface, shall be removed from the job by the CONTRACTOR at his expense, unless the ENGINEER grants permission to patch the defective area. This shall be done in accordance with the procedures above. Honeycomb consisting of 3/4-inch diameter holes or greater shall be considered a defective surface. Permission to patch any such area shall not be considered a waiver of the ENGINEER'S right to require complete removal of the defective work if the patching does not, in his opinion, satisfactorily restore the quality of the concrete and appearance of the surface.

3.5 CURB AND GUTTER

Construct curb or valley gutter from structural grade concrete.

Forms, workmanship, details and spacing of joints, finishing and curing shall conform to the requirements of Section 520 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest Edition.

3.6 INSTALLATION OF EMBEDDED ITEMS

Set and build into work anchorage devices and other embedded items required for other work that is attached to, or supported by, cast-in-place concrete. Use setting drawings, diagrams, templates, instructions and directions provided by suppliers of items to be attached thereto.

3.7 CURING

Methods and Curing Times. For surfaces on which forms are kept continuously in place, without loosening, for a period of seven days or more, no further curing will be required. All other surfaces shall be cured by continuous moisture application, application of a membrane- curing compound or by use of an impervious coating for a period of at least seven days. This may be accomplished by ponding of water on slabs, by a continuous spray, by covering material wet, by covering the surfaces with an impervious material or by application of a membrane type curing compound. Membrane curing compounds and impervious coverings shall be continuous, flexible and without defects, and shall retain the required moisture in the concrete. Compounds and coverings shall be protected from damage for the required curing period.

3.8 TESTS

Compressive strength tests shall be made by breaking standard 6-inch diameter by 12-inch high test specimens prepared, cured and broken in accordance with the ASTM C31 and C39. Four specimen test cylinders shall be taken from each concrete placement operation of fifty cubic yards or fraction thereof. One additional set of test cylinders shall be taken from each additional thirty cubic yards or fraction thereof. One cylinder from each casting shall be broken at seven days, two at 28 days, and one shall be held in reserve for a 56 day break if required. Additional test cylinders may be ordered for determining the characteristics of a new design mix or changes in equipment or methods and under adverse weather or curing conditions.

Slump tests shall be made in accordance with ASTM C143, and shall be made whenever directed by the ENGINEER.

The testing lab will make additional tests of in-place concrete when test results indicate specified concrete strengths and/or other characteristics have not been attained in the structure, as directed by the ENGINEER. Testing lab may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42, or by other means as directed. CONTRACTOR shall pay for such tests as may be required, when unacceptable concrete is verified.

END OF SECTION

SECTION 26 05 10

BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Electrical equipment coordination and installation.
2. Sleeves for raceways and cables.
3. Sleeve seals.
4. Common electrical installation requirements.

1.3 DEFINITIONS

A. ATS: Acceptance Testing Specifications.

B. EPDM: Ethylene-propylene-diene terpolymer rubber.

C. NBR: Acrylonitrile-butadiene rubber.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated.

1.5 QUALITY ASSURANCE

A. Test Equipment Suitability and Calibration: Comply with NETA ATS, "Suitability of Test Equipment" and "Test Instrument Calibration."

1.6 COORDINATION

A. Coordinate arrangement, mounting, and support of electrical equipment:

1. To allow maximum possible headroom unless specific mounting heights that reduce headroom are indicated.

2. To provide for ease of disconnecting the equipment with minimum interference to other installations.
3. To allow right of way for piping and conduit installed at required slope.
4. So connecting raceways, wireways, cable trays, and busways will be clear of obstructions and of the working and access space of other equipment.

B. Coordinate installation of required supporting devices and set sleeves in cast-in-place concrete, masonry walls, and other structural components as they are constructed.

C. Coordinate location of access panels and doors for electrical items that are behind finished surfaces or otherwise concealed.

D. Coordinate electrical testing of electrical, mechanical, and architectural items, so equipment and systems that are functionally interdependent are tested to demonstrate successful interoperability.

E. Contractor shall include part of base bid cost for additional electrical work as may be needed on this project and itemized below. Work shall include fittings, support, boxes, terminations and needed accessories for proper installations.

- 200 feet of 1" PVC conduit including trenching and backfill.

- 2,000 feet of #8 THHN/THWN copper wire.

PART 2- PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the follow requirements apply to product selection:

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.

2.2 SLEEVES FOR RACEWAYS AND CABLES

A. Steel Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, galvanized steel, plain ends.

B. Cast-Iron Pipe Sleeves: Cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop, unless otherwise indicated.

C. Sleeves for Rectangular Openings: Galvanized sheet steel with minimum 0.052- or 0.138-inch (1.3- or 3.5-mm) thickness as indicated and of length to suit application.

D. Coordinate sleeve selection and application with selection and application of firestopping specified in other divisions of specifications.

2.3 SLEEVE SEALS

A. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and raceway or cable.

1. Manufacturers:

a. Advance Products & Systems, Inc.

b. Calpico, Inc.

c. Metraflex Co.

d. Pipeline Seal and Insulator, Inc.

2. Sealing Elements: EPDM interlocking links shaped to fit surface of cable or conduit. Include type and number required for material and size of race or cable.
3. Pressure Plates: Stainless steel. Include two for each sealing element.
4. Connecting Bolts and Nuts: Carbon steel with corrosion-resistant coating of length required to secure pressure plates to sealing elements. Include one for each sealing element.

PART 3 – EXECUTION

3.1 COMMON REQUIREMENTS FOR ELECTRICAL INSTALLATION

A. Comply with NECA 1.
B. Measure indicated mounting heights to bottom of unit for suspended items and to center of unit for wall-mounted items.
C. Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide maximum possible headroom consistent with these requirements.
D. Equipment: Install to facilitate service, maintenance, and repair or replacement of components of both electrical equipment and other nearby installations. Connect in such a way as to facilitate future disconnecting with minimum interference with other items in the vicinity.
E. Right of Way: Give to raceways and piping systems installed at a required slope.

3.2 SLEEVE INSTALLATION FOR ELECTRICAL PENETRATIONS

A. Electrical penetrations occur when raceways, wireways, cable trays, or busways penetrate concrete slabs, gypsum board wall, sum concrete or masonry walls, or fire-rated floor and wall assemblies.
B. Coordinate sleeve selection and application with selection and application of firestopping.
C. Concrete Slabs and Walls: Install sleeves for penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of slabs and walls.
D. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.
E. Rectangular Sleeve Minimum Metal Thickness:

1. For sleeve cross-section rectangle perimeter less than 50 inches (1270 mm) and no side greater than 16 inches (400 mm), thickness shall be 0.052 inch (1.3 mm).

2. For sleeve cross-section rectangle perimeter equal to, or greater than, 50 inches (1270 mm) and 1 or more sides equal to, or greater than, 16 inches (400 mm), thickness shall be 0.138 inch (3.5 mm).

F. Fire-Rated Assemblies: Install sleeves for penetrations of fire- rated floor and wall assemblies unless openings compatible with firestop system used are fabricated during construction of floor or wall.
G. Cut sleeves to length for mounting flush with both surfaces of walls.
H. Extend sleeves installed in floors 2 inches (50 mm) above finished floor level.
I. Size pipe sleeves to provide ¼-inch (6.4-mm) annular clear space between sleeve and raceway or cable unless sleeve seal is to be installed.
J. Seal space outside of sleeves with grout for penetrations of concrete and masonry and with approved joint compound for gypsum board assemblies.
K. Interior Penetrations of Non-Fire-Rated Walls and Floors: Seal annular space between sleeve and raceway or cable, using joint sealant appropriate for size, depth, and location of joint.
L. Fire-Rated-Assembly Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at raceway and cable penetrations. Install sleeves and seal raceway and cable penetration sleeves with firestop materials. Comply with Division 7 Section "Through- Penetration Firestop Systems."
M. Roof-Penetration Sleeves: Seal penetration of individual raceways and cables with flexible boot-type flashing units applied in coordination with roofing work.
N. Aboveground, Exterior-Wall Penetrations: Seal penetrations using sleeves and mechanical sleeve seals. Select sleeve size to allow for 1-inch (25-mm) annular clear space between pipe and sleeve for installing mechanical sleeve seals.
O. Underground, Exterior-Wall Penetrations: Install cast-iron "wall pipes" for sleeves. Size sleeves to allow for 1-inch (25-mm) annular clear space between raceway or cable and sleeve for installing mechanical sleeve seals.

3.3 SLEEVE-SEAL INSTALLATION

A. Install to seal underground, exterior wall penetrations.

B. Use type and number of sealing elements recommended by manufacturer for raceway or cable material and size. Position raceway or cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between raceway or cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

3.4 FIRESTOPPING

A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly. Firestopping materials and installation requirements are specified in other divisions of specifications.

3.5 FIELD QUALITY CONTROL

A. Inspect installed sleeve and sleeve-seal installations and associated firestopping for damage and faulty work.

END OF SECTION

SECTION 26 05 19

LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 2 - GENERAL

2.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

2.2 SUMMARY

A. This Section includes building wires and cables and associated connectors, splices, and terminations for wiring systems rated 600 V and less.

2.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Qualification Data: For testing agency.

C. Field Quality-Control Test Reports: From a qualified testing and inspecting agency engaged by Contractor.

2.4 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

B. Comply with NFPA 70.

PART 3 - PRODUCTS

3.1 MANUFACTURERS

A. In other Part 2 articles where subparagraph titles below introduce lists, the following requirements apply for product selection:

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the manufacturers specified.

3.2 CONDUCTORS AND CABLES

A. Manufacturers:
   1. American Insulated Wire Corp.; a Leviton Company.
   2. General Cable Corporation.
   3. Senator Wire & Cable Company.
   4. Southwire Company.

B. Refer to Part 3 "Conductor and Insulation Applications" Article for insulation type, cable construction, and ratings.

C. Conductor Material: Copper complying with NEMA WC 5; solid conductor for No. 10 AWG and smaller, stranded for No. 8 AWG and larger.

D. Conductor Insulation Types: Type THHN-THWN complying with NEMA WC 5.

3.3 CONNECTORS AND SPLICES

A. Manufacturers:
   1. AMP Incorporated/Tyco International.
   2. Hubbell/Anderson.
   3. O-Z/Gedney; EGS Electrical Group LLC.
   4. 3M Company; Electrical Products Division.

B. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.

PART 4 - EXECUTION

4.1 CONDUCTOR AND INSULATION APPLICATIONS

A. Service Entrance: Type THHN-THWN, single conductors in raceway.

B. Exposed Feeders: Type THHN-THWN, single conductors in raceway.

C. Feeders Concealed in Ceilings, Walls, and Partitions: Type THHN-THWN, single conductors in raceway.

D. Feeders Concealed in Concrete, below Slabs-on-Grade, and in Crawlspaces: Type THHN-THWN, single conductors in raceway.

E. Branch Circuits Concealed in Ceilings, Walls, and Partitions: Type THHN-THWN, single conductors in raceway.

F. Branch Circuits Concealed in Concrete and below Slabs-on-Grade: Type THHN-THWN, single conductors in raceway.

G. Underground Feeders and Branch Circuits: Type THHN/THWN, single conductors in raceway.

H. Cord Drops and Portable Appliance Connections: Type SO, hard service cord.

I. Fire Alarm Circuits: Type THHN-THWN, in raceway.

4.2 INSTALLATION

A. Wires and cables shall be in conduit.

B. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.

C. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.

D. Identify and color-code conductors and cables according to Division 26 Section 26 05 53 "Identification for Electrical Systems."

4.3 CONNECTIONS

A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

B. Make splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.

1. Use oxide inhibitor in each splice and tap conductor for aluminum conductors.

C. Wiring at Outlets: Install conductor at each outlet, with at least 12 inches (300 mm) of slack.

4.4 FIELD QUALITY CONTROL

A. Testing: Perform the following field quality-control testing:

1. After installing conductors and cables and before electrical circuitry has been energized, test for compliance with requirements.
2. Perform each electrical test and visual and mechanical inspection stated in NETA ATS, Section 7.3.1. Certify compliance with test parameters.

B. Test Reports: Prepare a written report to record the following:

1. Test procedures used.
2. Test results that comply with requirements.
3. Test results that do not comply with requirements and corrective action taken to achieve compliance with requirements.

PART 5 - GENERAL

5.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

5.2 SUMMARY

A. This Section includes methods and materials for grounding systems and equipment.

1. Underground distribution grounding.
2. Common ground bonding with lightning protection system.

5.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Other Informational Submittals: Plans showing dimensioned as-built locations of grounding features specified in Part 3 "Field Quality Control" Article, including the following:

1. Test wells.
2. Ground rods.
3. Ground rings.
4. Grounding arrangements and connections for separately derived systems.
5. Grounding for sensitive electronic equipment.

C. Qualification Data: For testing agency and testing agency's field supervisor.

D. Field quality-control test reports.

E. Operation and Maintenance Data: For grounding to include the following in emergency, operation, and maintenance manuals:

1. Instructions for periodic testing and inspection of grounding features at test wells based on NFPA 70B.

    a. Tests shall be to determine if ground resistance or impedance values remain within specified maximums, and instructions shall recommend corrective action if they do not.
    b. Include recommended testing intervals.

5.4 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
B. Comply with UL 467 for grounding and bonding materials and equipment.

PART 6 - PRODUCTS

6.1 CONDUCTORS

A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.

B. Bare Copper Conductors:

1. Solid Conductors: ASTM B 3.
2. Stranded Conductors: ASTM B 8.
3. Tinned Conductors: ASTM B 33.
4. Bonding Cable: 28 kcmil, 14 strands of No. 17 AWG conductor, 1/4 inch (6 mm) in diameter.
5. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.
6. Bonding Jumper: Copper tape, braided conductors, terminated with copper ferrules; 1-5/8 inches (41 mm) wide and 1/16 inch (1.6 mm) thick.
7. Tinned Bonding Jumper: Tinned-copper tape, braided conductors, terminated with copper ferrules; 1-5/8 inches (41 mm) wide and 1/16 inch (1.6 mm) thick.

C. Grounding Bus: Rectangular bars of annealed copper, 1/4 by 2 inches (6 by 50 mm) in cross section, unless otherwise indicated; with insulators.

6.2 CONNECTORS

A. Listed and labeled by a nationally recognized testing laboratory acceptable to authorities having jurisdiction for applications in which used, and for specific types, sizes, and combinations of conductors and other items connected.

B. Bolted Connectors for Conductors and Pipes: Copper or copper alloy, bolted pressure-type, with at least two bolts.

1. Pipe Connectors: Clamp type, sized for pipe.

C. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

6.3 GROUNDING ELECTRODES

A. Ground Rods: Copper-clad steel; 3/4 inch by 10 feet (19 mm by 3 m) in diameter.

PART 7 - EXECUTION

7.1 APPLICATIONS

A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger, unless otherwise indicated.

B. Conductor Terminations and Connections:

1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.
2. Underground & Test Well Connections: Welded connectors.
3. Connections to Ground Rods at Test Wells: Welded connectors.
4. Connections to Structural Steel: Welded connectors.

7.2 GROUNDING UNDERGROUND DISTRIBUTION SYSTEM COMPONENTS

A. Comply with IEEE C2 grounding requirements.

7.3 EQUIPMENT GROUNDING

A. Install insulated equipment grounding conductors with all feeders and branch circuits.

B. Install insulated equipment grounding conductors with all feeders and branch circuits.

C. Lighting Poles Supporting Outdoor Lighting Fixtures: Install grounding electrode and a separate insulated equipment grounding conductor in addition to grounding conductor installed with branch-circuit conductors.

7.4 INSTALLATION

A. Grounding Conductors: Route along shortest and straightest paths possible, unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

B. Common Ground Bonding with Lightning Protection System: Comply with NFPA 780 and UL 96 when interconnecting with lightning protection system. Bond electrical power system ground directly to lightning protection system grounding conductor at closest point to electrical service grounding electrode. Use bonding conductor sized same as system grounding electrode conductor and install in conduit.

C. Ground Rods: Drive rods until tops are 2 inches (50 mm) below finished floor or final grade, unless otherwise indicated.

1. Interconnect ground rods with grounding electrode conductor below grade and as otherwise indicated. Make connections without exposing steel or damaging coating, if any.

2. For grounding electrode system, install at least three rods spaced at least one-rod length from each other and located at least the same distance from other grounding electrodes, and connect to the service grounding electrode conductor.

D. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance, except where routed through short lengths of conduit.

1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.
2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install so vibration is not transmitted to rigidly mounted equipment.
3. Use exothermic-welded connectors for outdoor locations, but if a disconnect-type connection is required, use a bolted clamp.

E. Grounding for Steel Building Structure: Install a driven ground rod at base of each corner column and at intermediate exterior columns at distances not more than 60 feet (18 m) apart.

7.5 FIELD QUALITY CONTROL

A. Perform the following tests and inspections and prepare test reports:

1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.
2. Test completed grounding system at each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal, at ground test wells. Make tests at ground rods before any conductors are connected.

    a. Measure ground resistance not less than two full days after last trace of precipitation and without soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.
    b. Perform tests by fall-of-potential method according to IEEE 81.

3. Prepare dimensioned drawings locating each test well, ground rod and ground rod assembly, and other grounding electrodes. Identify each by letter in alphabetical order, and key to the record of tests and observations. Include the number of rods driven and their depth at each location and include observations of weather and other phenomena that may affect test results. Describe measures taken to improve test results.

B. Report measured ground resistances that exceed 5 ohms.

C. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Architect promptly and include recommendations to reduce ground resistance.

END OF SECTION

SECTION 26 05 29

HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 8 - GENERAL

8.1 SUMMARY

A. Section includes:

1. Hangers and supports for electrical equipment and systems.
2. Construction requirements for concrete bases.

8.2 PERFORMANCE REQUIREMENTS

A. Delegated Design: Design supports for multiple raceways, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.

B. Design supports for multiple raceways capable of supporting combined weight of supported systems and its contents.

C. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.

D. Rated Strength: Adequate in tension, shear, and pullout force to resist maximum loads calculated or imposed for this Project, with a minimum structural safety factor of five times the applied force.

8.3 SUBMITTALS

A. Product Data: For steel slotted support systems.

B. Shop Drawings: Show fabrication and installation details and include calculations for the following:

1. Trapeze hangers. Include Product Data for components.
2. Steel slotted channel systems. Include Product Data for components.
3. Equipment supports.

C. Welding certificates.

8.4 QUALITY ASSURANCE

A. Welding: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."

B. Comply with NFPA 70.

PART 9 - PRODUCTS

9.1 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

A. Steel Slotted Support Systems: Comply with MFMA-4, factory-fabricated components for field assembly.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Allied Tube & Conduit.
      b. Cooper B-Line, Inc.; a division of Cooper Industries.
      c. ERICO International Corporation.
      d. GS Metals Corp.
      e. Thomas & Betts Corporation.
      f. Unistrut; Tyco International, Ltd.
      g. Wesanco, Inc.
   2. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.
   3. Channel Dimensions: Selected for applicable load criteria.

B. Raceway Supports: As described in NECA 1 and NECA 101.

C. Conduit Support Devices: Steel and malleable-iron hangers, threaded rods, galvanized "U" channels, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported. Raceway support shall be rigid to prevent horizontal movement.

D. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for non-armored electrical conductors or cables in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be malleable iron.

E. Structural Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M, steel plates, shapes, and bars; black and galvanized.

F. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:
   1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
      a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
         1) Hilti Inc.

2) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
3) MKT Fastening, LLC.
4) Simpson Strong-Tie Co., Inc.; Masterset Fastening Systems Unit.

2. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated steel, for use in hardened portland cement concrete with tension, shear, and pullout capacities appropriate for supported loads and building materials in which used.
   a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

      1) Cooper B-Line, Inc.; a division of Cooper Industries.
      2) Empire Tool and Manufacturing Co., Inc.
      3) Hilti Inc.
      4) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
      5) MKT Fastening, LLC.

3. Concrete Inserts: Steel or malleable-iron, slotted support system units similar to MSS Type 18; complying with MFMA-4 or MSS SP-58.
4. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.
5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.
6. Toggle Bolts: All-steel springhead type.
7. Hanger Rods: Threaded steel.

9.2 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

A. Description: Welded or bolted, structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.

B. Materials: Comply with requirements in Division 5 Section "Metal Fabrications" for steel shapes and plates.

PART 10 - EXECUTION

10.1 APPLICATION

A. Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems except if requirements in this Section are stricter.

B. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMT, IMC, and RMC as scheduled in NECA 1, where its Table 1 lists maximum spacings less than stated in NFPA 70. Minimum rod size shall be 1/4 inch (6 mm) in diameter.

C. Multiple Raceways: Install trapeze-type supports fabricated with steel slotted support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.

1. Secure raceways to these supports with two-bolt conduit clamps.

D. Spring-steel clamps designed for supporting single conduits without bolts may be used for 1-1/2-inch (38-mm) and smaller raceways serving branch circuits and communication systems above suspended ceilings and for fastening raceways to trapeze supports.

10.2 SUPPORT INSTALLATION

A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this Article.

B. Raceway Support Methods: In addition to methods described in NECA 1, EMT, IMC, and RMC may be supported by openings through structure members, as permitted in NFPA 70. Raceway support shall be rigid to prevent horizontal movement. Outlet and junction boxes in ceiling space shall have independent support. Support all conduits within (3) feet from boxes.

C. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb (90 kg).

D. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:

1. To Wood: Fasten with lag screws or through bolts.
2. To New Concrete: Bolt to concrete inserts.
3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
4. To Existing Concrete: Expansion anchor fasteners.
5. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inches (100 mm) thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inches (100 mm) thick.
6. To Steel: Beam clamps (MSS Type 19, 21, 23, 25, or 27) complying with MSS SP-69.
7. To Light Steel: Sheet metal screws.
8. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate by means that meet anchorage requirements.

E. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.

10.3 INSTALLATION OF FABRICATED METAL SUPPORTS

A. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.

B. Field Welding: Comply with AWS D1.1/D1.1M.

10.4 CONCRETE BASES

A. Construct concrete bases of dimensions indicated but not less than 4 inches (100 mm) larger in both directions than supported unit, and so anchors will be a minimum of 10 bolt diameters from edge of the base.

B. Use 3000-psi (20.7-MPa), 28-day compressive-strength concrete. Concrete materials, reinforcement, and placement requirements are specified in “Cast-in-Place Concrete."

C. Anchor equipment to concrete base.

1. Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
2. Install anchor bolts to elevations required for proper attachment to supported equipment.
3. Install anchor bolts according to anchor-bolt manufacturer's written instructions.

10.5 PAINTING

A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.

1. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils (0.05 mm).

B. Touchup: Comply with requirements in painting Sections for cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint on miscellaneous metal.

C. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

END OF SECTION

SECTION 26 05 33

RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

PART 11 - GENERAL

11.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

11.2 SUMMARY

A. This Section includes raceways, fittings, boxes, enclosures, and cabinets for electrical wiring.

B. Related Sections include the following:
   1. Division 26 Section 26 05 10 "Basic Electrical Materials and Methods" for supports, anchors, and identification products.

11.3 DEFINITIONS

A. EMT: Electrical metallic tubing.

B. FMC: Flexible metal conduit.

C. IMC: Intermediate metal conduit.

D. LFMC: Liquid tight flexible metal conduit.

E. LFNC: Liquid tight flexible nonmetallic conduit.

F. RNC: Rigid nonmetallic conduit.

11.4 SUBMITTALS

A. Product Data: For surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.

B. Shop Drawings: Show fabrication and installation details of components for raceways, fittings, boxes, enclosures, and cabinets.

C. Coordination Drawings: Reflected ceiling plans drawn to scale and coordinating penetrations and ceiling-mounted items. Show the following:

   1. Ceiling suspension assembly members.
   2. Method of attaching hangers to building structure.
   3. Size and location of initial access modules for acoustical tile.

4. Ceiling-mounted items including lighting fixtures, diffusers, grilles, speakers, sprinklers, access panels, and special moldings.

11.5 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

B. Comply with NFPA 70.

11.6 COORDINATION

A. Coordinate layout and installation of raceways, boxes, enclosures, cabinets, and suspension system with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, fire-suppression system, and partition assemblies.

PART 12 - PRODUCTS

12.1 MANUFACTURERS

A. In other Part 2 articles where subparagraph titles below introduce lists, the following requirements apply for product selection:

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the manufacturers specified.

12.2 METAL CONDUIT AND TUBING

A. Manufacturers:
1. Alflex Inc.
2. Anamet Electrical, Inc.; Anaconda Metal Hose.
3. Electri-Flex Co.
4. Grinnell Co./Tyco International; Allied Tube and Conduit Div.
5. LTV Steel Tubular Products Company.
6. Manhattan/CDT/Cole-Flex.
7. O-Z Gedney; Unit of General Signal.
8. Wheatland Tube Co.

B. Rigid Steel Conduit: ANSI C80.1.

C. IMC: ANSI C80.6.

D. Plastic-Coated Steel Conduit and Fittings: NEMA RN 1.

E. Plastic-Coated IMC and Fittings: NEMA RN 1.

F. EMT and Fittings: ANSI C80.3.

1. Fittings: Compression type.

G. FMC: Zinc-coated steel.

H. LFMC: Flexible steel conduit with PVC jacket.

I. Fittings: NEMA FB 1; compatible with conduit and tubing materials.

12.3 NONMETALLIC CONDUIT AND TUBING

A. Manufacturers:

1. American International.
2. Anamet Electrical, Inc.; Anaconda Metal Hose.
3. Arnco Corp.
4. Cantex Inc.
5. Certainteed Corp.; Pipe & Plastics Group.
6. Condux International.
7. ElecSYS, Inc.
8. Electri-Flex Co.
9. Lamson & Sessions; Carlon Electrical Products.
10. Manhattan/CDT/Cole-Flex.
11. RACO; Division of Hubbell, Inc.
12. Spiralduct, Inc./AFC Cable Systems, Inc.
13. Thomas & Betts Corporation.

B. RNC: NEMA TC 2, Schedule 40 and Schedule 80 PVC.

12.4 METAL WIREWAYS

A. Manufacturers:

1. Hoffman.
2. Square D.

B. Material and Construction: Sheet metal sized and shaped as indicated, NEMA 1 for dry location. NEMA 3R for outdoor locations.

C. Fittings and Accessories: Include couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.

D. Select features, unless otherwise indicated, as required to complete wiring system and to comply with NFPA 70.

E. Wireway Covers: Hinged type.

F. Finish: Manufacturer's standard enamel finish.

12.5 BOXES, ENCLOSURES, AND CABINETS

A. Manufacturers:

1. Cooper Crouse-Hinds; Div. of Cooper Industries, Inc.
2. Emerson/General Signal; Appleton Electric Company.
3. Erickson Electrical Equipment Co.
4. Hoffman.
5. Hubbell, Inc.; Killark Electric Manufacturing Co.
6. O-Z/Gedney; Unit of General Signal.
7. RACO; Division of Hubbell, Inc.
8. Robroy Industries, Inc.; Enclosure Division.
9. Scott Fetzer Co.; Adalet-PLM Division.
10. Spring City Electrical Manufacturing Co.
11. Thomas & Betts Corporation.
12. Walker Systems, Inc.; Wiremold Company (The).
13. Woodhead, Daniel Company; Woodhead Industries, Inc. Subsidiary.

B. Sheet Metal Outlet and Device Boxes: NEMA OS 1.

C. Cast-Metal Outlet and Device Boxes: NEMA FB 1, Type FD, with gasketed cover.

D. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.

E. Cast-Metal Pull and Junction Boxes: NEMA FB 1, cast aluminum with gasketed cover.

F. Hinged-Cover Enclosures: NEMA 250, Type 1, NEMA-3R for exterior location, with continuous hinge cover and flush latch.

1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.
2. Nonmetallic Enclosures: Plastic, finished inside with radio-frequency-resistant paint.

G. Cabinets: NEMA 250, Type 1, galvanized steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel. Hinged door in front cover with flush latch and concealed hinge. Key latch to match panelboards. Include metal barriers to separate wiring of different systems and voltage and include accessory feet where required for freestanding equipment.

12.6 FACTORY FINISHES

A. Finish: For raceway, enclosure, or cabinet components, provide manufacturer's standard prime coat finish ready for field painting.

B. Finish: For raceway, enclosure, or cabinet components, provide manufacturer's standard paint applied to factory-assembled surface raceways, enclosures, and cabinets before shipping.

PART 13 - EXECUTION

13.1 RACEWAY APPLICATION

A. Outdoors:

1. Exposed: Rigid steel or IMC.
2. Concealed: Rigid steel or IMC.
3. Underground Run: RNC. PVC Schedule 40. Change from nonmetallic tubing (including ells) to rigid steel conduit or IMC before rising above the floor. Primary and secondary power runs shall be encased in concrete. Provide 3" thick envelope around conduits. Concrete encasements are required for conduit runs property line to transformer, transformer to building and between buildings. Concrete encasements are not required for branch circuits such as site lighting.
4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.
5. Boxes and Enclosures: NEMA 250, Type 3R.

B. Indoors:

1. Exposed: EMT.
2. Concealed: EMT.
3. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC; except use LFMC in damp or wet locations.
4. Damp or Wet Locations: Rigid steel conduit.
5. Boxes and Enclosures: NEMA 250, Type 1, except as follows:

    a. Damp or Wet Locations: NEMA 250, Type 4, stainless steel.

C. Minimum Raceway Size: 1/2-inch trade size (DN 16).

D. Raceway Fittings: Compatible with raceways and suitable for use and location.

1. Intermediate Steel Conduit: Use threaded rigid steel conduit fittings, unless otherwise indicated.

2. PVC Externally Coated, Rigid Steel Conduits: Use only fittings approved for use with that material. Patch all nicks and scrapes in PVC coating after installing conduits.
3. EMT conduit: Steel compression type.

13.2 INSTALLATION

A. Keep raceways at least 6 inches (150 mm) away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.

B. Complete raceway installation before starting conductor installation.

C. Support raceways as specified in Division 26 Section 26 05 10 "Basic Electrical Materials and Methods."

D. Install temporary closures to prevent foreign matter from entering raceways.

E. Protect stub-ups from damage where conduits rise through floor slabs. Arrange so curved portions of bends are not visible above the finished slab.

F. Make bends and offsets so ID is not reduced. Keep legs of bends in the same plane and keep straight legs of offsets parallel, unless otherwise indicated.

G. Conceal conduit and EMT within finished walls, ceilings, and floors, unless otherwise indicated.

1. Install concealed raceways with a minimum of bends in the shortest practical distance, considering type of building construction and obstructions, unless otherwise indicated.

H. Raceways Embedded in Slabs: Install in middle 1/3 of slab thickness where practical and leave at least 2 inches (50 mm) of concrete cover.

1. Secure raceways to reinforcing rods to prevent sagging or shifting during concrete placement.
2. Space raceways laterally to prevent voids in concrete.
3. Run conduit larger than 1-inch trade size (DN 27) parallel or at right angles to main reinforcement. Where at right angles to reinforcement, place conduit close to slab support.
4. *For stub-ups outside of walls, c*hange from nonmetallic tubing (including ells) to rigid steel conduit or IMC before rising above the floor. *PVC conduits may stub up inside CMU walls.*

I. Install exposed raceways parallel or at right angles to nearby surfaces or structural members and follow surface contours as much as possible.

1. Run parallel or banked raceways together on common supports.
2. Make parallel bends in parallel or banked runs. Use factory elbows only where elbows can be installed parallel; otherwise, provide field bends for parallel raceways.

J. Join raceways with fittings designed and approved for that purpose and make joints tight.

1. Use insulating bushings to protect conductors.

K. Tighten setscrews of threadless fittings with suitable tools.

L. Terminations:

1. Where raceways are terminated with locknuts and bushings, align raceways to enter squarely and install locknuts with dished part against box. Use two locknuts, one inside and one outside box.
2. Where raceways are terminated with threaded hubs, screw raceways or fittings tightly into hub so end bears against wire protection shoulder. Where chase nipples are used, align raceways so coupling is square to box; tighten chase nipple so no threads are exposed.

M. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb (90-kg) tensile strength. Leave at least 12 inches (300 mm) of slack at each end of pull wire.

N. Install raceway-sealing fittings at suitable, approved, and accessible locations and fill them with UL-listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings at the following points:

1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
2. Where otherwise required by NFPA 70.

O. Stub-up Connections: Extend conduits through concrete floor for connection to freestanding equipment. Install with an adjustable top or coupling threaded inside for plugs set flush with finished floor. Extend conductors to equipment with rigid steel conduit; FMC may be used 6 inches (150 mm) above the floor. Install screwdriver-operated, threaded plugs flush with floor for future equipment connections.

P. Flexible Connections: Use maximum of 72 inches (1830 mm) of flexible conduit for recessed and semi recessed lighting fixtures; for equipment subject to vibration, noise transmission, or movement; and for all motors. Use LFMC in damp or wet locations. Install separate ground conductor across flexible connections.

Q. Surface Raceways: Install a separate, green, ground conductor in raceways from junction box supplying raceways to receptacle or fixture ground terminals.

R. Install hinged-cover enclosures and cabinets plumb. Support at each corner.

13.3 PROTECTION

A. Provide final protection and maintain conditions that ensure coatings, finishes, and cabinets are without damage or deterioration at time of Substantial Completion.

1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
2. Repair damage to PVC or paint finishes with matching touchup coating recommended by manufacturer.

13.4 CLEANING

A. After completing installation of exposed, factory-finished raceways and boxes, inspect exposed finishes and repair damaged finishes.

END OF SECTION

SECTION 26 05 53

IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 14 - GENERAL

14.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

14.2 SUMMARY

A. This Section includes the following:

1. Identification for raceway.
2. Identification for conductors and communication and control cable.
3. Underground-line warning tape.
4. Warning labels and signs.
5. Instruction signs.
6. Equipment identification labels.
7. Miscellaneous identification products.

14.3 SUBMITTALS

A. Product Data: For each electrical identification product indicated.

B. Identification Schedule: An index of nomenclature of electrical equipment and system components used in identification signs and labels.

C. Samples: For each type of label and sign to illustrate size, colors, lettering style, mounting provisions, and graphic features of identification products.

14.4 QUALITY ASSURANCE

A. Comply with ANSI A13.1 and ANSI C2.

B. Comply with NFPA 70.

C. Comply with 29 CFR 1910.145.

14.5 COORDINATION

A. Coordinate identification names, abbreviations, colors, and other features with requirements in the Contract Documents, Shop Drawings, manufacturer's wiring diagrams, and the Operation

and Maintenance Manual, and with those required by codes, standards, and 29 CFR 1910.145. Use consistent designations throughout Project.

C. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.

D. Coordinate installation of identifying devices with location of access panels and doors.

E. Install identifying devices before installing acoustical ceilings and similar concealment.

PART 15 - PRODUCTS

15.1 RACEWAY IDENTIFICATION MATERIALS

A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway and cable size.

B. Self-Adhesive Vinyl Tape: Colored, heavy duty, waterproof, fade resistant; 2 inches (50 mm) wide; compounded for outdoor use.

15.2 CONDUCTOR AND COMMUNICATION- AND CONTROL-CABLE IDENTIFICATION MATERIALS

A. Marker Tapes: Vinyl or vinyl-cloth, self-adhesive wraparound type, with circuit identification legend machine printed by thermal transfer or equivalent process.

15.3 UNDERGROUND-LINE WARNING TAPE

A. Description: Permanent, bright-colored, continuous-printed, magnetic polyethylene tape.

1. Not less than 6 inches (150 mm) wide by 4 mils (0.102 mm) thick.
2. Compounded for permanent direct-burial service.
3. Embedded continuous metallic strip or core.
4. Printed legend shall indicate type of underground line.

15.4 WARNING LABELS AND SIGNS

A. Comply with NFPA 70 and 29 CFR 1910.145.

B. Self-Adhesive Warning Labels: Factory printed, multicolor, pressure-sensitive adhesive labels, configured for display on front cover, door, or other access to equipment, unless otherwise indicated.

C. Baked-Enamel Warning Signs: Preprinted aluminum signs, punched or drilled for fasteners, with colors, legend, and size required for application. 1/4-inch (6.4-mm) grommets in corners for mounting. Nominal size, 7 by 10 inches (180 by 250 mm)

D. Metal-Backed, Butyrate Warning Signs: Weather-resistant, nonfading, preprinted, cellulose-acetate butyrate signs with 0.0396-inch (1-mm) galvanized-steel backing; and with colors, legend, and size required for application. 1/4-inch (6.4-mm) grommets in corners for mounting. Nominal size, 10 by 14 inches (250 by 360 mm).

E. Warning label and sign shall include, but are not limited to, the following legends:

1. Multiple Power Source Warning: "DANGER - ELECTRICAL SHOCK HAZARD - EQUIPMENT HAS MULTIPLE POWER SOURCES."

2. Workspace Clearance Warning: "WARNING - OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36 INCHES (915 MM)."

15.5 INSTRUCTION SIGNS

A. Engraved, laminated acrylic or melamine plastic, minimum 1/16 inch (1.6 mm) thick for signs up to 20 sq. in. (129 sq. cm) and 1/8 inch (3.2 mm) thick for larger sizes.

1. Engraved legend with black letters on white face.
2. Punched or drilled for mechanical fasteners.
3. Framed with mitered acrylic molding and arranged for attachment at applicable equipment.

15.6 EQUIPMENT IDENTIFICATION LABELS

A. Adhesive Film Label with Clear Protective Overlay: Machine printed, in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch (10 mm). Overlay shall provide a weatherproof and ultraviolet-resistant seal for label.

B. Self-Adhesive, Engraved, Laminated Acrylic or Melamine Label: Adhesive backed, with white letters on a dark-gray background. Minimum letter height shall be 3/8 inch (10 mm).

PART 16 - EXECUTION

16.1 APPLICATION

A. Power-Circuit Conductor Identification: For primary and secondary conductors No. 1/0 AWG and larger in vaults, pull and junction boxes, manholes, and handholes use color-coding conductor tape. Identify source and circuit number of each set of conductors. For single conductor cables, identify phase in addition to the above.

B. Conductors to Be Extended in the Future: Attach marker tape to conductors and list source and circuit number.

C. Auxiliary Electrical Systems Conductor Identification: Identify field-installed alarm, control,

D. signal, sound, intercommunications, voice, and data connection

1. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, and pull points. Identify by system and circuit designation.
2. Use system of marker tape designations that is uniform and consistent with system used by manufacturer for factory-installed connections.
3. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and Operation and Maintenance Manual.

E. Locations of Underground Lines: Identify with underground-line warning tape for power, lighting, communication, and control wiring and optical fiber cable.

F. Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting: Comply with 29 CFR 1910.145 and apply baked-enamel warning signs. Identify system voltage with black letters on an orange background. Apply to exterior of door, cover, or other access.

1. Equipment with Multiple Power or Control Sources: Apply to door or cover of equipment including, but not limited to, the following:

   a. Power transfer switches.
   b. Controls with external control power connections.

2. Equipment Requiring Workspace Clearance According to NFPA 70: Unless otherwise indicated, apply to door or cover of equipment but not on flush panelboards and similar equipment in finished spaces.

G. Instruction Signs:

1. Operating Instructions: Install instruction signs to facilitate proper operation and maintenance of electrical systems and items to which they connect. Install instruction signs with approved legend where instructions are needed for system or equipment operation.
2. Emergency Operating Instructions: Install instruction signs with white legend on a red background with minimum 3/8-inch- (10-mm-) high letters for emergency instructions at equipment used for power transfer.

H. Equipment Identification Labels: On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and Operation and Maintenance Manual. Apply labels to disconnect switches and protection equipment, central or master units, control panels, control stations, terminal cabinets, and racks of each system. Systems include power, lighting, control, communication, signal, monitoring, and alarm systems unless equipment is provided with its own identification.

1. Labeling Instructions:

   a. Indoor Equipment: Self-adhesive, engraved, laminated acrylic or melamine label. Unless otherwise indicated, provide a single line of text with 1/2-inch- (13-mm-) high letters on 1-1/2-inch- (38-mm-) high label; where 2 lines of text are required, use labels 2 inches (50 mm) high.

b.

c. Outdoor Equipment: Engraved, laminated acrylic or melamine label.

d. Elevated Components: Increase sizes of labels and letters to those appropriate for viewing from the floor.

2. Equipment to Be Labeled:

a. Panelboards, electrical cabinets, and enclosures.
b. Access doors and panels for concealed electrical items.
c. Electrical switchgear and switchboards.
d. Transformers.
e. Emergency system boxes and enclosures.
f. Disconnect switches.
g. Enclosed circuit breakers.
h. Motor starters.
i. Push-button stations.
j. Power transfer equipment.
k. Contactors.
l. Remote-controlled switches, dimmer modules, and control devices.
m. Power-generating units.
n. Voice and data cable terminal equipment.
o. Intercommunication and call system.
p. Television/audio components, racks, and controls.
q. Fire-alarm control panel and annunciators.
r. Monitoring and control equipment.
s. Uninterruptible power supply equipment.
t. Terminals, racks, and patch panels for voice and data communication and for signal and control functions.

16.2 INSTALLATION

A. Verify identity of each item before installing identification products.

B. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.

C. Apply identification devices to surfaces that require finish after completing finish work.

D. Self-Adhesive Identification Products: Clean surfaces before application, using materials and methods recommended by manufacturer of identification device.

E. Attach non-adhesive signs and plastic labels with screws and auxiliary hardware appropriate to the location and substrate.

F. System Identification Color Banding for Raceways: Each color band shall completely encircle conduit. Place adjacent bands of two-color markings in contact, side by side. Locate bands at changes in direction, at penetrations of walls and floors, at 50-foot (15-m) maximum intervals in straight runs, and at 25-foot (7.6-m) maximum intervals in congested areas

G. Color-Coding for Phase and Voltage Level Identification, 600 V and Less: Use the colors listed below for ungrounded service, feeder, and branch-circuit conductors.

1. Color shall be factory applied or, for sizes larger than No. 10 AWG if authorities having jurisdiction permit, field applied.
2. Colors for 208/120-V Circuits:

    a. Phase A: Black.
    b. Phase B: Red.
    c. Phase C: Blue.

3. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches (150 mm) from terminal points and in boxes where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding. Locate bands to avoid obscuring factory cable markings.

H. Aluminum Wraparound Marker Labels and Metal Tags: Secure tight to surface of conductor or cable at a location with high visibility and accessibility.

I. Underground-Line Warning Tape: During backfilling of trenches install continuous underground-line warning tape directly above line at 6 to 8 inches (150 to 200 mm) below finished grade. Use multiple tapes where width of multiple lines installed in a common trench exceeds 16 inches (400 mm) overall. Provide #12 stainless steel locator wire.

J. Painted Identification: Prepare surface and apply paint according to Division 9 painting Sections.

END OF SECTION

SECTION 26 28 16

ENCLOSED SWITCHES AND CIRCUIT BREAKERS

PART 17 - GENERAL

17.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

17.2 SUMMARY

A. This Section includes the following individually mounted, enclosed switches and circuit breakers:

1. Fusible switches.
2. Nonfusible switches.
3. Molded-case circuit breakers.
4. Enclosures

17.3 DEFINITIONS

A. GFCI: Ground-fault circuit interrupter.

B. HD: Heavy duty.

C. RMS: Root mean square.

D. SPDT: Single pole, double throw.

17.4 SUBMITTALS

A. Product Data: For each type of enclosed switch, circuit breaker, accessory, and component indicated. Include dimensioned elevations, sections, weights, and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.

1. Enclosure types and details for types other than NEMA 250, Type 1.
2. Current and voltage ratings.
3. Short-circuit current rating.
4. UL listing for series rating of installed devices.
5. Features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.

B. Shop Drawings: Diagram power, signal, and control wiring.

C. Field quality-control test reports including the following:

1. Test procedures used.
2. Test results that comply with requirements.
3. Results of failed tests and corrective action taken to achieve test results that comply with requirements.

D. Manufacturer's field service report.

E. Operation and Maintenance Data: For enclosed switches and circuit breakers to include in emergency, operation, and maintenance manuals. In addition to items specified in Division 1 Section "Operation and Maintenance Data," include the following:

1. Manufacturer's written instructions for testing and adjusting enclosed switches and circuit breakers.
2. Time-current curves, including selectable ranges for each type of circuit breaker.

17.5 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

B. Comply with NFPA 70.

C. Product Selection for Restricted Space: Drawings indicate maximum dimensions for enclosed switches and circuit breakers, including clearances between enclosures, and adjacent surfaces and other items. Comply with indicated maximum dimensions.

17.6 COORDINATION

A. Coordinate layout and installation of switches, circuit breakers, and components with other construction, including conduit, piping, equipment, and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.

17.7 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. Fuses: 20% of each type utilized.

PART 18 - PRODUCTS

18.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

18.2 FUSIBLE AND NONFUSIBLE SWITCHES

A. Manufacturers:

   1. Square “D”.
   2. Eaton.
   3. GE.

B. Fusible Switch, 600 A and Smaller: NEMA KS 1, Type HD, with clips or bolt pads to accommodate specified fuses, lockable handle with capability to accept two padlocks, and interlocked with cover in closed position.

C. Nonfusible Switch, 600 A and Smaller: NEMA KS 1, Type HD, lockable handle with capability to accept two padlocks, and interlocked with cover in closed position.

D. Accessories:

   1. Equipment Ground Kit: Internally mounted and labeled for copper and aluminum ground conductors.
   2. Neutral Kit: Internally mounted; insulated, capable of being grounded, and bonded; and labeled for copper and aluminum neutral conductors.
   3. Auxiliary Contact Kit: Auxiliary set of contacts arranged to open before switch blades open.

18.3 MOLDED-CASE CIRCUIT BREAKERS AND SWITCHES

A. Manufacturers:

   1. Eaton Corporation; Cutler-Hammer Products.
   2. General Electric Co.; Electrical Distribution & Control Division.
   3. Siemens Energy & Automation, Inc.

B. Molded-Case Circuit Breaker: NEMA AB 1, with interrupting capacity to meet available fault currents.

1. Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 400 A and larger.

C. Molded-Case Circuit-Breaker Features and Accessories:

1. Standard frame sizes, trip ratings, and number of poles.
2. Lugs: Mechanical style suitable for number, size, trip ratings, and conductor material.
3. Application Listing: Type SWD for switching fluorescent lighting loads; Type HACR for heating, air-conditioning, and refrigerating equipment.
4. Ground-Fault Protection: Integrally mounted relay and trip unit with adjustable pickup and time-delay settings, push-to-test feature, and ground-fault indicator.

18.4 ENCLOSURES

A. NEMA AB 1 and NEMA KS 1 to meet environmental conditions of installed location.

1. Outdoor Locations: NEMA 250, Type 3R.
2. Kitchen Areas: NEMA 250, Type 4X, stainless steel.
3. Other Wet or Damp Indoor Locations: NEMA 250, Type 4.
4. Hazardous Areas Indicated on Drawings: NEMA 250, Type 7C.
5. Indoor locations: NEMA-1.

PART 19 - EXECUTION

19.1 EXAMINATION

A. Examine elements and surfaces to receive enclosed switches and circuit breakers for compliance with installation tolerances and other conditions affecting performance.
B. Proceed with installation only after unsatisfactory conditions have been corrected.

19.2 CONCRETE BASES

A. Coordinate size and location of concrete bases. Verify structural requirements with structural engineer.

19.3 INSTALLATION

A. Comply with applicable portions of NECA 1, NEMA PB 1.1, and NEMA PB 2.1 for installation of enclosed switches and circuit breakers.

B. Mount individual wall-mounting switches and circuit breakers with tops at uniform height, unless otherwise indicated. Anchor floor-mounting switches to concrete base.

C. Temporary Lifting Provisions: Remove temporary lifting eyes, channels, and brackets and temporary blocking of moving parts from enclosures and components.

19.4 IDENTIFICATION

A. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs as specified in Division 26 Section 260553 "Identification for Electrical Systems."

B. Enclosure Nameplates: Label each enclosure with engraved metal or laminated-plastic nameplate as specified in Division 26 Section 260553 "Identification for Electrical Systems."

19.5 FIELD QUALITY CONTROL

A. Prepare for acceptance testing as follows:

1. Inspect mechanical and electrical connections.
2. Verify switch and relay type and labeling verification.
3. Verify rating of installed fuses.
4. Inspect proper installation of type, size, quantity, and arrangement of mounting or anchorage devices complying with manufacturer's certification.

B. Perform the following field tests and inspections and prepare test reports:

1. Perform each electrical test and visual and mechanical inspection stated in NETA ATS, Section 7.5 for switches and Section 7.6 for molded-case circuit breakers. Certify compliance with test parameters.
2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.
3. Infrared Scanning:

    a. Initial Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each enclosed switch andcircuit breaker. Open or remove doors or panels so connections are accessible to portable scanner.
    b. Follow-Up Infrared Scanning: Perform an additional follow-up infrared scan of each unit 11 months after date of Substantial Completion.
    c. Instruments, Equipment and Reports:

        1) Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.
        2) Prepare a certified report that identifies enclosed switches and circuit breakers included and describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

19.6 ADJUSTING

A. Set field-adjustable switches and circuit-breaker trip ranges.

19.7 CLEANING

A. On completion of installation, vacuum dirt and debris from interiors; do not use compressed air to assist in cleaning.

B. Inspect exposed surfaces and repair damaged finishes.

END OF SECTION

SECTION 26 56 19

LED EXTERIOR LIGHTING

PART 20 - GENERAL

20.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

20.2 SUMMARY

A. This Section includes the following:

1. Exterior luminaires with lamps and ballasts, but not mounted on exterior surfaces of buildings.
2. Luminaire-mounted photoelectric switches.

20.3 SUBMITTALS

A. Product Data: For each luminaire, arranged in the order of lighting unit designation. Include data on features, accessories, finishes, and the following:

1. Physical description of fixture, including dimensions and verification of indicated parameters.
2. Luminaire dimensions, effective projected area, details of attaching luminaires, accessories, and installation and construction details.
3. Luminaire materials.
4. Photoelectric relays.
5. Electrical and energy-efficiency data for drivers.

B. Shop Drawings: Anchor-bolt templates keyed to specific poles and certified by manufacturer.

C. Wiring Diagrams: Power, signal, and control wiring.

D. Coordination Drawings: Mounting and connection details, drawn to scale, for exterior luminaires with requirements specified in Division 2 Section "Lighting Poles and Standards."

E. Source quality-control test reports.

F. Field quality-control test reports.

G. Operation and Maintenance Data: For luminaires to include in maintenance manuals.

H. Warranties: Special warranties specified in this Section.

20.4 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

B. FMG Compliance: Fixtures for hazardous locations shall be listed and labeled for indicated class and division of hazard by FMG.

C. Comply with IEEE C2, "National Electrical Safety Code."

D. Comply with NFPA 70.

20.5 COORDINATION

A. Coordinate exterior luminaires with mounting and wind load requirements in Division 2 Section "Lighting Poles and Standards."

20.6 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace luminaires or components of luminaires and lamps that fail in materials or workmanship; corrode; or fade, stain, or chalk due to effects of weather or solar radiation within specified warranty period. Manufacturer may exclude, hail damage, vandalism, abuse, or unauthorized repairs or alterations from special warranty coverage.

1. Warranty Period for Luminaires: Five years from date of Substantial Completion.

    a. Warranty Period for Metal Corrosion: Five years from date of Substantial Completion.
    b. Warranty Period for Color Retention: Five years from date of Substantial Completion.

2. Warranty Period for LED Lamps and Drivers: Replace LED lamps and fuses that fail within 5 years from date of Substantial Completion.

1.7 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. LED Driver: 10% of each type and rating installed. Furnish at least one of each type.

2. Glass and Plastic Lenses, Cover, and Other Optical Parts: 3% of each type and rating installed. Furnish at least one of each type.

3. LED Panel: 10% of each type and rating installed. Furnish at least one of each type.

PART 21 - PRODUCTS

21.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
2. Products: Subject to compliance with requirements, provide products specified on drawings.

21.2 LUMINAIRES, GENERAL

A. Complying with UL 1572 and listed for installation in wet locations.

B. Comply with IESNA RP-8 for parameters of lateral light distribution patterns indicated for luminaires.

C. Metal Parts: Free of burrs and sharp corners and edges.

D. Sheet Metal Components: Corrosion-resistant aluminum, unless otherwise indicated. Form and support to prevent warping and sagging.

E. Housings: Rigidly formed, weather- and light-tight enclosures that will not warp, sag, or deform in use. Provide filter/breather for enclosed luminaires.

F. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position. Doors shall be removable for cleaning or replacing lenses. Designed to disconnect ballast when door opens.

G. Exposed Hardware Material: Stainless steel.

H. Plastic Parts: High resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.

I. Reflecting surfaces shall have minimum reflectance as follows, unless otherwise indicated:

1. White Surfaces: 85 percent.
2. Specular Surfaces: 83 percent.
3. Diffusing Specular Surfaces: 75 percent.

J. Lenses and Refractors Gaskets: Use heat- and aging-resistant resilient gaskets to seal and cushion lenses and refractors in luminaire doors.

21.3 FACTORY FINISHES

A. Factory-Painted Finish for Steel Luminaires: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

1. Surface Preparation: Clean surfaces to comply with SSPC-SP 1, "Solvent Cleaning," to remove dirt, oil, grease, and other contaminants that could impair paint bond. Grind welds and polish surfaces to a smooth, even finish. Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 5/NACE No. 1, "White Metal Blast Cleaning," or SSPC-SP 8, "Pickling."
2. Interior Surfaces: Apply one coat of bituminous paint on interior of pole, or otherwise treat to prevent corrosion.
3. Exterior Surfaces: Manufacturer's standard finish consisting of one or more coats of primer and two finish coats of high-gloss, high-build polyurethane enamel.

    a. Color: As selected from manufacturer's standard catalog of colors.
    b. Color: Match Architect's sample of manufacturer's standard color.
    c. Color: As selected by Architect from manufacturer's full range.

B. Factory-Applied Finish for Aluminum Luminaires: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

1. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
2. Natural Satin Finish: Provide fine, directional, medium satin polish (AA-M32); buff complying with AA-M20; and seal aluminum surfaces with clear, hard-coat wax.
3. Class I, Clear Anodic Finish: AA-M32C22A41 (Mechanical Finish: medium satin; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, clear coating 0.018 mm or thicker) complying with AAMA 611.
4. Class I, Color Anodic Finish: AA-M32C22A42/A44 (Mechanical Finish: medium satin; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, integrally colored or electrolytically deposited color coating 0.018 mm or thicker) complying with AAMA 611.

5. Gold Anodic Finish: AA-M32C22A43 (Mechanical Finish: medium satin; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, impregnated color coating 0.018 mm or thicker) complying with AAMA 611.

21.4 SOURCE QUALITY CONTROL

A. Factory test fixtures with drivers and lamps; certify results for isofootcandle curves, zonal lumen, average and minimum ratios, and electrical and energy-efficiency data for ballasts.

PART 22 - EXECUTION

22.1 INSTALLATION

A. Luminaire Attachment: Fasten to indicated structural supports.

B. Adjust luminaires that require field adjustment or aiming.

22.2 CONNECTIONS

A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

22.3 FIELD QUALITY CONTROL

A. Inspect each installed fixture for damage. Replace damaged fixtures and components.

B. Tests and Observations: Verify normal operation of lighting units after installing luminaires and energizing circuits with normal power source. Measure light intensities at night. Use photometers with calibration referenced to NIST standards. Comply with the following IESNA testing guide(s):

1. IESNA LM-5.
2. IESNA LM-50.
3. IESNA LM-52.
4. IESNA LM-64.
5. IESNA LM-72.

C. Prepare a written report of tests, inspections, observations, and verifications indicating and interpreting results. If adjustments are made to lighting system, retest to demonstrate compliance with standards.

END OF SECTION

321313

CONCRETE PAVING

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes exterior cement concrete work for the following items:

1. Handicap Parking Stalls.
2. Sidewalks.
3. Header Curbs.
4. Unit Paver Base.
5. Walks.

B. Related Sections:

1. Division 31 Section 312000 "Earth Work" for subgrade preparation, grading, and subbase course.

2. Division 32 Section 321373 "Concrete Paving Joint Sealants" for joint sealants of joints in concrete pavement and at isolation joints of concrete pavement with adjacent construction.

1.2 SCOPE OF WORK

A. Work includes, but is not limited to, the furnishing of all labor, tools, materials, and coordination with site contractor / grading for the necessary concrete work as defined in the drawings.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Mockup: 10’ section of walkway for color/finish approval by Landscape Architect.

C. Qualification Data: For testing agency

D. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated, based on comprehensive testing of current materials:

1. Aggregates. Include service record data indicating absence of deleterious expansion of concrete due to alkali-aggregate reactivity

E. Design Mixtures: For each concrete paving mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1.4 QUALITY ASSURANCE

A. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready- mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities" (Quality Control Manual - Section 3, "Plant Certification Checklist").

B. Testing Agency Qualifications: An independent agency qualified according to ASTM C 1077 and ASTM E 329 for testing indicated, as documented according to ASTM E 548.

1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-01 or an equivalent certification program.

1.5 PROJECT CONDITIONS

A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.

PART 2 - PRODUCTS

2.1 CONCRETE, GENERAL

A. ACI Publications: Comply with ACI 301 unless otherwise indicated.

2.2 STEEL REINFORCEMENT

A. For all steel reinforcement required, meet the requirements of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction Section 415.

B. Plain-Steel Welded Wire Reinforcement: ASTM A 185, fabricated from as-drawn steel wire into flat sheets.

C. Deformed-Steel Welded Wire Reinforcement: ASTM A 497, flat sheet.

D. Epoxy-Coated Welded Wire Fabric: ASTM A 884/A 884M, Class A, plain steel.

E. Reinforcing Bars: ASTM A 615/A 615M, Grade 60; deformed.

F. Galvanized Reinforcing Bars: ASTM A 767/A 767M, Class II zinc coated, hot-dip galvanized after fabrication and bending; with ASTM A 615/A 615M, Grade 60 deformed bars.

G. Epoxy-Coated Reinforcing Bars: ASTM A 775/A 775M or ASTM A 934/A 934M; with ASTM A 615/A 615M, Grade 60 deformed bars.

H. Steel Bar Mats: ASTM A 184/A 184M; with ASTM A 615/A 615M, Grade 60, deformed bars; assembled with clips.

I. Plain Steel Wire: ASTM A 82,

J. Deformed-Steel Wire: ASTM A 496.

K. Epoxy-Coated-Steel Wire: ASTM A 884/A 884M, Class Acoated.

L. Joint Dowel Bars: Plain steel bars, ASTM A 615/A 615M, Grade 60 . Cut bars true to length with ends square and free of burrs.

M. Epoxy-Coated Joint Dowel Bars: ASTM A 775/A 775M; with ASTM A 615/A 615M, Grade 60 , plain steel bars.

N. Tie Bars: ASTM A 615/A 615M, Grade 60 , deformed.

O. Hook Bolts: ASTM A 307, Grade A, internally and externally threaded. Design hook-bolt joint assembly to hold coupling against pavement form and in position during concreting operations, and to permit removal without damage to concrete or hook bolt.

P. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete, and as follows:

1. Equip wire bar supports with sand plates or horizontal runners where base material will not support chair legs.

2. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer-coated wire bar supports.

Q. Epoxy Repair Coating: Liquid two-part epoxy repair coating, compatible with epoxy coating on reinforcement.

R. Zinc Repair Material: ASTM A 780.

2.3 CONCRETE MATERIALS

A. Cementitious Materials: Use the following cementitious materials, of same type, brand, and source throughout Project:
   1. Portland Cement: ASTM C 150/C 150M, meeting the FDOT Road and Bridge Construction Standard Specifications.
   2. Fly Ash: ASTM C 618.
   3. Slag Cement: ASTM C 989/C 989M, Grade 100 or 120.

B. Normal-Weight Aggregates: ASTM C 33/C 33M, Class coarse aggregate, uniformly graded. Provide aggregates from a single source.

C. Air-Entraining Admixture: ASTM C 260/C 260M.

D. Chemical Admixtures: Admixtures certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material.

E. Water: Potable and complying with ASTM C 94/C 94M.

2.4 FIBER REINFORCEMENT

A. Synthetic Fiber: Monofilament polypropylene fibers engineered and designed for use in decorative concrete paving, complying with ASTM C 1116/C 1116M, Type III, 1/2 to 1-1/2 inches long.

B. Synthetic Fiber: Fibrillated polypropylene fibers engineered and designed for use in decorative concrete paving, complying with ASTM C 1116/C 1116M, Type III, 1/2 to 1-1/2 inches long.

2.5 CURING MATERIALS

A. Absorptive Cover: AASHTO M 182, Class 3, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. dry.

B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

C. Water: Potable.

D. Evaporation Retarder: Waterborne, monomolecular, film forming, manufactured for application to fresh concrete.

E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.

F. White, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 2,

G. Class B, dissipating.

2.6 RELATED MATERIALS

A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.

B. Slip-Resistive Aggregate Finish: Factory-graded, packaged, rustproof, nonglazing, abrasive aggregate of fused aluminum-oxide granules or crushed emery aggregate containing not less than 50 percent aluminum oxide and not less than 20 percent ferric oxide; unaffected by freezing, moisture, and cleaning materials.

2.7 CONCRETE MIXTURES

A. Prepare design mixtures, proportioned according to ACI 301, for each type and strength of normal-weight concrete, and as determined by either laboratory trial mixtures or field experience.

B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:

C. Chemical Admixtures: Use admixtures according to manufacturer's written instructions.

D. Synthetic Fiber: Uniformly disperse in concrete mixture at manufacturer's recommended rate, but not less than 1.0 lb/cu. yd.

E. Concrete Mixtures: Normal-weight concrete.

1. Compressive Strength (28 Days): 4000 psi- vehicular grade; 3000 psi- walks and as indicated.
2. Maximum W/C Ratio at Point of Placement: 0.45.
3. Slump Limit: 4 inches, plus or minus 1 inch.

2.8 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M and ASTM C 1116. Furnish batch certificates for each batch discharged and used in the Work.

1. When air temperature is between 85 deg F and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Proof-roll prepared subbase surface below concrete paving to identify soft pockets and areas of excess yielding.

3.2 PREPARATION

A. Remove loose material from compacted subbase surface immediately before placing concrete.

3.3 EDGE FORMS AND SCREED CONSTRUCTION

A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.

B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.4 STEEL REINFORCEMENT INSTALLATION

A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.

C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.

D. Install welded wire reinforcement in lengths as long as practicable. Lap adjoining pieces at least one full mesh, and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

E. Install fabricated bar mats in lengths as long as practicable. Handle units to keep them flat and free of distortions. Straighten bends, kinks, and other irregularities, or replace units as required before placement. Set mats for a minimum 2-inch overlap of adjacent mats.

3.5 JOINTS

A. General: Form construction, isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.

B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.

C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, other fixed objects, and where

indicated. Place color match sealant above strip; see details and related specifications.

D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, to match jointing of existing adjacent concrete paving:

E. Edging: After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to a 1/8-inch radius. Repeat tooling of edges after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.

3.6 CONCRETE PLACEMENT

A. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.

B. Comply with ACI 301 and FDOT requirements for measuring, mixing, transporting, and placing concrete.

C. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.

D. Screed paving surface with a straightedge and strike off.

E. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleedwater appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.

F. Header Curbs: When automatic machine placement is used for curb and gutter placement, submit revised mix design and laboratory test results that meet or exceed requirements. Produce curbs to required cross section, lines, grades, finish, and jointing as specified for formed concrete. If results are not approved, remove and replace with formed concrete.

G. When adjoining pavement lanes are placed in separate pours, do not operate equipment on concrete until pavement has attained 85 percent of its 28-day compressive strength.

3.7 FLOAT FINISHING

A. General: Do not add water to concrete surfaces during finishing operations.

B. Float Finish: Begin the second floating operation when bleedwater sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.

1. Medium-to-Fine-Textured Broom Finish: Draw a soft-bristle broom across float-finished concrete surface, perpendicular to line of traffic, to provide a uniform, fine-line texture.

3.8 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

B. Comply with ACI 306.1 for cold-weather protection.

C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete but before float finishing.

D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

E. Curing Methods: Cure concrete by moisture curing, moisture-retaining-cover curing, curing compound, or a combination of these.

3.9 REPAIR AND PROTECTION

A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Landscape Architect.

B. Protect concrete paving from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.

C. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION

321373

CONCRETE PAVING JOINT

SEALANTS PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Expansion joints within concrete pavement.
2. Control joints within concrete pavement.

B. Related Sections include the following:

1. Division 32 Section 321216 "Asphalt Paving" for constructing joints between concrete and asphalt pavement.
2. Division 32 Section 321313 "Concrete Paving" for constructing joints in concrete pavement.

1.2 SCOPE OF WORK

A. Work includes, but is not limited to, the furnishing of all labor, tools, materials, and coordination with site contractor / grading for the concrete expansion and control joints as defined in the drawings.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples: For each kind and color of joint sealant required.

C. Paving-Joint-Sealant Schedule: Include the following information:

1. Joint-sealant application, joint location, and designation.
2. Joint-sealant manufacturer and product name.
3. Joint-sealant formulation.
4. Joint-sealant color.

1.4 INFORMATIONAL SUBMITTALS

A. Product Certificates: For each type of joint sealant and accessory, signed by product manufacturer.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration date, pot life, curing time, and mixing instructions for multicomponent materials.

B. Store and handle materials to comply with manufacturer's written instructions to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

1.6 PROJECT CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer.
2. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.
3. When joint substrates are wet or covered with frost.
4. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
5. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Compatibility: Provide joint sealants, backing materials, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

2.2 COLD-APPLIED JOINT SEALANTS

A. Single-Component, Nonsag, Silicone Joint Sealant: ASTM D 5893/D 5893M, Type NS.

B. Single-Component, Self-Leveling, Silicone Joint Sealant: ASTM D 5893/D 5893M, Type SL.

C. Multicomponent, Nonsag, Urethane, Elastomeric Joint Sealant: ASTM C 920, Type M, Grade NS, Class 25, for Use T.

D. Single Component, Pourable, Urethane, Elastomeric Joint Sealant: ASTM C 920, Type S, Grade P, Class 25, for Use T.

E. Multicomponent, Pourable, Urethane, Elastomeric Joint Sealant: ASTM C 920, Type M, Grade P, Class 25, for Use T.

2.3 HOT-APPLIED JOINT SEALANTS

A. Elastomeric Sealant for Concrete: Single-component formulation complying with ASTM D 3406.

B. Sealant for Concrete and Asphalt: Single-component formulation complying with ASTM D 3405.

2.4 JOINT-SEALANT BACKER MATERIALS

A. General: Provide joint-sealant backer materials that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by joint-sealant manufacturer based on field experience and laboratory testing.

B. Round Backer Rods for Cold- and Hot-Applied Joint Sealants: ASTM D 5249, Type 1, of diameter and density required to control sealant depth and prevent bottom-side adhesion of sealant.

C. Round Backer Rods for Cold-Applied Joint Sealants: ASTM D 5249, Type 3, of diameter and density required to control joint-sealant depth and prevent bottom-side adhesion of sealant.

D. Backer Strips for Cold- and Hot-Applied Joint Sealants: ASTM D 5249; Type 2; of thickness and width required to control joint-sealant depth, prevent bottom-side adhesion of sealant, and fill remainder of joint opening under sealant.

2.5 PRIMERS

A. Primers: Product recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated.

PART 3 - EXECUTION

3.1 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions.

B. Joint Priming: Prime joint substrates where indicated or where recommended in writing

by joint-sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

3.2 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated unless more stringent requirements apply.

B. Cleaning of Joints: Clean out joints immediately to comply with joint-sealant manufacturer's written instructions.

C. Joint Priming: Prime joint substrates where indicated or where recommended in writing by joint-sealant manufacturer.

D. Joint-Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions.

E. Install joint-sealant backings to support joint sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leavegaps between ends of joint-sealant backings.
2. Do not stretch, twist, puncture, or tear joint-sealant backings.
3. Remove absorbent joint-sealant backings that have become wet before sealant application and replace them with dry materials.

F. Install joint sealants immediately following backing installation, using proven techniques that comply with the following:

1. Place joint sealants so they fully contact joint substrates.
2. Completely fill recesses in each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

G. Tooling of Nonsag Joint Sealants: Immediately after joint-sealant application and before skinning or curing begins, tool sealants according to the following requirements to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint:

1. Remove excess joint sealant from surfaces adjacent tojoints.
2. Use tooling agents that are approved in writing by joint-sealant manufacturer and that do not discolor sealants or adjacent surfaces.

H. Provide joint configuration to comply with joint-sealant manufacturer's written instructions unless otherwise indicated.

I. Clean off excess joint sealant as the Work progresses, by methods and with cleaning materials approved in writing by joint-sealant manufacturers.

J. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite

such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately and replace with joint sealant so installations with repaired areas are indistinguishable from the original work.

END OF SECTION

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SECTION 328400

PLANTING IRRIGATION

PART 1 – GENERAL.

1.1 SUMMARY

A. Section Includes:

1. Piping.
2. Valves.
3. Automatic control valves.
4. Sprinklers.
5. Drip Irrigation.
6. Controllers.
7. Boxes for automatic control valves.

1.2 SCOPE OF WORK

A. Irrigation system required for this work includes, but is not limited to, the furnishing of all labor, tools, materials, appliances, tests, permits, taxes, etc., necessary for the installation of a landscape irrigation system as herein specified and shown on the drawings, and the removal of all debris from the site.
   1. Locate, purchase, deliver and install piping, conduit, sleeves, 120 volt and low voltage electrical and water connections, valves, backflow preventer devices, controllers, rain sensors, spray and bubbler heads, drip irrigation lines, and associated accessories for a fully operational automatic irrigation system.
   2. Trenching and water settling of backfill material.
   3. Testing and startup of the irrigation system.
   4. Prepare an as built record set of drawings for both the new and existing system.
   5. Training of the Owner's maintenance personnel in the operational requirements of the Irrigation system.
   6. Clean up and disposal of all excess and surplus material.
   7. Maintenance of the irrigation system during the proscribed maintenance period.

1.3 RELATED DOCUMENTS AND REFERENCES

A. Related Documents:
   1. Drawings and general provisions of contract, including general and supplementary conditions and Division I specifications, apply to work of this section.
   2. Related Specification Sections
      a. Section 329300 – Plants (includes planting soils)

b. Section 329200 – Turf and Grasses
c. Section 015639 – Temporary Tree and Plant Protection
d. Sections – Mechanical / Plumbing
e. Sections - Electrical

B. References:
1. American Society of Testing Materials (ASTM): cited section numbers.
2. National Sanitation Foundation (NSF): rating system.
3. Irrigation Association: Turf & Landscape Irrigation Best Management Practices

1.4 PERFORMANCE REQUIREMENTS

A. Irrigation zone control shall be automatic operation with controller and automatic control valves.

B. Location of Sprinklers and Specialties: Design location is approximate. Make minor adjustments necessary to avoid plantings and obstructions such as signs and light standards. Maintain 100 percent irrigation coverage of areas indicated.
1. Irrigation piping and related equipment are drawn diagrammatically. Scaled dimensions are approximate only. Before proceeding with work, carefully check and verify dimensions and immediately notify the Owner's Representative of discrepancies between the drawings or specifications and the actual conditions. Although sizes and locations of plants and or irrigation equipment are drawn to scale wherever possible, it is not within the scope of the drawings to show all necessary offsets, obstructions, or site conditions. The Contractor shall be responsible to install the work in such a manner that it will be in conformance to site conditions, complete, and in good working order.

C. Minimum Working Pressures: The following are minimum pressure requirements for piping, valves, and specialties unless otherwise indicated:

1. Irrigation Main Piping: 200 psi
2. Circuit Piping: 150 psi
3. Designed Running Pressure: 60 gallons per minute; 30 psi at the sprinkler head.

1.5 ACTION SUBMITTALS

A. Pressure testing information / results for the main line and laterals, as noted in PART 3 – **EXECUTION.**

1.6 INFORMATIONAL SUBMITTALS

A. Zoning Chart: Show each irrigation zone and its control valve.

B. Controller Timing Schedule: Indicate timing settings for each automatic controller zone.

C. Field quality-control reports.

1.7 CLOSEOUT SUBMITTALS

A. Operation and maintenance data.As built record set of drawings for both the new and existing system. Include clock scheduling guidance for both standard and daylight savings time, in compliance with the St. Johns River Water Management District.

1.8 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

PART 2 - PRODUCTS

2.1 MATERIALS

A. All products are to be those expressed or implied on the Drawings.

B. All products must conform to their respectivecodes and regulations.

C. All products are to be installed and utilized in accordance with manufacturer's recommendations, Florida Irrigation Society Standards, and general irrigation installation standards and Southern Standard Building and Congress Codes.

2.2 MATERIALS GENERAL

A. All materials shall be of standard, approved and first grade quality and shall be new and in perfect condition when installed and accepted.

B. All controllers, valves, and heads shall be manufactured by the following manufacturer(s) (or approved equal).
   1. All equipment shall be Rainbird.
   2. Hunter is an approved equal.

C. Approval of any items or substitutions indicates only that the product(s) apparently meet the requirements of the drawings and specifications on the basis of the information or samples submitted. The Contractor shall be responsible for the performance of substituted items. If the substitution proves to be unsatisfactory or not compatible with other parts of the system, the Contractor shall replace said items with the originally specified items, including all necessary work and modifications to replace the items, at no cost to the owner.

2.3 PIPING MATERIAL

A. Individual types of pipe and fittings supplied are to be of compatible manufacturer unless otherwise approved. Pipe sizes shown are nominal inside diameter unless otherwise noted.

B. Plastic pipe:

1. All pipe shall be free of blisters, internal striations, cracks, or any other defects or imperfections. The pipe shall be continuously and permanently marked with the following information: manufacturer's name or trade mark, size, class and type of pipe pressure rating, quality control identifications, date of extrusion, and National Sanitation Foundation (NSF) rating.
2. Pressure main line for piping upstream of remote control valves and quick coupling valves:
    a. Pipe smaller than 2 inch diameter (typical of laterals) shall be plastic pipe for use with solvent weld or threaded fittings. Shall be manufactured rigid virgin polyvinyl chloride (PVC) 1220, Type 1, Grade 2 conforming to ASTM D 1785, designated as Schedule 40.
    b. Pipe 2 - 3 inch diameter shall be manufactured rigid virgin polyvinyl chloride (PVC), Type 1, Grade 2 conforming to ASTM D 1785, designated as bell gasket Class 315.
    c. Pipe larger than 3 inch diameter (typical of mainline) shall be manufactured rigid virgin polyvinyl chloride (PVC), Type 1, Grade 2 conforming to ASTM D 1785, designated as bell gasket Class 200 PVC.
3. Non pressure lateral line for piping downstream of remote control valves: plastic pipe for use with solvent weld or threaded fittings. Shall be manufactured rigid virgin polyvinyl chloride PVC 1220 (type 1, grade 2) conforming to ASTM d 1785, designated as Class 200,
    ¾" minimum size.

C. Galvanized pipe shall be used for above ground connections to, backflow prevention device assemblies, hose bibs, and booster pumps and as shown on the plans and details.
1. Pipe shall be hot dip galvanized continuous welded, seamless, Schedule 40 conforming to applicable current ASTM standards.

2.4 FITTINGS AND CONNECTIONS:

A. Polyvinyl chloride pipe fittings and connections: Type II, Grade 1, Schedule 40, high impact molded fittings, manufactured from virgin compounds as specified for piping tapered socket or molded thread type, suitable for either solvent weld or screwed connections. Machine threaded fittings and plastic saddle and flange fittings are not acceptable. Furnish fittings permanently marked with following information: nominal pipe size, type and schedule of material, and National Sanitation Foundation (NSF) seal of approval. PVC fittings shall conform to ASTM D2464 and D2466.

B. Brass pipe fittings, unions and connections: standard 125 pound class 85% red brass fittings and connections, IPS threaded.

C. PVC Schedule 80 threaded risers and nipples: Type I, grade 1, Schedule 80, high impact molded, manufactured from virgin compounds as specified for piping and conforming to ASTM D-2464. Threaded ends shall be molded threads only. Machined threads are not acceptable.

D. Galvanized pipe fittings shall be galvanized malleable iron ground joint Schedule 40 conforming to applicable current ASTM standards.

2.5 SOLVENT CEMENTS AND THREAD LUBRICANT

A. Solvent cements shall comply with ASTM D2564. Socket joints shall be made per recommended procedures for joining PVC plastic pipe and fittings with PVC solvent cement and primer by the pipe and fitting manufacturer and procedures outlined in the appendix of ASTM D2564.

B. Thread lubricant shall be Teflon ribbon-type, or approved equal, suitable for threaded installations as per manufacturer's recommendations.

C. Pipe Joint Compound (Pipe dope) shall be used on all galvanized threaded connections. Pipe Joint Compound is a white colored, non-separating thread sealant compound designed to seal threaded connections against leakage due to internal pressure. It shall contain PTFE (Polytetrafluoroethylene) to permit a tighter assembly with lower torque, secure permanent sealing of all threaded connections and allow for easy disassembly without stripping or damaging threads.

2.6 BACKFLOW PREVENTION DEVICES (not on project, as non-potable water is being used)

2.7 CHECK VALVES

A. Swing check valves 2 inch and smaller shall be 200 lbs., W.O.G., bronze construction with replaceable composition, neoprene or rubber disc and shall meet or exceed federal specification WW-V 5ld, class a, type iv.

B. Anti drain valves shall be of heavy duty virgin PVC construction with female iron pipe thread inlet and outlet. Internal parts shall be stainless steel and neoprene. Anti drain valves shall be field adjustable against draw out from 5 to 40 feet of head.

C. Check valves shall be as indicated on the drawings.

2.8 REMOTE CONTROL VALVES

A. Remote control valves shall be electrically operated, single seat, normally closed configuration, equipped with flow control adjustment and capability for manual operation.

B. Valves shall be actuated by a normally closed low wattage solenoid using 24 volts, 50/60 cycle solenoid power requirement. Solenoid shall be epoxy encased. A union shall be installed on the discharge end.

C. Remote control valves shall be wired to controller in same numerical sequence as indicated on drawings.

D. Remote control valves shall be as indicated on the drawings.

2.9 DRIP TUBING / DRIP SYSTEM / CONTROL VALVES

A. Rainbird XFDP or equal. All products are to be those expressed or implied on theDrawings.

B. All products must conform to their respectivecodes and regulations.

2.10 SPRINKLER HEADS

A. All sprinkler heads shall have check valves installed.

B. All sprinkler heads shall be as indicated on the drawings.

C. Riser nipples for all sprinkler heads shall be the same size as the riser opening in the sprinkler body and fabricated as shown on the drawings.

2.11 AUTOMATIC CONTROLLER + COMMUNICATION CARTRIDGE

A. Controller shall be housed in a plastic enclosure. Location is per drawings (interior).

B. Controller shall be equipped with remote access through Ethernet or WiFi signal (as specified on the plans) with associated communication cartridge for weather / evapo-transpiration (ET) information, which adjusts the controller programming based on local climatic conditions. The sensor shall also have a rain sensing shut-off switch, wind sensing shut off switch, and freeze sensing shut-off of switch. Location to be determined in field.

C. Automatic controller shall be as indicated on the drawings.

2.12 CONTROLLER DECODERS (not on project, as single wire system being used)

2.13 ELECTRICAL CONTROL WIRING

A. Low voltage
   1. The electrical control wire shall be direct burial type UF, no. 14 AWG, solid, single conductor, copper wire UL approved or larger, if required to operate system as designed.
   2. For 2-Wire controllers all irrigation wire for the controller, flow sensor, master valve, hydrometer, remote control valves and moisture sensors shall be per the controller manufacturer's specifications and recommendations.
   3. Color code wires to each valve. Common wire shall be white.
   4. If multiple controllers are being utilized, and wire paths of different controllers cross each other, both common and control wires from each controller to be of different colors.
   5. Control wire splices: Splices are when required shall be placed in splice boxes.
   6. Wire connections shall be per the controller manufacturer's specifications And recommendations

B. High voltage
   1. Shall be of type as required by local codes and ordinances.
   2. Shall be of proper size to accommodate needs of equipment it is to serve.

2.14 VALVE BOXES AND MATERIALS

A. Valve boxes: valve boxes shall be constructed of ABS (acrylonitrile butadiene styrene) plastic, green in color, with rigid base and sides and shall be supplied with bolt lock cover secured with stainless steel bolts. Cover shall be identified with number of zone OR with value identification tag. Provide box extensions as required.
   1. Master valves, flow sensors, remote control irrigation valves, gate valves, and ball valves 3 inch or less in size shall use a 14 inch x 19 inch x 12 inch rectangular box.
   2. Quick coupler valves, wire splices, and grounding rods shall use a 10 inch circular box.
   3. Lettering: "VALVE BOX" or "IRRIGATION".

2.15 CONCRETE THRUST BLOCKS

A. Concrete thrust blocks shall be sized per the pipe manufactures requirement.

2.16 VALVE IDENTIFICATION TAGS

A. Valve Identification Tags shall be 2.25 inch x 2.65 inch polyurethane. Color: potable water; yellow / Non-potable water; purple. Tags shall be permanently attached to each remote control valve with tamper proof seals as indicated on the drawings.

2.17 EQUIPMENT TO BE FURNISHED TO OWNER

A. Two (2) sets of keys for each automatic controller.

B. Two (2) 48 inch tee wrenches for operating the gate valves.

C. Three (3) sets of special tools required for removing, disassembling and adjusting each type of sprinkler and valve supplied on this project.

D. Five (5) Extra sprinkler heads, nozzles, shrub adapters, nozzle filter screens, for each type used on the project.

E. (If applicable) Two (2) quick coupler keys to match manufacturer type of quick coupler.

2.18 INCIDENTAL MATERIALS AND EQUIPMENT

A. Furnish all materials and equipment not specified above, but which are necessary for completion of the work as intended.

2.19 MAIN LINE LOCATOR TAPE

A. 3 - inch wide plastic detectable locator tape.

2.20 MAIN LINE AND LATERAL LINE BEDDING SAND

A. Sand shall consist of natural or manufactured granular material, free of organic material, mica, loam, clay or other substances not suitable for the intended purpose.

B. Sand shall be masonry sand ASTM C 144 or coarse concrete sand, ASTM C 33.

PART 3 – EXECUTION

3.1 GENERAL REQUIREMENTS

A. Code requirements shall be those of state and municipal codes and regulations locally governing this work, providing that any requirements of the drawings and specifications, not conflicting therewith, but exceeding the code requirements, shall govern unless written permission to the contrary is granted by the Owner's Representative.

B. Extreme care shall be exercised at all times by the Contractor in excavating and working in the project area due to existing utilities and irrigation systems to remain. Contractor shall be fully responsible for expenses incurred in the repair of damages caused by their operation.
   1. The Contractor is responsible for identifying and maintaining existing irrigation main lines that supply water to areas on the site as noted on the drawings and outside of the proposed limit of work. The Contractor shall relocate or replace existing irrigation main line piping as required to provide a continuous supply of water to all areas of existing irrigation on site.
      a. Providing continuous water supply shall include hand watering and or the use of watering trucks to provide adequate water.

C. Plan locations of backflow preventers, valves, controllers, irrigation lines, sleeves, spray heads and other equipment are diagrammatic and indicate the spacing and relative locations of all installations. Final site conditions and existing and proposed plantings shall determine final locations and adjusted as necessary and as directed to meet existing and proposed conditions and obtain complete water coverage. Minor changes in locations of the above from locations shown shall be made as necessary to avoid existing and proposed trees, piping, utilities, structures, etc. at the Contractor's expense or when directed by the Owner's Representative.
   1. The Contractor shall be held responsible for relocation of any items without first obtaining the Owner's Representative's approval. The Contractor shall remove and relocate such items at their expense if so directed by the Owner's Representative.

D. Prior to any work the Contractor shall stake out locations of all pipe, valves, equipment and irrigation heads and emitters using an approved staking method and maintain the staking of the approved layout in accordance with the drawings and any required modifications. Verify all horizontal and vertical site dimensions prior to staking of heads. Do not exceed spacing shown

   on drawings for any given area. If such modified spacing demand additional or less material than shown on the drawings, notify the Owner's Representative before beginning any work in the adjacent area.

E. Stub out main line at all end runs and as shown on drawings. Splice wires at existing clock location to extend to new clock *once the new clock is available and operational.*

F. Point of connection shall be approximately as shown on drawings. Connect new underground piping and valves and provide all flanges, adapters or other necessary

fittings for connection.

G. Permission to shut off any existing in-use water line must be obtained 48 hours in advance, in writing from the Owner. The Contractor shall receive instructions from the Owner's Representative as to the exact length of time of each shut-off.

H. No fittings shall be installed on pipe underneath pavement or walls.

I. Prior to starting any work, Contractor shall obtain a reading of existing static water pressure (no flow condition) at the designated point of connection and immediately submit written verification of pressure with date and time of recording to Owner's Representative.

3.2 TRENCHING, DIRECTIONAL BORING AND SLEEVING

A. Perform all trenching, directional boring, sleeving and excavations as required for the installation of the work included under this section, including shoring of earth banks to prevent cave ins.

B. The Contractor may directional bore lines where it is practical or where required on the plans.
   1. Extend the bore 1' past the edge of pavement unless noted differently on the plans
   2. Cap ends of each bore and locate ends at finished grade using metal stakes.
   3. All boring and sleeving shall have detectable locator tape placed at the ends of the pipe.

C. Make trenches for mains, laterals and control wiring straight and true to grade and free of protruding stones, roots or other material that would prevent proper bedding of pipe or wire.

D. Excavate trenches wide enough to allow a minimum of 4 - inch between parallel pipelines and 8 inch from lines of other trades. Maintain 3 - inch vertical clearance between irrigation lines. Minimum transverse angle is 45 degrees. All pipes shall be able to be serviced or replaced without disturbing the other pipes.

E. Trenches for pipelines shall be made of sufficient depth to provide the minimum cover from finished grade as follows:
   1. Main line: 18 inches below finish grade and 24 inches below paved areas in Schedule 40 PVC sleeves.
   2. Irrigation (especially reclaimed) water constant pressure main lines shall cross at least twelve (12) inches below potable water lines.
      a. If a constant pressure irrigation (especially reclaimed) water main line must be installed above a potable water line or less than twelve (12) inches below a potable water line, then reclaimed water line shall be installed within an approved

         protective sleeve. The sleeve shall extend ten (10) feet from each side of the center of the potable line, for a total of twenty (20) feet.

3. Lateral lines: 12 inches below finish grade and 18 inches below paved areas in Schedule 40 PVC sleeves.
4. Control wiring: to the side of pressure main line in Schedule 40 PVC sleeves.

F. When trenching through areas of imported or modified soil, deposit imported or modified soils on one side of trench and subsoil on opposite side.

G. Backfill the trench per the requirements in paragraphs "Backfilling and Compacting" below.

3.3 PIPING INSTALLATION

A. General Pipe Installation
1. Exercise caution in handling, loading and storing, of plastic pipe and fittings to avoid damage.
   a. The pipe and fittings shall be stored under cover until using, and shall be transported in a vehicle with a bed long enough to allow the length of pipe to lay flat so as not to be subjected to undue bending or concentrated external load at any point.
   b. All pipe that has been dented or damaged shall be discarded unless such dent or damaged section is cut out and pipe rejoined with a coupling.
2. Trench depth shall be as specified above from the finish grade to the top of the pipe.
3. Install warning tape directly above pressure piping, 12 inches below finished grades, except 6 inches below subgrade under pavement and slabs.

B. Polyvinyl Chloride Pipe (PVC) Installation
1. Under no circumstance is pipe to rest on concrete, rock, wood blocks, construction debris or similar items.
2. Install PVC piping in dry weather when temperature is above 40 deg F. Allow joints to cure at least 24 hours at temperatures above 40 deg F before testing.
3. No water shall be permitted in the pipe until a period of at least 24 hours has elapsed for solvent weld setting and curing.
4. Install assemblies and pipe to conform to respective details and where shown diagrammatically on drawings, using first class workmanship and best standard practices as approved. All fittings that are necessary for proper connections such as swing joints, offsets, and reducing bushings that are not shown on details shall be installed as necessary and directed as part of the work.
5. Dielectric bushings shall be used in any connections of dissimilar metals.
6. Gasketed plastic pipe: pipe-to-pipe joints or pipe to fittings shall be made in accordance
with manufacturer's specifications.
7. Solvent weld or threaded plastic pipe:
   a. Installation of all pipe and fittings shall be in strict accordance with manufacturer's
   specifications.
   b. Pipe shall be cut using approved PVC pipe cutters only. Sawed joints are disallowed. All field cuts shall be beveled to remove burrs and excess before gluing.

c. Welded joints shall be given a minimum of 15 minutes to set before moving or handling. Excess solvent on the exterior of the joint shall be wiped clean immediately after assembly.
d. Plastic to metal connections shall be made with plastic adapters and if necessary, short (not close) brass threaded nipples. Connection shall be made with two (2) wraps of Teflon tape and hand tightened plus one turn with a strap wrench.
e. Snake pipe horizontally in trench to allow one (1) foot of expansion and contraction per 100 feet of straight run.
f. Threaded pipe joints shall be made using Teflon tape. Solvent shall not be used with threaded joints. Pipe shall be protected from tool damage during assembly. All damaged pipe shall be removed and replaced. Take up threaded joints with light wrench pressure.
g. No close nipples or risers are allowed. Cross connections in piping is disallowed.
h. Center load pipe at 10 feet on center intervals with small amount of backfill to prevent arching and slipping under pressure. Other than this preliminary backfill all pipe joints, fittings and connections are to remain uncovered until successful completion of hydrostatic testing and written approval of the testing report.
i. Concrete thrust blocks shall be constructed behind all pipe fittings 1-1/2 inch diameter and larger at all changes of direction of 45 degrees or more.
j. PVC Piping Solvent-Cemented Joints: Clean and dry joining surfaces. Join pipe and fittings according to the following:
    1) Comply with ASTM F 402 for safe-handling practice of cleaners, primers, and solvent cements.
    2) PVC Pressure Piping: Join schedule number, ASTM D 1785, PVC pipe and PVC socket fittings according to ASTM D 2672. Join other-than-schedule- number PVC pipe and socket fittings according to ASTM D 2855.
    3) PVC Nonpressure Piping: Join according to ASTM D 2855.

3.4 TRENCHING, DIRECTIONAL BORING, ANDSLEEVING REVIEW:

A. Upon completion and installation of all trenching, directional boring, and sleeving, all installed irrigation control wiring, lines and fittings shall be visually observed by the Owner's Representative unless otherwise authorized. Do not cover any wires, lines or fittings until they have been tested and observed by the Owner's Representative.

3.5 FLUSHING

A. Openings in piping system during installation are to be capped or plugged to prevent dirt and debris from entering pipe and equipment. Remove plugs when necessary to flush or complete system.

B. After completion and prior to the installation of any terminal fittings, the entire pipeline system shall be thoroughly flushed to remove dirt, debris or other material.

3.6 HYDROSTATIC PRESSURE TESTING

A. After flushing, and the installation of valves the following tests shall be conducted in the sequence listed below. The Contractor shall furnish all equipment; materials and labor necessary to perform the tests and all tests shall be conducted in the presence of the Owner's Representative.

B. Water pressure tests shall be performed on all pressure main lines before any couplings, fittings, valves and the like are concealed.

C. Immediately prior to testing, all irrigation lines shall be purged of all entrapped air or debris by adjusting control valves and installing temporary caps forcing water and debris to be discharged from a single outlet.

D. Test all pressure main line at 150 PSI. For a minimum of four (4) hours with an allowable loss of 5 PSI. Pressure and gauges shall be read in PSI, and calibrated such that accurate determination of potential pressure loss can be ascertained.

E. Re test as required until the system meets the requirements. Any leaks, which occur during test period, will be repaired immediately following the test. All pipe shall be re tested until final written acceptance.

F. The Contractor is responsible for proving documentation stating the weather conditions, date, the start time and initial water pressure readings, the finish time and final water pressure readings and the type of equipment used to perform the test. The documentation must be signed by a witness acceptable to the Owner, verifying all of the above-mentioned conditions.

G. Submit a written report of the pressure testing results with the other above required information to the Owner's Representative for approval.

3.7 BACKFILLING AND COMPACTING

A. Irrigation trenches shall be carefully backfilled with material approved for backfilling and free of rocks and debris one (1) inch in diameter and larger. When back filling trenches in areas of imported or modified planting soil, replace any excavated subsoil at the bottom and the imported soil or modified planting soil at the top of the trench.

B. Backfill shall be compacted with approved equipment to the following densities
   1. Backfill under pavement and within 2 feet of the edge of pavement: Compact to 95% or greater of maximum dry density standard proctor.
   2. Backfill of subsoil under imported planting mixes or modified existing planting soil: Between 85 and 90% of maximum dry density standard proctor.
   3. Backfill of imported planting mixes or modified existing planting soil: Compact to the requirements of the adjacent planting mix or planting soil as specified in section "Planting Soil".

C. Finish grade of all trenches shall conform to adjacent grades without dips or other irregularities. Dispose of excess soil or debris off site at Contractor's expense.

D. Any settling of backfill material during the maintenance or warranty period shall be repaired at the Contractor's expense, including any replacement or repair of soil, lawn, and plant material or paving surface.

3.8 RESURFACING PAVING OVER TRENCHES

A. Restore all surfaces and repair existing underground installations damaged or cut as a result of
the excavation to their original condition, satisfactory to the Owner's Representative.

B. Trenches through paved areas shall be resurfaced with same materials quality and thickness as existing material. Paving restoration shall be performed by the project paving Sub-contractor or an approved Contractor skilled in paving work.

C. The cost of all paving restoration work shall be the responsibility of the irrigation Contractor unless the trenching thru the paving was, by previous agreement, part of the general project related construction.

3.9 INSTALLATION OF EQUIPMENT

A. General:
1. All equipment shall be installed to meet all installation requirements of the product manufacturer. In the event that the manufactures requirements cannot be implemented due to particular condition at the site or with other parts of the design, obtain the Owner's Representative's written authorization and approval for any modifications.
2. Install all equipment at the approximately at the location(s) and as designated and detailed on the drawings. Verify all locations with the Owner's Representative.
3. Install all valves within a valve box of sufficient size to accommodate the installation and servicing of the equipment. Group valves together where practical and locate in shrub planting areas.
4. All sprinkler irrigation systems that are using water from potable water systems shall require backflow prevention. All backflow prevention devices shall meet and be installed in accordance with requirements set forth by local codes and the health department. This water is from the stormwater ponds, so backflow prevention is not anticipated.

B. Pressure regulator:
1. Set regulator for required PSI per manufacturer's specifications.

C. Remote control valves:
1. Install one remote control valve per valve box.

2. Remote control valve manifolds and quick coupler valves shall be separate allowing use of a quick coupler with all remote control valves shut off.
3. Install boxes no farther than 12 inches from edge of paving and perpendicular to edge of paving and parallel to each other. Allow 12 inches clearance between adjacent valve boxes.

D. Sprinkler heads:

1. All main lines and lateral lines, including risers, shall be flushed and pressure tested before installing sprinkler heads.
2. Install specified sprinkler heads as shown in details at locations shown on the drawings. Adjust layout for full coverage, spacing of heads shall not exceed the maximum spacing recommended by the manufacturer.
3. Locate part-circle sprinklers to maintain a minimum distance of 4 inches from walls and 2 inches from other boundaries unless otherwise indicated.
4. All sprinkler heads shall be set perpendicular to finish grade unless otherwise designated on the drawings or details.

E. Irrigation controllers:

1. Remote control valves shall be connected to controller in numerical sequence as shown on the drawings.
2. Controller shall be tested with complete electrical connections. The Contractor shall be responsible for temporary power to the controller for operation and testing purposes.
3. Connections to control wiring shall be made within the pedestal of the controller. All wire shall follow the pressure main insofar as possible.
4. Electrical wiring shall be in a rigid gray PVC plastic conduit from controller to electrical outlet. The electrical Contractor shall be responsible for installing all wiring to the controller, in order to complete this installation. A disconnect switch shall be included.
5. Equipment Mounting: Install interior controllers on wall in location shown on drawings.
    a. Place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
    b. Install anchor bolts to elevations required for proper attachment to supported equipment.

F. Wiring:

1. Low Voltage
    a. Control wiring between controller and electrical valves shall be installed in the same trench as the main line where practical. The wire shall be bundled and secured to the lower quadrant of the trench at 10 foot intervals with plastic electrical tape.
    b. When the control wiring cannot be installed in the same main line trench it shall be installed a minimum of 18 inches below finish grade and a bright colored plastic ribbon with suitable markings shall be installed in the trench 6 inches below grade directly over the wire.
    c. An expansion loop shall be provided every 500 feet in a box and inside each valve box. Expansion loop shall be formed by wrapping wire at least eight (8) times around a ¾ inch pipe and withdrawing pipe.
    d. Provide one control wire to service each valve in system.

e. Run two (2) spare #14 1 wires from controller along entire main line to last electric remote control valve on each and every leg of main line. Label spare wires at controller and wire stub to be located in a box.
f. All control wire splices not occurring at control valve shall be installed in a separate splice valve box.
g. Wire markers (sealed, 1 inch to 3 inch square) are to identify control wires at valves and at terminal strips of controller. At the terminal strip mark each wire clearly indicting valve circuit number.

2. High Voltage
   a. All electrical work shall conform to local codes, ordinances and any authorities having jurisdiction. All high voltage electrical work to be performed by licensed electrician.
   b. The Contractor shall provide 120-volt power connection to the automatic controller unless noted otherwise on drawings.

G. Valve boxes:
1. Install one valve box for each type of valve installed as per the details.
2. Gravel sump shall be installed after compaction of all trenches. Final portion of gravel shall be placed inside valve box after valve is backfilled and compacted.
3. Permanently label valve number and or controller letter on top of valve box lid using a method approved by the Owners Representative.

H. Tracer wire:
1. Tracer wire shall be installed with non metallic plastic irrigation main lines where controller wires are not buried in the same trench as the main line.
2. The tracer wire shall be placed on the bottom of the trench under the vertical projection of the pipe with spliced joints soldered and covered with insulation type tape.
3. Tracer wire shall be of a color not used for valve wiring. Terminate wire in a valve box. Provide enough length of wire to make a loop and attach wire marker with the designation "tracer wire".

I. Drip Installation:
1. Clamp fittings with Oetiker clamps or approved equal when operating pressure exceeds specific drip tubing fitting requirements.
2. When installing drip tubing, install soil staples as listed below:
   a. Sandy Soil - One staple every three (3') feet and two (2) staples on each change of
   direction (tee, elbow, or cross).
3. Cap or plug all openings as soon as lines have been installed to prevent the intrusion of materials that would obstruct the pipe. Leave in place until removal is necessary for completion of installation.
4. Thoroughly flush all water lines before installing valves and other hydrants.

3.10 IDENTIFICATION

A. Identify system components.

B. In addition to identifying unit, distinguish between multiple units, inform operator of operational requirements, indicate safety and emergency precautions, and warn of hazards and improper operations.

C. Warning Tapes: Arrange for installation of continuous, underground, detectable warning tapes over underground piping during backfilling of trenches.

3.11 ADJUSTMENT AND COVERAGE TEST

A. Adjustment:
1. The Contractor shall flush and adjust all sprinkler heads, valves and all other equipment to ascertain that they function according to the manufacturer's data.
2. Adjust all sprinkler heads not to overspray onto walks, roadways and buildings when under maximum operating pressure and during times of normal prevailing winds.

B. Coverage test:
1. The Contractor shall perform the coverage test in the presence of the Owner's Representative after all sprinkler heads have been installed, flushed and adjusted. Each section is tested to demonstrate uniform and adequate coverage of the planting areas serviced.
2. Any systems that require adjustments for full and even coverage shall be done by the Contractor prior to final acceptance at the direction of the Owner's Representative at no additional cost. Adjustments may also include realignment of pipes, addition of extra heads, and changes in nozzle type or size.
3. The Contractor at no additional cost shall immediately correct all unauthorized changes or improper installation practices.
4. The entire irrigation system shall be operating properly with written approval of the installation by the Owner's representative prior to beginning any planting operations.

3.12 REPAIR OF PLANTING SOIL

A. Any areas of planting soil including imported or existing soils or modified planting soil which become compacted or disturbed or degraded as a result of the installation of the irrigation system shall be restored to the specified quality and compaction prior to beginning planting operations at no additional expense to the Owner. Restoration methods and depth of compaction remediation shall be approved by the Owner's Representative.

3.13 CLEAN-UP

A. During installation, keep the site free of trash, pavements reasonably clean and work area in an orderly condition at the end of each day. Remove trash and debris in containers from the site no less than once a week.
   1. Immediately clean up any spilled or tracked soil, fuel, oil, trash or debris deposited by the Contractor from all surfaces within the project or on public right of ways and neighboring property.

B. Equipment Nameplates and Signs: Install engraved plastic-laminate equipment nameplates and signs on each automatic controller neighboring property.

C. Once installation is complete, wash all soil from pavements and other structures.
   1. Make all repairs to grades ruts, and damage to the work or other work at the site.
   2. Remove and dispose of all excess soil, packaging, and other material brought to the site by the Contractor.

3.14 PROTECTION

A. The Contractor shall protect installed irrigation work from damage due to operations by other Contractors or trespassers.
   1. Maintain protection during installation until Acceptance. Treat, repair or replace damaged work immediately. The Owner's Representative shall determine when such treatment, replacement or repair is satisfactory.

3.15 PRE MAINTENANCE OBSERVATION:

A. Once the entire system shall be completely installed and operational and all planting is installed, the Owner's Representative shall observe the system and prepare a written punch list indicating all items to be corrected and the beginning date of the maintenance period.

B. This is not final acceptance and does not relieve the Contractor from any of the responsibilities in the contract documents.

3.16 GENERAL MAINTENANCE AND THE MAINTENANCE PERIOD

A. General maintenance shall begin immediately after installation of irrigation system. The general maintenance and the maintenance period shall include the following:
   1. On a weekly basis the Contractor shall keep the irrigation system in good running order and make observations on the entire system for proper operation and coverage. Repair and cleaning shall be done to keep the system in full operation.
   2. Records of all timing changes to control valves from initial installation to time of final acceptance shall be kept and turned over to the Owner's Representative at the time of final acceptance.

3. During the last week of the maintenance period, provide equipment familiarization and instruction on the total operations of the system to the personnel who will assume responsibility for running the irrigation system.
    a. Fully set up and ensure operation of the Rainbird IQ platform with the Owner.
4. At the end of the maintenance period, turn over all operations logs, manuals, instructions, schedules, keys and any other equipment necessary for operation of the irrigation system to the Owner's Representative who will assume responsibility for the operations and maintenance of the irrigation system.

B. The maintenance period for the irrigation system shall coincide with the maintenance period for the Planting. (See specification section 329300 Plants and Section 329200 Turf and Grasses.)

3.17 SUBSTANTIAL COMPLETION ACCEPTANCE

A. Upon written notice from the Contractor, the Owners Representative shall review the work and make a determination if the work is substantially complete.

B. The date of substantial completion of the irrigation shall be the date when the Owner's Representative accepts that all work in Planting, Planting Soil, and Irrigation installation sections is complete.

3.18 FINAL ACCEPTANCE / SYSTEM MALFUNCTION CORRECTIONS

A. At the end of the Plant Warrantee and Maintenance period, (See specification section "Planting") the Owner's Representative shall inspect the irrigation work and establish that all provisions of the irrigation system are complete and the system is working correctly.
    1. Restore any soil settlement over trenches and other parts of the irrigation system.
    2. Replace, repair or reset any malfunctioning parts of the irrigation system.

B. The Contractor shall show all corrections made from punch list. Any items deemed not acceptable shall be reworked and the maintenance period will be extended.

C. The Contractor shall show evidence that the Owner's Representative has received all charts, records, drawings, and extra equipment as required before final acceptance.

D. Failure to pass review: If the work fails to pass final review, any subsequent observations must be rescheduled as per above. The cost to the Owner for additional observations will be charged to the Contractor at the prevailing hourly rate of the reviewer.

END OF SECTION

SECTION 329200

TURF ANDGRASSES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Sodding.

1.2 SCOPE OF WORK

A. The scope of work includes all labor, materials, appliances, tools, equipment, facilities, transportation and services necessary for, and incidental to performing all operations in connection with furnishing, delivery, and installation of turf complete as shown on the drawings and as specified herein.

B. The scope of work in this section includes, but is not limited to, the following:
   1. Locate, purchase, deliver and install all specified turf and seed (if applicable).
   2. Water all specified turf.
   3. Maintenance of all specified turf until the beginning of the warranty period.
   4. Clean up and disposal of all excess and surplus material.
   5. Maintenance of all specified plants during the warranty period.

C. Achieve establishment as defined in this section for sod and seeding areas.

1.3 CONTRACTOR RESPONSIBILITIES

A. Provide all equipment, materials and labor necessary for completion of work.

B. Obtain all necessary permits, licenses and fees necessary for completion of the work. Comply with all applicable codes.

C. Provide safe storage for all equipment and materials. Keep pavements clean and work area in an orderly condition.

D. Conduct a pre-installation conference on the Project Site.

E. Coordinate all work around underground utilities with Owner and General Contractor to avoid conflict with other portions of the work on this project. Determine location of underground utilities before excavating; hand excavate where required to avoid damage to utilities. Contact utility locating services at least 72 hours before excavation. The utility location service for most utilities is the Florida Utility Locating Service at 800- 432-4770.

F. Repair, at no cost to the Owner, any damage occurring on the property, adjacent properties, or right-of-way by his work or his employees.

G. Carry all necessary insurance as specified in the General Conditions.

H. Make all necessary adjustments to establish healthy, vigorous sod. Fine grading for an even final appearance is critical.

1.4 VERIFICATION

A. All scaled dimensions on the drawings are approximate. Before proceeding with any work, the Contractor shall carefully check and verify all dimensions and quantities, and shall immediately inform the Owner's Representative of any discrepancies between the information on the drawings and the actual conditions, refraining from doing any work in said areas until given approval to do so by the Owner's Representative.

B. In the case of a discrepancy in the turf quantities between the plan drawings and the plant call outs, list or plant schedule, the square footage of the turf bed actually drawn on the plan drawings shall be deemed correct and prevail.

1.5 RELATED DOCUMENTS AND REFERENCES

A. Related Documents:
   1. Drawings and general provisions of contract including general and supplementary conditions and Division I specifications apply to work of this section
   2. Related Specification Sections
      a. Section 329300 – Plants
      b. Section 328400 – Planting Irrigation
      c. Section 015639 – Temporary Tree and Plant Protection

B. References: The following specifications and standards of the organizations and documents listed in this paragraph form a part of the specification to the extent required by the references thereto. In the event that the requirements of the following referenced standards and specification conflict with this specification section the requirements of this specification shall prevail. In the event that the requirements of any of the following referenced standards and specifications conflict with each other the more stringent requirement shall prevail or as determined by the Owners Representative.
   1. ANSI Z60.1 American Standard for Nursery Stock, most current edition.
   2. ANSI A 300 – Standard Practices for Tree, Shrub and other Woody Plant Maintenance, most current edition and parts.
   3. Florida Grades and Standards for Nursery Stock, current edition (Florida Department of Agriculture, Tallahassee FL).
   4. Interpretation of plant names and descriptions shall reference the following documents. Where the names or plant descriptions disagree between the several documents, the most current document shall prevail.
      a. USDA - The Germplasm Resources Information Network (GRIN)

http://www.ars- grin.gov/npgs/searchgrin.html

b. Manual of Woody Landscape Plants; Michael Dirr; Stipes Publishing, Champaign, Illinois; Most Current Edition.

5. Pruning practices shall conform to recommendations "Structural Pruning: A Guide For The Green Industry" most current edition; published by Urban Tree Foundation, Visalia, California.
6. Glossary of Arboricultural Terms, International Society of Arboriculture, Champaign IL, most current edition.

1.6 RELATED DOCUMENTS AND REFERENCES

A. Related Documents:
1. Drawings and general provisions of contract including general and supplementary conditions and Division I specifications apply to work of this section
2. Related Specification Sections
   a. Section 329300 – Plants
   b. Section 328400 – Planting Irrigation
   c. Section 015639 – Temporary Tree and Plant Protection

B. References: The following specifications and standards of the organizations and documents listed in this paragraph form a part of the specification to the extent required by the references thereto. In the event that the requirements of the following referenced standards and specification conflict with this specification section the requirements of this specification shall prevail. In the event that the requirements of any of the following referenced standards and specifications conflict with each other the more stringent requirement shall prevail or as determined by the Owners Representative.

1.7 DEFINITIONS

A. Finish Grade: Elevation of finished surface of planting soil.

B. Healthy: Plants that are growing in a condition that expresses leaf size, crown density, color; and with annual growth rates typical of the species and cultivar's horticultural description, adjusted for the planting site soil, drainage and weather conditions.

C. Maintenance: Actions that preserve the health of plants after installation and as defined in this specification.

D. Maintenance period: The time period, as defined in this specification, which the Contractor is to provide maintenance.

E. Normal: the prevailing protocol of industry standard(s).

F. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.

G. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. These include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.

H. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth. See drawing designations for planting soils.

I. Reasonable and reasonably:
   1. When used in this specification relative to plant quality, it is intended to mean that the conditions cited will not affect the establishment or long term stability, health or growth of the plant. This specification recognizes that it is not possible to produce plants free of all defects, but that some accepted industry protocols and standards result in plants unacceptable to this project.
   2. When reasonable or reasonably is used in relation to other issues such as weeds, diseased, insects, it shall mean at levels low enough that no treatment would be required when applying recognized Integrated Plant Management practices.
   3. This specification recognizes that some decisions cannot be totally based on measured findings and that professional judgment is required. In cases of differing opinion, the Owner's Representative's expert shall determine when conditions are judged as reasonable.

J. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or top surface of a fill or backfill before planting soil is placed.

K. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.

L. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil, but in disturbed areas such as urban environments, the surface soil can be subsoil.

1.8 SUBMITTALS

A. All submittals are to be made in writing per the General Conditions.

B. Landscape Contractor Qualifications: Submit contractor qualifications before award, if requested. Include the date the business was established and a list of 3 completed installations of similar scope. Include location; name and address of owner; and date when each project was completed.

1. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
2. Maintenance Proximity: Not more than two (2) hours' normal travel time from Installer's place of business to Project site.
3. Pesticide Applicator: State licensed, commercial.

C. Product Data: For each type of product indicated.

1. Soil testing, if requested by Owner.

2. Fertilizers.

3. Pesticides and Herbicides: Include product label and manufacturer's application instructions specific to this Project

4. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture stating the botanical and common name, percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.

D. Product Certificates: For soil amendments and fertilizers, from manufacturer.

E. Maintenance Instructions: Recommended procedures to be established by Owner for maintenance of turf during a calendar year. Submit before expiration of required initial maintenance periods.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws, as applicable.

B. Sod: Harvest, deliver, store, and handle sod according to requirements in "Specifications for Turfgrass Sod Materials" and "Specifications for Turfgrass Sod Transplanting and Installation" in TPI's "Guideline Specifications to Turfgrass Sodding." Deliver sod in time for planting within 24 hours of harvesting. Protect sod from breakage and drying.

C. Bulk Materials:

1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
3. Accompany each delivery of bulk fertilizers, lime, and soil amendments with appropriate certificates.

1.10 PROJECT CONDITIONS

A. Landscape work may proceed at any time or season agreed upon by the Contractor and the Owner's Representative. However, schedule and perform landscape work only when weather and soil conditions are suitable in accordance with local practice. Do not install plant materials when temperatures drop below 35 degrees or above 95 degrees Fahrenheit, nor when wind velocity exceeds 10 miles per hour. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of Substantial Completion.

1.11 MAINTENANCE SERVICE

A. Initial Turf Maintenance Service: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in Part 3. Begin maintenance immediately after each area is planted and continue until acceptable turf is established but for not less than the following periods:

1. Seeded Turf: 90 days from date of Substantial Completion. (note: seeding not in project; sodded turf only.)

    a. When initial maintenance period has not elapsed before end of planting season, or if turf is not fully established, continue maintenance during next planting season.

2. Sodded Turf: Sixty (60) days from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 TURFGRASS SOD

A. Turfgrass Sod: Certified, complying with "Specifications for Turfgrass Sod Materials" in TPI's "Guideline Specifications to Turfgrass Sodding." Furnish viable sod of uniform density, color, and texture, strongly rooted, and capable of vigorous growth and development when planted.

B. Turfgrass Species: Common Bermuda (Cynodon dactylon)

2.2 PLANTING SOIL

A. Fine sand or loamy fine sand indigenous to the area suitable for plant growth that is free of weeds, roots, stumps, rocks larger than 1/2" diameter, organic muck, hard pan, toxic substances detrimental to plant growth, and construction debris such as limerock, concrete, and asphalt pieces. Deliver in a normally moist condition, neither muddy nor wet. Soil used for topsoil shall meet the following criteria measured in accordance with the appropriate AASHTO and ASTM standard:

1. USDA Texture: Fine Sand, Loamy fine sand
2. AASHTO Classification: A-3
3. pH 5.0-7.5
4. Deleterious Material 0-2% maximum by mass (rocks, roots, sod)
5. Organic Matter Content 1-10% by mass
6.Sand Content 80-96% by mass
7.Silt & Clay Content 3-10% by mass

Use existing soil in plant pits if the soil complies with the standard for topsoil, unless the soil is contaminated with limerock, clay, brush, weeds, roots, stumps, stones larger than 1 ½ inches in any dimension, litter and other extraneous or toxic matter harmful to plant growth. Remove contaminated soil and replace with acceptable stockpiled existing soil, new topsoil or yard sand.

2.3 ORGANIC SOIL AMENDMENTS

A. In areas requiring additional organic material, provide 100% organic soil conditioner, free of limerock, clay, brush, weeds, roots, stumps, gravel, litter and other extraneous or toxic matter harmful to plant growth. Soil conditioner shall be one of the following:
   1. Compost: Meet requirements of Florida Department of Environmental Protection Rule
      62.709.550 Type Y (yard waste). Compost shall be 100% organic yard and tree trimmings with a 25/1 carbon/nitrogen ratio, mature and stable, free of pathogens, weed seeds, and debris, composted for a minimum of 15 days at 131 degrees F., with at least 3 turnings, then shredded to pass through a 1/2 inch mesh screen. Available from Enviro- Comp Services, Inc.; 11771 Phillips Highway; Jacksonville, Fl 32256; 904-292-1828.
   2. Wood Derivatives: Decomposed, nitrogen-treated sawdust, ground bark, or wood waste; of uniform texture and free of chips, stones, sticks, soil, or toxic materials. Mechanically shredded pine bark with at least 90% of particle size ¼" or less. In lieu of decomposed wood derivatives, mix partially decomposed wood derivatives with ammonium nitrate at a minimum rate of 0.15 lb/cu. ft. of loose sawdust or ground bark, or with ammonium sulfate at a minimum rate of 0.25 lb/cu. ft. of loose sawdust or ground bark.

2.4 FERTILIZERS

A. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:

   1. Composition: Develop to address soil test. If no soil test is required, provide 1 lb/1000 sq. ft. of actual nitrogen, 4 percent phosphorous, and 2 percent potassium, by weight.
   2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

2.5 PESTICIDES

A. General: Pesticide, registered and approved by EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.

B. Pre-Emergent Herbicide (Selective and Non-Selective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.

C. Post-Emergent Herbicide (Selective and Non-Selective): Effective for controlling weed growth that has already germinated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas to be planted for compliance with requirements and other conditions affecting performance.

1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
2. Do not mix or place soils and soil amendments in frozen, wet, or muddy conditions.
3. Suspend soil spreading, grading, and tilling operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
4. Uniformly moisten excessively dry soil that is not workable and which is too dusty.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

C. If soil does not meet definition for PLANTING SOIL (as defined in part 2) or contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Landscape Architect and replace with new planting soil.

3.2 TURF AREA PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs, and plantings from damage caused by planting operations. Protect grade stakes set by others until directed to remove them.

B. Install erosion-control measures to prevent erosion or displacement of soils and discharge

of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

C. Remove shrubs and root mass to depth of 12” minimum. Trees and palms shall remain as indicated on the plans.

D. Limit turf subgrade preparation to areas to be planted.

E. Newly Graded Subgrades: Loosen subgrade to a minimum depth of 4 inches. Remove stones larger than 1/2 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.

1. Apply commercial fertilizer (as defined in part 2) directly to subgrade before loosening.

2. Thoroughly blend planting soil off-site before spreading or spread topsoil, apply soil amendments and fertilizer on surface, and thoroughly blend planting soil. Delay mixing fertilizer with planting soil if planting will not proceed within a few days.Spread planting soil to a depth of 4 inches but not less than required to meet finish grades after light rolling and natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet. Reduce elevation of planting soil to allow for soil thickness of sod.

F. Unchanged Subgrades: If turf is to be planted in areas unaltered or undisturbed by excavating, grading, or surface-soil stripping operations, prepare surface soil as follows:

1. Remove existing grass, vegetation, and turf. Do not mix into surface soil. Apply pre- and post-emergent herbicides.

2. Remove stones larger than 1 inch in any dimension and sticks, roots, trash, and other extraneous matter.
3. Legally dispose of waste material, including grass, vegetation, and turf, off Owner's property.

G. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch (13 mm) of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit finish grading to areas that can be planted in the immediate future.

H. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

I. Before planting, obtain Landscape Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.3 SOD AREA PREPARATION

A. Newly Graded Subgrades: Loosen compacted areas, determined with Landscape Architect, to a minimum depth of 4 inches. Remove stones larger than 2 inches in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.

B. Unchanged Subgrades: If turf is to be planted in areas unaltered or undisturbed by excavating, grading, or surface-soil stripping operations, prepare surface soil as follows:

1. Remove existing grass, vegetation, and turf. Do not mix into surface soil.
2. Loosen surface soil, if compacted, to a depth of at least 6 inches. Determine areas of compaction with Landscape Architect. Apply soil amendments and fertilizers according to planting soil mix proportions and mix thoroughly into top 4 inches of soil. Till soil to a homogeneous mixture of fine texture.

    a. Apply fertilizer directly to surface soil before loosening.

3. Remove stones larger than 2 inches in any dimension and sticks, roots, trash, and other extraneous matter.Legally dispose of waste material, including grass, vegetation, and turf, off Owner's property.Weed Removal: Apply an application of a glyphosate herbicide suchas Roundup, per manufacturers recommendation, rake out dead material. Repeat application if necessary. Allow soil to recover a minimum of two (2) weeks prior to seeding.

C. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit finish grading to areas that can be planted in the immediate future.

D. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

E. Before planting, obtain Landscape Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.4 PREPARATION FOR EROSION-CONTROL MATERIALS

A. Prepare area as specified in "Turf Area Preparation" Article.

B. For erosion-control mats, install planting soil in two lifts, with second lift equal to thickness of erosion-control mats. Install erosion-control mat and fasten as recommended by material manufacturer.

C. Fill cells of erosion-control mat with planting soil and compact before planting.

D. For erosion-control blanket or mesh, install from top of slope, working downward, and as recommended by material manufacturer for site conditions. Fasten as recommended by material manufacturer.

E. Moisten prepared area before planting if surface is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

3.5 SODDING

A. Lay sod within 24 hours of harvesting. Do not lay sod if dormant or if ground is frozen or muddy.

B. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod; do not stretch or overlap. Stagger sod strips or pads to offset joints in adjacent courses. Avoid damage to subgrade or sod during installation. Tamp and roll lightly to ensure contact with subgrade, eliminate air pockets, and form a smooth surface. Work sifted soil or fine sand into minor cracks between pieces of sod; remove excess to avoid smothering sod and adjacent grass.

1. Lay sod across angle of slopes exceeding 1:3.
2. (If applicable) Anchor sod on slopes exceeding 1:6 with wood pegs or steel staples spaced as recommended by sod manufacturer but not less than 2 anchors per sod strip to prevent slippage. Saturate sod with fine water spray within two hours of planting. During first week after planting, water daily or more frequently as necessary to maintain moist soil to a minimum depth of 1-1/2 inches below sod.

3.6 TURF MAINTENANCE

A. Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.

1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.
2. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch and anchor as required to prevent displacement.
3. Apply treatments as required to keep turf and soil free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards.

B. Watering: Install and maintain temporary piping, hoses, and turf-watering equipment to convey water from sources and to keep turf uniformly moist to a depth of 4 inches.

1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.

2. Water turf with fine spray at a minimum rate of 1 inch per week unless rainfall precipitation is adequate.

C. Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than 1/3 of grass height. Remove no more than 1/3 of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain the following grass height:

D. Turf Post-fertilization: Apply fertilizer after initial mowing and when grass is dry.

3.7 MEADOW MAINTENANCE

A. Maintain and establish meadow by watering, weeding, trimming, replanting, and performing other operations as required to establish a healthy, viable meadow. Regrade, and replant bare or eroded areas and re-mulch. Provide materials and installation the same as those used in the original installation.

1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and meadow damaged or lost in areas of subsidence.

2. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch and anchor as required to prevent displacement.Apply treatments as required to keep meadow and soil free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards.

B. Watering: Install and maintain temporary piping, hoses, and meadow-watering equipment to convey water from sources and to keep meadow uniformly moist.

1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
2. Water meadow with fine spray at a minimum rate of 1/2 inch per week for six weeks after planting unless rainfall precipitation is adequate.

3.8 SATISFACTORY TURF

A. Turf installations shall meet the following criteria as determined by Landscape Architect / Owner’s Representative:

1. Satisfactory Seeded Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. and bare spots not exceeding 5 by 5 inches.

2. Satisfactory Sodded Turf: At end of maintenance period, a healthy, well-rooted, even- colored, viable turf has been established, free of weeds, open joints, bare areas, and surface irregularities.

B. Use specified materials to reestablish turf that does not comply with requirements and continue maintenance until turf is satisfactory.

3.9 PESTICIDE APPLICATION

A. Apply pesticides and other chemical products and biological control agents in accordance with requirements of authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.

B. Post-Emergent Herbicides (Selective and Non-Selective): Apply only as necessary to treat already-germinated weeds and in accordance with manufacturer's written recommendations.

3.10 CLEANUP AND PROTECTION

A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

B. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established. Remove nondegradable erosion-control measures after grass establishment period.

END OF SECTION

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SECTION 329300

PLANTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Plants (trees, shrubs, groundcover, etc.).

1.2 SCOPE OF WORK

A. The scope of work includes all labor, materials, appliances, tools, equipment, facilities, transportation and services necessary for, and incidental to performing all operations in connection with furnishing, delivery, and installation of plant (also known as "landscaping") complete as shown on the drawings and as specified herein.

B. The scope of work in this section includes, but is not limited to, the following:
   1. Locate, purchase, deliver and install all specified plants.
   2. Water all specified plants.
   3. Mulch, fertilize, stake, and prune all specified plants.
   4. Maintenance of all specified plants until the beginning of the warranty period.
   5. Plant warranty.
   6. Clean up and disposal of all excess and surplus material.
   7. Maintenance of all specified plants during the warranty period.

1.3 CONTRACTOR RESPONSIBILITIES

A. Provide all equipment, materials and labor necessary for completion of work.

B. Obtain all necessary permits, licenses and fees necessary for completion of the work. Comply with all applicable codes.

C. Provide safe storage for all equipment and materials. Keep pavements clean and work area in an orderly condition.

D. Conduct a pre-installation conference on the Project Site.
   1. Prior to the start of work, prepare a detailed schedule of the work for coordination with other trades.
   2. Relative positions of all plants and trees are subject to approval of the owner's representative. See Part 3 Execution for more information.

E. Coordinate all work around underground utilities with Owner and General Contractor to avoid conflict with other portions of the work on this project. Determine location of underground utilities before excavating; hand excavate where required to avoid damage to utilities. Contact utility locating services at least 72 hours before excavation. The utility location service for most utilities is the Florida Utility Locating Service at 800-432-4770.

F. Repair, at no cost to the Owner, any damage occurring on the property, adjacent properties, or right-of-way by his work or his employees.

G. Carry all necessary insurance as specified in the General Conditions.

H. Make all necessary adjustments to establish healthy, vigorous plants. Fine grading for an even final appearance is critical.

1.4 VERIFICATION

A. All scaled dimensions on the drawings are approximate. Before proceeding with any work, the Contractor shall carefully check and verify all dimensions and quantities, and shall immediately inform the Owner's Representative of any discrepancies between the information on the drawings and the actual conditions, refraining from doing any work in said areas until given approval to do so by the Owner's Representative.

B. In the case of a discrepancy in the plant quantities between the plan drawings and the plant call outs, list or plant schedule, the number of plants or square footage of the planting bed actually drawn on the plan drawings shall be deemed correct and prevail.

1.5 RELATED DOCUMENTS AND REFERENCES

A. Related Documents:
   1. Drawings and general provisions of contract including general and supplementary conditions and Division I specifications apply to work of this section
   2. Related Specification Sections
      a. Section 329200 – Turf and Grasses
      b. Section 328400 – Planting Irrigation
      c. Section 015639 – Temporary Tree and Plant Protection

B. References: The following specifications and standards of the organizations and documents listed in this paragraph form a part of the specification to the extent required by the references thereto. In the event that the requirements of the following referenced standards and specification conflict with this specification section the requirements of this specification shall prevail. In the event that the requirements of any of the following referenced standards and specifications conflict with each other the more stringent requirement shall prevail or as determined by the Owners Representative.

1. ANSI Z60.1 American Standard for Nursery Stock, most current edition.
2. ANSI A 300 – Standard Practices for Tree, Shrub and other Woody Plant Maintenance, most current edition and parts.
3. Florida Grades and Standards for Nursery Stock, current edition (Florida Department of Agriculture, Tallahassee FL).
4. Interpretation of plant names and descriptions shall reference the following documents. Where the names or plant descriptions disagree between the several documents, the most current document shall prevail.
   a. USDA - The Germplasm Resources Information Network (GRIN) http://www.ars- grin.gov/npgs/searchgrin.html
   b. Manual of Woody Landscape Plants; Michael Dirr; Stipes Publishing, Champaign, Illinois; Most Current Edition.
5. Pruning practices shall conform to recommendations "Structural Pruning: A Guide For The Green Industry" most current edition; published by Urban Tree Foundation, Visalia, California.
6. Glossary of Arboricultural Terms, International Society of Arboriculture, Champaign IL, most current edition.

1.6 DEFINITIONS

A. Balled and Burlapped Stock: Plants dug with firm, natural balls of earth in which they were grown, with ball size not less than diameter and depth recommended by ANSI Z60.1 for type and size of plant required; wrapped with burlap, tied, rigidly supported, and drum laced with twine with the root flare visible at the surface of the ball as recommended by ANSI Z60.1. Soil shall be removed to expose root flare if not evident at installation. Trees growing in field soil for at least 12 months prior to harvest.

B. Bare-Root Stock: Not Allowed.

C. Container-Grown Stock: Healthy, vigorous, well-rooted plants grown in a container, with a well- established root system reaching sides of container and maintaining a firm ball when removed from container. Container shall be rigid enough to hold ball shape and protect root mass during shipping and be sized according to ANSI Z60.1 for type and size of plant required. Kinked / circling roots shall not be allowed.

D. Finish Grade: Elevation of finished surface of planting soil.

E. Healthy: Plants that are growing in a condition that expresses leaf size, crown density, color; and with annual growth rates typical of the species and cultivar's horticultural
F. description, adjusted for the planting site soil, drainage and weather conditions.

G. Kinked ("circling") root: A root within the root package that bends more than 90 degrees. Also
see "Stem Girdling Roots".

H. Maintenance: Actions that preserve the health of plants after installation and as defined in this specification.

I. Maintenance period: The time period, as defined in this specification, which the Contractor is to provide maintenance.
J. Manufactured Topsoil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.
K. Normal: the prevailing protocol of industry standard(s).

L. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.

M. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. These include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.

N. Plant; Plants; Plant Material: These terms refer to vegetation in general, including trees, shrubs, vines, ground covers, ornamental grasses, bulbs, corms, tubers, or herbaceous vegetation.

O. Planting Soil: Standardized topsoil; existing, native surface topsoil; existing, in-place surface soil; imported topsoil; or manufactured topsoil that is modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth. Per plans.

P. Reasonable and reasonably:
1. When used in this specification relative to plant quality, it is intended to mean that the conditions cited will not affect the establishment or long term stability, health or growth of the plant. This specification recognizes that it is not possible to produce plants free of all defects, but that some accepted industry protocols and standards result in plants unacceptable to this project.
2. When reasonable or reasonably is used in relation to other issues such as weeds, diseased, insects, it shall mean at levels low enough that no treatment would be required when applying recognized Integrated Plant Management practices.

3. This specification recognizes that some decisions cannot be totally based on measured findings and that professional judgment is required. In cases of differing opinion, the Owner's Representative's expert shall determine when conditions are judged as reasonable.

Q. Root ball: The mass of roots including any soil or substrate that is shipped with the tree within the root ball package.

R. Root Flare: Also called "trunk flare." The area at the base of the plant's stem or trunk where the stem or trunk broadens to form roots; the area of transition between the root system and the stem or trunk. Soil should be removed to expose this flare if needed.

S. Root Stabilization System: As directed by plans, 2x2 pine stakes with associated crossbars. These shall be used in place of standard staking/guying details.Shrub: Woody plants with mature height approximately less than 15 feet.

T. Spade harvested and transplanted: Field grown trees that are mechanically harvested and immediately transplanted to the final growing site without being removed from the digging machine.

U. Stem Girdling Roots: Any root more than ¼ inch diameter currently touching the trunk, or with the potential to touch the trunk, above the root collar approximately tangent to the trunk circumference or circling the trunk. Roots shall be considered as Stem Girdling that have, or are likely to have in the future, root to trunk bark contact. Roots that encircle the stems (trunks) of trees below the soil surface. Potential circling roots shall be removed upon installation to avoid such problems.

V. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or top surface of a fill or backfill before planting soil is placed.

W. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.

X. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil, but in disturbed areas such as urban environments, the surface soil can be subsoil.

Y. Structural root: One of the largest roots emerging from the root collar.

Z. Tree: Single and multi-stemmed plants with mature height approximately greater than 15 feet.

1.7 SUBMITTALS

A. All submittals are to be made in writing per theGeneral Conditions.

B. Landscape Contractor Qualifications: Submit contractor qualifications before award, if requested. Include the date the business was established and a list of 3 completed installations of similar scope. Include location; name and address of owner; and date when each project was completed.

1. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
2. Maintenance Proximity: Not more than two (2) hours' normal travel time from Installer's place of business to Project site.
3. Pesticide Applicator: State licensed, commercial.

C. 15 Samples: Soil test report of soil mix with recommendations for pH adjustment of soil.

D. Product Data: For each type of product indicated.

1. Fertilizers.

2. pH Adjusters

3. Pesticides and Herbicides: Include product label and manufacturer's application instructions specific to this Project
4. Topsoil and soil conditioner; submit one quart of topsoil, yard sand, and soil conditioner if requested.

5. Plant Photographs: Include color photographs in digital format of each required species and size of plant material as it will be furnished to the Project. Such photographs are especially important for the Palm and shade trees. Identify each photograph with the full scientific name of the plant, plant size, and name of the growing nursery.

E. Product Certificates: For soil amendments and fertilizers, from manufacturer.

F. Maintenance Instructions: Recommended procedures to be established by Owner for maintenance of turf during a calendar year. Submit before expiration of required initial maintenance periods.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws if applicable.

B. Bulk Materials:

1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
3. Accompany each delivery of bulk fertilizers, lime, and soil amendments with appropriate certificates.

C. Do not prune trees and shrubs before delivery or following installation. Protect bark, branches, and root systems from sun scald, drying, wind burn, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of plants during shipping and delivery. Do not drop plants during delivery and handling.

D. Handle planting stock by root ball.

E. Store bulbs, corms, and tubers in a dry place at 60 to 65 deg F until planting.

F. Deliver plants after preparations for planting have been completed, and install immediately. If planting is delayed more than six hours after delivery, set plants and trees in their appropriate aspect (sun, filtered sun, or shade), protect from weather and mechanical damage, and keep roots moist.
1. Reject dried-out plants.
2. Set balled stock on ground and cover ball with soil, peat moss, sawdust, or other acceptable material.
3. Do not remove container-grown stock from containers before time of planting.
4. Water root systems of plants stored on-site deeply and thoroughly with a fine- mist spray. Water as often as necessary to maintain root systems in a moist, but not overly-wet condition.

1.9 PROJECT CONDITIONS

A. Field Measurements: Verify actual grade elevations, service and utility locations, irrigation system components, and dimensions of plantings and construction contiguous with new plantings by field measurements before proceeding with planting work.

B. Interruption of Existing Services or Utilities: Do not interrupt services or utilities to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary services or utilities according to requirements indicated:

1. Notify Landscape Architect and Owner no fewer than two (2) days in advance of proposed interruption of each service or utility.

2. Do not proceed with interruption of services or utilities without Landscape Architect's and Owner's written permission.

C. Landscape work may proceed at any time or season agreed upon by the Contractor and the Owner's Representative. However, schedule and perform landscape work only when weather and soil conditions are suitable in accordance with local practice. Do not install plant materials when temperatures drop below 35 degrees or above 95 degrees Fahrenheit, nor when wind velocity exceeds 10 miles per hour.

D. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of Substantial Completion.

1.10 WARRANTY

A. Special Warranty: Installer agrees to repair or replace plantings and accessories that fail in materials, workmanship, or growth within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Death and unsatisfactory growth, except for defects resulting from abuse, lack of adequate maintenance, or neglect by Owner, or incidents that are beyond Contractor's control.
b. Structural failures including plantings falling or blowing over.
c. Faulty performance of tree stabilization. Deterioration of metals, metal finishes, and other materials beyond normal weathering.

2. Warranty Periods from Date of Substantial Completion:

a. Trees, Shrubs, Vines, and Ornamental Grasses: Twelve (12) months.
b. Ground Covers, Biennials, Perennials, and Other Plants: Twelve (12) months.

3. Include the following remedial actions as a minimum:

a. Immediately remove dead plants and replace unless required to plant in the succeeding planting season.
b. Replace plants that are more than 25 percent dead or in an unhealthy condition at end of warranty period.
c. Provide extended warranty for period equal to original warranty period, for replaced plant material.

1.11 QUANTITIES

A. In the event of a variation between the 1) plant quantities shown on the plans and the 2) required spacing-dependent quantity for a planting area, the required spacing shall control.

PART 2 - PRODUCTS

2.1 PLANT MATERIAL

A. General: Furnish nursery-grown plants true to genus, species, variety, cultivar, stem form, shearing, and other features indicated in Plant Schedule or Plant List shown on Drawings and complying with Florida Grades & Standards (Grade #1 or better; and with healthy root systems developed by transplanting or root pruning. Provide well-shaped, fully branched, healthy, vigorous stock, densely foliated when in leaf and free of disease, pests, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.

1. Trees with damaged, crooked, or multiple leaders; tight vertical branches where bark is squeezed between two branches or between branch and trunk ("included bark"); crossing trunks; cut-off limbs more than 3/4 inch in diameter; or with stem girdling and/or circling roots will be rejected.
2. Collected Stock: Do not use plants harvested from the wild, from native stands, from an established landscape planting, or not grown in a nursery unless otherwise indicated.

3. Provide plants of sizes, grades, and ball or container sizes complying with Florida Grades & Standards for types and form of plants required. Plants of a larger size may be used if acceptable to Architect, with a proportionate increase in size of roots or balls. Plant size is to take precedence over containersize.

B. Root-Ball Depth: Furnish trees and shrubs with root balls measured from top of root ball, which shall begin at root flare according to Florida Grades and Standards. Root flare shall be visible before planting.

C. If formal arrangements or consecutive order of plants is shown on Drawings, select stock for uniform height and spread, and number the labels to assure symmetry in planting.

D. All plant material shall be graded #1 or Florida Fancy as outlined under the most current *Grades and Standards for Nursery Plants*, State Plant Board of Florida.

2.2 PLANTING SOIL

A. Fine sand or loamy fine sand indigenous to the area suitable for plant growth that is free of weeds, roots, stumps, rocks larger than 1/2" diameter, organic muck, hard pan, toxic substances detrimental to plant growth, and construction debris such as limerock, concrete, and asphalt pieces. Deliver in a normally moist condition, neither muddy nor wet. Soil used for topsoil shall meet the following criteria measured in accordance with the appropriate AASHTO and ASTM standard:

1. USDA Texture: Fine Sand, Loamy fine sand
2. AASHTO Classification: A-3
3. pH 5.0-7.5
4. Deleterious Material 0-2% maximum by mass (rocks, roots, sod)
5. Organic Matter Content 1-10% by mass
    a. Preferred is final tested organic matter between 2.75 and 4% (by dry weight)
6. Sand Content 80-96% by mass
7. Silt & Clay Content 3-10% by mass

B. Use existing soil in plant pits if the soil complies with the standard for topsoil, unless the soil is contaminated with limerock, clay, brush, weeds, roots, stumps, stones larger than 1 ½ inches in any dimension, litter and other extraneous or toxic matter harmful to plant growth. Remove contaminated soil and replace with acceptable stockpiled existing soil, new topsoil or yard sand.

C. All shrubs shall have a planting hole dug 2x the width and depth of the root ball. Back fill shall be composed of a soil mix composed of:

1.	Native Top Soil	45%-50%
2.	Coarse Sand	40%-45%
3.	Compost	10%

2.3 ORGANIC SOIL AMENDMENTS

A. Provide 100% organic soil conditioner, free of limerock, clay, brush, weeds, roots, stumps, gravel, litter and other extraneous or toxic matter harmful to plant growth. Soil conditioner shall be one of the following:

1. Compost: Meet requirements of Florida Department of Environmental Protection Rule 62.709.550 Type Y (yard waste). Compost shall be 100% organic yard and tree trimmings with a 25/1 carbon/nitrogen ratio, mature and stable, free of pathogens, weed seeds, and debris, composted for a minimum of 15 days at 131 degrees F., with at least 3 turnings, then shredded to pass through a 1/2 inch mesh screen. Available from Enviro- Comp Services, Inc.; 11771 Phillips Highway; Jacksonville, Fl 32256; 904-292-1828.

2. Wood Derivatives: Decomposed, nitrogen-treated sawdust, ground bark, or wood waste; of uniform texture and free of chips, stones, sticks, soil, or toxic materials. Mechanically shredded pine bark with at least 90% of particle size ¼" or less. In lieu of decomposed wood derivatives, mix partially decomposed wood derivatives with ammonium nitrate at a minimum rate of 0.15 lb/cu. ft. of loose sawdust or ground bark, or with ammonium sulfate at a minimum rate of 0.25 lb/cu. ft. of loose sawdust or ground bark.

2.4 FERTILIZERS

A. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:

1. Composition: Develop to address soil test. If no soil test is required, provide 1 lb/1000 sq. ft. of actual nitrogen, 4 percent phosphorous, and 2 percent potassium, by weight.
2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

2.5 MULCHES

A. Pine Straw Mulch: Provide air-dry, clean, mildew- and seed-free, pine straw mulch.

2.6 PESTICIDES

A. General: Pesticide, registered and approved by EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.

B. Pre-Emergent Herbicide (Selective and Non-Selective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.

C. Post-Emergent Herbicide (Selective and Non-Selective): Effective for controlling weed growth that has already germinated.

2.7 TREE STABILIZATION MATERIALS

A. Stakes and Guys are not to be used.

B. Root Stabilization System

1. Crossbars: Rough-sawn, sound, new hardwood or softwood, free of knots, holes, cross grain, and other defects, 2x6 untreated pine, nominal by lengths indicated, located on both sides of the tree. Qty: 4 per tree.
2. Straps: ¾" polyester strapping with plastic or metal earth anchors per manufacturer guidelines.
3. Stabilization system shall remain in place to naturally decay in place. Cut polyester straps following establishment.

C. Palm Bracing: Tree staples, as indicated.

2.8 MISCELLANEOUS PRODUCTS

A. Burlap: Non-synthetic, biodegradable.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Contractor shall obtain soil testing for the areas around proposed Christian Formation Building (landscape per sheet L2.2). A minimum of 15 samples, distributed per agreement with Landscape Architect, 6"-10" in depth, shall be taken. Results shall be reviewed with the Owner and Landscape Architect prior to planting. This shall be mixed and submitted for testing for the following factors:
   1. pH / Buffer pH
   2. Organic content / Sand content / Silt and Clay Content (percentage)
   3. Phosphorous / Potassium / Calcium / Magnesium
   4. AASHTO classification

B. Contractor shall provide landscape bed preparation, including removal and disposal of existing landscape and trees (trees to remain are noted on plan). Contractor shall pull any applicable permits, such as tree removal permit.

C. Examine areas to be planted for compliance with requirements and other conditions affecting performance.

   1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.

2. Do not mix or place soils and soil amendments in frozen, wet, or muddy conditions.
3. Suspend soil spreading, grading, and tilling operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
4. Uniformly moisten excessively dry soil that is not workable and which is too dusty.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

E. If soil does not meet definition for PLANTING SOIL (as defined in part 2) or contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Landscape Architect and replace with new planting soil.

3.2 PLANT GUIDELINES / PLACEMENT

A. Per St. Johns County guidelines, planting design reflects that vegetation that exceeds twenty- five (25) feet in height at maturity should not be planted closer than fifteen (15) feet of the vertical plane of an existing power line, excluding service wires.

B. Coordinate the relocation of any irrigation lines, heads or the conduits of other utility lines that are in conflict with tree locations. Root balls shall not be altered to fit around lines. Notify the owner's representative of any conflicts encountered.

C. Schedule the planting to occur prior to application of the mulch. If the bed is already mulched, pull the mulch from around the hole and plant into the soil. Do not plant the root system in the mulch. Pull mulch back so it is not on the root ball surface.

D. Trees shall not be planted closer than 7.5' from the centerline of underground utilities.

E. Non-canopy trees shall not be planted closer than 10 feet from other trees and canopy trees no closer than 20-30 feet, depending on the species.

3.3 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities and turf areas and existing plants from damage caused by planting operations.

B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

C. Remove shrubs and root mass to depth of 12” minimum.

D. Lay out individual tree and shrub locations and areas for multiple plantings. Stake locations, outline areas, adjust locations when requested, and obtain Landscape Architect's acceptance of layout before excavating or planting. Make minor adjustments as required.
   1. Coordinate the relocation of any irrigation lines, heads or the conduits of other utility lines that are in conflict with tree locations. Root balls shall not be altered to fit around lines. Notify the owner's representative of any conflicts encountered.
   2. Notify the owner's representative, one (1) week prior to layout. Layout all individual tree and shrub locations. Place plants above surface at planting location or place a labeled stake at planting location. Layout bed lines with paint for the owner's representative's approval. Secure the owner's representative's acceptance before digging and start of planting work.
   3. Plants shall be planted in even, triangularly spaced rows, at the intervals called out for on the drawings, unless otherwise noted. The first row of annual flower plants shall be 6 inches from the bed edge unless otherwise directed.

E. Assure that soil moisture is within the required levels prior to planting. Irrigation, if required, shall not be applied less than 12 hours prior to planting to avoid planting in muddy soils.

F. Wrap trees and shrubs with burlap fabric over trunks, branches, stems, twigs, and foliage to protect from wind and other damage during digging, handling, and transportation.

3.4 PLANTING AREA ESTABLISHMENT

A. Soil in tree islands shall have at least 12" of suitable soil for tree plantings, and be void of any construction debris or unsuitable materials.

B. Loosen subgrade of planting areas to a minimum depth of 12 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.

   1. Apply commercial fertilizer directly to subgrade before loosening.
   2. Spread topsoil, apply soil amendments and fertilizer on surface, and thoroughly blend planting soil.

      a. Delay mixing fertilizer with planting soil if planting will not proceed within a few days.
      b. At the time of final grading, add fertilizer or acidifier if required to the planting soil at rates recommended by the testing results for the plants to be grown.

c. Mix the coarse sand and compost together first and then add to the topsoil. Mix with a loader bucket to loosely incorporate the topsoil into the coarse sand/compost mix. Do not over mix. Do not mix with a soil blending machine. Do not screen the soil. Clumps of soil, compost and coarse sande will be permitted in the overall mix.

3. Spread planting soil to a depth of 12 inches but not less than required to meet finish grades after natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.

a. Spread approximately one-half the thickness of planting soil over loosened subgrade. Mix thoroughly into top 4 inches of subgrade. Spread remainder of planting soil.

C. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.
1. Assure that soil grades in the beds are smooth and as shown on the plans.

D. Before planting, obtain Landscape Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

E. Application of Mycorrhizal Fungi: At time directed by Landscape Architect, broadcast dry product uniformly over prepared soil at manufacturers application rate.

3.5 EXCAVATION FOR TREES AND SHRUBS

A. Planting Pits and Trenches: Excavate circular planting pits with sides sloping gradually inward at a 45-degree angle. Excavations with vertical sides are not acceptable. Ensure that root ball will sit on undisturbed base soil to prevent settling. Scarify sides of planting pit smeared or smoothed during excavation.

1. Excavate approximately two times as wide as ball diameter for balled and burlapped and container-grown stock.
2. Do not excavate deeper than 90% depth of the root ball, measured from the root flare to the bottom of the root ball.
3. If area under the plant was initially dug too deep, add soil to raise it to the correct level and thoroughly tamp the added soil to prevent settling.
4. Maintain required angles of repose of adjacent materials as shown on the Drawings. Do not excavate subgrades of adjacent paving, structures, hardscapes, or other new or existing improvements.
5. Maintain supervision of excavations during working hours.
6. Keep excavations covered or otherwise protected when unattended by Installer's personnel.
7. If drain tile is shown on Drawings or required under planting areas, excavate to top of porous backfill over tile.

B. Back fill with planting mix. See "soil mix" guidelines in Landscape Notes. Subsoil and topsoil removed from excavations may be used as planting soil.

C. Obstructions: Notify Landscape Architect if unexpected rock or obstructions detrimental to trees or shrubs are encountered in excavations.

1. Hardpan Layer: Drill 6-inch- diameter holes, 24 inches apart, into free-draining strata or to a depth of 10 feet, whichever is less, and backfill with free-draining material.

D. Drainage: Notify Landscape Architect if subsoil conditions evidence unexpected water seepage or retention in tree or shrub planting pits.

E. Fill excavations with water and allow complete percolation before positioning trees and shrubs.

3.6 TREE, SHRUB, AND VINE PLANTING

A. Before planting, verify that root flare is visible at top of root ball according to ANSIZ60.1. If root flare is not visible, remove soil in a level manner from the root ball to where the top-most root emerges from the trunk. After soil removal to expose the root flare, verify that root ball still meets size requirements.

B. Remove stem girdling roots and kinked roots. Remove injured roots by cutting cleanly; do not break.

C. Set balled and burlapped stock plumb and in center of planting pit or trench with root flare approximately 1 inch above adjacent finish grades (10% of root ball above grade).

1. Use planting soil (soil mix) for backfill.
2. After placing some backfill around root ball to stabilize plant, carefully cut and remove burlap, rope, and wire baskets from tops of root balls and from sides, but do not remove from under root balls. Remove pallets, if any, before setting. Do not use planting stock if root ball is cracked or broken before or during planting operation.
3. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
    a. Back fill with planting mix. See "soil mix" guidelines in Landscape Notes. Subsoil and topsoil removed from excavations may be used as planting soil.
4. Continue backfilling process. Water again after placing and tamping final layer of soil.

D. Set container-grown stock plumb and in center of planting pit or trench with root flare approximately 1 inch above adjacent finish grades (10% of root ball above grade).

1. Use planting soil for backfill.
2. Carefully remove root ball from container without damaging root ball or plant.
3. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
4. Continue backfilling process. Water again after placing and tamping final layer of soil.

E. Water each planting area as soon as the planting is completed. Apply additional water to keep the soil moisture at the required levels. Do not over water.

3.7 PALM PLANTING

A. Palm trees shall be placed at grade making sure not to plant the tree any deeper in the ground than the palm trees originally stood.

B. The trees shall be placed with their vertical axis in a plumb position.

C. All backfill shall be native soil except in cases where planting in rock. Water-settle the back fill. Do not cover root ball with mulch or topsoil.

D. Provide a watering berm at each palm. Berms shall extend a minimum of 18 inches out from the trunk all around and shall be a minimum of (6) inches high.

E. Remove twine which ties fronds together after placing palm in planting hole and securing it in the upright position.

3.8 MECHANIZED TREE SPADE PLANTING

A. Trees may be planted with an approved mechanized tree spade at the designated locations. Do not use tree spade to move trees larger than the maximum size allowed for a similar field- grown, balled-and-burlapped root-ball diameter according to ANSI Z60.1, or larger than the manufacturer's maximum size recommendation for the tree spade being used, whichever is smaller.

B. When extracting the tree, center the trunk within the tree spade and move tree with a solid ball of earth.

C. Cut exposed roots cleanly during transplanting operations.

D. Use the same tree spade to excavate the planting hole as was used to extract and transport the tree.

E. Plant trees as shown on Drawings, following procedures in "Tree, Shrub, and Vine Planting" Article.

F. Where possible, orient the tree in the same direction as in its original location.

3.9 TREE, SHRUB, AND VINE PRUNING

A. Prune plants as directed by the owner's representative. Pruning trees shall be limited to addressing structural defects as shown in details; follow recommendations per ANSI A300 and ISA best management practices.

3.10 TREE STABILIZATION

A. Install root stabilization as follows unless otherwise indicated:

1. Site-Fabricated Root Stabilization Method:

a. Cut 2x6 pine crossbars the width of the root ball approximately 6” from the trunk.
b. Attached the crossbars to the polyester straps and stakes, as shown on planting detail plans.
c. Install Root Stabilizers per tree, 12” apart on either side of the tree trunk.

B. Palm Bracing: Tree staples, as noted on plans.

3.11 GROUND COVER AND PLANT PLANTING

A. Set out and space ground cover and plants other than trees, shrubs, and vines as indicated in even rows with triangular spacing.

B. Use planting soil (soil mix) for backfill.

C. Dig holes large enough to allow spreading of roots.

D. For rooted cutting plants supplied in flats, plant each in a manner that will minimally disturb the root system but to a depth not less than two nodes.

E. Work soil around roots to eliminate air pockets and leave a slight saucer indentation around plants to hold water.

F. Water thoroughly after planting, taking care not to cover plant crowns with wet soil.

G. Protect plants from hot sun and wind; remove protection if plants show evidence of recovery from transplanting shock.

3.12 PLANTING AREA MULCHING

A. Mulch backfilled surfaces of planting areas and other areas a minimum of 3". Apply a minimum of 2-3 inches depth of pine straw mulch before settlement, covering the entire planting bed area. Install no more than 1 inch of mulch over the top of the root balls of all plants. Taper to 2 inches when abutting pavement.

B. Apply mulch to the bed being sure not to cover the tops of the plants with or the tops of the root ball with mulch.

C. For trees planted in lawn areas the mulch shall extend to a 5 foot radius around the tree or to the extent indicated on the plans and spaced at least six inches away from the tree trunk.

D. Lift all leaves, low hanging stems and other green portions of small plants out of the mulch if covered.

3.13 PLANT MAINTENANCE

A. Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring planting saucers, adjusting and repairing tree-stabilization devices, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings. Spray or treat as required to keep trees and shrubs free of insects and disease.

B. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of subsidence.

C. Apply treatments as required to keep plant materials, planted areas, and soils free of pests and pathogens or disease. Use integrated past management practices whenever possible to minimize the use of pesticides and reduce hazards (see University of Florida Department of Entomology for more information). Treatments include physical controls such as hosing off foliage, mechanical controls such as traps, and biological control agents.

3.14 PESTICIDE APPLICATION

A. Apply pesticides and other chemical products and biological control agents in accordance with authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.

B. Pre-Emergent Herbicides (Selective and Non-Selective): Apply to tree, shrub, and ground-cover areas in accordance with manufacturer's written recommendations. Do not apply to seeded areas.

C. Post-Emergent Herbicides (Selective and Non-Selective): Apply only as necessary to treat already-germinated weeds and in accordance with manufacturer's written recommendations.

3.15 CLEANUP AND PROTECTION

A. During planting, keep adjacent paving and construction clean and work area in an orderly condition.

B. Protect plants from damage due to landscape operations and operations of other contractors and trades. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged plantings.

C. After installation and before Substantial Completion, remove nursery tags, nursery stakes, tie tape, labels, wire, burlap, and other debris from plant material, planting areas, and Project site.

D. Spray down base of building to remove soil from construction activities.

3.16 DISPOSAL

A. Remove surplus soil and waste material including excess subsoil, unsuitable soil, trash, and debris and legally dispose of them off Owner's property. Recycle materials as appropriate.

END OF SECTION

Appendix A

FDEP PERMIT

GEOTECHNICAL REPORT





ECS Florida, LLC

Geotechnical Engineering Report

Cassen Park Redevelopment

1 South Beach Street
Ormond Beach, Florida

ECS Project Number 56:1858

April 3, 2024

ECS FLORIDA, LLC

Geotechnical • Construction Materials • Environmental • Facilities

"One Firm. One Mission."

April 3, 2024

Mr. Alex Schumann, P.E.
City Engineer
City of Ormond Beach
22 South Beach Street
Ormond Beach, Florida 32174

ECS Project No. 56:1858

Reference: Geotechnical Engineering Report
Cassen Park Redevelopment
1 South Beach Street
Ormond Beach, Florida

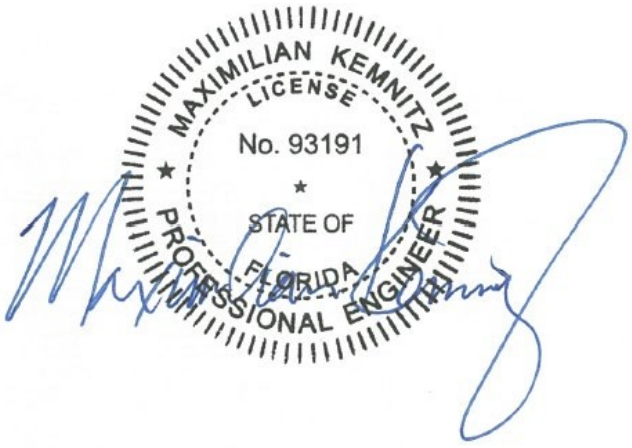
Dear Mr. Schumann:

ECS Florida, LLC. (ECS) has completed the subsurface exploration, laboratory testing, and geotechnical engineering analyses for the above-referenced project. Our services were performed in general accordance with our agreed-to scope of work. This report presents our understanding of the geotechnical aspects of the project along with the results of the field exploration and laboratory testing conducted, and our project design and earthwork construction recommendations.

It has been our pleasure to be of service to the **City of Ormond Beach** during the design phase of this project. We would appreciate the opportunity to remain involved during the continuation of the design phase, and we would like to provide our services during construction phase operations as well to verify the assumptions of subsurface conditions made for this report. Should you have any questions concerning the information contained in this report, or if we can be of further assistance to you, please contact us.

Respectfully submitted,

ECS Florida, LLC



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TABLE OF CONTENTS

EXECUTIVE SUMMARY **1**
1.0 INTRODUCTION **2**
2.0 PROJECT INFORMATION **3**
2.1 Project Location/Current Site Use 3
2.2 Past Site History/Uses 3
2.3 Soil Survey Mapping 3
2.4 Proposed Construction 4
3.0 FIELD EXPLORATION AND LABORATORY TESTING **5**
3.1 Subsurface Characterization 5
3.2 Groundwater Observations 6
3.2.1 Encountered Groundwater 6
3.2.2 Estimated Normal Seasonal High Groundwater 6
3.3 Laboratory Testing 6
4.0 DESIGN RECOMMENDATIONS **7**
4.1 Stormwater Management Ponds/ Exfiltration System 7
4.1.1 Soil Permeability Rates 7
4.1.2 Borrow Suitability 7
4.2 Pavements 7
4.2.1 Flexible Pavement Recommendations 8
4.2.2 Rigid Pavement Recommendations 8
5.0 SITE CONSTRUCTION RECOMMENDATIONS **10**
5.1 Subgrade Preparation 10
5.1.1 Stripping and Grubbing 10
5.1.2 Proof Rolling 10
5.1.3 Temporary Groundwater Control 10
5.1.4 Subgrade Compaction 10
5.2 Earthwork Operations 11
5.2.1 Structural Backfill and Fill Soils 11
5.2.2 Flexible Pavement Areas 12
5.2.3 Rigid Pavement Areas 12
5.3 Utility Installations 12
6.0 CLOSING **14**

APPENDICES

Appendix A – Drawings & Reports

- Figure 1 – Site Location Diagram
- Figure 2 – Boring Location Diagram
- Figure 3 – Boring Location Diagram with Provided Site Plan
- Generalized Subsurface Profiles

Appendix B – Field Operations

- Reference Notes for Boring Logs
- Subsurface Exploration Procedure: Standard Penetration Testing (SPT) ASTM D1586
- Subsurface Exploration Procedure: Hand Auger Boring ASTM D1452
- Geotechnical SPT Boring Logs
- Hand Auger Logs

Appendix C – Laboratory Test Results

- Laboratory Testing Summary

EXECUTIVE SUMMARY

This Executive Summary is intended as a very brief overview of the primary geotechnical conditions that are expected to affect design and construction of the proposed Cassen Park Redevelopment of the existing park, located at 1 South Beach Street in Ormond Beach, Florida. The redevelopment is proposed to include new pavement for on-site drives and parking, two small stormwater management ponds, and two exfiltration areas. Information gleaned from the Executive Summary should not be utilized in lieu of reading the entire geotechnical report. Recovery analysis for the proposed ponds and exfiltration system was not completed at the time of this report and will be provided in a separate ECS report under the same project number.

In summary, we assess the geotechnical conditions at the site to be as follows:

- At the Boring B-02 and B-03 locations, our exploration borings encountered probable fill soil comprising fine sand (SP) and sand with gravel/gravel with sand (SP/GP) within a depth range of approximately 0.5 to 6 feet below the ground surface. ECS notes that fill materials may be variable beyond the locations of our borings. Observation of soils within pond and exfiltration areas by performing test pits during construction is recommended to determine that similar granular and relatively free-draining soils, such as those tested herein, are present within the pond and exfiltration system areas.

- We consider the subsurface conditions at the site adaptable for support of flexible and rigid pavement sections when constructed on properly prepared subgrade soils as outlined in Section 5.0 of this report.

- The borings encountered groundwater at depths varying from 2.0 to 3.0 feet below the existing ground surface at the time of our exploration, with the normal seasonal high groundwater level (SHGWL) estimated to be approximately 0.7-foot higher than these levels; from 1.3 to 2.3 feet below the ground surface and at an approximate elevation of El. 1.3 to 2.3 (as shown on the boring logs in Appendix B). Temporary groundwater control will be necessary to compact subgrade soils within 2 feet of the groundwater level at the time of construction.

- The predominant fine sand (SP), fine sands with silt and clay (SP-SM/SP-SC), and sand with gravel/gravel with sand (SP/GP) soils encountered at the pond and exfiltration boring locations may be used as structural fill soil. Where soils to be excavated from within the proposed pond and exfiltration areas are in close proximity to or below the groundwater level, they will require stockpiling or spreading to drain the excess moisture, to enable placement and compaction of these materials in structural fill areas. Clayey find sand (SC) soils are not recommended for use as structural fill but may be used in non-structural areas.

- We recommend that ECS be provided the opportunity to review the project plans and earthwork specifications to verify that our recommendations have been properly interpreted and implemented. ECS should also be retained to perform the construction material testing and observations required for this project, to verify that our recommendations have been satisfied.

1.0 INTRODUCTION

The purpose of this study was to provide geotechnical information for the design and construction of proposed stormwater management ponds and exfiltration system for the proposed Cassen Park Redevelopment project, located at 1 South Beach Street in Ormond Beach, Florida. The redevelopment is proposed to include new pavement for on-site drives and parking, two small stormwater management ponds, and two exfiltration areas. Recovery analysis for the proposed ponds and exfiltration system was not completed at the time of this report and will be provided in a separate ECS report under the same project number.

Our services were provided in general accordance with the scope of services outlined in our Proposal No. 56:2141, dated February 19, 2024, and the Continuing Contract dated March 20, 2017, between the City of Ormond Beach, Florida and ECS Florida, LLC.

This report includes the following items:

- Information on site conditions including surface drainage, geologic information, and special site features.
- Description of the field exploration and laboratory tests performed.
- Final logs of the soil borings and records of the field exploration per the standard practice of geotechnical engineers. A site location plan, and results of the laboratory tests, plotted on the final boring logs and/or included in the Appendices.
- Evaluation of the on-site soil characteristics encountered in the soil borings.
- Estimates for the seasonal high groundwater levels at the boring locations.
- Measured mean soil permeability (K_m) and estimated horizontal and vertical permeability (K_h and K_v) for the site soils at the pond and exfiltration system locations.
- Recommendations for flexible and rigid pavements.
- Recommendations for fill placement and subgrade preparations.
- Recommendations for additional testing and/or consultation that might be required to complete the geotechnical assessment and related engineering for this project.

2.0 PROJECT INFORMATION

2.1 PROJECT LOCATION/CURRENT SITE USE

The project site is located at 1 South Beach Street in Ormond Beach, Florida. The site is bordered to the north by West Granada Boulevard, to the west by South Beach Street, and to the east and south by Halifax River. A figure showing the general site location is provided below, and on Figure 1 in Appendix A.



Site Location

At the time of our exploration, the site was developed with the existing Cassen Park, comprising lawn, bush and tree landscaping and asphalt concrete paved parking and drives. Based on the provided map of topographic survey of the site area provided by Zev Cohen & Associates Inc. and performed by Atlantic Drafting and Surveying, Inc., dated December 11, 2023, the estimated site elevations within the area of the planned redevelopment ranged from approximately El. 2 to El. 5.

2.2 PAST SITE HISTORY/USES

ECS has reviewed aerial photographs of the subject site on Google Earth and Historic Aerials (NETR Online). The aerial photographs reviewed were dated 1985, 1995, 1999, 2004 to 2012, 2014 to 2019 and 2021 to 2023. Site conditions did not appear to change significantly since 1985, and conditions appeared to be approximately as they existed at the time of this exploration.

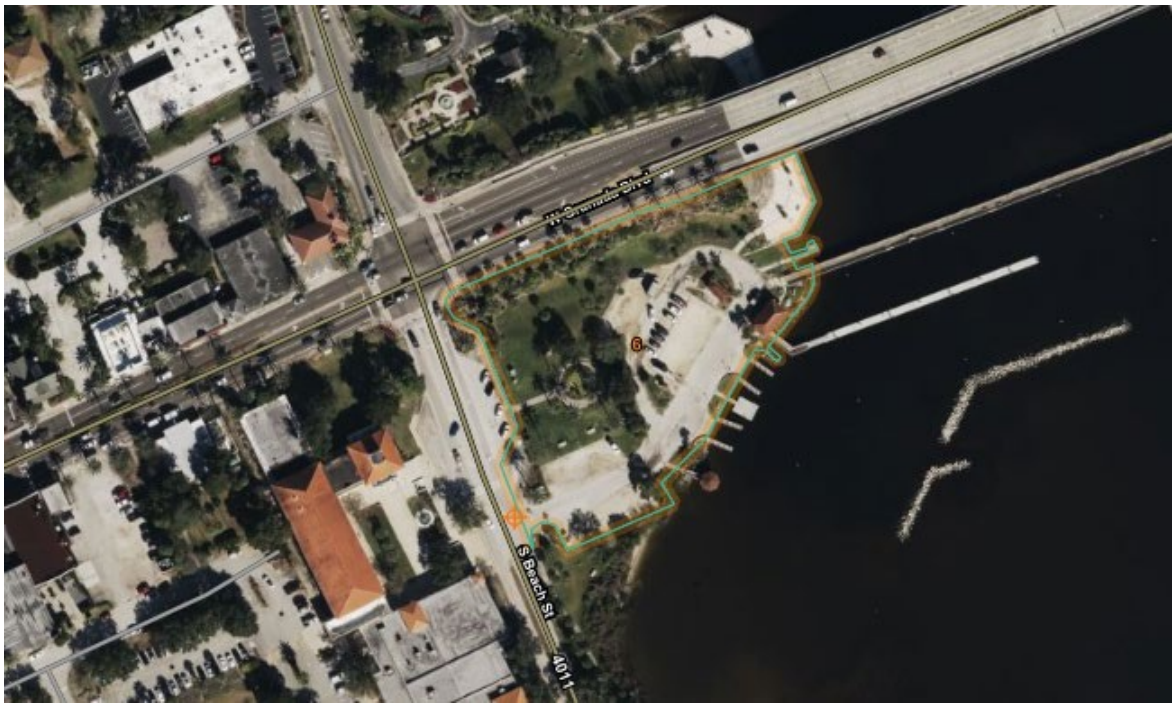
2.3 SOIL SURVEY MAPPING

Based on the Web Soil Survey for Volusia County, Florida, as prepared by the U.S. Department of Agriculture Natural Resource Conservation Service (USDA-NRCS), the predominant soil types existing within the site area and beyond the site boundaries is described in the following table. The site area is illustrated superimposed on the USDA-NRCS Soil Survey Map included as the following figure.

Web Soil Survey Data

Soil Type	Constituents	Drainage Class	Water Table
6—Astatula-Urban land complex, 0 to 8 percent slopes	Fine sand	Excessively drained	More than 80 inches

Soil mapping of the site vicinity including soil type and number are presented in the following figure, obtained from the USDA Web Soil site.



Site Soil Survey

2.4 PROPOSED CONSTRUCTION

Based on the project information provided by the City of Ormond Beach along with project information supplied by Mr. Sean Meade, E.I. with Zev Cohen and Associates, Inc. (ZCA) and the provided ZCA requested boring location diagram for the site, we understand the project for which this scope is requested will consist of the redevelopment of Cassen Park. The redevelopment is proposed to include new pavement for on-site drives and parking, two small stormwater management ponds, and two exfiltration areas. Recovery analysis has been requested for the proposed ponds and exfiltration areas; we understand from ZCA that the two ponds will function as a combined system and the two exfiltration areas will function as a combined system. ECS will provide the recovery analysis results and recommendations in a separate report.

3.0 FIELD EXPLORATION AND LABORATORY TESTING

Our scope of exploration work included drilling four (4) Standard Penetration Test (SPT) Borings to a depth from 10 feet below the ground surface for the proposed pond and exfiltration areas, and two (2) Auger Borings to a depth of 6 feet below the ground surface for the proposed pavement areas for parking and drives. Our borings were located with a handheld GPS unit and their approximate locations are shown on the Boring Location Diagram (Figures 2 and 3) in Appendix A. Our exploration procedures are explained in greater detail in Appendix B, including the inserts titled Reference Notes for Boring Logs, Subsurface Exploration Procedure: Standard Penetration Testing (SPT) ASTM D1586, and Subsurface Exploration Procedure: Soil Exploration and Sampling by Auger Borings ASTM D1452.

3.1 SUBSURFACE CHARACTERIZATION

The subsurface conditions encountered were generally consistent with published geological mapping. The following sections provide generalized characterizations of the soil strata. Please refer to the boring logs in Appendix B for detailed subsurface conditions.

Subsurface Stratigraphy of Pond/Exfiltration SPT Borings

Approximate Depth Range (ft)	Stratum	Description	Ranges of SPT[(1)] N-values (bpf)
0 to 0.5	N/A	Topsoil [6.00”] As an exception, Topsoil was not encountered at the Boring B-04 location.	N/A
0.5 to 10 [(2)]	I	Very loose to Medium Dense Fine Sand (SP), Fine Sand with Silt (SP-SM), Fine Sand with Clay (SP-SC) and Clayey Fine Sand (SC) with some to significant shells. **As an exception, (SP) PROBABLE FILL (Fine Sand) and (SP/GP) PROBABLE FILL (Sand with Gravel/Gravel with Sand), were encountered at the Boring B-02 and B-03 locations, respectively, to a depth of approximately 6 feet below the ground surface.**	2 to 28

Notes: (1) Standard Penetration Test
(2) Termination depth of borings

Subsurface Stratigraphy of Pavement Auger Borings

Approximate Depth Range (ft)	Stratum	Description
0 to 6 [(1)]	I	Fine Sand (SP) with some to significant shells

Notes: (1) Termination depth of borings

3.2 GROUNDWATER OBSERVATIONS

3.2.1 Encountered Groundwater

Groundwater levels were measured during our field exploration and are presented in our boring logs in Appendix B. Groundwater depths measured at the time of drilling were approximately 2.0 to 3.0 feet below the ground surface. Variations in the long-term water table may occur as a result of changes in precipitation, evaporation, surface water runoff, construction activities, and other factors, including the water level in Halifax River.

3.2.2 Estimated Normal Seasonal High Groundwater

The normal seasonal high groundwater level is affected by a number of factors. The drainage characteristics of the soils, land surface elevation, relief points such as drainage ditches, lakes, the water level in Halifax River, etc., and distance to relief points are some of the more important factors influencing the seasonal high groundwater level.

Based on the estimated groundwater levels at the site and our interpretation of the site conditions, including the boring logs and Web Soil Survey, we estimate the normal seasonal high groundwater level (SHGWL) to be approximately 0.7-foot higher than these levels; from 1.3 to 2.3 feet below the ground surface and at an approximate elevation of El. 1.3 to 2.3 (as shown on the boring logs in Appendix B). It is possible that groundwater levels may exceed the estimated normal seasonal high groundwater level as a result of significant or prolonged rains and tidal variations.

3.3 LABORATORY TESTING

Each sample was visually classified on the basis of texture and plasticity in accordance with ASTM D2487 Standard Practice for Classification for Engineering Purposes (Unified Soil Classification System (USCS)) and ASTM D2488 Standard Practice for Description and Identification of Soils (Visual-Manual Procedures) and including USCS classification symbols. After classification, the samples were grouped in the major zones noted on the boring logs in Appendix B. The group symbols for each soil type are indicated in parentheses along with the soil descriptions. The stratification lines between strata on the logs are approximate; in situ, the transitions may be gradual.

The laboratory testing consisted of selected tests performed on samples obtained during our field exploration. Classification and index property tests were performed on representative soil samples and included percent fines (ASTM D1140), moisture content (ASTM D2216), and falling head permeability tests (ASTM D5084) tests. Percent fines and moisture content test results are included on the boring logs in Appendix B, and are summarized in Appendix C on the Laboratory Testing Summary sheet. The permeability test results are presented in Section 4.1.

4.0 DESIGN RECOMMENDATIONS

4.1 STORMWATER MANAGEMENT PONDS/EXFILTRATION SYSTEM

4.1.1 Soil Permeability Rates

For the stormwater management ponds/exfiltration system, laboratory testing included soil permeability tests on remolded samples collected at the time of drilling from Borings B-01 through B-04, and the results of these tests are presented in the following table.

Laboratory Permeability Results

Test Location (Depth, ft)	Test Depth (feet)	Measured Mean Permeability (ft/day) K_m	Estimated Horizontal Permeability (ft/day) K_h	Estimated Vertical Permeability (ft/day) K_v
B-01	0 to 1	23.6	23.6	23.6
B-02	0 to 1	12.1	12.1	12.1
B-03	0 to 1	14.6	14.6	14.6
B-04	0 to 1	33.4	33.4	33.4

The measured permeability rates presented from the field and laboratory tests should not be construed to represent the actual pond exfiltration rates. For pond design calculations, we recommend an appropriate factor of safety be applied to the above permeability values (e.g. a factor of safety of 2.0). In addition, at the Boring B-02 and B-03 locations, our exploration borings encountered probable fill soil comprising fine sand (SP) and sand with gravel/gravel with sand (SP/GP) within a depth range of approximately 0.5 to 6 feet below the ground surface. ECS notes that fill materials may be variable beyond the locations of our borings. Observation of soils within pond and exfiltration areas by performing test pits during construction is recommended to determine that similar granular and relatively free-draining soils, such as those tested herein (SP, SP/GP), are present within the pond and exfiltration system areas.

4.1.2 Borrow Suitability

Based on the boring results and classification of the soil samples, the fine sands (SP) and fine sands with silt and clay (SP-SM/SP-SC) encountered at the stormwater pond locations can be used as structural fill. If soils to be excavated from within the proposed pond areas are in close proximity to or below the groundwater level, they may have moisture contents in excess of the modified Proctor optimum moisture content. In this case, these soils will require stockpiling or spreading to drain the excess moisture. Wet soils should be dried to bring the soil moisture content within ±2 percent of the soil's optimum moisture content to facilitate placement and compaction. Dewatering also may be used to drain the soils excess moisture in advance of borrow pond area excavation.

4.2 PAVEMENTS

Based on the results of our exploration, we consider the subsurface conditions at the site adaptable for support of a flexible or rigid pavement section when constructed on properly prepared subgrade soils as outlined in Section 5.0 of this report. Typical pavement sections used in northeast Florida

are presented in the following sections. If requested, we can prepare a project-specific pavement design if specific traffic data is provided.

4.2.1 Flexible Pavement Recommendations

TYPICAL FLEXIBLE PAVEMENT SECTIONS		
MATERIAL	**LIGHT DUTY**	**HEAVY DUTY**
Asphaltic Concrete Surface Course (SP-9.5 or Type S)	1.5 inches	2 inches
Limerock Base	6 inches	8 inches
Stabilized Subgrade	12 inches	12 inches

Base and Subgrade: The limerock base course should have a minimum Limerock Bearing Ratio (LBR) of 100 and should be compacted to 98 percent of the modified Proctor maximum dry density (ASTM D1557) value. The subgrade material should have a minimum LBR of 40 and be compacted to 98 percent of the modified Proctor maximum dry density (ASTM D1557) value.

Underdrains: Satisfactory pavement life is dependent on dry/strong pavement support provided by the base and subgrade courses. Accordingly, a minimum clearance of 2 feet must be maintained between the normal SHGWL and the bottom of the limerock base layer. In some areas of the site, elevating fill will be required to achieve this separation. Depending on final pavement grades, FDOT Type I or II underdrains may be required to maintain dry base and subgrade materials where this separation cannot be achieved.

4.2.2 Rigid Pavement Recommendations

Our recommendations for slab thickness for standard duty and heavy-duty concrete pavements are based on the following:

a) subgrade soils densified to 98 percent of the modified Proctor maximum dry density (ASTM D1557),

b) modulus of subgrade reaction (k) equal to 200 pounds per cubic inch, and

c) a 20-year design life.

TYPICAL RIGID PAVEMENT SECTIONS		
	LIGHT DUTY	**HEAVY DUTY**
Minimum Concrete Thickness	5 inches	6 inches
Maximum Control Joint Spacing	10 feet x 10 feet	12 feet x 12 feet
Recommended Sawcut Depth	1¼ inches	1½ inches

We recommend using concrete with a minimum 28-day compressive strength of 4,000 psi and a minimum 28-day flexural strength (modulus of rupture) of at least 600 pounds per square inch, based on 3rd point loading of concrete beam test samples. Layout of the sawcut control joints should form square panels. The joints should be sawed within six hours of concrete placement or as soon as the concrete has developed sufficient strength to support workers and equipment. We

recommend allowing ECS to review and comment on the final concrete pavement design, including section and joint details (type of joints, joint spacing, etc.), prior to the start of construction.

For further details on concrete pavement construction, please reference the "Guide to Jointing on Non-Reinforced Concrete Pavements" published by the Florida Concrete and Products Associates, Inc., and "Building Quality Concrete Parking Areas", published by the Portland Cement Association.

5.0 SITE CONSTRUCTION RECOMMENDATIONS

5.1 SUBGRADE PREPARATION

5.1.1 Stripping and Grubbing

The "footprint" of the proposed ponds, plus a minimum additional margin of 5 feet, and of the hardscape areas (parking/driveway) plus a minimum additional margin of 3 feet, should be stripped of all existing surface vegetation, stumps, organic topsoil, or other deleterious materials. During grubbing operations, roots with a diameter greater than 0.5-inch, stumps, small roots in a concentrated state or other organic soils with higher than 8 percent organic materials content, should be grubbed and completely removed; organic soils may be used in non-structural areas.

5.1.2 Proof Rolling

Following removal of any unsuitable materials (such as soils with many organic materials) and prior to fill placement or other construction on subgrades, subgrades should be evaluated by an ECS field technician by proof rolling. The exposed subgrade should be thoroughly proof rolled with construction equipment having a minimum axle load of 20 tons [e.g., fully loaded tandem-axle dump truck]. Proof rolling should be traversed in two perpendicular directions with overlapping passes of the vehicle under the observation of an ECS technician. This procedure is intended to assist in identifying any localized yielding materials.

Where proof rolling identifies areas that are unstable or “pumping” subgrade those areas should be repaired prior to the placement of any subsequent Structural Fill or other construction materials. Methods of stabilization include undercutting or moisture conditioning. The situation should be discussed with ECS to determine the appropriate procedure. Test pits may be excavated to explore the shallow subsurface materials to help in determining the cause of the observed unstable materials, and to assist in the evaluation of appropriate remedial actions to stabilize the subgrade.

5.1.3 Temporary Groundwater Control

We recommend that temporary groundwater control measures be implemented where the groundwater table is within a depth of 2 feet below the excavated subgrade bottom at the time of compaction operations. Dewatering methods should be determined by the contractor. We recommend the groundwater control measures remain in place until compaction of the existing soils is completed. The dewatering method should be maintained until backfilling has reached a height of 2 feet above the subgrade level at the time of construction. The site should be graded to direct surface water runoff from the construction area.

Note that discharge of produced groundwater to surface waters of the state from dewatering operations or other site activities is regulated and requires a permit from the State of Florida Department of Environmental Protection (FDEP). This permit is termed a Generic Permit for the Discharge of Produced Groundwater From Any Non-Contaminated Site Activity. If discharge of produced groundwater is anticipated, we recommend sampling and testing of the groundwater early in the site design phase to prevent project delays during construction. ECS can provide the sampling, testing, and professional consulting required to evaluate compliance with the regulations.

5.1.4 Subgrade Compaction

After completing the clearing and stripping, installing the temporary groundwater control measures, organic materials removals (where required) and proof rolling operations, the exposed surface should be compacted with a heavy vibratory roller having a minimum static, at-drum weight on the order of 10 tons to compact very loose to loose soils near subgrade levels. Typically, the

material should exhibit moisture contents within ±2 percentage points of the modified Proctor optimum moisture content (ASTM D1557) during the compaction operations. Compaction should continue until densities of at least 95 percent of the modified Proctor maximum dry density (ASTM D1557) have been achieved within the upper 2 feet of the compacted natural soils at the site.

Should the bearing level soils experience pumping and soil strength loss during the compaction operations, compaction work should be immediately terminated, and (1) the disturbed soils should be removed and backfilled with compacted structural fill, or (2) the excess moisture content within the disturbed soils should be allowed to dissipate before recompacting.

Care should be exercised to avoid damaging any nearby structures while the compaction operation is underway. Prior to commencing compaction, occupants of adjacent structures should be notified, and the existing conditions of the structures should be documented with photographs and survey (if deemed necessary). Compaction should cease if deemed detrimental to adjacent structures, and ECS should be contacted immediately. We recommend the vibratory roller remain a minimum of 50 feet from existing structures. Within this zone, use of a track-mounted bulldozer, or a vibratory roller operating in the static mode, is recommended.

5.2 EARTHWORK OPERATIONS

5.2.1 Structural Backfill and Fill Soils

Structural fill is defined as a non-plastic, inorganic, granular soil having less than 10 percent material passing the No. 200 mesh sieve and containing less than 4 percent organic material. The predominant fine sand (SP), fine sands with silt and clay (SP-SM/SP-SC), and sand with gravel/gravel with sand (SP/GP) soils encountered at the pond and exfiltration boring locations may be used as structural fill soil. Where soils to be excavated from within the proposed pond and exfiltration areas are in close proximity to or below the groundwater level, they will require stockpiling or spreading to drain the excess moisture, to enable placement and compaction of these materials in structural fill areas. Clayey find sand (SC) soils are not recommended for use as structural fill but may be used in non-structural areas.

Structural Fill Compaction Requirements: Materials placed as structural fill should meet the following compaction requirements.

STRUCTURAL FILL COMPACTION REQUIREMENTS	
Subject	**Requirement**
Compaction Standard	Modified Proctor, ASTM D1557
Required Compaction	95% of Max. Dry Density (general structural fill) 98% of Max. Dry Density (upper one foot below the proposed pavement base course)
Loose Thickness prior to compaction	12 inches if vibratory drum roller compaction equipment is used 8 inches if vibratory drum roller is used in static mode 8 inches if track-mounted compaction equipment is used 6 inches if hand-held compaction equipment is used

Fill materials should not be placed on excessively wet soils. Excessively wet soils should be scarified, aerated, and moisture conditioned. Proper drainage should be maintained during the earthwork phases of construction to prevent ponding of water which has a tendency to degrade subgrade soils. The contractor should minimize dusting or implement dust control measures, as required.

We recommend that the grading contractor have equipment on site during earthwork for both drying and wetting fill soils. Moisture control may be difficult during extended periods of rain. The control of moisture content of soils containing more than 10% fines may be difficult when these soils become wet. Further, such soils are easily degraded by construction traffic when the moisture content is elevated.

5.2.2 Flexible Pavement Areas

After completing the clearing/stripping operations in the pavement areas, where any underlying silty or clayey sands (and sandy clays) are within 2 feet of the bottom of the pavement base, they should be over-excavated from within the pavement areas. Structural backfill and fill required to achieve the finish pavement grades then can be placed and compacted as described in Sections 5.2.1.

5.2.3 Rigid Pavement Areas

For a concrete pavement subgrade, we recommend using clean fine sand (SP), compacted to at least 98 percent of modified Proctor test maximum dry density (ASTM D1557) without additional stabilization. Limerock base is not required beneath rigid pavements and the relatively free draining fine sand (SP) soils with 5 percent or less fines are preferred.

5.3 UTILITY INSTALLATIONS

Utility Subgrades: The soil borings encountered predominant fine sands and fine sands with silt and clay (SP, SP-SM, SP-SC), and sand with gravel/gravel with sand (SP/GP) soils. It is our opinion that these soils are suitable bedding soils for pipelines and utility structures where it is determined that these soils contain 20 percent or less fines. Utility trenches may also encounter clayey fine sand (SC), such as was encountered in Boring B-02 at 6 feet below the ground surface. Where clayey sand soils contain less than 20 percent fines, they may remain; however, where these soils contain more than 20 percent fines, they should be over excavated to a depth of 12 inches below the pipe invert and to a depth of 24 inches below manhole structures, and should be replaced with soils having less than 20 percent fines.

Utility Backfilling: Backfill placed around the pipe, and to a height of 2 feet above the top of pipe, should be placed in 6-inch lifts. Each lift should be compacted with hand-held equipment to 98 percent of the soil's Modified Proctor (ASTM D1557) maximum dry density. Backfill placed above the 2-foot zone above the top of pipe elevation may be placed in 12-inch lifts and compacted with heavier equipment. Typically, the backfill soil should exhibit moisture contents within ±2 percent of the soil's optimum moisture content as determined from the Proctor test. Care should be taken to avoid damaging the pipe during compaction operations.

Utility Excavation Dewatering: Based on the groundwater depths encountered at our boring locations, groundwater may be encountered in utility excavations which extend below existing grades. Removal of groundwater may be required, especially for deeper utility excavations. The contractor should submit a dewatering plan prior to installing the site utilities.

Excavation Safety: All excavations and slopes should be made and maintained in accordance with OSHA excavation safety standards. The contractor is solely responsible for designing and constructing stable, temporary excavations and slopes and should shore, slope, or bench the sides of the excavations and slopes as required to maintain stability of both the excavation sides and bottom. The contractor's responsible person, as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety procedures. In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in local, state, and federal safety regulations. ECS is providing this

information solely as a service to our client. ECS is not assuming responsibility for construction site safety or the contractor's activities; such responsibility is not being implied and should not be inferred.

Erosion Control: The surface soils may be erodible. Therefore, the Contractor should provide and maintain good site drainage during earthwork operations to maintain the integrity of the surface soils. All erosion and sedimentation controls should be in accordance with sound engineering practices and local requirements.

Other Excavation Considerations: Dense to very dense coquina gravel and/or cemented shells were encountered throughout many of the borings at this site. Excavations through this material may be difficult and require special equipment or procedures, particularly where the near-surface materials are cemented.

6.0 CLOSING

Our geotechnical exploration has been performed, our findings obtained, and our recommendations prepared, in accordance with generally accepted geotechnical engineering principles and practices. ECS is not responsible for any independent conclusions, interpretation, opinions, or recommendations made by others based on the data contained in this report.

Our scope of services was intended to evaluate the soil conditions within the zone of soil influenced by the foundation and pavement systems. Our scope of services does not address geologic conditions, such as sinkholes or soil conditions existing below the depth of the soil borings.

If any of the project description information discussed in this report is inaccurate, either due to our interpretation of the documents provided or site or design changes that may occur later, ECS should be contacted immediately in order that we can review the report in light of the changes and provide additional or alternate recommendations as may be required to reflect the proposed construction.

We recommend that ECS be allowed to review the project's plans and specifications pertaining to our work so that we may ascertain consistency of those plans/specifications with the intent of the geotechnical report.

Field observations, monitoring, and quality assurance testing during earthwork and foundation installation are an extension of and integral to the geotechnical design recommendation. We recommend that the owner retain these quality assurance services and that ECS be allowed to continue our involvement throughout these critical phases of construction to provide general consultation as issues arise.

APPENDIX A – Diagrams & Reports

Figure 1 – Site Location Diagram
Figure 2 – Boring Location Diagram
Figure 3 – Boring Location Diagram with Provided Site Plan
Subsurface Soil Profiles



SITE LOCATION DIAGRAM
CASSEN PARK REDEVELOPMENT - ORMOND BEACH

1 SOUTH BEACH STREET, ORMOND BEACH, FLORIDA

CITY OF ORMOND BEACH

ENGINEER	MK6
SCALE	AS NOTED
PROJECT NO.	56:1858
FIGURE	1 OF 3
DATE	3/25/2024



BORING LOCATION DIAGRAM
CASSEN PARK REDEVELOPMENT - ORMOND BEACH

1 SOUTH BEACH STREET, ORMOND BEACH, FLORIDA

CITY OF ORMOND BEACH

ENGINEER	MK6
SCALE	AS NOTED
PROJECT NO.	56:1858
FIGURE	2 OF 3
DATE	3/25/2024

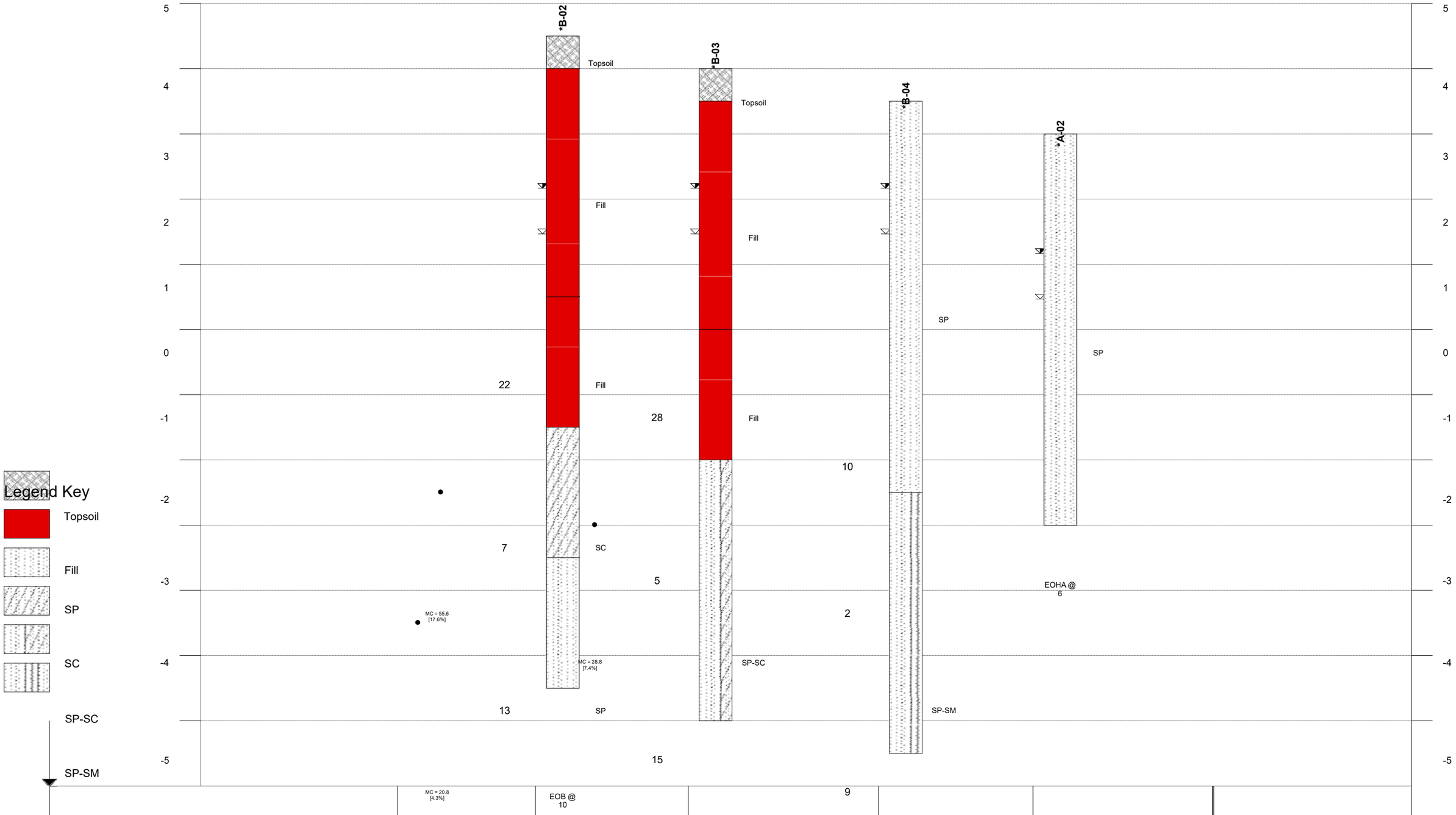


BORING LOCATION DIAGRAM
CASSEN PARK REDEVELOPMENT - ORMOND BEACH

1 SOUTH BEACH STREET, ORMOND BEACH, FLORIDA

CITY OF ORMOND BEACH

ENGINEER	MK6
SCALE	AS NOTED
PROJECT NO.	56:1858
FIGURE	3 OF 3
DATE	3/25/2024


*B-02
*B-03
*B-04
*A-02
Topsoil
Topsoil
Fill
Fill
Fill
Fill
SP
SP
22
28
10
7
SC
5
2
MC = 55.6 [17.6%]
MC = 28.8 [7.4%]
SP-SC
13
SP
SP-SM
15
MC = 20.8 [4.3%]
EOB @ 10
9
EOHA @ 6
EOB @ 10
EOB @ 10
Legend Key
Topsoil
Fill
SP
SC
SP-SC
SP-SM
-7.00
0.00
57.47
120.98
200.08
64.37
130.52
Notes:
1- EOB: END OF BORING
AR: AUGER
REFUSAL
SR: SAMPLER REFUSAL.
2- THE NUMBER BELOW THE STRIPS IS THE DISTANCE ALONG THE BASELINE.
3- SEE INDIVIDUAL BORING LOG AND GEOTECHNICAL INFORMATION.

4- STANDARD PENETRATION TEST RESISTANCE (LEFT OF BORING) IN BLOWS PER FOOT (ASTM D1586).

Plastic Limit Water Content Liquid Limit
X———●———△

[FINES CONTENT%]

BOTTOM OF CASING

LOSS OF CIRCULATION

– WL (First Encountered)

WL (Completion)

WL (Seasonal High Water)

WL (Stabilized)

Fill

Possible Fill

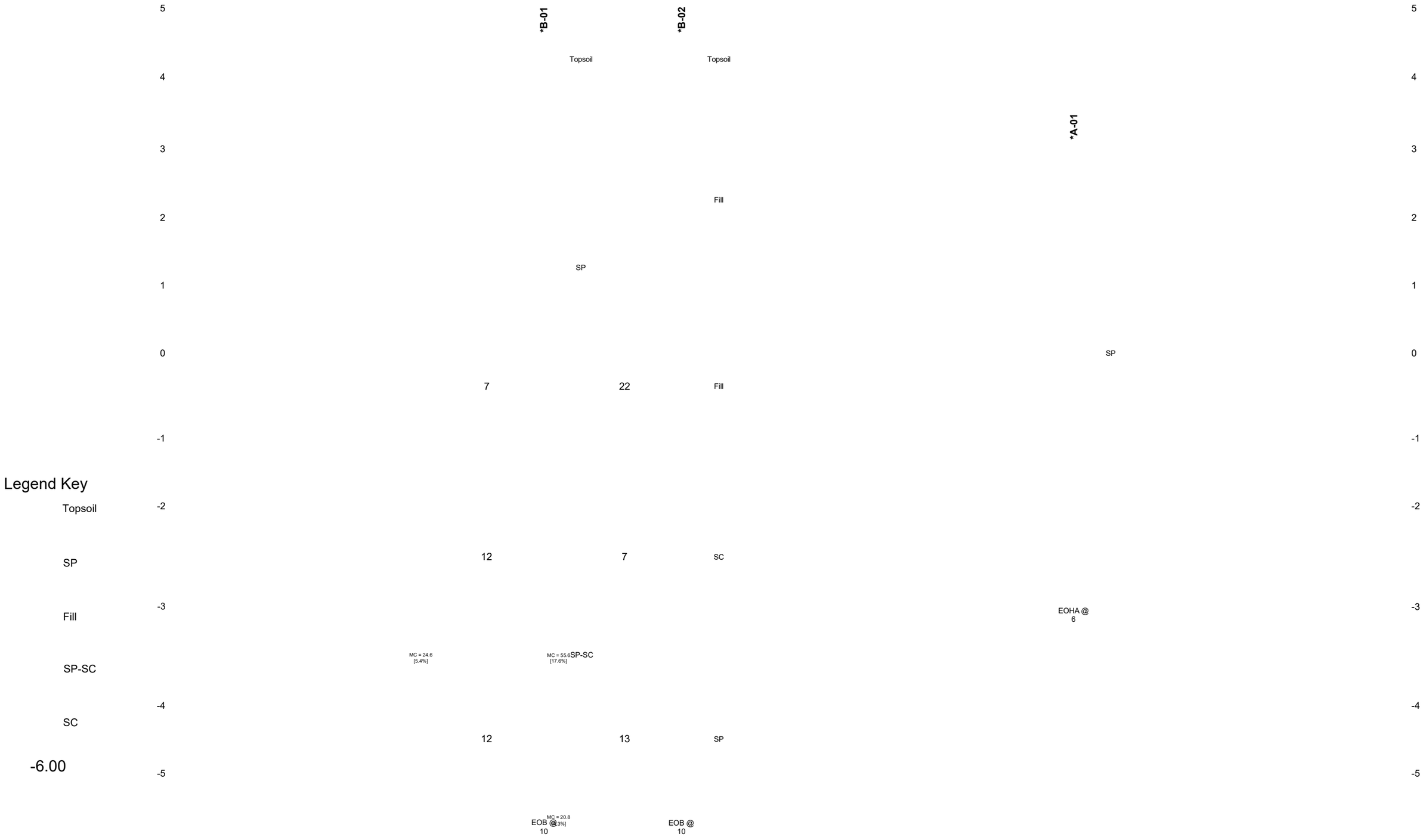
Probable Fill

Rock

GENERALIZED SUBSURFACE PROFILE Section line A-A'

Cassen Park Redevelopment - Ormond Beach
City of Ormond Beach
1 South Beach Street, Ormond Beach, Florida, 32174

Project No: 56:1858 Date: 04/04/2024



Legend Key

Topsoil

SP

Fill

SP-SC

SC

-6.00

Notes:

1- EOB: END OF BORING AR: AUGER REFUSAL SR: SAMPLER REFUSAL.
2- THE NUMBER BELOW THE STRIPS IS THE DISTANCE ALONG THE BASELINE.
3- SEE INDIVIDUAL BORING LOG AND GEOTECHNICAL INFORMATION.
4- STANDARD PENETRATION TEST RESISTANCE (LEFT OF BORING) IN BLOWS PER FOOT (ASTM D1586).

0.00 44.87 93.06 230.0 279.4

Plastic Limit Water Content Liquid Limit
X——●——△
[FINES CONTENT%]

BOTTOM OF CASING
LOSS OF CIRCULATION

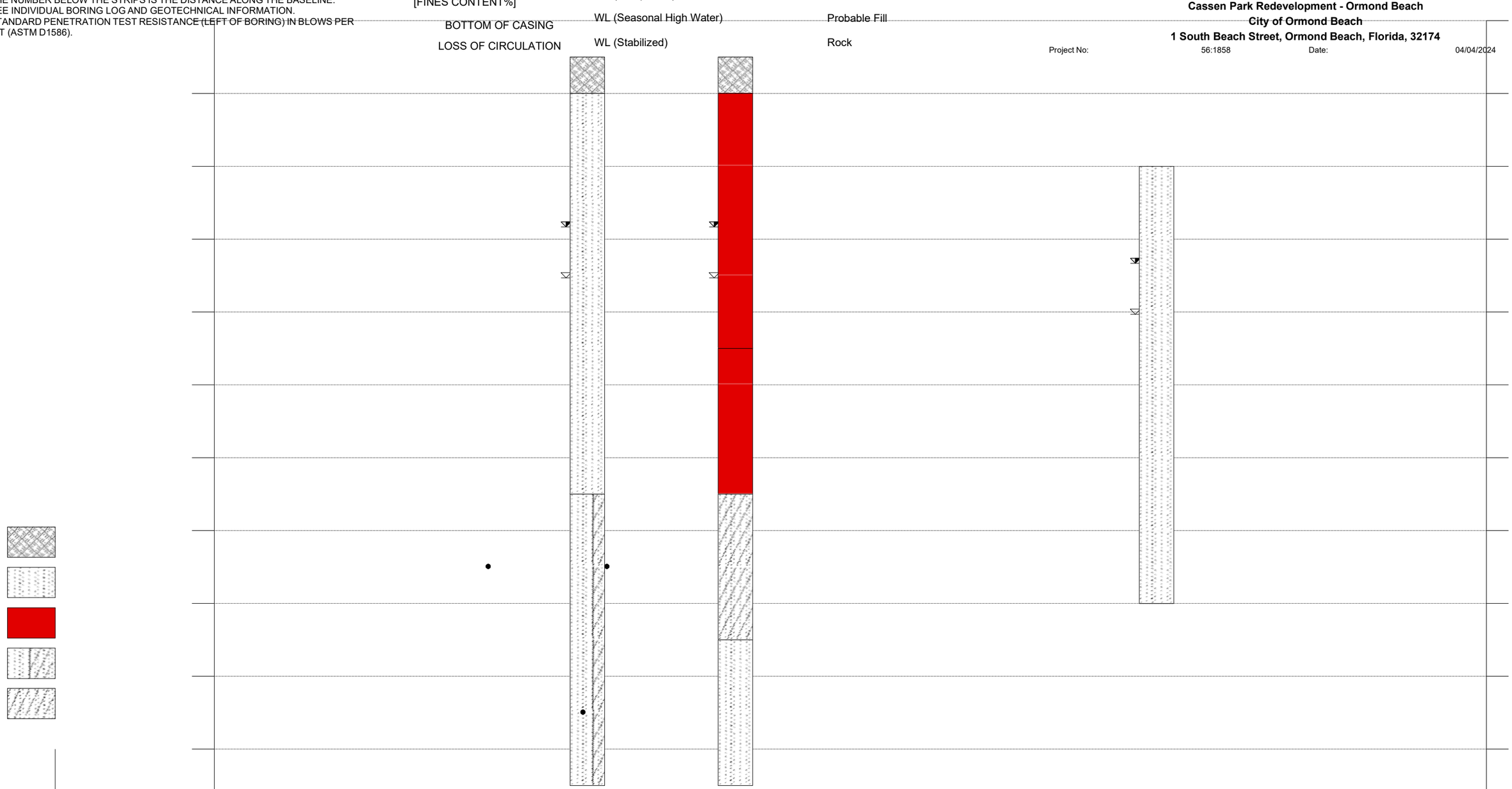
WL (First Encountered)
WL (Completion)
WL (Seasonal High Water)
WL (Stabilized)

Fill
Possible Fill
Probable Fill
Rock

GENERALIZED SUBSURFACE PROFILE Section line B-B'

Cassen Park Redevelopment - Ormond Beach
City of Ormond Beach
1 South Beach Street, Ormond Beach, Florida, 32174

Project No: 56:1858 Date: 04/04/2024



APPENDIX B – Field Operations

Reference Notes for Boring Logs
Subsurface Exploration Procedure: Standard Penetration Testing (SPT) ASTM D1586
Subsurface Exploration Procedure: Soil Exploration and Sampling by Auger Borings ASTM D1452
Geotechnical SPT Boring Logs
Auger Boring Logs

REFERENCE NOTES FOR BORING LOGS

MATERIAL[1,2]

	ASPHALT	
	CONCRETE	
	GRAVEL	
	TOPSOIL	
	VOID	
	BRICK	
	AGGREGATE BASE COURSE	
	GW	WELL-GRADED GRAVEL gravel-sand mixtures, little or no fines
	GP	POORLY-GRADED GRAVEL gravel-sand mixtures, little or no fines
	GM	SILTY GRAVEL gravel-sand-silt mixtures
	GC	CLAYEY GRAVEL gravel-sand-clay mixtures
	SW	WELL-GRADED SAND gravelly sand, little or no fines
	SP	POORLY-GRADED SAND gravelly sand, little or no fines
	SM	SILTY SAND sand-silt mixtures
	SC	CLAYEY SAND sand-clay mixtures
	ML	SILT non-plastic to medium plasticity
	MH	ELASTIC SILT high plasticity
	CL	LEAN CLAY low to medium plasticity
	CH	FAT CLAY high plasticity
	OL	ORGANIC SILT or CLAY non-plastic to low plasticity
	OH	ORGANIC SILT or CLAY high plasticity
	PT	PEAT highly organic soils

DRILLING SAMPLING SYMBOLS & ABBREVIATIONS

SS	Split Spoon Sampler	PM	Pressuremeter Test
ST	Shelby Tube Sampler	RD	Rock Bit Drilling
WS	Wash Sample	RC	Rock Core, NX, BX, AX
BS	Bulk Sample of Cuttings	REC	Rock Sample Recovery %
PA	Power Auger (no sample)	RQD	Rock Quality Designation %
HSA	Hollow Stem Auger		

PARTICLE SIZE IDENTIFICATION

DESIGNATION		PARTICLE SIZES
Boulders		12 inches (300 mm) or larger
Cobbles		3 inches to 12 inches (75 mm to 300 mm)
Gravel:	Coarse	¾ inch to 3 inches (19 mm to 75 mm)
	Fine	4.75 mm to 19 mm (No. 4 sieve to ¾ inch)
Sand:	Coarse	2.00 mm to 4.75 mm (No. 10 to No. 4 sieve)
	Medium	0.425 mm to 2.00 mm (No. 40 to No. 10 sieve)
	Fine	0.074 mm to 0.425 mm (No. 200 to No. 40 sieve)
Silt & Clay ("Fines")		<0.074 mm (smaller than a No. 200 sieve)

COHESIVE SILTS & CLAYS

UNCONFINED COMPRESSIVE STRENGTH, Q_P[4]	SPT[5] (BPF)	CONSISTENCY[7] (COHESIVE)
<0.25	<2	Very Soft
0.25 - <0.50	2 - 4	Soft
0.50 - <1.00	5 - 8	Firm
1.00 - <2.00	9 - 15	Stiff
2.00 - <4.00	16 - 30	Very Stiff
4.00 - 8.00	31 - 50	Hard
>8.00	>50	Very Hard

GRAVELS, SANDS & NON-COHESIVE SILTS

SPT[5]	DENSITY
<5	Very Loose
5 - 10	Loose
11 - 30	Medium Dense
31 - 50	Dense
>50	Very Dense

RELATIVE AMOUNT[7]	COARSE GRAINED (%)[8]	FINE GRAINED (%)[8]
Trace	<5	<5
With	10 - 20	10 - 25
Adjective *(ex: "Silty")*	25 - 45	30 - 45

WATER LEVELS[6]

- WL (First Encountered)
- WL (Completion)
- WL (Seasonal High Water)
- WL (Stabilized)

FILL AND ROCK

FILL | POSSIBLE FILL | PROBABLE FILL | ROCK

[1]Classifications and symbols per ASTM D 2488-17 (Visual-Manual Procedure) unless noted otherwise.

[2]To be consistent with general practice, "POORLY GRADED" has been removed from GP, GP-GM, GP-GC, SP, SP-SM, SP-SC soil types on the boring logs.

[3]Non-ASTM designations are included in soil descriptions and symbols along with ASTM symbol [Ex: (SM-FILL)].

[4]Typically estimated via pocket penetrometer or Torvane shear test and expressed in tons per square foot (tsf).

[5]Standard Penetration Test (SPT) refers to the number of hammer blows (blow count) of a 140 lb. hammer falling 30 inches on a 2 inch OD split spoon sampler required to drive the sampler 12 inches (ASTM D 1586). "N-value" is another term for "blow count" and is expressed in blows per foot (bpf). SPT correlations per 7.4.2 Method B and need to be corrected if using an auto hammer.

[6]The water levels are those levels actually measured in the borehole at the times indicated by the symbol. The measurements are relatively reliable when augering, without adding fluids, in granular soils. In clay and cohesive silts, the determination of water levels may require several days for the water level to stabilize. In such cases, additional methods of measurement are generally employed.

[7]Minor deviation from ASTM D 2488-17 Note 14.

[8]Percentages are estimated to the nearest 5% per ASTM D 2488-17.

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SUBSURFACE EXPLORATION PROCEDURE: STANDARD PENETRATION TESTING (SPT) ASTM D 1586 Split-Barrel Sampling

Standard Penetration Testing, or SPT, is the most frequently used subsurface exploration test performed worldwide. This test provides samples for identification purposes, as well as a measure of penetration resistance, or N-value. The N-Value, or blow counts, when corrected and correlated, can approximate engineering properties of soils used for geotechnical design and engineering purposes.

SPT Procedure:

- Involves driving a hollow tube (split-spoon) into the ground by dropping a 140-lb hammer a height of 30-inches at desired depth
- Recording the number of hammer blows required to drive split-spoon a distance of 12 inches (in 3 or 4 Increments of 6 inches each)
- Auger is advanced* and an additional SPT is performed
- One SPT test is typically performed for every two to five feet
- Obtain 1.5-inch diameter soil sample





*Drilling Methods May Vary— The predominant drilling methods used for SPT are open hole fluid rotary drilling and hollow-stem auger drilling.

SUBSURFACE EXPLORATION PROCEDURE: SOIL EXPLORATION AND SAMPLING BY AUGER BORINGS ASTM D 1452

The auger borings were performed manually by the use of a hand auger and in general accordance with the latest revision of ASTM D 1452, “Soil Investigation and Sampling by Auger Borings”. Representative samples of the soils brought to the ground surface by the augering process were placed in sealed containers and transported to our laboratory where they were examined by our engineer to verify the driller’s field classification.

HAND AUGER BORING:





CLIENT:	PROJECT NO.:	BORING NO.:	SHEET:
City of Ormond Beach	**56:1858**	**B-01**	**1 of 1**
PROJECT NAME:	DRILLER/CONTRACTOR:		
Cassen Park Redevelopment - Ormond Beach	**Allstate Geotechnical Drilling Inc.**		
SITE LOCATION:			LOSS OF CIRCULATION
1 South Beach Street, Ormond Beach, Florida, 32174			
LATITUDE:	LONGITUDE:	STATION:	SURFACE ELEVATION:
29.285605	**-81.055139**		**4.5**

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (N - Value)*
	S-1		0		Topsoil Thickness[6.00"]			
	S-2		0		(SP) FINE SAND, orange and brown, moist to saturated, loose, some shells			
5	S-3	SS	24	24			0	2-2-5-2 (7)
	S-4	SS	24	24	(SP-SC) FINE SAND WITH CLAY, brown, saturated, medium dense			1-5-7-8 (12)
10	S-5	SS	24	24	**END OF BORING AT 10 FT**		-5	2-5-7-6 (12)
15							-10	
20							-15	
25							-20	
30							-25	

BOTTOM OF CASING

STANDARD PENETRATION BLOWS/FT
10 20 30 40 50
20 40 60 80 100

ROCK QUALITY DESIGNATION & RECOVERY
RQD
REC

MODIFIED CALIFORNIA SAMPLER BLOWS/FT
10 20 30 40 50
7
12
12

LIQUID LIMIT
PLASTIC LIMIT

CALIBRATED PENETROMETER TSF
1 2 3 4 5

WATER CONTENT %
[FINES CONTENT]%
10 20 30 40 50
24.6
[5.4%]

▽
▼
▼ THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL
W L (C ompletion)
WL (First Encountered)
TRACK
WL (Seasonal High Water)

GEOTECHNICAL BOREHOLE LOG

WL (Stabilized)	**3.00**	BORING STARTED:	**Mar 15 2024**	CAVE IN DEPTH:	
	2.30	BORING COMPLETED:	**Mar 15 2024**	HAMMER TYPE:	**Manual - Safety**
		EQUIPMENT:		LOGGED BY:	DRILLING METHOD:

CLIENT:	PROJECT NO.:	BORING NO.:	SHEET:
City of Ormond Beach	**56:1858**	**B-02**	**1 of 1**

PROJECT NAME:	DRILLER/CONTRACTOR:
Cassen Park Redevelopment - Ormond Beach	**Allstate Geotechnical Drilling Inc.**

SITE LOCATION: **1 South Beach Street, Ormond Beach, Florida, 32174**

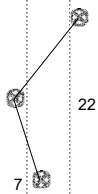
LOSS OF CIRCULATION

LATITUDE:	LONGITUDE:	STATION:	SURFACE ELEVATION:
29.285474	**-81.055110**		**4.5**

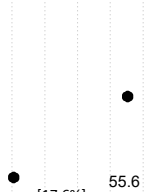
BOTTOM OF CASING

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (N - Value)*
	S-1		0		Topsoil Thickness[6.00"]			
	S-2		0		(SP) PROBABLE FILL, FINE SAND, brown and orange, moist to saturated, some shells			
5	S-3	SS	24	24	(SP/GP) PROBABLE FILL, SAND WITH GRAVEL/GRAVEL WITH SAND, dark brown and green, saturated, medium dense		0	8-12-10-6 (22)
	S-4	SS	24	24	(SC) CLAYEY FINE SAND, some organics dark brown, saturated, loose			5-4-3-2 (7)
10	S-5	SS	24	24	(SP) FINE SAND WITH SILT, brown, saturated, medium dense		-5	5-6-7-8 (13)
					END OF BORING AT 10 FT			
15							-10	
20							-15	
25							-20	
30							-25	

STANDARD PENETRATION BLOWS/FT
10 20 30 40 50
20 40 60 80 100
ROCK QUALITY DESIGNATION & RECOVERY
RQD
REC
MODIFIED CALIFORNIA SAMPLER BLOWS/FT
10 20 30 40 50



LIQUID LIMIT
PLASTIC LIMIT
CALIBRATED PENETROMETER TSF
1 2 3 4 5
WATER CONTENT %
[FINES CONTENT]%
10 20 30 40 50



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

WL (First Encountered) W (Completion WL (Se asonal High Water) WL (Stabilized)

L TRACK

GEOTECHNICAL BOREHOLE LOG

3.00

2.30

BORING STARTED:

Mar 15 2024

Mar 15 2024

LOGGED BY:

BORING COMPLETED:

EQUIPMENT:

CAVE IN DEPTH:

HAMMER TYPE:

Manual - Safety

DRILLING METHOD:

CLIENT:	PROJECT NO.:	BORING NO.:	SHEET:
City of Ormond Beach	**56:1858**	**B-03**	**1 of 1**

PROJECT NAME:	DRILLER/CONTRACTOR:
Cassen Park Redevelopment - Ormond Beach	**Allstate Geotechnical Drilling Inc.**

SITE LOCATION: **1 South Beach Street, Ormond Beach, Florida, 32174**

LOSS OF CIRCULATION

LATITUDE:	LONGITUDE:	STATION:	SURFACE ELEVATION:
29.285550	**-81.054923**		**4.0**

BOTTOM OF CASING

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (N - Value)*
	S-1		0		Topsoil Thickness[6.00"]			
	S-2		0		(SP) PROBABLE FILL, FINE SAND, light brown, moist to saturated, some shells			
5	S-3	SS	24	24	(SP/GP) PROBABLE FILL, SAND WITH GRAVEL/GRAVEL WITH SAND, dark brown and green, saturated, medium dense		-1	10-17-11-6 (28)
	S-4	SS	24	24	(SP-SC) FINE SAND WITH CLAY, gray and brown, saturated, medium dense, few shells			1-2-3-3 (5)
	S-5	SS	24	24				4-6-9-11 (15)
10					**END OF BORING AT 10 FT**		-6	
15							-11	
20							-16	
25							-21	
30							-26	

STANDARD PENETRATION BLOWS/FT
10 20 30 40 50
20 40 60 80 100
ROCK QUALITY DESIGNATION & RECOVERY
RQD
REC

MODIFIED CALIFORNIA SAMPLER BLOWS/FT
10 20 30 40 50
28
5
15

LIQUID LIMIT
PLASTIC LIMIT
CALIBRATED PENETROMETER TSF
1 2 3 4 5
WATER CONTENT %
[FINES CONTENT]%
10 20 30 40 50
28.8
[7.4%]

▽
▼
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL
WL (First Encountered) W L (C ompletion) WL (Seasonal High Water)
TRACK

GEOTECHNICAL BOREHOLE LOG

WL (Stabilized)	**2.50**	BORING STARTED:	**Mar 15 2024**	CAVE IN DEPTH:	
	1.80	BORING COMPLETED:	**Mar 15 2024**	HAMMER TYPE:	**Manual - Safety**
		EQUIPMENT:		LOGGED BY:	DRILLING METHOD:

CLIENT:	PROJECT NO.:	BORING NO.:	SHEET:
City of Ormond Beach	**56:1858**	**B-04**	**1 of 1**

PROJECT NAME:	DRILLER/CONTRACTOR:
Cassen Park Redevelopment - Ormond Beach	**Allstate Geotechnical Drilling Inc.**

SITE LOCATION: **1 South Beach Street, Ormond Beach, Florida, 32174**

LOSS OF CIRCULATION

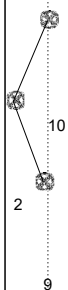
LATITUDE:	LONGITUDE:	STATION:	SURFACE ELEVATION:
29.285587	**-81.054678**		**3.5**

BOTTOM OF CASING

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (N - Value)*
	S-10				(SP) FINE SAND, light brown to light gray, moist to saturated, medium dense, some to significant shells	▽		
	S-20							
5	S-3	SS	24	24			-1	5-4-6-6 (10)
	S-4	SS	24	24	(SP-SM) FINE SAND WITH SILT, brown to light brown, saturated, very loose to medium dense			3-1-1-1 (2)
10	S-5	SS	24	24	**END OF BORING AT 10 FT**		-6	4-4-5-6 (9)
15							-11	
20							-16	
25							-21	
30							-26	

STANDARD PENETRATION BLOWS/FT
10 20 30 40 50
20 40 60 80 100
ROCK QUALITY DESIGNATION & RECOVERY
RQD
REC

MODIFIED CALIFORNIA SAMPLER BLOWS/FT
10 20 30 40 50



LIQUID LIMIT
PLASTIC LIMIT

CALIBRATED PENETROMETER TSF
1 2 3 4 5

WATER CONTENT %
[FINES CONTENT]%
10 20 30 40 50

▽
▼
▼ THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL
W L (C ompletion)
WL (First Encountered) **TRACK** WL (Seasonal High Water)

GEOTECHNICAL BOREHOLE LOG

WL (Stabilized)	**2.00**	BORING STARTED:	**Mar 15 2024**	CAVE IN DEPTH:	
	1.30	BORING COMPLETED:	**Mar 15 2024**	HAMMER TYPE:	**Automatic**
		EQUIPMENT:		LOGGED BY:	DRILLING METHOD:

CLIENT:	PROJECT NO.:	SHEET:
City of Ormond Beach	**56:1858**	**1 of 1**
PROJECT NAME:	HAND AUGER NO.:	SURFACE ELEVATION:
Cassen Park Redevelopment - Ormond Beach	**A-01**	**3.00**
SITE LOCATION:		STATION:
1 South Beach Street, Ormond Beach, Florida, 32174		
LATITUDE: **29.285132**	LONGITUDE: **-81.054920**	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	SAMPLE NUMBER	FINES CONTENT (%)	MOISTURE CONTENT (%)
5	▽ ▽	-2	(SP) FINE SAND, brown and orange, moist to saturated, some shells			S-1 S-2 S-3 S-4		
10		-7	**END OF HAND AUGER AT 6 FT**					
15								

REMARKS:

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

EXCAVATION EFFORT: E - EASY M - MEDIUM D - DIFFICULT VD - VERY DIFFICULT

▽

HAND AUGER LOG

WL (First Encountered)	**2.00**	WL (Seasonal High)	**1.30**	ECS REP:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:
WL (Completion)					**Mar 15 2024**	**English**	

HAND AUGER LOG

CLIENT:	PROJECT NO.:	SHEET:
City of Ormond Beach	**56:1858**	**1 of 1**
PROJECT NAME:	HAND AUGER NO.:	SURFACE ELEVATION:
Cassen Park Redevelopment - Ormond Beach	**A-02**	**3.0**
SITE LOCATION:		STATION:
1 South Beach Street, Ormond Beach, Florida, 32174		
LATITUDE: **29.285594**	LONGITUDE: **-81.054475**	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	SAMPLE NUMBER	FINES CONTENT (%)	MOISTURE CONTENT (%)
	▼		(SP) FINE SAND, light gray to brown, moist to saturated, some to significant shells			S-1		
	▽					S-2		
						S-3		
5		-2				S-4		
			END OF HAND AUGER AT 6 FT					
10		-7						
15								

REMARKS:

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

EXCAVATION EFFORT: E - EASY M - MEDIUM D - DIFFICULT VD - VERY DIFFICULT

▽

HAND AUGER LOG

WL (First Encountered)	**2.50**	WL (Seasonal High)	**1.80**	ECS REP:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:
WL (Completion)					**Mar 15 2024**	**English**	

HAND AUGER LOG

APPENDIX C – Laboratory Testing

Laboratory Testing Summary

Laboratory Testing Summary

Sample Location	Sample Number	Depth (feet)	^MC (%)	Soil Type	Atterberg Limits			**Percent Passing No. 200 Sieve	Moisture - Density		@ LBR (%)	#Organic Content (%)
					LL	PL	PI		<Maximum Density (pcf)	<Optimum Moisture (%)		
B-01	S-4	6-8	24.6	SP-SC				5.4				
B-02	S-4	6-8	55.6	SC				17.6				6.8
B-02	S-5	8-10	20.8	SP				4.3				
B-03	S-4	6-8	28.8	SP-SC				7.4				

Notes: See test reports for test method, ^ASTM D2216-19, *ASTM D2488, **ASTM D1140-17, @FM 5-515, #ASTM D2974-20e1 < See test report for D4718 corrected values

Definitions: MC: Moisture Content, Soil Type: USCS (Unified Soil Classification System), LL: Liquid Limit, PL: Plastic Limit, PI: Plasticity Index, CBR: California Bearing Ratio, OC: Organic Content

Project: Cassen Park Subsurface Exploration - O
Client: City of Ormond Beach

Project No.: 56:1858
Date Reported: 3/22/2024

Office / Lab	Address	Office Number / Fax
ECS Florida LLC - Daytona Beach	2330 South Nova Road Suite A South Daytona, FL 32119	(386)944-9588 (386)944-9589

Tested by	Checked by	Approved by	Date Received
RRawson	kleimer	kleimer	3/15/2024

CASSEN PARK REDEVELOMENT

CITY OF ORMOND BEACH - VOLUSIA COUNTY, FL

FINAL ENGINEERING PLANS

OWNER:
CITY OF ORMOND BEACH
22 SOUTH BEACH STREET
ORMOND BEACH, FL 32174
(386) 677-0311
CONTACT PERSON: SHAWN FINLEY, P.E.
e-mail: shawn.finley@ormondbeach.org

CIVIL ENGINEER:
ZEV COHEN & ASSOCIATES, INC.
300 INTERCHANGE BLVD. SUITE C
ORMOND BEACH, FL 32174
(386) 677-2482
CONTACT PERSON: M. DWIGHT DURANT, P.E.
e-mail: ddurant@zevcohen.com

SURVEYOR:
ATLANTIC DRAFTING & SURVEYING, INC.
1362 N. US HWY 1, SUITE 304
ORMOND BEACH, FL 32174
(386) 264-8490
CONTACT PERSON: JAY WOOLDRIDGE, PSM
e-mail: ads.inc.fl1@gmail.com

GEOTECHNICAL ENGINEER:
ECS FLORIDA, LLC
2330 SOUTH NOVA ROAD, SUITE A
SOUTH DAYTONA, FL 32119
(386) 944-9588
CONTACT PERSON: MAX KEMNITZ, P.E.
e-mail: mkemnitz@ecslimited.com

LANDSCAPE ARCHITECT:
MARQUIS LATIMER + HALBACK, INC.
34 CORDOVA ST, SUITE A
ST. AUGUSTINE, FL 32084
(904) 540-6940
CONTACT PERSON: JEREMY MARQUIS, RLA
e-mail: jeremy@halback.com

PROJECT DESCRIPTION:

THIS PROJECT INCLUDES THE RECONSTRUCTION OF A PUBLIC PARK THAT INCLUDES PEDESTRIAN AREAS, BOAT TRAILER PARKING, BAIT SHOP, AND RESTROOMS.

SITE INFORMATION:		
SITE ADDRESS:	1 S BEACH ST, ORMOND BEACH, FL 32174	
PROJECT AREA:	±2.33 AC	
TAX PARCEL I.D. #:	421514030010	
EXISTING ZONING:	SE	
PROPOSED ZONING:	SE	
EXISTING LAND USE:	PARK/BOAT LAUNCH	
PROPOSED LAND USE:	PARK/BOAT LAUNCH	
EXISTING FUTURE LAND USE:	OS/C	
EXISTING BUILDING AREA:	708 SF	
PROPOSED BUILDING AREA:	1,162 SF	
SETBACKS:		
FRONT:	50 FT	
SIDE:	20 FT	
REAR:	30 FT	
STREET SIDE/CORNER:	50 FT	
WATERBODY	50 FT	
REQUIRED LANDSCAPE BUFFER(S):	20 FT - ALONG W GRANADA BLVD	
	10 FT - ALONG S BEACH ST.	
MAXIMUM BUILDING LOT COVERAGE:	35%	
MAXIMUM BUILDING HEIGHT	30 FT	
UTILITIES:	PROVIDED BY CITY OF ORMOND BEACH	
LAND USE TABLE:		
	ACREAGE	PERCENTAGE
EXISTING CONDITIONS:		
WETLAND AREA	0.25 AC	10.73%
UPLAND AREA	2.08 AC	89.27%
PROPOSED IMPROVEMENTS:		
BUILDING(S)	0.03 AC	1.29%
PAVEMENT & SIDEWALK	1.49 AC	63.95%
LANDSCAPE/OPEN SPACE	0.81 AC	34.76%
EXISTING		
TOTAL PERVIOUS	1.07 AC	45.92%
TOTAL IMPERVIOUS	1.26 AC	54.08%
PROPOSED		
TOTAL PERVIOUS	0.81 AC	34.76%
TOTAL IMPERVIOUS	1.52 AC	65.24%

PARKING CALCULATIONS:	
STANDARD PARKING SPACES PROVIDED:	5
HANDICAP PARKING PROVIDED:	1
BOAT TRAILER PARKING PROVIDED:	37

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.



VICINITY MAP
SCALE: 1" = 750'



ZONING MAP
SCALE: 1" = 150'
CURRENT ZONING FOR THIS SITE IS: SE - SPECIAL ENVIRONMENTAL



SOILS MAP
SCALE: 1" = 150'
THE SITE LIES WITHIN THE FOLLOWNG VOLUSIA COUNTY SOIL CLASSIFICATIONS:
0-WATER
6-ASTATULA-URBAN LAND COMPLEX, 0-8% SLOPES



FLOOD ZONE MAP
SCALE: 1" = 150'
THE PROPERTY LIES IN:
FLOOD ZONE X AND AE PER FEMA MAPS 1217C0216K

SHEET INDEX:

C1	COVER SHEET
C2-C4	CONSTRUCTION NOTES
C5	DEMOLITION & EROSION CONTROL PLAN
C6	GEOMETRY, SIGNAGE & STRIPING PLAN
C7	PAVING, GRADING & DRAINAGE PLAN
C8	UTILITY PLAN
C9-C13	CONSTRUCTION DETAILS
AT1	AUTOTURN EXHIBIT
L2.1-L2.6	HARDSCAPE PLAN & DETAILS
L3.0	LANDSCAPE DEMO PLAN
L3.1-L3.4	LANDSCAPE PLAN & DETAILS
L4.1-L4.3	IRRIGATION PLAN & DETAILS
E1.1	ELECTRICAL DETAILS & NOTES
E2.1	DEMOLITION ELECTRICAL PLAN
E3.1	ELECTRICAL & LIGHTING PLAN

LEGAL DESCRIPTION:

PART OF PLAT OF ASSESSORS SUBDIVISION RIVER LOTS 1 TO 14 INCL. AND CORBINS SUBDIVISION OF PART OF RIVER LOT 5 SECTION 15, TOWNSHIP 14 SOUTH, RANGE 32 EAST ORMOND BEACH, VOLUSIA COUNTY, FLORIDA

ZEV COHEN & ASSOCIATES, INC.
300 INTERCHANGE BLVD. SUITE C
ORMOND BEACH, FL 32174
WWW.ZEVCOHEN.COM
CIVIL ENGINEERING
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL
PLANNING
TRANSPORTATION

NO	DATE	BY	SUBMITTALS/ REVISIONS
1	07-2-24	RH/SM	REVISED PER CITY OF ORMOND BEACH COMMENTS

CASSEN PARK
REDEVELOPMENT
FINAL ENGINEERING PLANS
COVER SHEET
CITY OF ORMOND BEACH — VOLUSIA COUNTY, FLORIDA

PROJECT NO: ZC 22138
DESIGNED BY: SM
DRAFTED BY: SM
CHECKED BY: RH

RANDY M. HUDAK, P.E., NO. 68557
NOT VALID WITHOUT SEAL

SHEET: C1 OF 13

GENERAL NOTES

1. ALL CONSTRUCTION, DRAINAGE STRUCTURES AND OTHER SITE IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITIONS OF FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD PLANS AND SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION OR THE CITY'S LAND DEVELOPMENT CODE REQUIREMENTS, STANDARD CONSTRUCTION DETAILS & STANDARD SPECIFICATIONS, WHICHEVER IS MORE STRINGENT.
2. SHOP DRAWINGS AND CERTIFICATIONS FOR ALL MATERIALS AND STRUCTURES ARE REQUIRED. THE CONTRACTOR SHALL REVIEW AND SIGN SHOP DRAWINGS. THE CONTRACTOR SHALL SUBMIT REVIEWED SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO ORDERING THE MATERIALS REQUIRED FOR CONSTRUCTION.
3. CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL REQUIRED PERMITS. THE CONTRACTOR SHALL MAINTAIN COPIES OF ALL RELEVANT PERMITS AND CONSTRUCTION DOCUMENTS AVAILABLE ON THE JOB SITE AT ALL TIMES.
4. CONTRACTOR TO MAINTAIN THE SITE IN A SAFE AND SECURE MANNER TO PROTECT PUBLIC SAFETY AND THE CONDITIONS OF THE IMPROVEMENTS.
5. THE CONTRACTOR SHALL MAINTAIN, AT THE JOB SITE, A RECORD COPY OF ALL CONSTRUCTION DRAWINGS AND SPECIFICATIONS ON WHICH ALL FIELD CHANGES ARE TO BE SHOWN. THESE CHANGES ARE TO BE INCORPORATED IN THE "AS-BUILT" SURVEY FURNISHED TO THE ENGINEER.
6. SHOULD CONDITIONS VARY FROM THOSE SHOWN ON THESE PLANS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF RECORD PRIOR TO CONTINUING CONSTRUCTION.
7. ANY FIELD MODIFICATIONS OR DEVIATIONS TO THESE CONSTRUCTION PLANS REQUIRES APPROVAL BY BOTH THE ENGINEER OF RECORD AND THE CITY PRIOR TO PERFORMING THE WORK.
8. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE AN "AS-BUILT" SURVEY OF THE COMPLETED CONSTRUCTION. THE "AS-BUILT" SURVEY SHALL BE PREPARED IN ACCORDANCE WITH APPROPRIATE GOVERNMENTAL REGULATIONS AND ZCA REQUIREMENTS. THE "AS-BUILT" SURVEY SHALL BE PREPARED ON ZCA'S DESIGN/PERMITTED PLANS. ELECTRONIC AND PAPER COPIES OF THE AS-BUILT SURVEY SHALL BE PROVIDED TO THE ENGINEER OF RECORD. THE "AS-BUILT" SHALL BE SIGNED AND SEALED BY A FLORIDA REGISTERED PROFESSIONAL LAND SURVEYOR.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING VEHICULAR AND PEDESTRIAN TRAFFIC SAFELY THROUGH THE WORK ZONE AT ALL TIMES, IF APPLICABLE. ANY SIDEWALK, LANE OR ROAD CLOSURE REQUIRES REVIEW AND APPROVAL IN ADVANCE AND A SEVEN (7) DAY MINIMUM NOTICE TO THE CITY OF ORMOND BEACH. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REQUIRED COORDINATION.
10. MAINTENANCE OF TRAFFIC WILL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAY CONSTRUCTION, MAINTENANCE AND UTILITY OPERATIONS AND THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD PLANS, LATEST EDITIONS.
11. CONTRACTOR TO NOTIFY THE REGULATORY AGENCIES FORTY EIGHT (48) HOURS PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL SEND COPIES OF ALL TESTING REPORTS TO THE REGULATORY AGENCIES AND THE ENGINEER OF RECORD.
12. SURVEY INFORMATION PROVIDED BY ATLANTIC DRAFTING & SURVEYING, INC. DATED 12-11-2023. ALL ELEVATIONS BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) AND ARE SHOWN IN FEET. STATE PLANE COORDINATES ARE BASED UPON NAD 83.
13. ALL PUBLIC LAND CORNERS AND MONUMENTS WITHIN THE LIMITS OF CONSTRUCTION ARE TO BE PROTECTED. THE CONTRACTOR SHALL EMPLOY A SURVEYOR, REGISTERED IN THE STATE OF FLORIDA, TO REPLACE/RESTORE ANY PROPERTY OR LAND MARKERS DISTURBED BY CONSTRUCTION ACTIVITIES.
14. NO LAND SHALL BE CLEARED, EXCAVATED OR FILLED AND NO STRUCTURES SHALL BE ERECTED, REPAIRED OR DEMOLISHED WITHOUT PROPER PERMIT(S).
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS AS WELL AS THE REQUIREMENTS OF ST. JOHNS RIVER WATER MANAGEMENT DISTRICT AND E.P.A. (NPDES). CONTRACTOR SHALL ESTABLISH BEST MANAGEMENT PRACTICES AND EROSION CONTROL METHODS PRIOR TO COMMENCING ANY SITE CLEARING OR DEMOLITION AND SHALL MAINTAIN THOSE BARRIERS UNTIL FINAL ACCEPTANCE OF THE PROJECT.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROJECT'S NPDES PERMITTING, INSPECTION AND REPORTING, IF APPLICABLE.
17.
18. THE EROSION, SEDIMENT AND TURBIDITY CONTROL MEASURES DELINEATED HEREON ARE THE MINIMUM REQUIRED. ADDITIONAL CONTROLS MAY BE NEEDED, DEPENDING UPON THE ACTUAL SITE CONDITIONS, JURISDICTIONAL AGENCY PERMIT REQUIREMENTS AND CONSTRUCTION OPERATIONS. STAKED SILT FENCE SHALL BE UTILIZED TO CONTROL EROSION AND RELEASE OF SUSPENDED SOLIDS. SEDIMENT TRACKING CONTROL DEVICES SHALL BE USED TO PREVENT THE OFFSITE TRANSPORTATION OF SEDIMENT BY MOTORIZED VEHICLES. IF CONTROL MEASURES DO NOT PROVE SATISFACTORY, WORK SHALL CEASE UNTIL NEW MEASURES ARE ADOPTED WITH SATISFACTORY RESULTS.
19. ALL EROSION AND SEDIMENT TRACKING CONTROL DEVICES SHALL BE INSPECTED DAILY AND IMMEDIATELY FOLLOWING A RAINFALL EVENT. REFER TO PROJECT'S STORMWATER POLLUTION PREVENT PLAN (SWPPP). ANY DEFICIENCIES FOUND IN THE EROSION CONTROL MEASURES SHALL BE REPAIRED IMMEDIATELY. THE CONTRACTOR SHALL KEEP A LOG BOOK DOCUMENTING THESE DAILY INSPECTIONS, DEFICIENCIES AND REMEDIAL ACTIONS.
20. ALL UNSUITABLE SOILS AND UNSUITABLE MATERIALS (SUCH AS CLAY, ORGANICS, ROCK, CEMENTED COQUINA, DEBRIS, ETC.) SHALL BE REMOVED, DISPOSED OF IN A LEGAL MANNER AND REPLACED WITH DRY COMPACTED GRANULAR MATERIAL SATISFACTORY TO THE CITY. THE COST OF ALL COMPACTION MATERIALS IS TO BE INCLUDED IN THE UNIT PRICE OF THE ASSOCIATED CONSTRUCTION ITEMS UNLESS OTHERWISE SHOWN IN THE PLANS.
21. IN THE EVENT THAT WATER IS ENCOUNTERED DURING CONSTRUCTION, DEWATERING SHALL BE PERFORMED AS NEEDED. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE DESIGN, INSTALLATION, OPERATION AND SUBSEQUENT REMOVAL OF DEWATERING SYSTEMS AND THEIR SAFETY AND CONFORMITY WITH APPLICABLE CODES AND REGULATIONS.
22. PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE ELECTRIC, TELEPHONE, GAS, CABLE TELEVISION, COMMUNICATIONS, ETC. COMPANIES TO DETERMINE THE TYPE AND LOCATION OF ALL UNDERGROUND FACILITIES IN THE AREA OF CONSTRUCTION.
23. ALL UNDERGROUND UTILITIES HAVE BEEN LOCATED HORIZONTALLY AND VERTICALLY BASED ON THE BEST INFORMATION AVAILABLE AND SHOULD BE CONSIDERED APPROXIMATE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND VERIFYING ALL ELEVATIONS OF EXISTING UTILITIES (PUBLIC AND PRIVATE) SHOWN OR NOT SHOWN PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE VARIOUS UTILITY COMPANIES TO MAKE THE NECESSARY ARRANGEMENTS FOR ANY RELOCATION, DISRUPTION OF SERVICE OR CLARIFICATION OF ACTIVITY REGARDING SAID UTILITY. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING, CROSSING OR INSTALLING ANY UTILITY, WHETHER SHOWN ON THESE PLANS OR FIELD LOCATED. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE AND NOTIFY THE UTILITY COMPANIES FOR UTILITIES WHICH MAY BE LOCATED FOR THE PROPOSED CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE TO PAY FOR ANY REPAIR, RELOCATION OR TEMPORARY MEASURES NEEDED FOR EXISTING OR PROPOSED UTILITIES.
24. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE AND AVOID ALL UTILITIES, OTHER STRUCTURES AND OBSTRUCTIONS BOTH ABOVE AND BELOW GROUND. ALL DAMAGE RESULTING FROM THE CONTRACTOR'S FAILURE TO COMPLY WITH THIS REQUIREMENT SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
25. THE CONTRACTOR SHALL NOTIFY ALL UTILITY PROVIDERS AT LEAST TWO (2) BUSINESS DAYS PRIOR TO ANY CONSTRUCTION.
26. THE CONTRACTOR SHALL MAINTAIN UNINTERRUPTED SERVICE AT ALL SERVICE CONNECTIONS. THE MANNER IN WHICH THIS IS ACCOMPLISHED SHALL BE LEFT TO THE DISCRETION OF THE CONTRACTOR, SUBJECT TO THE REQUIREMENTS OF THE CONTRACT SPECIFICATIONS.
27. ALL EXISTING DRAINAGE STRUCTURES AND UTILITIES WITHIN THE CONSTRUCTION LIMITS SHALL REMAIN, UNLESS OTHERWISE NOTED IN PLANS.
28. THE LENGTH OF ALL DRAINAGE PIPES AND LOCATION OF ALL DRAINAGE STRUCTURES ARE APPROXIMATE. THE LOCATION OF THE DRAINAGE STRUCTURE SHALL DETERMINE THE LENGTH OF PIPE.
29. THE TOP OF CASTING ELEVATIONS (TC) OF ALL STRUCTURES ARE SHOWN. HOWEVER, THE CONTRACTOR SHALL INSTALL ALL FRAMES SO AS TO PROVIDE A SMOOTH SURFACE FOR VEHICULAR AND/OR PEDESTRIAN TRAFFIC.
30. CONTRACTOR SHALL CONFIRM PROPOSED TOP OF CASTING (TC) ELEVATIONS WILL ALLOW POSITIVE DRAINAGE TO PROPOSED INLETS. IF POSITIVE DRAINAGE DOES NOT EXIST, CONTRACTOR TO COORDINATE WITH ENGINEER OF RECORD FOR SOLUTION AND ADJUST PROPOSED INLETS AS NECESSARY AT NO COST.
31. CONTRACTOR SHALL CONFIRM ELEVATION OF EXISTING GRADE PRIOR TO PLACING DRAINAGE OUTFALL STRUCTURES. CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD IF EXISTING GRADE DOES NOT MATCH PROPOSED OUTFALL INVERT. CONTRACTOR SHALL ADJUST OUTFALL STRUCTURE INVERT AND/OR STRUCTURE LOCATION AS DIRECTED BY ENGINEER OF RECORD AT NO COST.
32. ANY DRAINAGE PROBLEMS CREATED BY CONSTRUCTION, OR EXISTING BEFORE CONSTRUCTION AND NOT ALLEVIATED, SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD AT THE TIME OF DISCOVERY.
33. ALL STORMWATER PIPES AND INLETS SHALL BE CLEANED OF DEBRIS AND ERODED MATERIALS AT LAST STAGES OF AND PRIOR TO COMPLETION OF CONSTRUCTION.

GENERAL NOTES

34. SPECIAL ATTENTION IS DIRECTED TO THE FACT THAT PORTIONS OF SOME DRAINAGE STRUCTURES MAY EXTEND INTO THE STABILIZED PORTION OF THE ROADBED. EXTREME CAUTION WILL BE NECESSARY DURING COMPACTION AND STABILIZATION OPERATIONS AT THESE LOCATIONS TO AVOID DAMAGE AND ACHIEVE THE REQUIRED COMPACTION.
35. DURING CONSTRUCTION, AN ALL-WEATHER ACCESSIBLE ROADWAY SHALL BE MAINTAINED AT ALL TIMES FOR FIRE ACCESS.
36. ALL REQUIRED FIRE LINES & HYDRANTS SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL & STATE REQUIREMENTS AND OPERATIONAL PRIOR TO THE START OF VERTICAL CONSTRUCTION.
37. NONE OF THE EXISTING LIMEROCK BASE THAT IS REMOVED IS TO BE USED IN THE CONSTRUCTION OF THE NEW LIMEROCK BASE UNLESS OTHERWISE NOTED ON PLANS.
38. EXISTING DRIVEWAYS WITHIN THE LIMITS OF THIS PROJECT ARE TO BE REPLACED AT THE SAME LOCATION AND WIDTH WITH THE SAME TYPE OF MATERIAL, UNLESS OTHERWISE SHOWN IN THE PLANS.
39. ALL RAMPS, SIDEWALKS AND ACCESSIBLE ROUTES ARE TO BE IN COMPLIANCE WITH CURRENT A.D.A. REQUIREMENTS.
40. SIGNS THAT ARE REMOVED AND ARE TO BE RELOCATED SHALL BE STOCK PILED BY THE CONTRACTOR. ANY EXISTING SIGNS DAMAGED DURING CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR AT HIS COST.
41. ROADWAY AND PARKING SIGNAGE AND MARKINGS SHALL BE IN CONFORMANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION.
42. UNLESS OTHERWISE NOTED, PROPOSED GRADES SHOWN ARE FINISHED GRADES.
43. OPERATION AND MAINTENANCE OF THE STORMWATER SYSTEM WILL BE PROVIDED BY THE OWNER OF PROPERTY. MAINTENANCE IS TO INCLUDE BI-WEEKLY MOWING OF SIDE SLOPES FOR VEGETATION CONTROL AND MONTHLY INSPECTION/CLEANING OF CULVERTS & STORM SYSTEMS.
44. ALL DISTURBED AREAS SHALL BE SODDED, UNLESS OTHERWISE SHOWN, AND SHALL HAVE SOD/ VEGETATED COVER ESTABLISHED PRIOR TO THE INSPECTION FOR THE CERTIFICATE OF OCCUPANCY.
45. INSTALLATION OF THE REQUIRED STREET SIGNS, TRAFFIC SIGNS, PAVEMENT STRIPING, STREET LIGHTS AND SIDEWALKS ALONG WITH THE PAINTING OF THE FIRE HYDRANTS MUST BE COMPLETED PRIOR TO THE ISSUANCE OF THE CERTIFICATE OF COMPLETION.
46. CONTRACTOR IS RESPONSIBLE FOR INSPECTING AND PRE-TESTING PRIOR TO SCHEDULING A TEST OR WALK-THROUGH WITH THE UTILITY REPRESENTATIVES, MUNICIPAL REPRESENTATIVES AND ENGINEER OF RECORD. ANY COST ASSOCIATED WITH RETESTING SHALL BE PAID FOR BY THE CONTRACTOR.
47. THE ENGINEER OF RECORD AND LOCAL UTILITY SHALL BE GIVEN SEVENTY-TWO (72) HOURS NOTICE OF ALL REQUESTED MEETINGS AND/OR TESTING MEASURES.
48. CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH THE REGULATORY REPRESENTATIVES TO DETERMINE THE INSPECTIONS NEED FOR THE PROJECT. CONTRACTOR SHALL PROVIDE PROPER NOTIFICATION TO INSPECTING AUTHORITIES BEFORE AND DURING CONSTRUCTION.
49. ZEV COHEN AND ASSOCIATES, INC (ZCA) LIABILITY SHALL BE LIMITED TO THE COMPANY'S DESIGN OF SPECIFIC IMPROVEMENTS AS DEPICTED ON THE SITE INFRASTRUCTURE CONSTRUCTION DOCUMENTS.

ROADWAY CONSTRUCTION NOTES

1. ALL RIGHT OF WAY OTHER THAN ROADWAY AREAS SHALL BE SEEDED AND MULCHED OR SODDED. ALL SLOPES GREATER THAN 6% SHALL BE SODDED. THE CITY RESERVES THE RIGHT TO REQUIRE SODDING IN SPECIAL AREAS WHERE EROSION IS A CONCERN.
2. THE FOLLOWING WILL BE THE STANDARD PROTECTION FOR DITCHES UNLESS DRAINAGE CALCULATIONS INDICATE OTHERWISE:

SWALE PROFILE GRADES	PROTECTION REQUIRED
0.2% – 1.0%	SEEDING AND MULCHING
1.0% – 4.0%	SODDING
4.0% AND GREATER	DITCH PAVING

3. ALL FRANCHISE UTILITY CROSSINGS, INCLUDING BUT NOT LIMITED TO FPL, BELLSOUTH AND CABLE SHALL BE INSTALLED PRIOR TO INSTALLATION AND COMPACTION OF THE ROAD SUB BASE. ANY CROSSINGS AFTER INSTALLATION OF THE SUB BASE SHALL BE BY DIRECTIONAL BORE.
4. THE LIMITS OF STABILIZED SUB BASE SHALL EXTEND TO A DEPTH OF SIX INCHES (6") BELOW THE BOTTOM OF THE BASE AND OUTWARD TO TWELVE INCHES (12") BEYOND THE CURB.
5. THE STABILIZING MATERIAL, IF REQUIRED, SHOULD BE A HIGH BEARING VALUE SOIL, SAND–CLAY, LIMEROCK, RECYCLED CONCRETE, SHELL OR OTHER MATERIAL AS APPROVED BY THE CITY AND A LICENSED SOILS ENGINEER.
6. THE SUB BASE SHALL BE STABILIZED NOT LESS THAN FORTY (40) POUNDS LIMEROCK BEARING RATIO (LBR). A COMPACTION OF NO LESS THAN NINETY–EIGHT (98%) PERCENT DENSITY BASED ON AASHTO T–180 SHALL BE REQUIRED.
7. TESTS FOR SUB BASE BEARING CAPACITY AND COMPACTION SHALL BE DONE AT A MINIMUM OF EVERY 300 FEET AND SHALL BE STAGGERED TO THE LEFT, RIGHT AND AT CENTER LINE OF THE ROADWAY.
8. BASES FOR ALL STREETS SHALL HAVE A MINIMUM SIX INCH (6") DEPTH. PRIMING AND SANDING SHALL BE REQUIRED AS SOON AS BEARING CAPACITY AND COMPACTION HAS BEEN ACHIEVED.
9. MAXIMUM DENSITY BASED ON AASHTO T–180 MODIFIED PROCTOR TEST. RECYCLED CONCRETE OR LIMEROCK BASES SHALL BE COMPACTED TO (98%)
10. MATERIAL DELIVERY TICKETS SHALL BE PROVIDED TO THE CITY AT THE TIME OF PLACEMENT.
11. TESTING OF THE IN–PLACE BASE SHALL BE DONE AT INTERVALS EQUIVALENT TO SUB BASE TESTING AND SHALL CONSIST OF, AS A MINIMUM, MOISTURE CONTENT AND COMPACTION TEST.

CITY OF ORMOND BEACH FLORIDA	STANDARD CONSTRUCTION DETAIL ROADWAY CONSTRUCTION NOTES	INDEX R–1A MAY 2020

811 Know what's below. Call before you dig.

12. DESIGN MIXES SHALL BE SUBMITTED TO THE CITY FOR THEIR APPROVAL NO LESS THAN THREE (3) WORKING DAYS PRIOR TO ANY ROADWAY CONSTRUCTION.
13. ASPHALT SPECIFICATIONS SHALL BE SUBMITTED BY THE DESIGN ENGINEER WITH FINAL PLANS TO THE CITY. FLORIDA STATE CERTIFIED BATCH PLANTS MUST THEN CERTIFY THAT THESE APPROVED SPECIFICATIONS HAVE BEEN MET.
14. EXTRACTION AND GRADATION TESTS ON ASPHALT MIXES SHALL BE PROVIDED TO THE CITY TO INSURE THAT DESIGN MIXES MEET THE CITY STANDARD SPECIFICATIONS.
15. THE ROADWAY CROWN SHALL HAVE A STANDARD ONE QUARTER INCH (1/4") PER FOOT SLOPE.
16. ALL ROADWAYS WITH CURB AND GUTTER SECTIONS SHALL HAVE AS A STANDARD A MINIMUM LONGITUDINAL SLOPE OF 0.30%.
17. THE FINISHED PAVEMENT EDGE SHALL BE WITHIN ONE QUARTER INCH (1/4") OF THE ADJACENT CONCRETE CURB.
18. CONCRETE CURBS SHALL BE PROVIDED ON BOTH SIDES OF ALL STREETS AND CONSTRUCTED WITH 2500 PSI CONCRETE AT 28 DAYS.
19. CONCRETE CURBS SHALL BE SAW CUT TO A DEPTH EQUAL TO 1/4 OF CURB THICKNESS AT INTERVALS OF TEN FEET (10') WITH EXPANSION JOINTS AT STREET INTERSECTIONS, STRUCTURES AND ALONG CURVES AT SIXTY FEET (60') INTERVALS. ALL EXPANSION JOINT MATERIAL IS REQUIRED TO BE INSTALLED THROUGH THE ENTIRE DEPTH OF THE CONCRETE CURB.
20. AN "X" SHALL BE CUT IN THE CURB TO MARK THE LOCATION OF WATER DISTRIBUTION SYSTEM VALVE.
21. AN "⊕" SHALL BE CUT INTO THE CURB TO MARK THE LOCATION OF ALL VALVES OTHER THAN WATER DISTRIBUTION VALVES.
22. A "V" SHALL BE CUT IN THE CURB TO MARK THE LOCATION OF ALL SEWER SERVICES.
23. A "⊥" SHALL BE CUT IN THE CURB TO MARK THE LOCATION OF ALL RECLAIMED WATER SERVICES.
24. A "Λ" SHALL BE CUT IN THE CURB TO MARK THE LOCATION OF ALL WATER SERVICES.

CITY OF ORMOND BEACH FLORIDA	STANDARD CONSTRUCTION DETAIL ROADWAY CONSTRUCTION NOTES	INDEX R–1B MAY 2020

25. THREE (3) CONCRETE CYLINDERS SHALL BE TAKEN AND TESTED FOR EVERY THREE HUNDRED (300) FEET OF ROADWAY CONSTRUCTED. TEST RESULTS SHALL THEN BE PROVIDED TO THE CITY AS THEY BECOME AVAILABLE.
26. THE DEVELOPER SHALL PROVIDE ALL REQUIRED PAVEMENT MARKINGS ON ALL ROADWAYS PER CITY, COUNTY AND STATE REQUIREMENTS. CENTERLINE STRIPES SHALL BE PROVIDED ON EXTENSIONS OF CITY COLLECTOR OR ARTERIAL ROADS, COUNTY ROADS AND STATE HIGHWAYS ONLY.
27. STOP BARS SHALL BE PLACED AT ALL SUBDIVISION ENTRANCES AND INTERSECTIONS CONTAINING CITY COLLECTOR AND ARTERIAL ROADS, COUNTY ROADS AND STATE HIGHWAYS.
28. ALL TRAFFIC CONTROL DEVICES PLACED AT INTERSECTIONS, PRIVATE STREETS, PUBLIC STREETS, COUNTY ROADS AND STATE HIGHWAYS WITHIN THE CITY LIMITS SHALL BE INSTALLED ACCORDING TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
29. THE DEVELOPER IS RESPONSIBLE FOR PAYING FEES FOR ALL STREET LIGHTS PRIOR TO ACCEPTANCE OF THE PROJECT BY THE CITY.
30. STANDARD TURNING RADII FOR INTERSECTIONS:

2–LANE ACCESS OR FEEDER	35'
LOCAL TO COLLECTOR	35'
LOCAL OR COLLECTOR TO ARTERIAL	40'
ARTERIAL TO ARTERIAL	50'

31. CITY INSPECTOR SHALL BE PRESENT DURING PAVING OF ALL PUBLIC AND PRIVATE ROADS. PAVING SHALL BE PERFORMED DURING NORMAL BUSINESS HOURS, MONDAY THROUGH FRIDAY. PAVING DURING WEEKENDS IS NOT PERMITTED.
32. CONSTRUCTION METHODS AND DESIGN FOR CONCRETE PAVEMENT SHALL CONFORM TO FDOT STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.
33. ALL CONTRACTORS THAT ARE PERFORMING THE CONSTRUCTION OF PUBLIC IMPROVEMENTS (WATER MAIN, SANITARY SEWER MAIN, RECLAIMED WATER MAIN, STORM WATER PIPES AND INLETS AND ALSO CONSTRUCTION OF ROADWAYS) SHALL BE CERTIFIED WITH THE FLORIDA STATE DEPARTMENT OF PROFESSIONAL REGULATIONS (DPR) FOR THE TYPE OF WORK THAT THEY PERFORM. A COPY OF THE VALID LICENSE IS REQUIRED AT PRE CONSTRUCTION MEETING.
34. UTILITY DEPTH:
    – HIGH VOLTAGE UTILITIES SUCH AS POWER (FEEDER, SERVICE AND DROPS) SHALL BE BURIED A MINIMUM OF 30 INCHES IN DEPTH.
    – LOW VOLTAGE UTILITIES SUCH AS PHONE AND CABLE TV SHALL BE BURIED A MINIMUM OF 12 INCHES IN DEPTH FOR FEEDER AND SERVICES. SERVICE DROPS SHALL BE BURIED A MINIMUM OF 6 INCHES IN DEPTH.
    – HIGH VOLTAGE UTILITIES INSTALLED PARALLEL TO PRESSURE MAINS SHALL MAINTAIN A MINIMUM FIVE FOOT SEPARATION.
35. GEOTECHNICAL TESTING REPORTS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER SHALL BE SUBMITTED TO THE CITY OF ORMOND BEACH PRIOR TO FINAL SIGN OFF. REPORTS SHALL CLEARLY LABEL PROJECT NAME AND PHASE.

CITY OF ORMOND BEACH FLORIDA	STANDARD CONSTRUCTION DETAIL ROADWAY CONSTRUCTION NOTES	INDEX R–1C MAY 2020

IN ORDER TO ENSURE THAT NEW DEVELOPMENTS WITHIN THE CITY ARE CONSTRUCTED SUBSTANTIALLY IN ACCORDANCE WITH CITY REGULATIONS AND THE APPROVED DRAWINGS "AS-BUILT" DRAWINGS ARE REQUIRED:

THE FOLLOWING INFORMATION IS REQUIRED ON ALL PAVING AND DRAINAGE "AS-BUILT" DRAWINGS:

1. PAVEMENT AND CURB WIDTHS SHALL BE VERIFIED AND DIMENSIONED FOR EACH STREET AT EACH BLOCK. ALL RADII AT INTERSECTIONS SHALL BE VERIFIED AND DIMENSIONED. THIS INFORMATION TO CLEARLY INDICATE IT AS AS BEING "AS-BUILT" INFORMATION.
2. ROADWAY ELEVATIONS SHALL BE RECORDED AT ALL GRADE CHANGES OR OTHER INTERVALS AS NEEDED ALONG ALL STREETS. STREET CENTERLINE AND CURB INVERT ELEVATIONS SHALL BE RECORDED AS NOTED. THE "AS-BUILT" CENTERLINE PROFILE OF ALL STREETS SHALL ALSO BE SHOWN ON THE PLAN AND PROFILE SO IT MAY BE COMPARED TO THE EXISTING AND DESIGNED PROFILE GRADE LINES. ALL STREET CENTERLINES ON "AS-BUILTS" SHALL BE LABELED WITH STREET NAME AND RIGHT–OF–WAY WIDTH ON EVERY PAGE.
3. STORM DRAINAGE STRUCTURES SHALL BE LOCATED AND/OR DIMENSIONED FROM CENTERLINES OR LOT LINES AS APPROPRIATE.
4. STORM DRAINAGE PIPE INVERT AND STRUCTURE TOP AND BOTTOM ELEVATIONS SHALL BE RECORDED AND CLEARLY DENOTED AS "AS-BUILT" INFORMATION. DESIGN ELEVATIONS SHALL BE CROSSED OUT AND "AS-BUILT" INFORMATION WRITTEN NEXT TO IT.
5. STORM DRAINAGE PIPE MATERIAL, LENGTH, AND SIZE SHALL BE MEASURED AND/OR VERIFIED. THIS INFORMATION TO CLEARLY INDICATE IT AS BEING "AS-BUILT" INFORMATION.
6. ALL APPLICABLE TOPOGRAPHIC INFORMATION, PERTINENT TO THE ON SITE DRAINAGE SYSTEM SUCH AS DITCHES, LAKES, CANALS, ETC. THAT ARE DEEMED APPROPRIATE BY THE CITY SHALL BE NOTED. NORMALLY, RECORDING ELEVATIONS EVERY 100 FEET AT THE TOP OF BANK AND TOE OF SLOPE WILL BE REQUIRED. MEASUREMENTS SHALL BE TAKEN AND RECORDED IN ORDER TO ACCURATELY TIE DOWN THESE FEATURES TO THE ROADWAY CENTERLINES AND TO PLAT LINES. WHENEVER POSSIBLE, CONTOUR LINES SHALL BE UTILIZED TO GRAPHICALLY DESCRIBE THESE TOPOGRAPHIC FEATURES.
7. RETENTION AREAS SHALL HAVE THEIR TOP–OF–BANK AND BOTTOM ELEVATIONS RECORDED. ACTUAL MEASUREMENTS SHALL BE TAKEN AND DIMENSIONS RECORDED OF THE SIZE OF ALL RETENTION AREAS. MEASUREMENTS SHALL BE DONE FROM TOP–OF–BANK TO TOP–OF–BANK WITH SIDE SLOPES AS INDICATED. SEPARATE CALCULATIONS SHALL BE SUBMITTED TO INDICATE REQUIRED AND PROVIDED RETENTION VOLUMES.
8. STORM DRAINAGE SWALE CENTERLINES SHALL BE LOCATED AND ELEVATIONS OF FLOW LINE SHALL BE RECORDED EVERY 100 FEET.
9. ANY SPECIAL FEATURES SUCH AS CONCRETE FLUMES, LAKE BANKS, WALLS, FENCING, ETC., WHICH WERE A PART OF THE APPROVED CONSTRUCTION DRAWINGS SHOULD ALSO BE LOCATED AND DIMENSIONED.
10. ACTUAL MATERIALS USED AND ELEVATIONS AND DIMENSIONS OF OVERFLOW WEIR STRUCTURES AND SKIMMERS SHALL BE NOTED ON THE "AS-BUILT".

THE FOLLOWING INFORMATION IS REQUIRED ON ALL WATER AND SEWER "AS-BUILT" DRAWINGS:

11. SANITARY SEWER MANHOLES SHALL BE VERIFIED AND DIMENSIONED FROM STREET CENTERLINES OR LOT LINES AS APPROPRIATE. ALL RIM AND INVERT ELEVATIONS SHALL BE VERIFIED AND RECORDED. THIS INFORMATION TO CLEARLY INDICATE IT AS BEING "AS-BUILT" INFORMATION.
12. SANITARY SEWER LINE LENGTHS, SIZES, MATERIAL, SLOPE, ETC., SHALL BE VERIFIED AND RECORDED. THIS INFORMATION TO CLEARLY INDICATE IT AS BEING "AS-BUILT" INFORMATION.

CITY OF ORMOND BEACH FLORIDA	STANDARD CONSTRUCTION DETAIL REQUIREMENTS FOR "AS–BUILT" DRAWINGS	INDEX M–1A MAY 2020

13. SEWER LATERALS SHALL BE VERIFIED AND RECORDED AT THEIR CLEAN–OUT LOCATIONS. STATIONING AND OFFSET DISTANCES SHALL BE MEASURED FROM DOWNSTREAM MANHOLES TOWARDS UPSTREAM MANHOLES.
14. ALL STATIONS AND FORCE MAINS SHALL BE VERIFIED AND DIMENSIONED FROM STREET CENTERLINES OR LOT LINES AS APPROPRIATE. FORCE MAIN DEPTH AND LOCATION INCLUDING VALVES WILL BE PROVIDED AND TIED TO PERMANENT ABOVE GRADE FEATURES EVERY 500 FEET. DIMENSIONAL AND ELEVATION INFORMATION INDICATED ON THE APPROVED PLAN SHALL BE VERIFIED AND RECORDED. THIS INFORMATION TO CLEARLY INDICATE IT AS BEING "AS–BUILT" INFORMATION. BURIED ELECTRICAL SERVICE LINE SHALL BE CLEARLY DIMENSIONED, LOCATED AND LABELED.
15. VAVE OUTS OR METAL TABS, USED TO MARK SEWER LATERALS, WATER SERVICES AND WATER VALVES, SHALL BE VERIFIED FOR PRESENCE AND ACCURACY OF LOCATION.
16. WATER MAIN LINES SHALL BE DIMENSIONED OFF THE BACK OF CURB OR EDGE OF PAVEMENT IF NO CURB IS INSTALLED. WATER MAIN LINE MATERIAL, SIZE, LENGTH AND DEPTH SHALL ALSO BE NOTED. THIS INFORMATION TO CLEARLY INDICATE IT AS BEING "AS–BUILT" INFORMATION.
17. WATER VALVES, TEES, ALL SERVICES, BLOW – OFFS AND FIRE HYDRANTS SHALL BE LOCATED BY TYING THEM TO SANITARY SEWER MANHOLES. STATIONING AND OFFSET DISTANCES SHALL BE MEASURED FROM DOWNSTREAM MANHOLES TO UPSTREAM MANHOLES.

THE FOLLOWING INFORMATION IS GENERAL REQUIREMENTS OF ALL "AS–BUILT" DRAWINGS:

18. FOR PERPENDICULAR CROSSINGS OF STORM WATER, SANITARY SEWER, POTABLE WATER, OR RECLAIMED WATER MAINS, THE "AS–BUILT" PLANS SHALL CLEARLY INDICATE WHICH UTILITIES ARE LOCATED OVER OR UNDER OTHER UTILITIES, AS NECESSARY.
19. WHEN STORM WATER, POTABLE WATER, RECLAIMED WATER, OR SANITARY SEWER IMPROVEMENTS ARE LOCATED WITHIN AN EASEMENT, THE "AS–BUILT" SHALL ACCURATELY DEPICT THE LOCATION OF THE EASEMENT ITSELF AS WELL AS THE EXACT LOCATION OF THE IMPROVEMENTS WITHIN THE EASEMENT. THIS IS REQUIRED IN ORDER TO VERIFY THAT THE IMPROVEMENTS HAVE BEEN PROPERLY LOCATED AND TO ENSURE THAT FUTURE SUBSURFACE EXCAVATION TO PERFORM REPAIRS OR REPAIR CAN BE ACCOMPLISHED WITHOUT DISTURBANCE BEYOND THE EASEMENT. SUCH DOCUMENTATION AND THE ASSOCIATED

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF ORMOND BEACH'S LAND DEVELOPMENT CODE REQUIREMENTS, AND THE STANDARD CONSTRUCTION DETAILS AND CONSTRUCTION SPECIFICATIONS (SCDCS). AN ENGINEERING PERMIT AND TREE REMOVAL PERMIT IS REQUIRED PRIOR TO STARTING CONSTRUCTION.
2. NO LAND SHALL BE CLEARED, EXCAVATED OR FILLED AND NO STRUCTURE SHALL BE ERECTED, REPAIRED OR DEMOLISHED WITHOUT PROPER PERMIT(S) AS REQUIRED BY THE CITY OF ORMOND BEACH.
3. NOTIFY THE CITY OF ORMOND BEACH AT COMDEV@ORMONDBEACH.ORG 48 HOURS PRIOR TO THE START OF CONSTRUCTION.
4. ANY CONSTRUCTION CHANGES TO APPROVED PLANS SHALL BE SUBMITTED TO THE CITY OF ORMOND BEACH FOR APPROVAL PRIOR TO PERFORMING THE WORK.
5. ROAD CONSTRUCTION AND PIPE INSTALLATION COMPACTION AND DENSITY TESTING SHALL CONFORM TO THE CITY OF ORMOND BEACH'S MINIMUM REQUIREMENTS. CERTIFIED COPIES OF TEST REPORTS SHALL BE SUBMITTED TO THE CITY INSPECTOR AND THE CITY'S ENGINEERING DIVISION.
6. A PRE-PAVING UTILITY INSPECTION MUST BE REQUESTED AND COMPLETED PRIOR TO THE PAVING OF ALL ROADS, STREETS, AND PARKING AREAS.
7. A FINAL INSPECTION, TO BE CONDUCTED BY THE CITY OF ORMOND BEACH, SHALL BE PERFORMED ON ALL CONSTRUCTION. THE DESIGN ENGINEER SHALL NOTIFY THE CITY OF ORMOND BEACH AT COMDEV@ORMONDBEACH.ORG WHEN REQUESTING A FINAL INSPECTION.
8. THREE COMPLETE SETS OF AS-BUILT DRAWINGS (5 FOR SUBDIVISIONS) ARE REQUIRED TO BE SUBMITTED TO THE CITY OF ORMOND BEACH PRIOR TO REQUESTING A FINAL INSPECTION. AS-BUILT DRAWINGS MAY BE SUBMITTED IN DIGITAL FORMAT WITH DIGITAL SIGNATURE OF SURVEYOR AND/OR ENGINEER OF RECORD.
9. THE CITY HAS A CONTRACTOR FOR ROLL OFF SERVICE. NO OTHER CONTRACTOR SHALL BE PERMITTED TO PROVIDE THIS SERVICE. VERIFY COMPANY UNDER CONTRACT WITH THE CITY.
10. CONSTRUCTION SITES THAT DISTURB ONE ACRE OR MORE WILL BE REQUIRED TO SEEK COVERAGE UNDER THE GENERIC PERMIT FOR STORM WATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES. IN ACCORDANCE WITH THIS REQUIREMENT, A STORM WATER POLLUTION PREVENTION PLAN (SWPP) MUST BE SUBMITTED TO THE CITY OF ORMOND BEACH AT COMDEV@ORMONDBEACH.ORG PRIOR TO CONSTRUCTION TO BE IN COMPLIANCE WITH THE PERMIT.
11. CONTRACTOR WILL FOLLOW REQUIRED WASTE MANAGEMENT PRACTICES
12. SEEDING OR SODDING SHALL BE INITIATED FOR EROSION AND SEDIMENT CONTROL ON DISTURBED AREAS AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED.
13. ANY FIELD MODIFICATIONS OR DEVIATIONS TO THIS CONSTRUCTION PLAN REQUIRES WRITTEN APPROVAL BY BOTH THE ENGINEER OF RECORD AND THE CITY OF ORMOND BEACH.

STANDARD CONSTRUCTION DETAIL
GENERAL CONSTRUCTION NOTES
INDEX M-2
MAY 2020

SANITARY SEWER CONSTRUCTION GENERAL NOTES

1. THE CITY'S PUBLIC WORKS – UTILITY DIVISION DEPARTMENT SHALL BE NOTIFIED PRIOR TO BEGINNING ANY SEWER CONSTRUCTION.
2. ALL GRAVITY SANITARY SEWER LINES SHALL BE A MINIMUM OF 8" IN DIAMETER. SERVICE LATERALS SHALL BE A MINIMUM OF 4" DIAMETER (RESIDENTIAL) OR A MINIMUM OF 6" DIAMETER (COMMERCIAL)
3. ALL SANITARY SEWER MAINS SHALL BE PVC SDR 26, IN PLACES WHERE A MINIMUM COVER OF 4.0' CANNOT BE MAINTAINED, C-900 GREEN PVC DR-25, CLASS 100 OR CONCRETE ENCASEMENT SHALL BE USED.
4. MINIMUM ALLOWABLE SANITARY SEWER SLOPES ALLOWED ARE:
   8" PIPE 0.40%
   10" PIPE 0.30%
   12" PIPE 0.22%
5. SEWER LINE CONSTRUCTION SHALL BE ACCOMPLISHED BY THE USE OF A LASER INSTRUMENT.
6. THE CONTRACTOR SHALL AT ALL TIMES, DURING PIPE LAYING, DEWATER THE GROUND SUFFICIENTLY TO KEEP THE GROUNDWATER ELEVATION A MINIMUM OF 6" BELOW THE PIPE BEING LAID WITHIN THE AREA OF THE TRENCH.
7. ALL PIPES SHALL BE LAID ON A FIRM FOUNDATION. SOFT OR SPONGY BEDDING FOR PIPES WILL NOT BE ACCEPTED. ANY UNSUITABLE MATERIAL SHALL BE REMOVED AND REPLACED WITH A DRY, COMPACTED, GRANULAR MATERIAL SATISFACTORY TO THE CITY.
8. TRENCHES SHALL BE BACKFILLED WITH CLEAN GRANULAR MATERIAL IN MAX. 1' LIFTS WITH A MINIMUM COMPACTION OF 98 PERCENT (AASHTO-T180) IN PAVED AREAS AND 95 PERCENT IN UNPAVED AREAS.
9. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT TRENCH COMPACTION TEST BE PROVIDED AT POINTS 1 FOOT ABOVE THE PIPE AND AT 1 FOOT VERTICAL INTERVALS TO FINISH GRADE, AT A MINIMUM SPACING OF EVERY 300 FEET, AND TO FURNISH COPIES OF TEST REPORTS PROMPTLY TO THE CITY INSPECTOR.
10. EXCAVATION AND BACKFILL: THE CONTRACTOR SHALL PROVIDE ADEQUATE SHEETING AND BRACING OF EXCAVATION WORK OR USE OF TRENCH BOX IN ORDER TO PROVIDE FOR THE SAFETY OF WORKMEN, AS WELL AS REPRESENTATIVES OF THE CITY, THE DESIGN ENGINEER, AND THE DEVELOPER.
11. THE CONTRACTOR SHALL INSTALL A METALLIZED FOIL LOCATER TAPE, OR SIMILAR DEVICE AS MAY BE APPROVED BY THE CITY FOR THE FULL LENGTH OF ALL PVC WATER, RECLAIMED WATER AND SEWAGE FORCE MAINS. THIS PIPE LOCATER AID SHALL BE INSTALLED 18 INCHES ABOVE TOP OF PIPE OR AS DIRECTED BY THE MANUFACTURER AND IS IN ADDITION TO THE LOCATER WIRE REQUIRED IN THE UTILITY PIPE LOCATION MATERIALS DETAIL (MISCELLANEOUS DETAILS SECTION – M10).
12. MANHOLES SHALL BE LOCATED AT INTERVALS NOT EXCEEDING 400 FEET.
13. MANHOLE RIMS SHALL MATCH FLUSH WITH THE FINISH GRADE ELEVATION IN PAVED AREAS AND A MINIMUM OF 0.2 FEET ABOVE GRADE IN UNPAVED AREAS.

STANDARD CONSTRUCTION DETAIL
GENERAL NOTES
SANITARY SEWER CONSTRUCTION
INDEX S-1A
JUNE 2023

SANITARY SEWER CONSTRUCTION GENERAL NOTES

14. THE CONTRACTOR SHALL CONSTRUCT SANITARY SEWER MANHOLES IN SUCH A WAY THAT SEWER LINES DO NOT INTERSECT SEALED JOINTS BETWEEN SECTIONS OF THE MANHOLE.
15. RUBBER BOOTS AND STAINLESS STEEL BANDS SHALL BE UTILIZED IN THE CONNECTION OF THE SEWER MAIN TO THE MANHOLES (SEE RUBBER BOOT AND PRECAST JOINT CONNECTION DETAIL).
16. DOGHOUSE TYPE MANHOLES ARE NOT PERMITTED WITHIN THE CITY OF ORMOND BEACH
17. INDIVIDUAL SANITARY SERVICE CONNECTORS ON NEW CONSTRUCTION SHALL NOT BE CONNECTED DIRECTLY INTO MANHOLES, BUT TO SEWER MAIN LINES BY USE OF PVC WYE CONNECTIONS.
18. FOR SINGLE FAMILY HOMES, SINGLE FOUR INCH SEWER SERVICES SHALL BE CONSTRUCTED AT EACH LOT OR UNIT AND LOCATED ON THE DOWNSTREAM SIDE OF THE LOT CENTER LINE. THESE SERVICES SHALL BE EXTENDED 4 FEET ABOVE GROUND AT THE PROPERTY LINE WITH A PVC RISER AND PLUG BEING EASILY VISIBLE FROM THE ROAD. RUBBER SEAL FITTINGS TO BE USED ON ALL LINES, NO GLUED JOINTS.
19. FOR MULTI-FAMILY AND COMMERCIAL SITES, SIX INCH MINIMUM SEWER SERVICES AND CLEANOUTS SHALL BE PROVIDED AS APPROVED BY THE CITY.
20. SANITARY SEWER LATERALS LONGER THAN 70 FEET, MEASURED FROM THE SEWER MAIN TO THE RIGHT-OF-WAY LINE MAY BE APPROVED ON A CASE BY CASE BASIS. SUCH LATERALS SHALL BE D.I.P. EPOXY LINED OR C-900 PVC.
21. SANITARY SEWER MANHOLES WHICH HAVE SEWER FORCE MAINS DISCHARGING DIRECTLY INTO THEM, OR ANY MANHOLE WITHIN 200 FEET OF A LIFT STATION, SHALL BE FIBERGLASS OR PVC LINED. RETRO-FITTING OF MANHOLES WITH LINERS SHALL BE REQUIRED WHEN NEW CONNECTIONS SUCH AS THIS ARE MADE. LINING SHALL BE AGRU SURE-GRIP, RAVEN, SEWERCOAT, GREEN MONSTER, OR PRE-APPROVED EQUAL.
22. SEE CHART ON DETAIL INDEX S-1C FOR FORCE MAIN AND REUSE PIPE SIZE AND MATERIALS.
23. THE CITY OF ORMOND BEACH REQUIRES THE DEVELOPER/CONTRACTOR TO TELEVISE ALL SANITARY SEWER MAINS AND LATERALS PRIOR TO ACCEPTANCE AND RESERVES THE RIGHT TO REQUEST WATER AND AIR TESTING. A REPUTABLE COMPANY THAT ENGAGES IN THIS TYPE OF WORK SHALL CONDUCT THE TELEVISING PROCESS. THE DVD AND/OR DIGITAL FILE SHALL BE NON STOP WITH AUDIO DESCRIBING WHAT IS BEING REVIEWED. WRITTEN DVD LOGS DESCRIBING THE CONDITION OF THE LINES SHALL ACCOMPANY THE DVD SUBMISSION TO THE CITY. THIS PROCESS SHALL BE WITNESSED BY A REPRESENTATIVE OF THE CITY OF ORMOND BEACH.
24. ALL DUCTILE IRON VALVES AND FITTINGS SHALL HAVE PROTECTO 401 LINER OR APPROVED EQUAL
25. ALL DIRECT BURY FORCE MAINS SHALL BE AWWA C-900 PVC.
26. ALL DIRECTIONAL DRILL FORCE MAINS SHALL BE AWWA C-900 FUSIBLE PVC. HDPE IS ONLY ALLOWED TO BE USED UNDER SPECIAL CIRCUMSTANCES APPROVED BY UTILITIES ENGINEER OR UTILITIES MANAGER.
27. FORCE MAINS SHALL HAVE VALVES EVERY 1,000 LF.

STANDARD CONSTRUCTION DETAIL
GENERAL NOTES
SANITARY SEWER CONSTRUCTION
INDEX S-1B
JUNE 2023

SANITARY SEWER CONSTRUCTION GENERAL NOTES

28. ALL MANHOLES CONSTRUCTED IN SIDE YARDS, BACKYARDS, AND EASEMENTS OFF THE RIGHT-OF-WAY SHALL BE OUTFITTED WITH FIBERGLASS LINERS OR OTHER TYPES OF LINERS OR COATINGS APPROVED BY THE CITY. IN ADDITION THE CITY MAY REQUIRE LINERS OR COATINGS TO BE INSTALLED IN OTHER AREAS WHERE THE PUBLIC UTILITY DEPARTMENTS BELIEVE THE NEED IS JUSTIFIED.
29. ALL SEWER LINES WHICH ARE CONSTRUCTED OFF PUBLIC RIGHTS-OF-WAY WITHIN SIDEYARDS, BACKYARDS, AND OTHER POORLY ACCESSIBLE AREAS SHALL BE CONSTRUCTED OF C-900 PVC. ABSOLUTELY NO USE OF PLASTIC STYRENE FITTINGS SHALL BE ALLOWED.
30. SEWER LATERAL LOCATIONS SHALL BE MARKED ALONG THE OUTSIDE OF THE CURB WITH A SAW CUT 'V, OR BY A METAL TAB SET INTO THE PAVEMENT.
31. EZ-WRAP PLASTIC, AS MANUFACTURED BY PRESS-SEAL GASKET CORPORATION OR APPROVED EQUAL, SHALL BE USED ON THE OUTSIDE OF ALL MANHOLE AND WET WELL JOINTS. APPLY ONE LAYER OF 9" WRAP CENTERED ON EACH JOINT. A CITY INSPECTOR SHALL PERSONALLY INSPECT ALL JOINT SEALS PRIOR TO BACKFILLING OPERATIONS .
32. ALL PROPOSED SEWER MAINS, 4" OR GREATER, SHALL BE FLUSHED AND CLEANED WITH A POLY PIG IN ACCORDANCE WITH LATEST AWWA STANDARDS AND THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION REQUIREMENTS.
33. ALL SEWER MAINS SHALL HAVE A MINIMUM COVER OF 36 INCHES AND A MAXIMUM DEPTH OF 18' TO ANY MANHOLE OR 22' TO ANY WETWELL. IN SPECIAL CASES WHERE IT IS IMPOSSIBLE OR INAPPROPRIATE TO PROVIDE ADEQUATE COVER C900/C905 OR CONCRETE ENCASEMENT MAY BE USED AS APPROVED BY THE CITY.
34. FORCE MAIN SYSTEMS SHALL BE PRESSURE TESTED AT 100 PSI STATIC PRESSURE FOR A PERIOD OF 2 HOURS PER AWWA STANDARDS. TESTS SHALL BE CONDUCTED BEFORE FINAL PAVING AND IN THE PRESENCE OF THE CITY'S INSPECTOR. SUBMIT FOR FDEP CLEARANCE
35. DURING CONSTRUCTION, CONTRACTOR SHALL ISOLATE NEW SANITARY SEWER CONSTRUCTION FROM EXISTING SANITARY SEWER MAINS. THIS ISOLATION MAY BE BY INSTALLATION OF A BLADDER/PLUG PLACED AT POINT OF CONNECTION OR BY OTHER METHODS. THE PURPOSE OF THIS ISOLATION IS TO ENSURE SURFACE WATER IS NOT RELEASED TO THE TREATMENT PLANT. SURFACE WATER SHALL BE REMOVED PRIOR TO THE BLADDER BEING REMOVED.

FORCE MAIN & REUSE MAIN STANDARDS

DIAMETER	MATERIAL	STANDARD
2" – 4"	PVC 1120 / SDR 21	ASTM D 2241
> 4" – 12"	PVC 1120 / CLASS 100	AWWA C 900
14" – 36" (16"– 24" ⟶ DR – 18) (30"– 36" ⟶ DR – 21)	PVC 1120	AWWA C 905
ALL SIZES	HDPE (DIPS) DR 13.5	ASTM F 714
ALL SIZES	FUSIBLE PVC	AWWA C900 OR C905

NOTE: PVC PIPE COLOR SHALL BE GREEN FOR SEWER FORCE MAIN, AND PURPLE FOR REUSE MAIN.

STANDARD CONSTRUCTION DETAIL
GENERAL NOTES
SANITARY SEWER CONSTRUCTION
INDEX S-1C
JUNE 2023

GENERAL NOTES
WATER SYSTEM CONSTRUCTION

1. THE CITY'S PUBLIC UTILITIES DEPARTMENT SHALL BE NOTIFIED PRIOR TO BEGINNING ANY WATER SYSTEM CONSTRUCTION.
2. DEWATERING SHALL BE PROVIDED TO KEEP GROUNDWATER ELEVATION A MINIMUM OF 6 INCHES BELOW WATER MAIN BEING LAID.
3. ALL WATER MAINS SHALL BE LAID ON A FIRM FOUNDATION WITH ALL UNSUITABLE MATERIAL (MUCK, ROCK, COQUINA, ETC.) REMOVED AND REPLACED WITH CLEAN GRANULAR MATERIAL.
4. TRENCHES SHALL BE BACKFILLED WITH CLEAN GRANULAR MATERIAL IN MAX. 1' LIFTS WITH A MINIMUM COMPACTION OF 98 PERCENT (AASHTO-T180) IN PAVED AREAS AND 90 PERCENT IN UNPAVED AREAS.
5. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT TRENCH COMPACTION TESTS BE PROVIDED AT POINTS 1 FOOT ABOVE THE PIPE AND AT 1 FOOT VERTICAL INTERVALS TO FINISH GRADE, AT A MINIMUM SPACING OF EVERY 300 FEET, AND TO FURNISH COPIES OF TEST REPORTS PROMPTLY TO THE CITY INSPECTOR.
6. METALLIZED PIPE LOCATION TAPE SHALL BE LOCATED 18 INCHES ABOVE TOP OF PIPE OR AS SPECIFIED BY MANUFACTURER FOR ALL PVC LINES. MARKER TAPE SHALL BE USED ON ALL DUCTILE IRON PIPE.
7. WATER SERVICES (SINGLE 1") SHALL BE POLYETHYLENE TUBING (BLUE IN COLOR) ; POLYBUTYLENE SHALL NOT BE ALLOWED.
8. ALL WATER SERVICE ENDINGS SHALL BE MARKED WITH 4" X 4" LUMBER (PRESSURE TREATED) EXTENDING 4 FEET ABOVE GRADE, WITH WATER SERVICES SECURED 24" ABOVE THE GROUND. WIRE TIES SHALL BE USED TO SECURE THE CURB STOPS TO SUPPORT POSTS.
9. WATER VALVES SHALL BE PLACED AT ALL STREET INTERSECTIONS AND AT MAXIMUM SPACING OF 500 FEET.
10. AT ALL WATER MAIN TEES AND CROSSES, VALVES SHALL BE INSTALLED ON ALL LEGS EXCEPT ONE.
11. APPROVED WATER VALVE TYPES ARE THE FOLLOWING:
    A. STANDARD GATE VALVES LESS THAN 48" DIAMETER RESILIENT SEAT GATE VALVES (AWWA C-509 OR C-515).
    B. MECHANICAL TAPPING SLEEVE SHALL BE STAINLESS STEEL. (AWWA C - 509)
    C. 2" OR SMALLER VALVES SHALL BE BRASS BALL VALVES.

STANDARD CONSTRUCTION DETAIL
GENERAL NOTES
WATER SYSTEM CONSTRUCTION
INDEX W-1A
JUNE 2023

GENERAL NOTES
WATER SYSTEM CONSTRUCTION

23. WATER SYSTEMS SHALL BE PRESSURE TESTED AT 150 PSI STATIC PRESSURE FOR A PERIOD OF 2 HOURS PER AWWA STANDARDS. TESTS SHALL BE CONDUCTED BEFORE FINAL PAVING AND IN THE PRESENCE OF THE CITY'S INSPECTOR.
24. ALL WATER SERVICES SHALL BE MARKED WITH A "^" SAW CUT INTO THE CURB OR BY METAL TABS SET INTO THE PAVEMENT.
25. ALL WATER VALVES AND BLOW-OFFS SHALL BE MARKED WITH AN "X" SAW CUT INTO THE CURB OR BY METAL TABS SET INTO THE PAVEMENT. LOCATION OF METAL TABS IN INCHES FROM EDGE OF PAVEMENT SHALL EQUAL DISTANCE IN FEET FROM EDGE OF PAVEMENT TO VALVE.
26. UNIFLANGE 1300 SERIES PIPE RESTRAINTS AS MANUFACTURED BY FORD OR APPROVED EQUAL MAY BE USED AS APPROPRIATE FOR RESTRAINING IN-LINE PRESSURE PIPE EACH SIDE OF PIPE JOINT. AS REQUIRED BY RESTRAINT TABLE.
27. TRACING WIRE SHALL BE INSTALLED IN ACCORDANCE WITH UTILITY PIPE LOCATION MATERIALS DETAIL.
28. NO GALVANIZED PIPE, FITTINGS, ETC. ARE ACCEPTED.
29. ALL WATER METERS SHALL BE INSTALLED AT THE RIGHT OF WAY LINE ONLY REGARDLESS OF SIZE.
30. SUBMIT ASSEMBLY CERTIFICATION FOR ALL BACKFLOW PREVENTERS TO THE CITY'S ENGINEERING & PLANNING DEPARTMENT BEFORE FINAL INSPECTION AT COMDEV@ORMONDBEACH.ORG.
31. PIPING FOR RAW WATER SHALL BE WHITE FOR ABOVE GROUND PIPING, BURIED PVC PIPING SHALL BE WHITE WITH LOCATOR TAPE PLACED DIRECTLY ON TOP OF THE PIPE AND AT 12" TO 18" ABOVE THE PIPE. THE TAPE SHALL CONTINUOUSLY READ "CAUTION – RAW WATER MAIN BURIED BELOW" OR WHITE WITH LOCATOR TAPE PLACED 12" TO 18" ABOVE THE TOP OF THE PIPE.
32. SEE CHART BELOW FOR WATER MAIN SIZE AND MATERIALS.

MATERIALS	
DIAMETER	MATERIAL / STANDARD
1" – 2"	BLUE ENDOT ENDOTRACE POLYETHYLENE TUBING (CTS 7008) / ASTM D 2737
4" – 12"	PVC DR-18 / AWWA C 900
> 4" – 12" DEDICATED FIRE LINE	PVC DR-14 / AWWA C 900
14" – 36" (16"– 24" ⟶ DR – 18) (30"– 36" ⟶ DR – 21)	PVC 1120 / AWWA C 905
ALL SIZES	HDPE DIPS DR 11 / ASTM F 714

NOTE: PVC PIPE COLOR SHALL BE BLUE FOR POTABLE WATER MAINS, BLUE WITH WHITE LOCATOR TAPE OR WHITE WHITE LOCATOR TAPE FOR RAW WATER MAIN.

STANDARD CONSTRUCTION DETAIL
GENERAL NOTES
WATER SYSTEM CONSTRUCTION
INDEX W-1C
JUNE 2023

GENERAL NOTES
WATER SYSTEM CONSTRUCTION

12. ALL WATER VALVE BOXES SHALL BE ADJUSTED TO FINISH GRADE AND THE LIDS PAINTED BLUE TO MAKE THEM PLAINLY VISIBLE.
13. WATER VALVES SHALL BE COMPLETELY OPENED BY THE CONTRACTOR UPON FINAL ACCEPTANCE OF NEW WATER SYSTEMS IN THE PRESENCE OF UTILITY DEPARTMENT PERSONNEL.
14. HYDRANTS SHALL BE PLACED AT 500 FEET MAXIMUM SPACING IN RESIDENTIAL DEVELOPMENTS AND AT 300 FEET MAXIMUM SPACING IN BUSINESS AND INDUSTRIAL DEVELOPMENTS. ALL WATER MAINS TO WHICH HYDRANTS ARE CONNECTED SHALL BE 8 INCHES MINIMUM.
15. ALL FIRE HYDRANTS SHALL BE CONSTRUCTED TO MAKE THEM EASILY ACCESSIBLE TO FIRE PERSONNEL IN CASE OF FIRE. THE MAIN NOZZLE CONNECTION SHOULD ALWAYS FACE THE STREET AND BE 18-24" ABOVE GRADE.
16. AS STANDARD PRACTICE, WATER MAINS SHALL BE INSTALLED 4 FEET OFF THE BACK OF CURB OR AS APPROVED BY THE CITY.
17. ALL WATER MAINS SHALL BE NSF-APPROVED FOR POTABLE WATER USE, AND SHALL HAVE A MINIMUM COVER OF 36 INCHES. IN SPECIAL CASES WHERE IT IS IMPOSSIBLE OR INAPPROPRIATE TO PROVIDE ADEQUATE COVER, DUCTILE IRON CLASS 350 MAY BE USED AS APPROVED BY THE CITY.
18. ALL NEWLY CONSTRUCTED WATER MAINS SHALL BE FLUSHED, CLEANED WITH A POLY PIG, PRESSURE TESTED, DISINFECTED AND BACTERIOLOGICALLY CLEARED FOR SERVICE IN ACCORDANCE WITH LATEST AWWA STANDARDS AND THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION REQUIREMENTS.
19. WATER MAINS SHALL BE AWWA C-900 CL 150, OR D.I.P. CLASS 350 STANDARD CEMENT LINED AWWA C-104.
20. UPON CONSTRUCTION COMPLETION AND ACCEPTANCE OF THE SYSTEM, IT SHALL BE THE DESIGN ENGINEER'S RESPONSIBILITY TO ENSURE THAT THE SYSTEM IS PROPERLY CERTIFIED AND ACCEPTED BY THE HEALTH DEPARTMENT, AND THAT CERTIFIED AS-BUILT DRAWINGS (24"x36") ARE PROVIDED TO THE CITY PRIOR TO PAVING AND ANY USE OF THE SYSTEM. SEE M-1A & M-1B FOR AS-BUILT REQUIREMENTS
21. MEGALUG OR EQUIVALENT, RESTRAINED JOINT SYSTEM MAY BE USED ON ALL RESTRAINED FITTINGS, VALVES, ETC. MINIMUM DEPTH OF BURY ON PIPES NOT MEETING REQUIRED COVER REQUIREMENTS SHALL FOLLOW THE MOST RECENT DIPRA THRUST RESTRAINT DESIGN GUIDELINES.
22. ALL DI BENDS, TEES, VALVES, WYE FITTINGS TO HAVE CEMENT INTERIOR LINING IN ACCORDANCE WITH AWWA C-550

STANDARD CONSTRUCTION DETAIL
GENERAL NOTES
WATER SYSTEM CONSTRUCTION
INDEX W-1B
JUNE 2023

1. CONSTRUCTION STANDARDS FOR ALL DRAINAGE SYSTEM COMPONENTS SHALL CONFORM TO THE LATEST EDITION OF THE "FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AND AS SPECIFIED HEREIN.
2. ALL STORM WATER PIPES AND STRUCTURES SHALL BE INSTALLED ON A FIRM FOUNDATION WITH ALL UNSUITABLE MATERIAL (MUCK, ROCK, COQUINA, ETC.) REMOVED AND REPLACED WITH CLEAN GRANULAR MATERIAL.
3. DEWATERING SHALL BE PROVIDED TO KEEP GROUNDWATER ELEVATION A MINIMUM OF 6 INCHES BELOW THE COMPONENT BEING INSTALLED.
4. ALL PIPES AND STRUCTURES SHALL BE PLACED TRUE TO LINES AND GRADES AS DEPICTED ON THE APPROVED PLANS.
5. ALL PIPE JOINTS SHALL BE PROPERLY HONED AND FILTER FABRIC LINED USING A METHOD TO HOLD THE FABRIC IN PLACE DURING BACKFILL.
6. BACKFILL AND COMPACT TO THE SPRING-LINE (CENTER OF PIPE) ELEVATION AND REQUEST CITY INSPECTION AND APPROVAL BEFORE CONTINUING.
7. ALL WORK COVERED WITHOUT CITY INSPECTION WILL BE REQUIRED TO BE EXCAVATED AND INSPECTED AT THE CONTRACTOR'S EXPENSE.
8. TRENCHES SHALL BE BACKFILLED AND COMPACTED WITH CLEAN GRANULAR MATERIAL IN MAX 6" LIFTS WITH A MINIMUM COMPACTION OF 98 PERCENT (AASHTO-T180) IN PAVED AREAS AND 95 PERCENT (AASHTO-T180) IN UNPAVED AREAS.
9. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT TRENCH COMPACTION TESTS AT POINTS 1' ABOVE THE PIPE AND AT A MAX. 1' VERTICAL INTERVALS TO FINISH GRADE, AT A MAXIMUM SPACING OF 100 FEET, AND TO FURNISH COPIES OF TEST REPORTS PROMPTLY TO THE CITY'S INSPECTOR.
10. ALL STORM SEWER PIPE SHALL BE REINFORCED CONCRETE (RCP), HIGH DENSITY POLYETHYLENE (HDPE), POLYVINYL CHLORIDE (PVC) OR ALUMINUM CORRUGATED METAL PIPE (ACMP), AS SHOWN ON THE PLANS.
11. STORM DRAINAGE PIPES WITHIN PUBLIC RIGHT-OF-WAY SHALL BE A MINIMUM OF FIFTEEN (15) INCH RCP DIAMETER OR EQUIVALENT.
12. STORM INLETS, MANHOLES, AND CATCH BASINS SHALL BE EITHER POURED IN PLACE OR PRECAST REINFORCED CONCRETE. STRUCTURES SHALL BE REQUIRED AT EACH CHANGE OF PIPE SIZE OR CHANGE IN PIPE DIRECTION.

STANDARD CONSTRUCTION DETAIL
STORM DRAINAGE
CONSTRUCTION NOTES
INDEX ST-1A
MAY 2020

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NO	DATE	BY	SUBMITTALS/REVISIONS
1	07-02-24	RH/SM	REVISED PER CITY OF ORMOND BEACH COMMENTS

CASSEN PARK
REDEVELOPMENT
FINAL ENGINEERING PLANS
CONSTRUCTION NOTES
CITY OF ORMOND BEACH VOLUSIA COUNTY, FLORIDA

PROJECT NO: ZC 22138
DESIGNED BY: SM
DRAFTED BY: SM
CHECKED BY: RH
DWG FILE:

RANDY M. HUDAK
No. 66557
STATE OF FLORIDA
PROFESSIONAL ENGINEER

RANDY M. HUDAK, P.E., NO. 66557
NOT VALID WITHOUT SEAL

SHEET: C3 OF 13

13. STORM INLETS SHALL BE SPACED IN SUCH A MANNER AS TO ACCEPT ONE HUNDRED (100) PERCENT OF THE DESIGN STORM RUNOFF.

14. WET DETENTION PONDS SHALL BE EIGHT (8) FEET MINIMUM TO TWELVE (12) FEET MAXIMUM DEPTH BELOW THE DESIGN LOW OR NORMAL WATER STAGE.

15. MAXIMUM DISTANCES BETWEEN INLETS AND/OR JUNCTION BOXES:

PIPES SIZE (INCHES)	LENGTH OF RUN (FEET)
15	150
18	300
24 OR GREATER	400

16. ALL SWALES, DITCHES, AND DRY RETENTION POND SIDE SLOPES SHALL BE NO STEEPER THAT 4:1 (H:V) AND SHALL BE SODDED.

17. ALL RETENTION POND BACKSLOPES SHALL BE NO STEEPER THAN 3:1 (H:V) AND SHALL BE SODDED.

18. NORMAL ROADSIDE SWALES SHALL BE CONSTRUCTED TO A MAXIMUM DEPTH OF 18" BELOW THE OUTSIDE EDGE OF PAVEMENT OR CONCRETE CURB.

19. CONCRETE EROSION CONTROL MUST BE PROVIDED WHERE SWALES OR CULVERTS INTERCEPT DRAINAGE DITCHES.

20. A MINIMUM ONE FOOT (1') FREEBOARD ABOVE THE DESIGN HIGH WATER ELEVATION IS REQUIRED AT ALL POINTS AROUND WET RETENTION PONDS.

21. A MINIMUM SIX INCH (6") FREEBOARD ABOVE THE DESIGN HIGH WATER ELEVATION IS REQUIRED AT ALL POINTS AROUND DRY RETENTION PONDS.

22. POND INFLOW SHALL GENERALLY BE CONSTRUCTED WITH REINFORCED CONCRETE AND SHALL BE SUBJECT TO THE APPROVAL OF THE CITY.

23. OUTLET STRUCTURES ARE REQUIRED ON ALL PONDS. ALL OUTLET STRUCTURES SHALL BE PERMANENT CONCRETE OVERFLOW WEIRS OR CONCRETE OUTLET CONTROL STRUCTURES. NO SODDED WEIRS OR OTHER NON-PERMANENT OVERFLOW STRUCTURES SHALL BE ALLOWED.

24. SOIL EROSION CONTROL MEASURES SATISFACTORY TO THE CITY, SHALL BE EMPLOYED DURING CONSTRUCTION AND UPON COMPLETION OF THE POND.

25. THE CITY MAY REQUEST THAT THE DEVELOPER SUBMIT A REPORT BY A QUALIFIED HYDROLOGIST ON THE IMPACT THE POND WILL HAVE ON NEIGHBORING WATER TABLE ELEVATIONS BOTH DURING CONSTRUCTION AND AFTER POND COMPLETION. THE CITY MAY REQUIRE GROUNDWATER MONITORING DURING THE POND EXCAVATION.

STANDARD CONSTRUCTION DETAIL	INDEX
STORM DRAINAGE CONSTRUCTION NOTES	ST-1B
	MAY 2020

CONTRACTOR REQUIREMENTS FOR SITE CLEARING, GRADING, AND EROSION CONTROL DESIGN AND CONSTRUCTION NOTES

THE FOLLOWING MEASURES REPRESENT MINIMUM STANDARDS TO BE ADHERED TO BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION OF A PROJECT. THE CITY RESERVES THE RIGHT TO REQUIRE ADDITIONAL MEASURES TO BE EMPLOYED WHEN WARRANTED BY EXTREME CONDITIONS AND/OR THE FAILURE OF THE CONTRACTOR TO EMPLOY THE APPROPRIATE EROSION CONTROL BEST MANAGEMENT PRACTICES. FAILURE TO COMPLY WITH THESE PROVISIONS SHALL RESULT IN THE ISSUANCE OF A "STOP WORK ORDER".

1. NO DISTURBANCE OF PROPOSED CONSERVATION EASEMENTS, NATURAL BUFFERS, OR WATER BODIES IS PERMITTED. THE CONTRACTOR SHALL LOCATE THESE AREAS ON SITE AND BARRICADE THEM TO AVOID ANY UNAUTHORIZED CLEARING. BARRICADES AND OTHER PROTECTIVE FENCING ARE TO BE LOCATED AT THE DRIP LINE OF EXISTING NATIVE TREES OR AT THE EDGE OF THE NATIVE UNDER- STORY HABITAT, WHICHEVER IS NEAREST TO THE CONSTRUCTION ACTIVITY.

2. SPECIMEN AND HISTORIC TREES, CONSERVATION EASEMENTS, NATURAL VEGETATION BUFFERS, AND SIMILAR AREAS MUST BE PROTECTED BY BARRICADES OR FENCING PRIOR TO CLEARING. BARRICADES ARE TO BE SET AT THE DRIP LINE OF THE TREES AND MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT. BARBED WIRE IS NOT PERMITTED AS A PROTECTIVE BARRIER.

3. WHERE A CHANGE OF GRADE OCCURS AT THE DRIP LINE OF A SPECIMEN TREE, SILT FENCES WILL BE REQUIRED DURING CONSTRUCTION AND RETAINING WALLS MUST BE INSTALLED PRIOR TO FINAL ACCEPTANCE BY THE CITY.

4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL PROTECTIVE VEGETATION BARRICADES AND EROSION CONTROL STRUCTURES AND MEASURES IN PLACE PRIOR TO THE COMMENCEMENT OF ANY EARTHWORK, INCLUDING PRELIMINARY GRUBBING. THESE MEASURES INCLUDE, BUT ARE NOT LIMITED TO, TEMPORARY CONSTRUCTION FENCES, SYNTHETIC JUTE BALES, WATTLES, &/OR HAVE BEST MANAGEMENT PRACTICES (BMP'S) AS REQUIRED, SILT FENCES, AND FLOATING TURBIDITY BARRIERS. FURTHER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN ALL EROSION CONTROL DEVICES THROUGHOUT THE DURATION OF THE ENTIRE PROJECT. MAINTENANCE SHALL INCLUDE PERIODIC INSPECTION AND REMOVAL OF DEBRIS ABUTTING EROSION CONTROL DEVICES.

5. PRIOR TO THE INSTALLATION OF ANY FILL MATERIALS ON SUBJECT SITE, SILT FENCES SHALL BE INSTALLED (1) ALONG SUBJECT SITE BOUNDARY AND PROPERTY LINES, (2) AT THE EDGE OF CONSERVATION EASEMENTS AND WETLANDS, (3) ADJACENT TO NATURAL LANDSCAPE BUFFERS, (4) AROUND THE PERIMETER OF EXISTING STORM WATER TREATMENT FACILITIES, AND (5) AT ANY ADDITIONAL AREAS THAT THE CITY DEEMS NECESSARY TO BE PROTECTED FROM POTENTIAL EROSION IMPACTS DURING CONSTRUCTION. THESE CONDITIONS SHALL APPLY IN ALL INSTANCES WHERE FILL MATERIAL IS BEING INSTALLED WITHIN 25 FEET OF ANY OF THE AFOREMENTIONED LOCATIONS. WHILE THESE ITEMS REPRESENT THE MINIMUM REQUIREMENTS, THE CITY RESERVES THE RIGHT TO IMPOSE ADDITIONAL PROTECTIVE MEASURES, AS DETERMINED DURING ACTUAL SITE VISITS CONDUCTED AS PART OF THE STANDARD REVIEW OF THE SITE THROUGHOUT PROJECT CONSTRUCTION.

6. AT A MINIMUM, THE CONTRACTOR SHALL SEED AND MULCH ALL DISTURBED AREAS. SUFFICIENT GRASS COVERAGE IS TO BE ESTABLISHED WITHIN TWO WEEKS.

7. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR THROUGH SCHEDULING, TO MINIMIZE THE DISTURBANCE OF SITE AREAS THAT HAVE BEEN BROUGHT TO THEIR PROPOSED FINAL GRADE. WITHIN SEVEN (7) DAYS OF BRINGING A SUBJECT AREA TO ITS FINAL GRADE OR INACTIVITY IN CONSTRUCTION, THE CONTRACTOR SHALL INSTALL SEED AND MULCH OR SOD, AS REQUIRED. ANY PROJECT THAT IS INACTIVE FOR A PERIOD OF 30 DAYS OR MORE THE AREA SHALL BE STABILIZED TO THE SATISFACTION OF THE CITY OF ORMOND BEACH

8. ONCE AN AREA IS SEEDED OR SODDED, IT MUST BE MAINTAINED BY THE CONTRACTOR TO ALLOW THE GRASS TO BECOME ESTABLISHED. IF THE GRASS IS NOT ESTABLISHED WITHIN TWO WEEKS THE CITY MAY REQUIRE THE CONTRACTOR TO RE-SEED OR A NON-VEGETATIVE OPTION MAY BE EMPLOYED.

A. 9. ABSOLUTELY NO BURYING OF CLEARED MATERIALS IS PERMITTED.

STANDARD CONSTRUCTION DETAIL	INDEX
CONTRACTOR REQUIREMENTS FOR SITE CLEARING, GRADING, AND EROSION CONTROL DESIGN AND CONSTRUCTION NOTES NTS	M-16A
	MAY 2020

26. ADEQUATE MAINTENANCE ACCESS AS APPROVED BY THE CITY SHALL BE PROVIDED AROUND THE ENTIRE PERIMETER OF ALL PONDS AND ASSOCIATED OUTFALLS DISCHARGING INTO AND OUT OF PONDS.

27. IN GENERAL, ALL RETENTION/DETENTION PONDS MUST BE CONSTRUCTED PRIOR TO ANY ROAD, PARKING LOT, OR BUILDING CONSTRUCTION COMMENCING OR AS CURRENT PERMIT CONDITIONS DICTATE.

28. THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN ANY DEWATERING PERMITS THAT MAY BE REQUIRED.

29. CULVERTS CROSSING RIGHT-OF-WAYS SHALL EXTEND FROM RIGHT-OF-WAY LINE TO RIGHT-OF-WAY LINE UNDER THE ROADWAY.

30. ALL STORM WATER DISCHARGE FROM RETENTION/DETENTION PONDS ARE REQUIRED TO BE CHANNELED INTO DEFINED DRAINAGE PATHS TO EXISTING WATER BODIES, WETLANDS, DITCHES, ETC.

31. THE CITY OF ORMOND BEACH REQUIRES THE DEVELOPER TO TELEVISE ANY AND ALL STORM SEWER PIPE SYSTEMS IN THE PRESENCE OF THE CITY INSPECTOR BY A REPUTABLE COMPANY THAT ENGAGES IN THIS TYPE OF WORK. THE DVD SHALL BE IN HIGH QUALITY STANDARD RESOLUTION USING A CAMERA WITH SUITABLE LIGHTING TO ALLOW A CLEAR FOCUSED PICTURE OF THE ENTIRE INSIDE PIPE CIRCUMFERENCE. THE DVD SHALL BE NON-STOP WITH AUDIO DESCRIBING WHAT IS BEING VIEWED. COPIES OF DVD SHALL BE SUBMITTED IN DVD FORMAT ACCOMPANIED BY WRITTEN LOGS DESCRIBING THE CONDITION OF THE LINES AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO REQUESTING FINAL INSPECTIONS. ANY DEFECTS NOTED SHALL BE CORRECTED PRIOR TO ACCEPTANCE BY THE CITY OR ISSUANCE OF CERTIFICATE OF OCCUPANCY.

32. IN ACCORDANCE WITH SECTION 3-58(F) ALL WET DETENTION PONDS SHALL INCLUDE AN AERATION FOUNTAIN TO ENSURE PROPER WATER QUALITY, ENHANCE MAINTENANCE, AND IMPROVE AESTHETICS. PONDS SHALL BE DESIGNED TO APPEAR NATURAL AND NON-GEOMETRIC.

STANDARD CONSTRUCTION DETAIL	INDEX
STORM DRAINAGE CONSTRUCTION NOTES	ST-1C
	MAY 2020

CONTRACTOR REQUIREMENTS FOR SITE CLEARING, GRADING, AND EROSION CONTROL DESIGN AND CONSTRUCTION NOTES

10. THE REMOVAL OF ALL VEGETATION AND TOPSOIL ON THE FUTURE ROADWAY, PARKING AND BUILDING LOT AREAS IS REQUIRED TO BE COMPLETED PRIOR TO THE PLACEMENT OF FILL ON THOSE AREAS. THE TOPSOIL MAY BE TEMPORARILY STOCKPILED AND USED AS TOPSOIL OVER OVER PROPOSED GREEN AREAS SUCH AS PLANT BEDS, SODDED AREAS, AND WHERE TREES ARE TO BE INSTALLED OR RELOCATED.

11. A SIGNED, DATED, AND SEALED LETTER FROM A SOILS ENGINEER OR THE ENGINEER OF RECORD CERTIFYING THAT THE AREAS TO BE FILLED HAVE BEEN STRIPPED OF ORGANIC MATERIALS, MUST BE SUBMITTED TO THE CITY PRIOR TO FILLING.

10. FILL MATERIAL IS TO BE PLACED IN ONE FOOT LIFTS AND COMPACTED TO THE APPROPRIATE DENSITY (98% FOR PAVED AREAS AND 95% FOR BUILDING PADS AND ALL OTHER AREAS AS PER AASHTO T-180).

11. DURING SUBDIVISION DEVELOPMENT WHEN FUTURE BUILDING LOTS ARE FILLED AS PART OF THE OVERALL SUBDIVISION IMPROVEMENTS, COMPACTION TEST REPORTS MUST BE PERFORMED ON THE BUILDING LOTS AT 300 FOOT INTERVALS. THESE TESTS ARE TO BE PERFORMED IN ONE-FOOT VERTICAL INCREMENTS. THE RESULTS OF THESE TESTS ARE TO BE SUBMITTED TO THE CITY UPON COMPLETION OF THE TESTS.

12. IF ANY MUCK MATERIAL IS DISCOVERED, IT SHALL BE REQUIRED TO BE REMOVED AND REPLACED WITH A SUITABLE MATERIAL THAT IS PROPERLY BACKFILLED, COMPACTED AND TESTED USING AASHTO T-180 MODIFIED PROCTOR METHOD.

13. STOCKPILING IS NOT GENERALLY PERMITTED BY THE CITY. WHEN ALLOWED, STOCKPILES SHALL NOT EXCEED SIX FEET IN HEIGHT MEASURED FROM THE ORIGINAL GRADE. AT A MINIMUM, STOCK PILES THAT WILL REMAIN IN PLACE IN EXCESS OF TWENTY DAYS SHOULD BE SEEDED AND MULCHED IMMEDIATELY UPON PLACEMENT OF THE FINAL LIFT. STOCKPILE AREA IS TO BE SURROUNDED BY SILT FENCE FROM THE INITIAL LIFT.

14. SOILS ARE TO BE STABILIZED BY WATER OR OTHER MEANS DURING CONSTRUCTION. THIS IS INTENDED TO REDUCE SOIL EROSION AND THE IMPACT TO NEIGHBORING COMMUNITIES. ADEQUATE WATERING METHODS SHOULD BE EMPLOYED TO ALLOW DAILY COVERAGE OF THE ENTIRE LIMITS OF ALL AREAS THAT DO NOT YET HAVE AN ESTABLISHED VEGETATIVE COVER. METHODS TO BE EMPLOYED INCLUDE, BUT ARE NOT LIMITED TO, WATER TRUCKS, PERMANENT IRRIGATION SYSTEMS, TEMPORARY SPRINKLER SYSTEMS OPERATED BY PUMPING UNITS CONNECTED TO WET RETENTION PONDS, WATER CANNONS, TEMPORARY IRRIGATION SYSTEMS MOUNTED ATOP STOCKPILE AREAS, AND OTHER METHODS AS DEEMED NECESSARY BY THE CITY.

15. ALL FILL MATERIALS LOCATED BENEATH STRUCTURES AND PAVEMENT SHALL CONSIST OF CLEAN GRANULAR SAND FREE FROM ORGANICS AND SIMILAR MATERIAL THAT COULD DECOMPOSE.

16. ALL FILL TO BE PLACED IN LANDSCAPED AREAS SHALL HAVE A Ph RANGE BETWEEN 5.5 AND 7.5, BE ORGANIC IN NATURE, FREE OF ROCKS AND DEBRIS, OR MATCH NATIVE EXISTING SOILS.

17. OWNER SHALL FILE A "NOTICE OF INTENT TO USE GENERIC PERMIT FOR STORM WATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES" WITH THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION AS REQUIRED BY DEP. CONTRACTOR SHALL BE REQUIRED TO COMPLY WITH ALL PROVISIONS OF THE GENERIC PERMIT INCLUDING BUT NOT LIMITED TO:
   A. PROVIDE SUCH EROSION AND SEDIMENT CONTROL MEASURES AS MAY BE NECESSARY TO PREVENT DISCHARGE OF POLLUTANTS FROM THE SITE FROM THE START OF CONSTRUCTION UNTIL THE FINAL GROUND COVER HAS BEEN ESTABLISHED.
   B. EMPLOY A DEP CERTIFIED INSPECTOR TO MAKE WEEKLY INSPECTIONS / REPORTS OF THE CONDITION OF EROSION AND SEDIMENT CONTROL MEASURES.
   C. EMPLOY A DEP CERTIFIED INSPECTOR TO MAKE INSPECTIONS / REPORTS OF THE CONDITION OF EROSION AND SEDIMENT CONTROL MEASURES WITHIN 24 HOURS OF EVERY RAINFALL EVENT EXCEEDING ONE-HALF INCH.
   D. MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES THROUGHOUT CONSTRUCTION.
   E. ADD EROSION AND SEDIMENT CONTROL MEASURES AS SITE CONDITIONS CHANGE.

STANDARD CONSTRUCTION DETAIL	INDEX
CONTRACTOR REQUIREMENTS FOR SITE CLEARING, GRADING, AND EROSION CONTROL DESIGN AND CONSTRUCTION NOTES NTS	M-16B
	MAY 2020

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NO	DATE	BY	SUBMITTALS/REVISIONS
1	07-02-24	RH/SM	REVISED PER CITY OF ORMOND BEACH COMMENTS

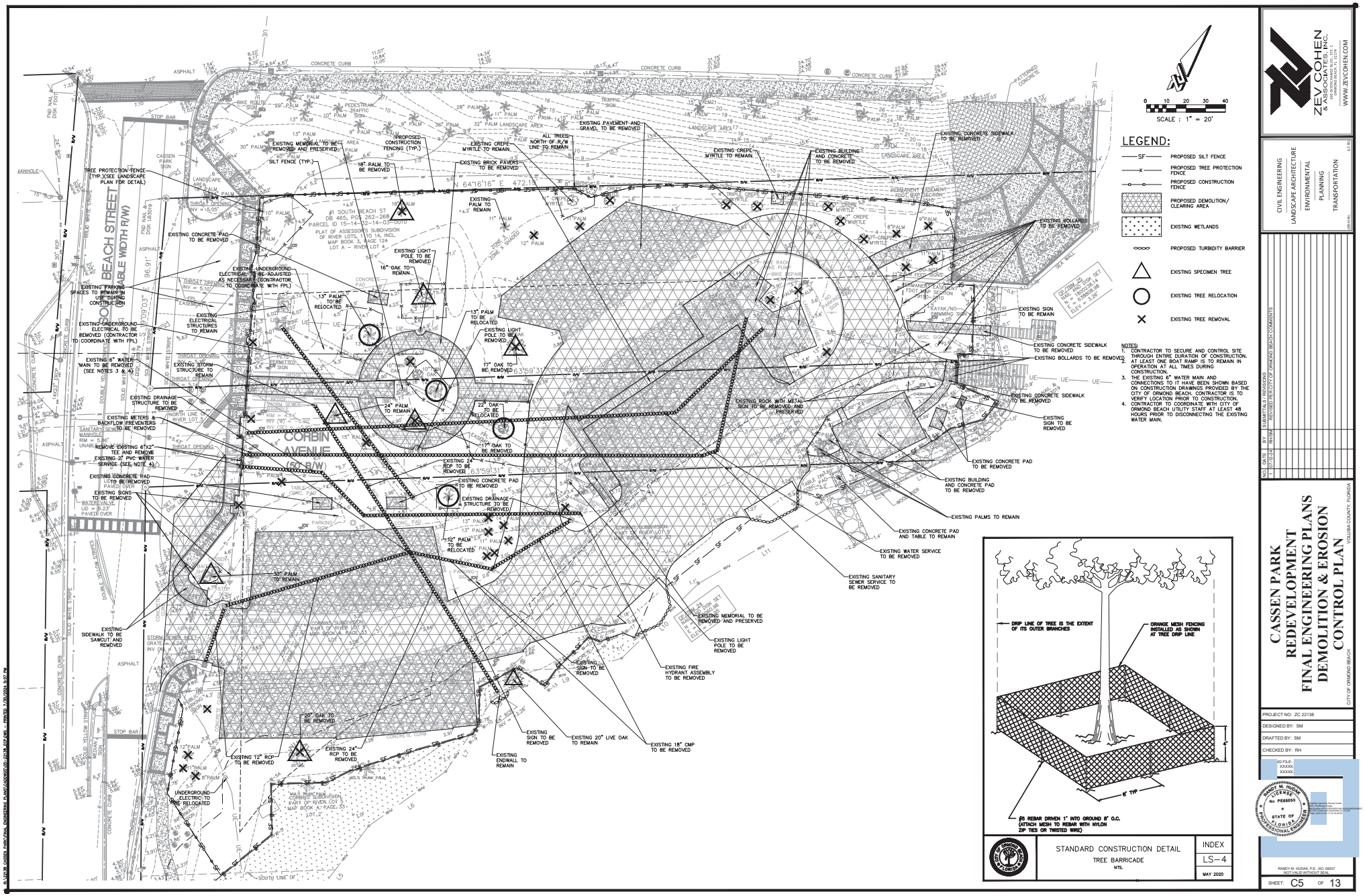
CASSEN PARK REDEVELOPMENT FINAL ENGINEERING PLANS CONSTRUCTION NOTES

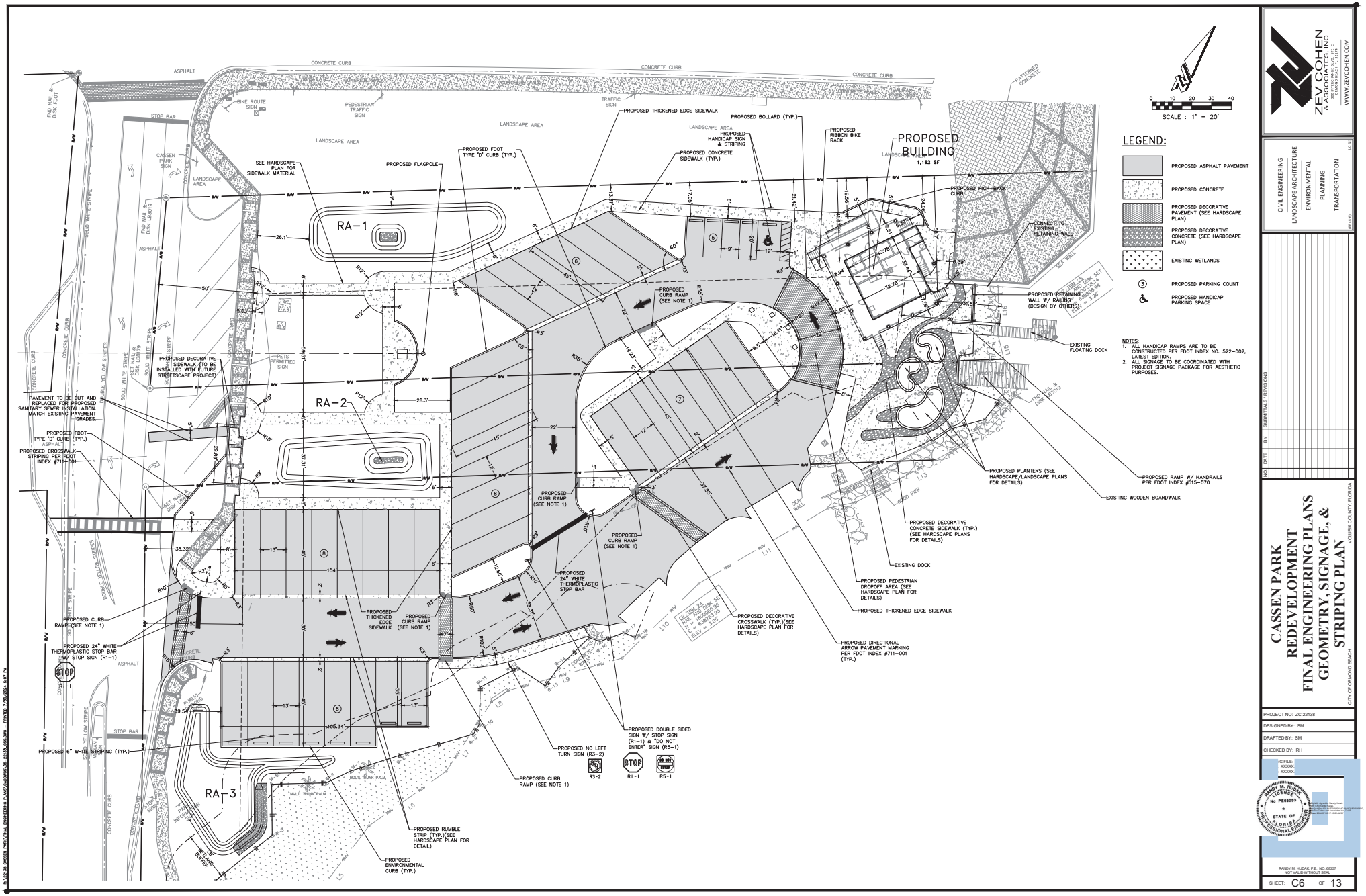
CITY OF ORMOND BEACH VOLUSIA COUNTY, FLORIDA

PROJECT NO: ZC 22138
DESIGNED BY: SM
DRAFTED BY: SM
CHECKED BY: RH
DWG FILE:

RANDY M. HUDAK, P.E., NO. 68557
NOT VALID WITHOUT SEAL

SHEET: C4 OF 13


SCALE : 1" = 20'
LEGEND:
PROPOSED SILT FENCE
PROPOSED TREE PROTECTION FENCE
PROPOSED CONSTRUCTION FENCE
PROPOSED DEMOLITION/ CLEARING AREA
EXISTING WETLANDS
PROPOSED TURBIDITY BARRIER
EXISTING SPECIMEN TREE
EXISTING TREE RELOCATION
EXISTING TREE REMOVAL
NOTES:
1. CONTRACTOR TO SECURE AND CONTROL SITE THROUGH ENTIRE DURATION OF CONSTRUCTION. AT LEAST ONE BOAT RAMP IS TO REMAIN IN OPERATION AT ALL TIMES DURING CONSTRUCTION.
2. THE EXISTING 6" WATER MAIN AND CONNECTIONS TO IT HAVE BEEN SHOWN BASED ON CONSTRUCTION DRAWINGS PROVIDED BY THE CITY OF ORMOND BEACH. CONTRACTOR IS TO VERIFY LOCATION PRIOR TO CONSTRUCTION.
3. CONTRACTOR TO COORDINATE WITH CITY OF ORMOND BEACH UTILITY STAFF AT LEAST 48 HOURS PRIOR TO DISCONNECTING THE EXISTING WATER MAIN.
SOUTH BEACH STREET (VARIABLE WIDTH R/W)
CORBIN AVENUE (50' R/W)
TREE PROTECTION FENCE (TYP.)(SEE LANDSCAPE PLAN FOR DETAIL)
EXISTING MEMORIAL TO BE REMOVED AND PRESERVED
EXISTING CONCRETE PAD TO BE REMOVED
EXISTING PARKING SPACES TO REMAIN IN USE DURING CONSTRUCTION
EXISTING UNDERGROUND ELECTRICAL TO BE ADJUSTED AS NECESSARY (CONTRACTOR TO COORDINATE WITH FPL)
EXISTING UNDERGROUND ELECTRICAL TO BE REMOVED (CONTRACTOR TO COORDINATE WITH FPL)
EXISTING 6" WATER MAIN TO BE REMOVED (SEE NOTES 3 & 4)
EXISTING ELECTRICAL STRUCTURES TO REMAIN
EXISTING DRAINAGE STRUCTURE TO BE REMOVED
EXISTING METERS & BACKFLOW PREVENTERS TO BE REMOVED
REMOVE EXISTING 6"x2" TEE AND REMOVE EXISTING 2" PVC WATER SERVICE (SEE NOTE 4)
EXISTING CONCRETE PAD TO BE REMOVED
EXISTING SIGNS TO BE REMOVED
EXISTING SIDEWALK TO BE SAWCUT AND REMOVED
UNDERGROUND ELECTRIC TO BE RELOCATED
EXISTING PAVEMENT AND GRAVEL TO BE REMOVED
PROPOSED CONSTRUCTION FENCING (TYP.)
EXISTING CREPE MYRTLE TO REMAIN
EXISTING BRICK PAVERS TO BE REMOVED
ALL TREES NORTH OF R/W LINE TO REMAIN
EXISTING BUILDING AND CONCRETE TO BE REMOVED
EXISTING CONCRETE SIDEWALK TO BE REMOVED
EXISTING BOLLARDS TO BE REMOVED
EXISTING SIGN TO REMAIN
EXISTING CONCRETE SIDEWALK TO BE REMOVED
EXISTING SIGN TO BE REMOVED
EXISTING ROCK WITH METAL SIGN TO BE REMOVED AND PRESERVED
EXISTING CONCRETE PAD TO BE REMOVED
EXISTING BUILDING AND CONCRETE PAD TO BE REMOVED
EXISTING PALMS TO REMAIN
EXISTING CONCRETE PAD AND TABLE TO REMAIN
EXISTING WATER SERVICE TO BE REMOVED
EXISTING SANITARY SEWER SERVICE TO BE REMOVED
EXISTING MEMORIAL TO BE REMOVED AND PRESERVED
EXISTING LIGHT POLE TO BE REMOVED
EXISTING FIRE HYDRANT ASSEMBLY TO BE REMOVED
EXISTING SIGN TO BE REMOVED
EXISTING 20" LIVE OAK TO REMAIN
EXISTING 18" CMP TO BE REMOVED
EXISTING ENDWALL TO REMAIN
EXISTING 12" RCP TO BE REMOVED
EXISTING 24" RCP TO BE REMOVED
EXISTING LIGHT POLE TO BE REMOVED
EXISTING 24" RCP TO BE REMOVED
EXISTING DRAINAGE STRUCTURE TO BE REMOVED
EXISTING STORM STRUCTURE TO REMAIN
EXISTING 16" OAK TO REMAIN
EXISTING 13" PALM TO BE RELOCATED
EXISTING 17" OAK TO BE REMOVED
EXISTING 24" PALM TO REMAIN
EXISTING 22" OAK TO BE RELOCATED
EXISTING 17" OAK TO BE REMOVED
EXISTING 10" PALM TO BE RELOCATED
EXISTING 10" PALM TO REMAIN
EXISTING 20" OAK TO BE REMOVED
EXISTING 18" PALM TO BE REMOVED
EXISTING PALM TO REMAIN
EXISTING LIGHT POLE TO BE REMOVED
EXISTING CONCRETE PAD TO BE REMOVED
EXISTING 24" RCP TO BE REMOVED
EXISTING CONCRETE PAD TO BE REMOVED
EXISTING DRAINAGE STRUCTURE TO BE REMOVED
EXISTING 13" PALM TO BE RELOCATED
EXISTING 10" PALM TO REMAIN
EXISTING 8" PALM TO BE REMOVED
EXISTING 17" OAK TO BE REMOVED
EXISTING 20" OAK TO BE REMOVED
EXISTING 24" RCP TO BE REMOVED
EXISTING 12" RCP TO BE REMOVED
EXISTING 24" RCP TO BE REMOVED
EXISTING 18" CMP TO BE REMOVED
EXISTING ENDWALL TO REMAIN
EXISTING 20" LIVE OAK TO REMAIN
EXISTING SIGN TO BE REMOVED
EXISTING FIRE HYDRANT ASSEMBLY TO BE REMOVED
EXISTING LIGHT POLE TO BE REMOVED
EXISTING MEMORIAL TO BE REMOVED AND PRESERVED
EXISTING SANITARY SEWER SERVICE TO BE REMOVED
EXISTING WATER SERVICE TO BE REMOVED
EXISTING CONCRETE PAD AND TABLE TO REMAIN
EXISTING PALMS TO REMAIN
EXISTING BUILDING AND CONCRETE PAD TO BE REMOVED
EXISTING CONCRETE PAD TO BE REMOVED
EXISTING SIGN TO BE REMOVED
EXISTING CONCRETE SIDEWALK TO BE REMOVED
EXISTING BOLLARDS TO BE REMOVED
EXISTING SIGN TO REMAIN
EXISTING CONCRETE SIDEWALK



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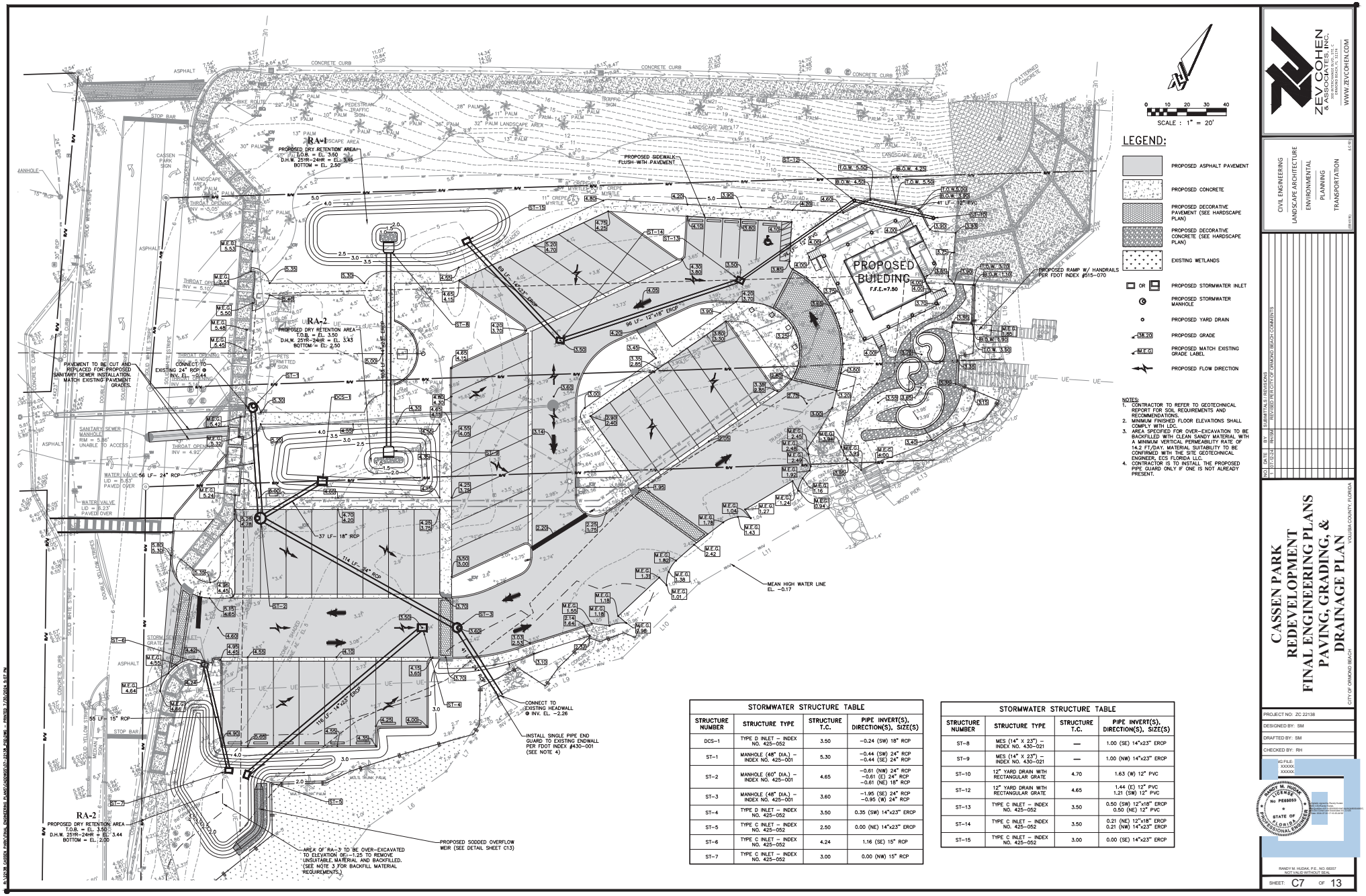
CASSEN PARK REDEVELOPMENT
FINAL ENGINEERING PLANS GEOMETRY, SIGNAGE, & STRIPING PLAN

CITY OF ORMOND BEACH — VOLUSIA COUNTY, FLORIDA

PROJECT NO: ZC 22138
DESIGNED BY: SM
DRAFTED BY: SM
CHECKED BY: RH

RANDY M. HUDAK, P.E., NO. 68057
NOT VALID WITHOUT SEAL

SHEET: C6 OF 13



STORMWATER STRUCTURE TABLE

STRUCTURE NUMBER	STRUCTURE TYPE	STRUCTURE T.C.	PIPE INVERT(S), DIRECTION(S), SIZE(S)
DCS-1	TYPE D INLET – INDEX NO. 425-052	3.50	-0.24 (SW) 18" RCP
ST-1	MANHOLE (48" DIA.) – INDEX NO. 425-001	5.30	-0.44 (SW) 24" RCP -0.44 (SE) 24" RCP
ST-2	MANHOLE (60" DIA.) – INDEX NO. 425-001	4.65	-0.61 (NW) 24" RCP -0.61 (E) 24" RCP -0.61 (NE) 18" RCP
ST-3	MANHOLE (48" DIA.) – INDEX NO. 425-001	3.60	-1.95 (SE) 24" RCP -0.95 (W) 24" RCP
ST-4	TYPE D INLET – INDEX NO. 425-052	3.50	0.35 (SW) 14"x23" ERCP
ST-5	TYPE C INLET – INDEX NO. 425-052	2.50	0.00 (NE) 14"x23" ERCP
ST-6	TYPE C INLET – INDEX NO. 425-052	4.24	1.16 (SE) 15" RCP
ST-7	TYPE C INLET – INDEX NO. 425-052	3.00	0.00 (NW) 15" RCP

STORMWATER STRUCTURE TABLE

STRUCTURE NUMBER	STRUCTURE TYPE	STRUCTURE T.C.	PIPE INVERT(S), DIRECTION(S), SIZE(S)
ST-8	MES (14" X 23") – INDEX NO. 430-021	—	1.00 (SE) 14"x23" ERCP
ST-9	MES (14" X 23") – INDEX NO. 430-021	—	1.00 (NW) 14"x23" ERCP
ST-10	12" YARD DRAIN WITH RECTANGULAR GRATE	4.70	1.63 (W) 12" PVC
ST-12	12" YARD DRAIN WITH RECTANGULAR GRATE	4.65	1.44 (E) 12" PVC 1.21 (SW) 12" PVC
ST-13	TYPE C INLET – INDEX NO. 425-052	3.50	0.50 (SW) 12"x18" EROP 0.50 (NE) 12" PVC
ST-14	TYPE C INLET – INDEX NO. 425-052	3.50	0.21 (NE) 12"x18" EROP 0.21 (NW) 14"x23" ERCP
ST-15	TYPE C INLET – INDEX NO. 425-052	3.00	0.00 (SE) 14"x23" ERCP

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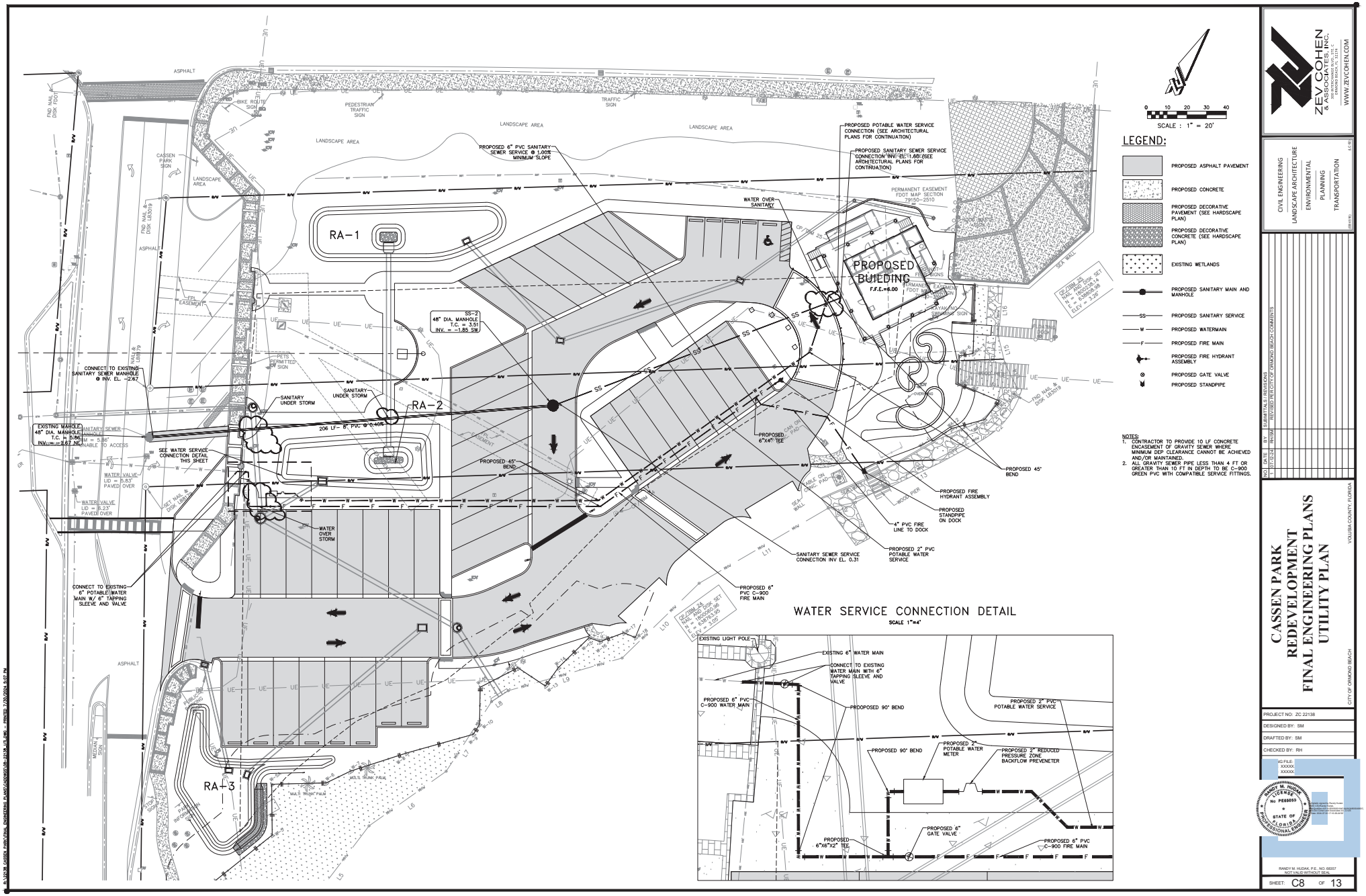
NO	DATE	BY	SUBMITTALS/ REVISIONS
1	07-02-24	RH/SM	REVISED PER CITY OF ORMOND BEACH COMMENTS

CASSEN PARK REDEVELOPMENT
FINAL ENGINEERING PLANS PAVING, GRADING, & DRAINAGE PLAN
CITY OF ORMOND BEACH VOLUSIA COUNTY, FLORIDA

PROJECT NO: ZC 22138
DESIGNED BY: SM
DRAFTED BY: SM
CHECKED BY: RH

RANDY M. HUDAK, P.E., NO. 68557
NOT VALID WITHOUT SEAL

SHEET: C7 OF 13



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CIVIL ENGINEERING
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL
PLANNING
TRANSPORTATION

NO	DATE	BY	SUBMITTAL/S REVISIONS
1	07-02-24	RH/SM	REVISED PER CITY OF ORMOND BEACH COMMENTS

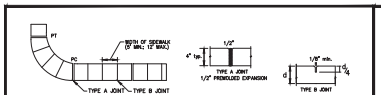
CASSEN PARK REDEVELOPMENT FINAL ENGINEERING PLANS UTILITY PLAN

CITY OF ORMOND BEACH VOLUSIA COUNTY, FLORIDA

PROJECT NO: ZC 22138
DESIGNED BY: SM
DRAFTED BY: SM
CHECKED BY: RH

RANDY M. HUDAK, P.E., NO. 68557
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SHEET: C8 OF 13

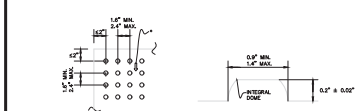


1. SIDEWALKS, BIKEPATHS, RAMPS, AND DRIVEWAY APRONS SHALL BE CONSTRUCTED OF PLAIN PORTLAND CEMENT CONCRETE WITH A MAXIMUM SLUMP OF 3 INCHES, A MINIMUM DEVELOPED COMPRESSIVE STRENGTH OF 2500 P.S.I. IN 28 DAYS, AND A MINIMUM UNIFORM THICKNESS OF 4 INCHES WHERE INTENDED SOLELY FOR PEDESTRIAN TRAFFIC, AND 6 INCHES THICK WHERE MOTOR VEHICLES ARE LIKELY TO CROSS. SIDEWALKS SHALL BE 5 FOOT WIDE UNLESS OTHERWISE SHOWN ON PLANS.
2. SIDEWALKS AND BIKE PATHS SHALL BE PLACED PARALLEL TO, AND ONE FOOT WITHIN THE, RIGHT-OF-WAY LINE, EXCEPT THAT THE CITY MAY APPROVE DEVIATIONS TO SAVE SPECIMEN TREES PROVIDED THAT THE MINIMUM WIDTH OF 5 FEET IS MAINTAINED. SIDEWALKS SHALL BE PLACED AT LEAST 4 FEET FROM THE EDGE OF THE STREET PAVEMENT, UNLESS OTHERWISE APPROVED BY THE CITY.
3. THE TOP OF THE CONCRETE SHALL BE AT AN ELEVATION NO LOWER THAN THE CROWN OF THE ADJACENT ROADWAY, AND NO HIGHER THAN 6 INCHES ABOVE THE CROWN UNLESS APPROVED BY THE CITY TO MAKE A MORE NATURAL TRANSITION WITH THE ADJACENT LAND.
4. ALL WALKS SHALL HAVE A CROSS SLOPE OF 1/4 INCH PER FOOT AND SHALL NOT EXCEED A LONGITUDINAL SLOPE OF 1:20, EXCEPT AT DESIGNATED RAMPS THAT SHALL NOT EXCEED 1:12. PROVIDE A TACTILE WARNING SURFACE AT ALL RAMPS PER A.D.A. THE CONTRACTOR SHALL INSURE THAT ALL PROVISIONS OF A.D.A AND FLORIDA ACCESSIBILITY CODE ARE MET.*
5. ISOLATION JOINTS (TYPE A JOINTS) SHALL BE PROVIDED BETWEEN EXISTING SLABS OR STRUCTURES AND FRESH CONCRETE, TO SEPARATE PEDESTRIAN SECTIONS FROM SECTIONS WHICH WILL ENCOUNTER VEHICULAR TRAFFIC, TO SEPARATE ARTERIAL PLACEMENT FROM CURBS IN INTERSECTIONS, AND AT NOT MORE THAN 60 LINEAR FEET INTERVALS. ALL ISOLATION JOINTS SHALL BE FILLED WITH JOINT MATERIAL SHALL BE SPECIFIED IN FDOT STANDARDS AND SPECIFICATIONS AND SHALL BE RUBBER, PLASTIC OR OTHER APPROVED NON-BIODEGRADABLE ELASTOMERIC MATERIAL. WOOD IS PROHIBITED.
6. CONTROL JOINTS (TYPE B JOINTS) SHALL BE TOOLED INTO THE FRESH CONCRETE TO A DEPTH EQUAL TO 1/4 THE SLAB THICKNESS AND SPACED APART A DISTANCE EQUAL TO THE WIDTH OF THE SLAB, AT MINIMUM SPACING OF 5', MAX SPACING OF 12'.
7. THE SLAB SURFACE SHALL BE BROOM FINISHED TO BE SLIP RESISTANT, AND SHALL MATCH AS CLOSELY AS POSSIBLE THE FINISH OF THE EXISTING ADJACENT SLABS AND ALL EDGES SHALL BE TOOLED TO ELIMINATE SHARP CORNERS.
8. THE BEARING SUBSURFACE SHALL HAVE ALL ORGANIC, LOOSE, AND DELETERIOUS MATTER REMOVED, AND THE REMAINING CLEAN SOIL SHALL BE SMOOTH, SOUND, AND SOLID. ANY FILL MATERIAL SHALL BE COMPACTED WITH A VIBRATORY OR IMPACT COMPACTION MACHINE IN MAXIMUM 12 INCH LIFTS OR COMPACTED WITH A HAND TAMPER IN MAXIMUM 4 INCH LIFTS. THE CITY SHALL REQUIRE A COMPACTION TEST FOR ANY FILL OVER 12 INCHES DEEP. WHERE SUBSURFACE HAS BEEN DISTURBED MORE THAN 12 INCHES DEEP, BEFORE SUCH TEST IS REQUIRED, THE RESULTS SHALL SHOW A MINIMUM PROCTOR FIELD DENSITY OF 95 PERCENT.
9. ALL CONCRETE WORK IN THE RIGHT-OF-WAY SHALL BE INSPECTED BY THE CITY AFTER THE SUBSOIL IS PREPARED AND THE FORMS ARE SET, BUT BEFORE THE CONCRETE PLACEMENT BEGINS.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THE FINISHED SLAB FROM ALL DAMAGE AND REPAIRING OR REPLACING ANY DAMAGED SLAB BEFORE FINAL ACCEPTANCE. THE OWNER OF THE ABUTTING LAND SHALL BE RESPONSIBLE FOR THE SLAB IN ACCORDANCE WITH THE CITY CODE. ANY SLAB SECTION DAMAGED OR VANDALIZED PRIOR TO ACCEPTANCE OR APPROVAL SHALL BE CUT OUT BETWEEN JOINTS AND REPLACED. REPAIRS ARE NOT ACCEPTABLE.
11. SIDEWALKS LOCATED WITHIN THE RIGHT-OF-WAY SHALL NOT BE TINTED, STAINED, COLORED, OR COATED.
12. ALL FORMS SHALL BE REMOVED PRIOR TO ACCEPTANCE OR APPROVAL AND THE DISTURBED GROUND SHALL BE BACKFILLED, REGRADED, AND SODDED SO THAT THE MEAN SURFACE OF THE CONCRETE IS REASONABLY **FLUSH WITH THE ADJACENT GRADE.**

STANDARD CONSTRUCTION DETAIL
SIDEWALK, RAMP, AND DRIVEWAY APRON CONSTRUCTION REQUIREMENTS
NTS
INDEX M-3
MAY 2020

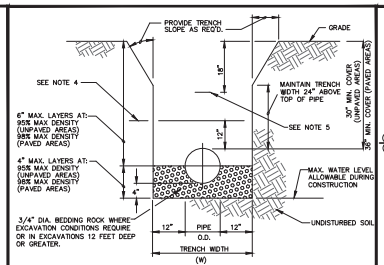


NOTES:
1. RAMP LOCATIONS ARE TO BE COORDINATED WITH AND IN CONFORMANCE WITH CROSSWALK MARKING DETAILS SHOWN IN THE PLANS.
2. CURBED RAMPS SHALL HAVE FLARED SIDES WITH A MAXIMUM SLOPE OF 12:1.
3. RAMPS SHALL HAVE A DETECTABLE WARNING SURFACE AS SHOWN.
4. RAMPS ARE TO BE CONSTRUCTED AT ALL LOCATIONS SHOWN IN THE PLANS EVEN WHEN A SIDEWALK IS NOT CONSTRUCTED CONCURRENTLY.
5. NO CURB TRANSITION IS NEEDED FOR MIAMI CURBS.
6. ALL RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH FDOT INDEX NO. 304 AND HANDICAPPED ACCESSIBILITY REQUIREMENTS IN ACCORDANCE WITH THE AMERICAN DISABILITIES ACT.



NOTES:
* ON RAMPS THAT ARE PERPENDICULAR WITH THE CURB LINE, THE DOME PATTERN SHALL BE IN-LINE WITH THE DIRECTION OF TRAVEL. ON RAMPS INTERSECTING CURBS ON A RADIUS, THE DOME PATTERN SHALL BE IN-LINE WITH THE DIRECTION OF TRAVEL TO THE EXTENT PRACTICAL.

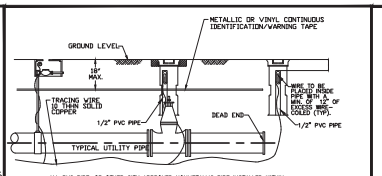
STANDARD CONSTRUCTION DETAIL
SIDEWALK AND BIKE PATH RAMP
NTS
INDEX M-4
MAY 2020



PIPE INSTALLATION DETAIL

NOTES:
1. WHERE SOIL CONDITIONS CAN NOT BE MAINTAINED AS SHOWN ABOVE, PROVIDE APPROVED METHOD OF CONSTRUCTION.
2. SHEETING WILL BE REQUIRED AS DETERMINED IN THE FIELD.
3. COMPACTION PERCENTAGES SHOWN REFER TO A.A.S.H.T.O. T-180. PROVIDE COPIES OF CERTIFIED TEST REPORTS TO CITY INSPECTOR.
4. MECHANICAL COMPACTION NOT ALLOWED BELOW THIS LEVEL.
5. INSTALL METALLIC TAPE OVER FULL LENGTH OF PIPE.

STANDARD CONSTRUCTION DETAIL
PIPE INSTALLATION
NTS
INDEX M-9
MAY 2020



ALL PVC PIPE, OR OTHER CITY APPROVED NONMETALLIC PIPE INSTALLED WITHIN THE CITY'S WATER, SANITARY SEWER, OR RECLAIMED WATER SYSTEMS, SHALL BE INSTALLED WITH 10 THHN SOLID COPPER TRACING WIRE. IF PIPE IS INSTALLED BY DIRECTIONAL BORE, USE (2) 10 THHN SOLID COPPER TRACING WIRE.

THE TRACING WIRE MUST BE INSTALLED DIRECTLY BELOW THE PIPE AND BROUGHT TO THE SURFACE AT 500' MINIMUM INTERVALS. WIRE SHALL EXTEND A MINIMUM OF 12" ABOVE GRADE AT EACH INTERVAL AND BE COILED AND PLACED IN A VALVE BOX, METER BOX, MANHOLE, CLEANOUT OR OTHER APPLICABLE STRUCTURE.

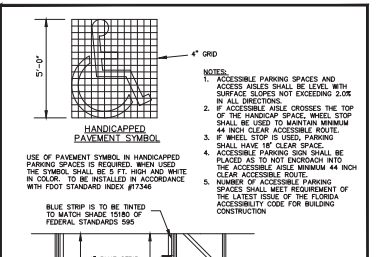
TRACING WIRE BETWEEN INTERVALS SHALL BE INSTALLED SO AS TO PROVIDE CONTINUOUS CURRENT WHEN LINE LOCATION EQUIPMENT IS CONNECTED TO THE TRACING WIRE. WIRE BRANCHING FROM MAIN LINES SHALL BE LINKED BY A CITY APPROVED CONNECTOR SUCH AS KING # 2011 SAFETY SEALED CONNECTORS OR APPROVED EQUAL.

COLOR CODING:

POTABLE WATER SYSTEM:	BLUE
RECLAIMED WATER SYSTEM:	LAVENDER
SANITARY SEWER FORCE MAIN SYSTEM:	GREEN
RAW WATER MAIN SYSTEM:	WHITE

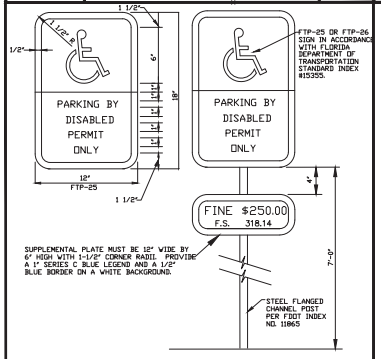
1. POTABLE WATER AND RECLAIMED WATER SYSTEMS: WIRE SHALL BE INSTALLED BELOW ALL MAINS AND SERVICE LINES AND ATTACHED TO VALVES, HYDRANTS AND FITTINGS. WIRE INSTALLED WITH SERVICE LINES SHALL CONNECT TO THE WIRE INSTALLED BELOW THE MAIN AND EXTEND TO THE CURB STOP.
2. FIRE SPRINKLER LINES: WIRE SHALL CONNECT TO THE WIRE INSTALLED BELOW THE MAIN AND EXTEND TO THE RISER CONNECTION.
3. SANITARY SEWER FORCE MAINS: WIRE SHALL BE INSTALLED BELOW THE FORCE MAIN AND ATTACHED TO ALL VALVES AND FITTINGS AND BROUGHT TO THE SURFACE AND PLACED IN A METAL, CITY APPROVED, VALVE BOX.
4. DEAD END MAINS: WIRE SHALL BE PLACED IN A PROPERLY IDENTIFIED METAL VALVE BOX AT THE END OF THE RUN.
5. WIRE SHALL NOT BE FASTENED OR COILED TO VALVE OPERATING NUT.

STANDARD CONSTRUCTION DETAIL
UTILITY PIPE LOCATION MATERIALS
NTS
INDEX M-10
MAY 2020



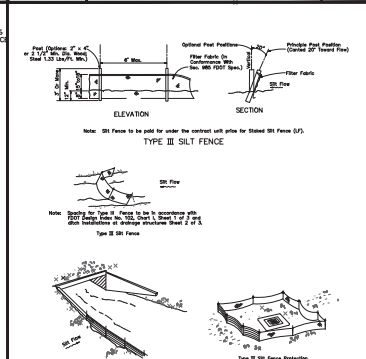
NOTES:
1. ACCESSIBLE PARKING SPACES AND ACCESS AISLES SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 2.0% IN ALL DIRECTIONS.
2. IF ACCESSIBLE AISLE CROSSES THE TOP OF THE HANDICAP SPACE, WHEEL STOP SHALL BE USED TO MAINTAIN MINIMUM 44 INCH CLEAR ACCESSIBLE ROUTE.
3. IF WHEEL STOP IS USED, PARKING SHALL HAVE 18' CLEAR SPACE.
4. ACCESSIBLE PARKING SIGN SHALL BE PLACED AS TO NOT ENCROACH INTO THE ACCESSIBLE AISLE MINIMUM 44 INCH CLEAR ACCESSIBLE ROUTE.
5. NUMBER OF ACCESSIBLE PARKING SPACES SHALL MEET REQUIREMENT OF THE LATEST ISSUE OF THE FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION

STANDARD CONSTRUCTION DETAIL
TYPICAL MARKINGS FOR HANDICAPPED PARKING
NTS
INDEX M-12A
MAY 2020

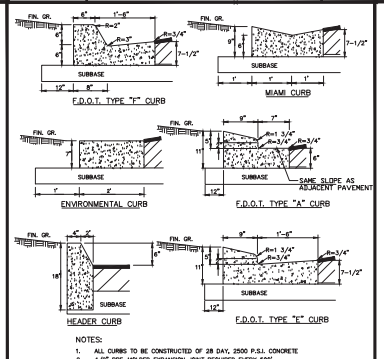


1.) TOP PORTION OF SIGN TO HAVE A REFLECTIVE BLUE BACKGROUND WITH WHITE REFLECTIVE SYMBOL AND BORDER.
2.) BOTTOM PORTION SHALL HAVE A REFLECTIVE WHITE BACKGROUND WITH BLACK OPAQUE LEGEND AND BORDER.
3.) SIGN MAY BE FABRICATED ON ONE PANEL OR TWO.
4.) SIGNS ARE TO BE MOUNTED AT STANDARD HEIGHT. (7' FROM PAVEMENT TO BOTTOM OF SIGN.)

STANDARD CONSTRUCTION DETAIL
HANDICAP PARKING SIGN DETAIL
NTS
INDEX M-12B
MAY 2020



STANDARD CONSTRUCTION DETAIL
EROSION CONTROL – SILT FENCE
NTS
INDEX M-15
MAY 2020



NOTES:
1. ALL CURBS TO BE CONSTRUCTED OF 28 DAY, 2500 P.S.I. CONCRETE
2. 1/2" PRE-MOLDED EXPANSION JOINT REQUIRED EVERY 500'. CONSTRUCTION JOINT REQUIRED EVERY 10' MAXIMUM (4' MINIMUM).
3. 1/2" PRE-MOLDED EXPANSION JOINT REQUIRED AT EACH SIDE OF ALL STORM INLET STRUCTURES AND AT ALL RADIUS POINTS.
4. 6" SUBBASE TO BE COMPACTED AND TESTED TO 98% DENSITY WITH MINIMUM L.B.R. 40 BASED ON AASHTO T-180 MODIFIED PROCTOR TEST.
5. EXPANSION JOINT MATERIAL MUST COVER THE ENTIRE CROSS SECTION OF CURB.
6. ALL EXPOSED CORNERS TO BE ROUNDED AT 3/4" MIN. RADIUS.
7. ALL CURB ENDS THAT DO NOT TIE INTO OTHER FACILITIES SHALL TRANSITION DOWN TO PAVEMENT GRADE IN 24 INCHES.

STANDARD CONSTRUCTION DETAIL
STANDARD CURB CONSTRUCTION
NTS
INDEX R-4
MAY 2020

ROADWAY COMPACTION AND DENSITY TESTING REQUIREMENTS

ITEM	TEST	FREQUENCY	STANDARD	TEST METHOD
ROADWAY SUBBASE (BOTTOM OF SUBBASE DOWN 1 FOOT)	IN-PLACE DENSITY	ONE (1) TEST/300 LF	98% MODIFIED PROCTOR (ASTM D-1557 OR AASHTO T-180)	ASTM D-2937 D-2922 D-1556
STABILIZED SUBBASE	IN-PLACE DENSITY	ONE (1) TEST/300 LF	98% MODIFIED PROCTOR (ASTM D-1557 OR AASHTO T-180)	ASTM D-2937 D-2922 D-1556
STABILIZED SUBBASE	FLORIDA BEARING VALUE (FBV)	ONE (1) TEST/300 LF	FBV = 75	
STABILIZED SUBBASE	LIMEROCK BEARING RATIO (LBR)	ONE (1) TEST/SOIL TYPE	LBR = 40	
LIMEROCK BASE	IN-PLACE DENSITY	ONE (1) TEST/300 LF	98% MODIFIED PROCTOR (ASTM D-1557 OR AASHTO T-180)	ASTM D-2937 D-2922 D-1556
LIMEROCK BASE	LIMEROCK BEARING RATIO (LBR)	PROVIDE CERTIFICATE FROM PLANT	LBR 100	FM 5-515
ORLISHED CONCRETE BASE	IN-PLACE DENSITY	ONE (1) TEST/300 LF	98% MODIFIED PROCTOR (ASTM D-1557 OR AASHTO T-180)	ASTM D-2937 D-1556
ORLISHED CONCRETE BASE	LIMEROCK BEARING RATIO (LBR)	(1) PER VISIBLE CHANGE IN MATERIAL BLEND	LBR 100	
ASPHALT	EXTRACTION AND GRADATION	(1) PER DAY PER MIX	PER MIX DESIGN	
ASPHALT	THICKNESS AND DENSITY	(1) PER 300 LF ROADWAY	PER MIX DESIGN AND JOB SPECS	D-3903 CORING OR NUCLEAR (DENSITY ONLY)
SOIL OPTIMUM MOISTURE/DENSITY	PROCTOR TEST	(1) PER SOIL OR BASE TYPE		ASTM D-1557 (MODIFIED) ASTM D-558 (STANDARD) AASHTO T-180 (MODIFIED) AASHTO T-99 (STANDARD)
CURB SUBBASE	IN-PLACE DENSITY	ONE (1) TEST/300 LF	98% MODIFIED PROCTOR (ASTM D-1557 OR AASHTO T-180)	
CURB SUBBASE (LBR)	LIMEROCK BEARING RATIO (LBR)	(1) TEST/SOIL CHANGE	LBR 40	

STANDARD CONSTRUCTION DETAIL
TECHNICAL SPECIFICATIONS FOR TESTING REQUIREMENTS
INDEX R-6A
MAY 2020

PIPED UTILITY INSTALLATION REQUIREMENTS

ITEM	TEST	FREQUENCY	STANDARD	TEST METHOD
PIPE TRENCH SUBBASE (IF SPECIFIED)	IN-PLACE DENSITY	ONE (1) TEST/300 LF	98% MODIFIED PROCTOR	ASTM D-2937 D-2922 D-1556
PIPED BACKFILL IN PAVED AREAS	IN-PLACE DENSITY	ONE (1) TEST/300 LF PER ONE (1) FOOT VERTICAL LIFT OF FILL	98% MODIFIED PROCTOR	ASTM D-2937 D-2922 D-1556
PIPED BACKFILL IN GREEN AREAS	IN-PLACE DENSITY	ONE (1) TEST/300 LF PER ONE (1) FOOT VERTICAL LIFT OF FILL	90% MODIFIED PROCTOR	ASTM D-2937 D-2922 D-1556
SOIL OPTIMUM MOISTURE/DENSITY	PROCTOR TEST	ONE (1) PER SOIL OR BASE TYPE		ASTM D-2937 (MODIFIED) ASTM D-558 (STANDARD) AASHTO T-180 (MODIFIED) AASHTO T-99 (STD.)

STANDARD CONSTRUCTION DETAIL
TECHNICAL SPECIFICATIONS FOR TESTING REQUIREMENTS
INDEX R-6B
MAY 2020

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NO.	DATE	BY	SUBMITTALS/REVISIONS
1	07-12-24	RH/SM	REVISED PER CITY OF ORMOND BEACH COMMENTS

CASSEN PARK REDEVELOPMENT FINAL ENGINEERING PLANS CONSTRUCTION DETAILS

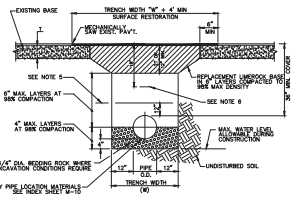
CITY OF ORMOND BEACH — VOLUSIA COUNTY, FLORIDA

PROJECT NO: ZC 22138
DESIGNED BY: SM
DRAFTED BY: SM
CHECKED BY: RH
DWG FILE:



RANDY M. HUDAK, P.E., NO. 66557
NOT VALID WITHOUT SEAL

SHEET: C9 OF 13

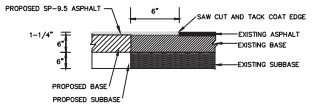


PAVEMENT CUT AND PATCH DETAIL

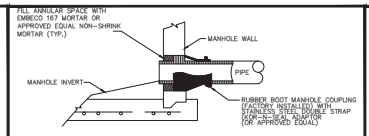
NOTES:

1. WHERE SOIL CONDITIONS CAN NOT BE MAINTAINED AS SHOWN ABOVE, PROVIDE APPROVED METHOD OF CONSTRUCTION.
2. SHEETING WILL BE REQUIRED AS DETERMINED IN THE FIELD.
3. NEW SURFACING MATERIALS SHALL BE CONSISTENT WITH EXISTING AND SHALL HAVE LAPPED & FEATHERED JOINTS (1 1/2" MIN. THK.)
4. COMPACTION PERCENTAGES SHOWN REFER TO A.A.S.H.T.O. T-180. PROVIDE COMPACTION TEST REPORTS TO CITY INSPECTOR.
5. MECHANICAL COMPACTION NOT ALLOWED BELOW THIS LEVEL.
6. INSTALL METALLIC TAPE OVER FULL LENGTH OF PIPE.
7. EIGHT INCHES (8") OF HIGH EARLY-STRENGTH CONCRETE MAY BE SUBSTITUTED FOR LIMEROCK UPON APPROVAL BY CITY ENGINEER.

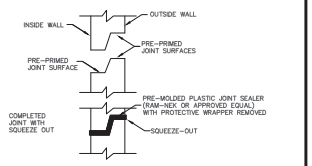
STANDARD CONSTRUCTION DETAIL	INDEX
PAVEMENT CUT AND PATCH	R-8
NTS	MAY 2020



STANDARD CONSTRUCTION DETAIL	INDEX
PAVEMENT BUTT JOINT	R-9
NTS	MAY 2020



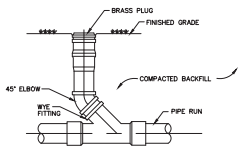
MANHOLE PIPE CONNECTION



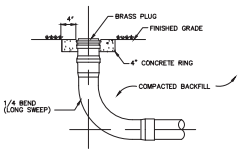
NOTE: ALL CONNECTIONS TO EXISTING SANITARY SEWER MANHOLES SHALL UTILIZE A CORING METHOD AND THE IN-FIELD INSTALLATION OF A RUBBER BOOT INTO THE MANHOLE AND THEN SECURED WITH A STAINLESS STEEL DOUBLE STRAP.

PRECAST JOINT CONNECTION

STANDARD CONSTRUCTION DETAIL	INDEX
RUBBER BOOT AND PRECAST JOINT CONNECTION DETAIL	S-5
NTS.	JUNE 2023



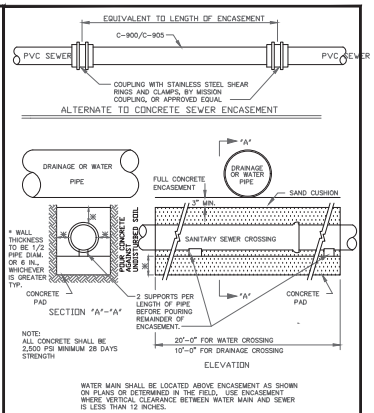
IN-LINE CLEANOUT



TERMINAL CLEANOUT

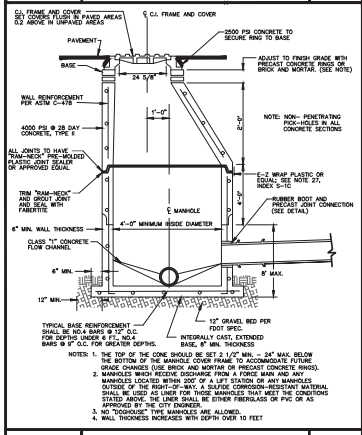
NOTE: CONCRETE COLLAR REQUIRED IN UNPAVED AREAS

STANDARD CONSTRUCTION DETAIL	INDEX
CLEANOUT DETAIL	S-7
NTS.	JUNE 2023



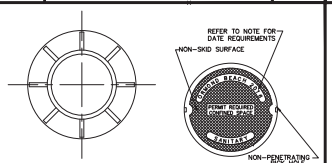
WATER MAIN SHALL BE LOCATED ABOVE ENCASEMENT AS SHOWN ON PLANS OR DETERMINED IN THE FIELD. USE ENCASEMENT WHERE VERTICAL CLEARANCE BETWEEN WATER MAIN AND SEWER IS LESS THAN 12 INCHES.

STANDARD CONSTRUCTION DETAIL	INDEX
SANITARY SEWER CROSSING	S-8
NTS.	JUNE 2023



NOTES: 1. THE TOP OF THE CONE SHOULD BE SET 2 1/2" MIN. – 24" MAX. BELOW THE BOTTOM OF THE MANHOLE COVER FRAME TO ACCOMMODATE FUTURE GRADE CHANGES (USE BRICK AND MORTAR OR PRECAST CONCRETE RINGS).
2. MANHOLES WHICH RECEIVE DISCHARGE FROM A FORCE MAIN AND ANY MANHOLES LOCATED WITHIN 200' OF A LIFT STATION OR ANY MANHOLES OUTSIDE OF THE RIGHT-OF-WAY, A SULFIDE CORROSION-RESISTANT MATERIAL SHALL BE USED AS LINER FOR THOSE MANHOLES THAT MEET THE CONDITIONS STATED ABOVE. THE LINER SHALL BE EITHER FIBERGLASS OR PVC OR AS APPROVED BY THE CITY ENGINEER.
3. NO "DOGHOUSE" TYPE MANHOLES ARE ALLOWED.
4. WALL THICKNESS INCREASES WITH DEPTH OVER 10 FEET

STANDARD CONSTRUCTION DETAIL	INDEX
TYPE "A" PRECAST MANHOLE	S-9A
NTS	JUNE 2023



NOTE: FOR PRIVATE SANITARY SEWER SYSTEMS, REMOVE CITY OF ORMOND BEACH NAME.

NOTE: MANHOLE RING AND COVER SHALL CONFORM TO FDOT STANDARD INDEX 201, SHEET 1 OF 6, AS SHOWN IN ROADWAY TRAFFIC DESIGN STANDARDS.

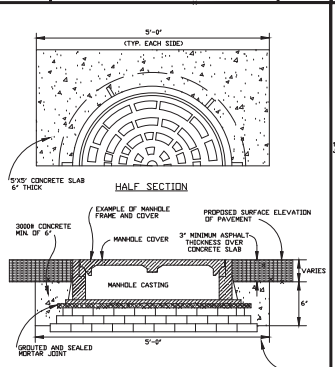
NOTE: YEAR STAMP TO MATCH CASTING YEAR

U. S. FOUNDRY 195E–ORS ("O" RING SEAL) OR APPROVED EQUAL

COVER TYPE	LOAD RATING	COVER WEIGHT	TOTAL WEIGHT
BJ	HEAVY DUTY	200	350

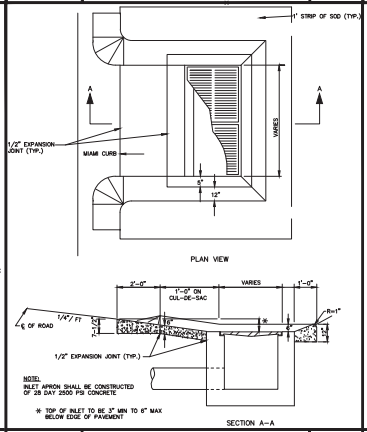
FOR MANHOLES IN FL. D.O.T. R/W OR AS DETERMINED BY THE CITY. THE COVER TYPE SHALL BE – BJ HEAVY DUTY 200 LBS W/ ORS.

STANDARD CONSTRUCTION DETAIL	INDEX
MANHOLE RING AND COVER DETAIL	S-9B
NTS.	JUNE 2023

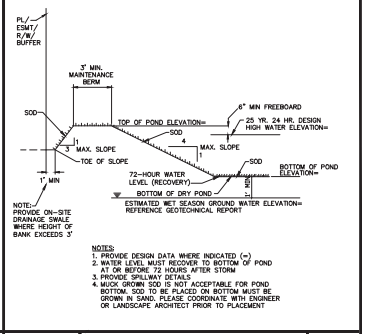


MANHOLE ADJUSTMENT DETAILS

STANDARD CONSTRUCTION DETAIL	INDEX
MANHOLE ADJUSTMENT DETAILS	S-9C
NTS	JUNE 2023

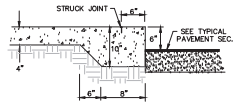


STANDARD CONSTRUCTION DETAIL	INDEX
STORM INLET APRON	ST-3
NTS	MAY 2020

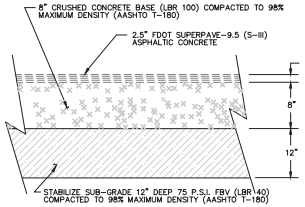


NOTES:
1. PROVIDE DESIGN DATA WHERE INDICATED (=)
2. WATER LEVEL MUST RECOVER TO BOTTOM OF POND AT OR BEFORE 72 HOURS AFTER STORM
3. PROVIDE SPILLWAY DETAILS
4. MUCK GROWN SOD IS NOT ACCEPTABLE FOR POND BOTTOM. SOD TO BE PLACED ON BOTTOM MUST BE GROWN IN SAND. PLEASE COORDINATE WITH ENGINEER OR LANDSCAPE ARCHITECT PRIOR TO PLACEMENT

STANDARD CONSTRUCTION DETAIL	INDEX
DRY RETENTION POND	ST-4
NTS.	MAY 2020



THICKENED EDGE SIDEWALK DETAIL
NTS



NOTE: SURFACE–SUPERPAVE 12.5 CM ON 9.5 MM TRAFFIC LEVEL C ASPHALTIC CONCRETE

NOTE: HEAVY DUTY PAVEMENT TO BE USED IN ALL DRIVE AISLES AND TRAILER PARKING AREAS

HEAVY DUTY PAVING SECTION
N.T.S.

ZEVCOHEN & ZEVCOHEN INC.
CIVIL ENGINEERING
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL
PLANNING
TRANSPORTATION
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NO	DATE	BY	SUBMITTALS/REVISIONS
1	07-02-24	RH/SM	REVISED PER CITY OF ORMOND BEACH COMMENTS

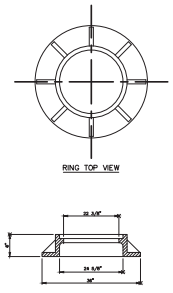
CASSEN PARK REDEVELOPMENT FINAL ENGINEERING PLANS CONSTRUCTION DETAILS

CITY OF ORMOND BEACH VOLUSIA COUNTY, FLORIDA

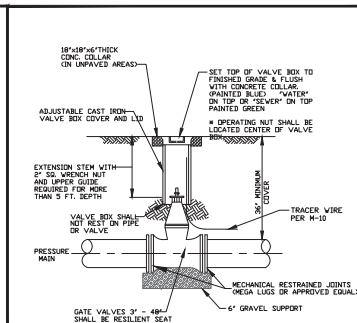
PROJECT NO: ZC 22138
DESIGNED BY: SM
DRAFTED BY: SM
CHECKED BY: RH
DWG FILE:

RANDY M. HUDAK, P.E., NO. 68057
STATE OF FLORIDA
NOT VALID WITHOUT SEAL

SHEET: C10 OF 13

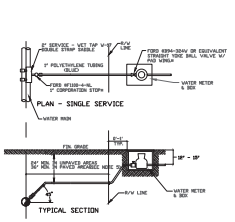


STANDARD CONSTRUCTION DETAIL
MANHOLE RING AND COVER DETAIL
NTS.
INDEX ST-6
MAY 2020



STANDARD CONSTRUCTION DETAIL
GATE VALVE AND VALVE BOX
NTS.
INDEX W-2
JUNE 2023

VALVE SCHEDULE FORD OR EQUIVALENT	
WATER SERVICES	
VALVES AT MAIN	
1"	F1100-4-NL
2" (RED. C84-77 PACK JOINT COUPLING)	B81-777-NL
VALVES AT METER	
1"x3/4"	B94-324V-NL
1 1/2"-2"	B43-777V-NL
1"x1"	B94-344V-NL
* = NO HALF SIZE TAPS PERMITTED	



NOTES:
1. CUSTOMER POINT OF SERVICE IS TYPICALLY AT THE LOCATION WHERE CUSTOMER PLUMBING IS ATTACHED TO THE YOKE ADAPTER.
2. HDPE SHALL BE 200 PSI, NSF APPROVED, SDR 9, MEETING ASTM D2248. TUBING SHALL BE ENDOT ENDOTRACE (OR APPROVED EQUAL).
3. REDUCED PRESSURE BACKFLOW PREVENTERS ARE REQUIRED FOR ALL COMMERCIAL SERVICES AND SHALL BE INSTALLED BY A CERTIFIED TECHNICIAN AT OWNERS EXPENSE
4. ALL SERVICE TAPS SHALL BE NO CLOSER THAN 2'-0" STAGGERED INTERVAL OR WITHIN 2'-0" OF BELL OR SPIGOT ENDS.
5. IN AREAS TO BE PAVED PROVIDE A 2" MIN. PVC SCHEDULE 40 CASING FOR PC-TUBING. CASING SHALL EXTEND A MIN. OF 2' BEHIND BACK OF CURB AT EACH SIDE OF ROAD. 2" CASING FOR 1", 4" CASING FOR 2".
6. ALL IRRIGATION SERVICES (WATER) MUST HAVE AN APPROVED BACKFLOW PREVENTION DEVICE INSTALLED ON CUSTOMERS SIDE OF WATER METER. SEE V-6D FOR COMMERCIAL PROPERTIES OR SEE V-6F FOR RESIDENTIAL PROPERTIES. THE CITY WILL INSTALL ALL CITY-OWNED IRRIGATION BACKFLOW PREVENTERS. THE CUSTOMER IS RESPONSIBLE FOR INSTALLATION AND CERTIFICATION COST. A COPY OF THE CERTIFICATION MUST BE SENT TO THE CITY OF ORMOND BEACH ENGINEERING DEPARTMENT, PRIOR TO FINAL INSPECTION.
7. WATER METERS INSTALLED IN AREAS SERVED BY RECLAIMED WATER SHALL BE EQUIPPED WITH A DUAL CHECK BACKFLOW PREVENTER.
8. WATER METERS IN AREA SERVED WITH AN ALTERNATE IRRIGATION SUPPLY SHALL BE EQUIPPED WITH BACKFLOW PREVENTION TO BE APPROVED FOR USE BY FSDP.

STANDARD CONSTRUCTION DETAIL
WATER LATERAL SERVICE
5/8", 3/4", 1", 1-1/2", 2" METERS
NTS
INDEX W-3
JUNE 2023

SCHEDULE OF LENGTHS OF RESTRAINED PVC PIPE (FT.)

FITTING	1/4 BEND	1/8 BEND	1/16 BEND	1/32 BEND	TEE OR DEAD END
PIPE SIZE (IN.) :					
4"	20	18	18	18	45
6"	28	18	18	18	63
8"	36	18	18	18	82
10"	44	28	18	18	98
12"	51	21	18	18	116
14"	57	24	18	18	132
16"	63	26	18	18	148
18"	69	29	18	18	163
20"	75	31	18	18	179
24"	87	36	18	18	208
30"	102	42	20	18	248

TABLE APPLIES TO PVC PIPE FOR THE FOLLOWING CONDITIONS:
TEST PRESSURE: 150 PSIG
SOIL TYPE: SP
COVER DEPTH: 2.5 FEET
SAFETY FACTOR: 1.5
TRENCH TYPE: 3

LENGTHS BETWEEN HEAVY LINES INDICATE ONE FULL LENGTH (18' MIN.) OF PIPE TO BE RESTRAINED.
TABLE SHOWS MINIMUM LENGTH OF PIPE EACH WAY FROM FITTING FOR WHICH RESTRAINT IS REQUIRED.

SCHEDULE OF LENGTHS OF RESTRAINED DIP (FT.)

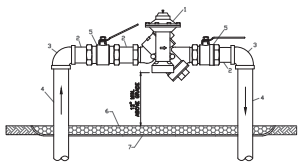
FITTING	1/4 BEND	1/8 BEND	1/16 BEND	1/32 BEND	TEE OR DEAD END
PIPE SIZE (IN.) :					
4"	21 (26)	18 (18)	18 (18)	18 (18)	37 (55)
6"	30 (36)	18 (18)	18 (18)	18 (18)	52 (78)
8"	38 (45)	18 (18)	18 (18)	18 (18)	67 (100)
10"	45 (54)	18 (22)	18 (18)	18 (18)	81 (122)
12"	52 (63)	22 (26)	18 (18)	18 (18)	94 (141)
14"	60 (72)	25 (30)	18 (18)	18 (18)	107 (160)
16"	66 (80)	27 (33)	18 (18)	18 (18)	120 (180)
18"	74 (87)	31 (36)	18 (18)	18 (18)	132 (198)
20"	80 (94)	33 (39)	18 (18)	18 (18)	144 (216)
24"	92 (108)	38 (45)	18 (22)	18 (18)	167 (250)
30"	106 (126)	44 (53)	21 (25)	18 (18)	199 (298)
36" *	69 (82)	28 (34)	18 (18)	18 (18)	170 (204)
42" *	76 (90)	31 (37)	18 (18)	18 (18)	191 (229)
48" *	90 (106)	40 (46)	18 (18)	18 (18)	212 (254)

TABLE APPLIES TO D.I.P. FOR THE FOLLOWING CONDITIONS:
TEST PRESSURE: 150 PSIG
SOIL TYPE: SP
COVER DEPTH: 2.5 FEET
SAFETY FACTOR: 1.5
TRENCH TYPE: 2

LENGTHS BETWEEN HEAVY LINES INDICATE ONE FULL LENGTH (18' MIN.) OF PIPE TO BE RESTRAINED.
TABLE SHOWS MINIMUM LENGTH OF PIPE EACH WAY FROM FITTING FOR WHICH RESTRAINT IS REQUIRED.
VALUES IN PARENTHESES ARE FOR PIPE ENCASED IN POLYETHYLENE.

STANDARD CONSTRUCTION DETAIL
PVC AND D.I.P. RESTRAINED JOINT TABLE
INDEX W-5
JUNE 2023

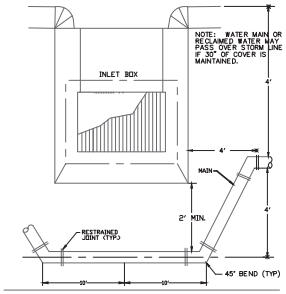
ACCEPTABLE MANUFACTURERS:
WILKINS MODEL 975XL, WATTS MODEL 009 QTS, APOLLO MODEL RPLF4A



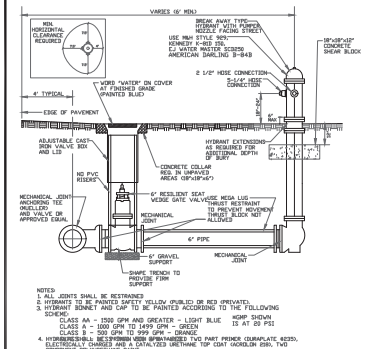
ITEM	QUANT.	DESCRIPTION
1	1	3/4", 1", 1-1/2" OR 2" BACKFLOW PREVENTER ASSEMBLY
2	3	3/4", 1", 1-1/2" OR 2" x NOM. NIPPLES - BRASS
3	2	3/4", 1", 1-1/2" OR 2" x 90° ELBOWS - PVC., BRASS, OR COPPER
4	2	3/4", 1", 1-1/2" OR 2" x VARIES RISER - PVC., BRASS, OR COPPER
5	2	3/4", 1", 1-1/2" OR 2" BALL VALVE
6	*	PEA GRAVEL
7	*	PLASTIC LINER

NOTE: -FIELD ADJUST AND CUT ITEM 4 TO THE PROPER LENGTH.
-NO GALVANIZED FITTINGS OR PIPE ALLOWED.
-A COPY OF THE ASSEMBLY CERTIFICATION SHALL BE SUBMITTED TO THE CITY'S ENGINEERING DEPARTMENT BEFORE FINAL INSPECTION.
-ASSEMBLY SHOULD HAVE ADEQUATE LANDSCAPING AROUND IT TO OBSCURE VIEW.
-ASSEMBLY SHALL BE PAINTED FOREST GREEN
-WILKINS ASSEMBLIES ARE REQUIRED FOR CITY OWNED FACILITIES

STANDARD CONSTRUCTION DETAIL
REDUCED PRESSURE BACKFLOW PREVENTER (POTABLE WATER & COMMERCIAL PROPERTY IRRIGATION) - 3/4", 1", 1 1/2", OR 2"
NTS
INDEX W-6D
JUNE 2023

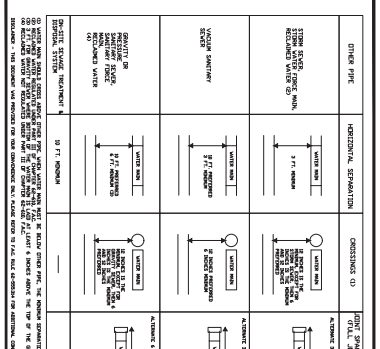


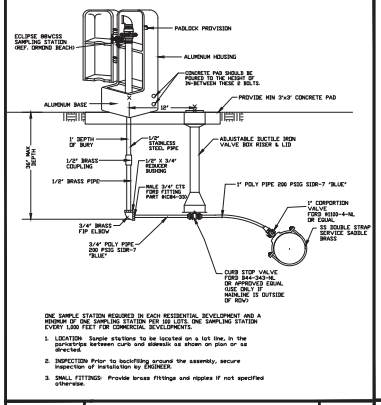
STANDARD CONSTRUCTION DETAIL
WATER MAIN INSTALLATION BETWEEN DRAINAGE INLET AND SIDEWALK
INDEX W-7



NOTES:
1. ALL JOINTS SHALL BE RESTRAINED
2. HYDRANTS TO BE PAINTED SAFETY YELLOW (PUBLIC) OR RED (PRIVATE).
3. HYDRANT BONNET AND CAP TO BE PAINTED IN ACCORDANCE WITH THE FOLLOWING SCHEME:
CLASS AA - 1500 GPM AND GREATER - LIGHT BLUE (CMYP SHOWN IS AT 80 PSI
CLASS A - 1000 GPM TO 1499 GPM - GREEN
CLASS B - 500 GPM TO 999 GPM - ORANGE
4. HYDRANTS SHALL BE TRAFFIC MODEL WITH TWO 4-1/2" AND ONE 6" NOMINAL OPENINGS, CONFORMING TO AWWA C-502. HYDRANTS SHALL BE PAINTED WITH TWO PART PRIMER (CORALPLATE #235), ELECTROSTATICALLY CHARGED AND A CATALYZED URETHANE TOP COAT (ISOROLON 2280, TWO COMPONENT POLYURETHANE PAINT).
5. HOSE CONNECTIONS TO BE AMERICAN STANDARD THREADS.
6. ALL BOLTS AND NUTS SHALL BE COATED WITH FUSION BONDED EPOXY, 6 MIL MINIMUM
7. ADJUSTMENTS OR REPAIRS TO THE HYDRANT AFTER INSTALLATION SHALL BE DONE BY AN UNDERGROUND UTILITY CONTRACTOR OR THE CITY AND ALL COST SHALL BE CHARGED TO THE DEVELOPER. PAYMENT SHALL BE MADE PRIOR TO CERTIFICATE OF OCCUPANCY OF PROPERTY.
8. RESTRAINED JOINTS REQUIRED. THRUST BLOCKS NOT PERMITTED.
9. ALL PIPE TO BE DUCTILE IRON CLASS 50.
10. INSTALL BLUE REFLECTIVE MARKER IN SUCH A MANNER THAT THE REFLECTIVE FACE OF THE MARKER IS PERPENDICULAR TO A LINE PARALLEL TO THE ROADWAY CENTERLINE. THE BLUE REFLECTIVE MARKER SHALL BE PLACED IN THE CENTER OF THE TRAVEL LANE, DIRECTLY ACROSS FROM AND ADJACENT TO EACH FIRE HYDRANT.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR FLOW TEST OF HYDRANT BY A FIRE SUPPRESSION CONTRACTOR / DESIGN FIRM IN ACCORDANCE WITH AWWA M-17.
12. FIRE HYDRANTS TO BE OPEN LEFT (C.C.W.)

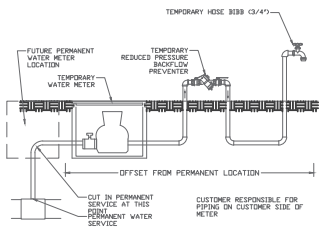
STANDARD CONSTRUCTION DETAIL
FIRE HYDRANT ASSEMBLY
NTS
INDEX W-8
JUNE 2023


DUCTILE IRON PIPE
HORIZONTAL SEPARATION
CROSSINGS (1)
JOINT SPACING & CROSSINGS
MINIMUM 10 FT. HORIZONTAL SEPARATION
WATER MAIN
SEWER FORCE MAIN
RECLAIMED WATER MAIN OR VICE VERSA



STANDARD CONSTRUCTION DETAIL
WATER SAMPLING STATION
NTS

INDEX W-20
JUNE 2023



FOR USE ON PROJECTS DURING CONSTRUCTION WITHOUT AN EXISTING METER AND A HYDRANT METER IS NOT FEASIBLE.

NOTES:

1. UPON APPROVAL OF ENGINEERING PERMIT CONTRACTOR MAY INSTALL A TEMPORARY METER, BACKFLOW PREVENTER, AND HOSE BIBB TO SUPPLY METERED WATER FOR CONSTRUCTION. TEMPORARY PLUMBING & FIXTURES SHOULD BE OFFSET FROM THE FINAL LOCATION OF THE PERMANENT WATER METER & CONNECTION.
2. PRIOR TO FINAL INSPECTION, THE CONTRACTOR SHALL REMOVE THE TEMPORARY METER, BACKFLOW PREVENTER, AND HOSE BIBB AND INSTALL A PERMANENT WATER METER AND MAKE WATER CONNECTION TO THE BUILDING PER CURRENT CONSTRUCTION STANDARDS.
3. CONTRACTOR SHALL NOT DISTURB FITTINGS AT METER BOX.
4. CONTRACTOR SHALL REMOVE HOSE BIBB AND CONNECT PERMANENT SERVICE AT LOCATION INDICATED.

STANDARD CONSTRUCTION DETAIL
TEMPORARY WATER SERVICE
(FOR CONSTRUCTION)
NTS

INDEX W-21
JUNE 2023

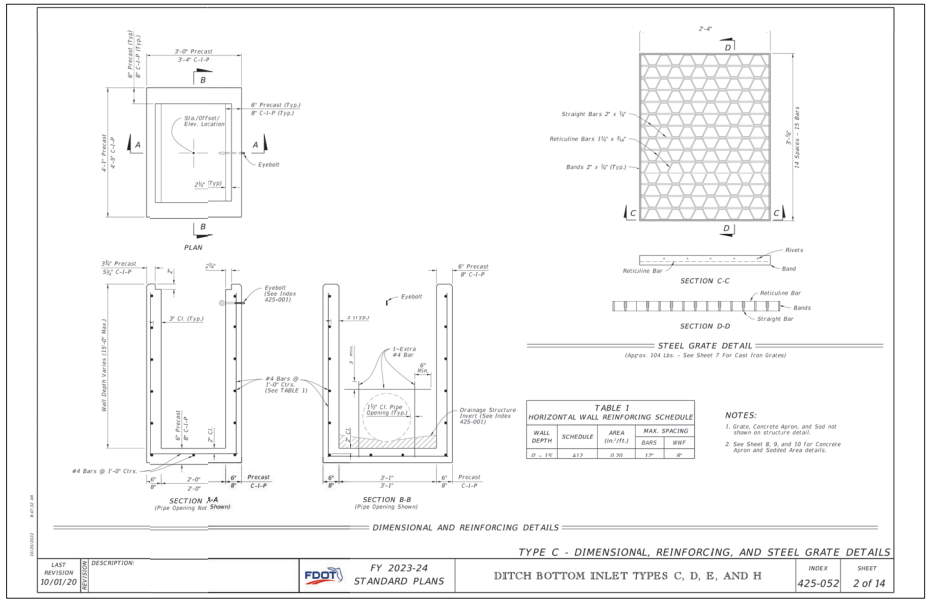
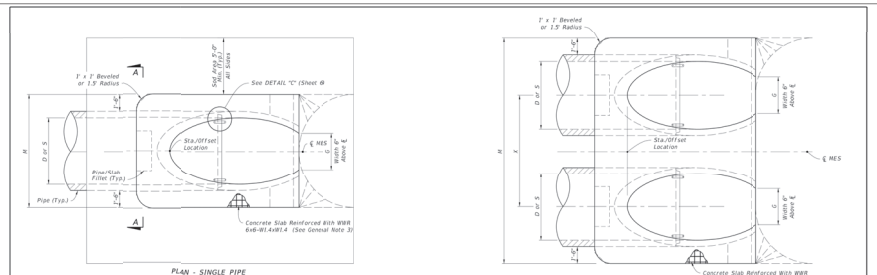


TABLE 1
HORIZONTAL WALL REINFORCING SCHEDULE

WALL DEPTH	SCHEDULE	AREA (in²/ft.)	MAX. SPACING BARS	MAX. SPACING WWF
0' - 11'	A12	0.36	12"	8"

NOTES:
1. Grate, Concrete Apron, and Sod not shown on structure detail.
2. See Sheet 8, 9, and 10 for Concrete Apron and Sodded Area details.

LAST REVISION 10/01/20
REVISION DESCRIPTION:
FDOT FY 2023-24 STANDARD PLANS
DITCH BOTTOM INLET TYPES C, D, E, AND H
INDEX 425-052
SHEET 2 of 14



NOTE: See Table 1 on Sheet 3 for Dimensions and Quantities.

LAST REVISION 11/01/19
REVISION DESCRIPTION:
FDOT FY 2023-24 STANDARD PLANS
CROSS DRAIN MITERED END SECTION
INDEX 430-021
SHEET 2 of 6

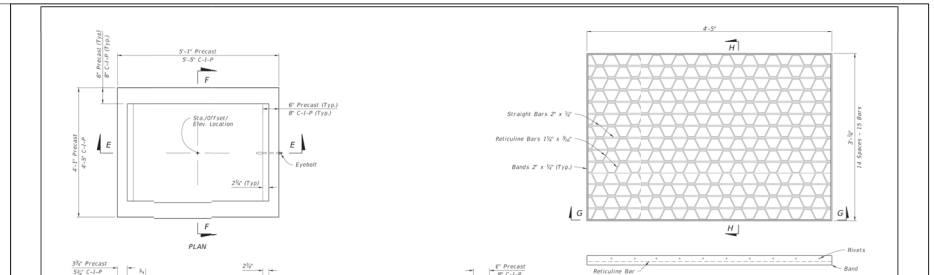


TABLE 2
HORIZONTAL WALL REINFORCING SCHEDULE

WALL DEPTH	SCHEDULE	AREA (in²/ft.)	MAX. SPACING BARS	MAX. SPACING WWF
0' - 6'	A12	0.20	12"	8"
6' - 10'	A8	0.20	8"	5"
10' - 13'	A4	0.20	4"	3"
10' - 19'	B5.5	0.24	5½"	5"

NOTES:
1. Grate, Concrete Apron, and Sod not shown on structure details.
2. See Sheet 8, 9, and 10 for Concrete Apron and Sodded Area details.
3. Cast Iron Grate is not permitted on Inlet Type D.

LAST REVISION 10/01/20
REVISION DESCRIPTION:
FDOT FY 2023-24 STANDARD PLANS
DITCH BOTTOM INLET TYPES C, D, E, AND H
INDEX 425-052
SHEET 3 of 14

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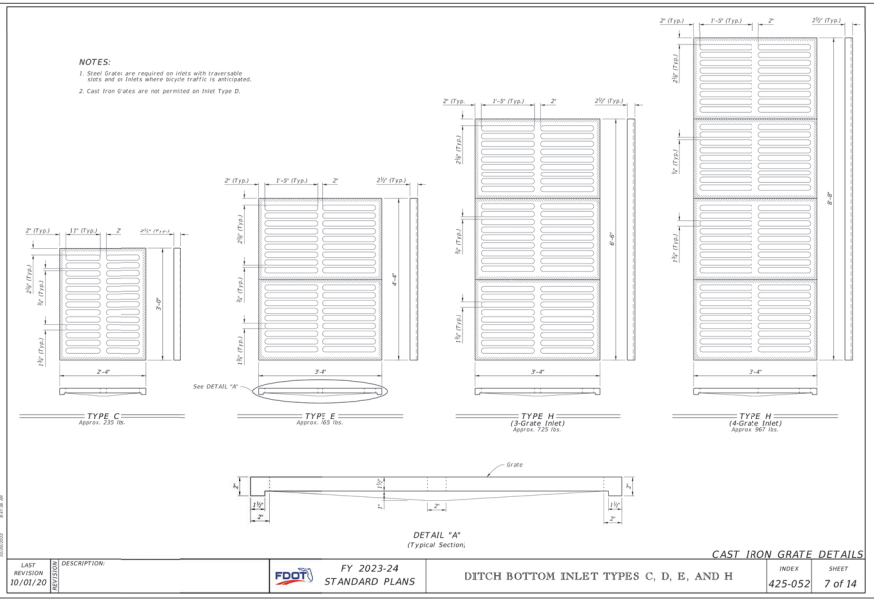
NO	DATE	BY	REVISIONS
1	07-12-24	RH/SM	SUBMITTALS REVISIONS REVISED PER CITY OF ORMOND BEACH COMMENTS

CASSEN PARK
REDEVELOPMENT
FINAL ENGINEERING PLANS
CONSTRUCTION DETAILS
CITY OF ORMOND BEACH VOLUSIA COUNTY, FLORIDA

PROJECT NO: ZC 22138
DESIGNED BY: SM
DRAFTED BY: SM
CHECKED BY: RH
DWG FILE:

RANDY M. HUDAK, P.E., NO. 68057
NOT VALID WITHOUT SEAL

SHEET: C12 OF 13



LAST REVISION	DESCRIPTION:	FDOT	FY 2023-24 STANDARD PLANS	DITCH BOTTOM INLET TYPES C, D, E, AND H	INDEX	SHEET
10/01/20					425-052	7 of 14

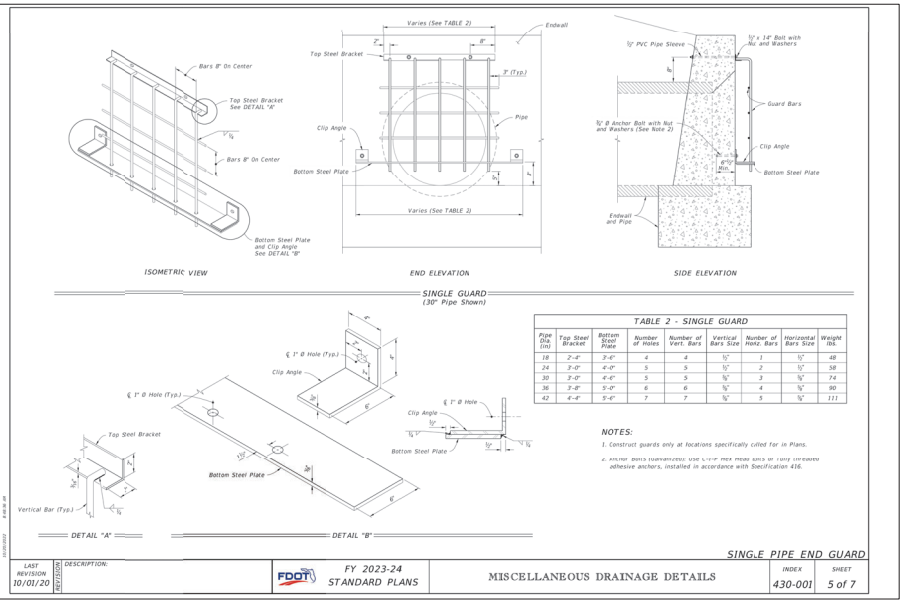
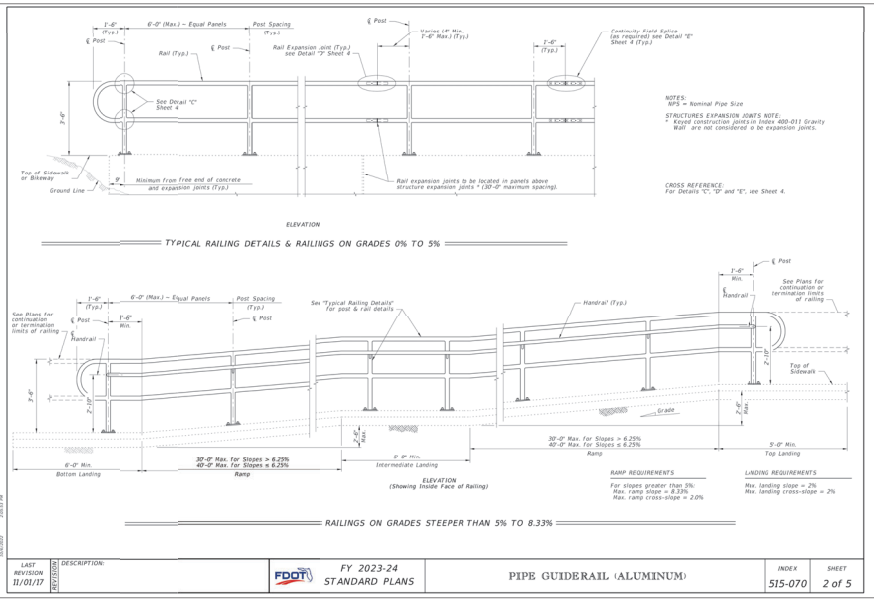


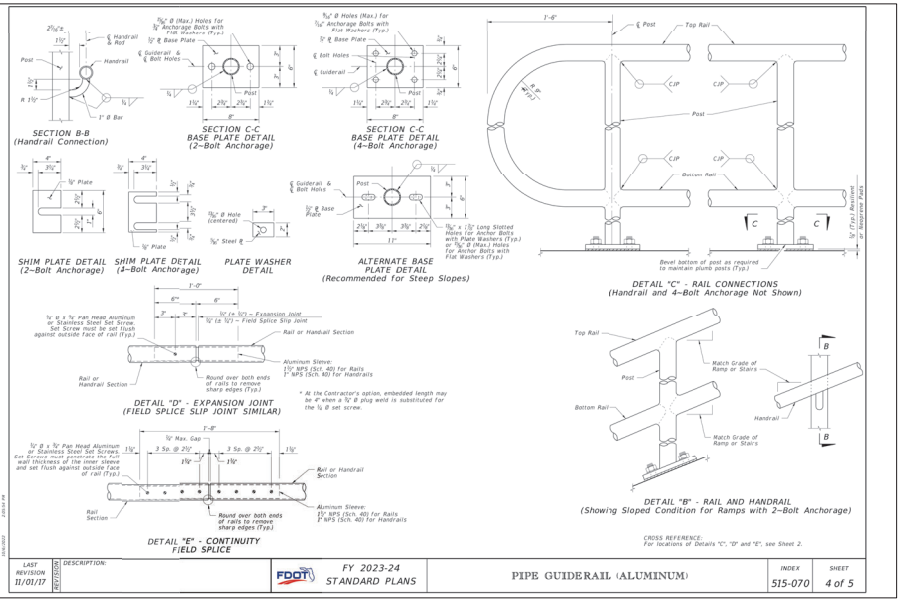
TABLE 2 - SINGLE GUARD

Pipe Dia. (in)	Top Steel Bracket	Bottom Steel Plate	Number of Holes	Number of Vert. Bars	Vertical Bars Size	Number of Horiz. Bars	Horizontal Bars Size	Weight lbs.
18	2'-4"	3'-6"	4	4	½"	1	½"	48
24	3'-0"	4'-0"	5	5	½"	2	½"	58
30	3'-0"	4'-6"	5	5	⅝"	3	⅝"	74
36	3'-0"	5'-0"	6	6	⅝"	4	⅝"	90
42	4'-4"	5'-6"	7	7	⅝"	5	⅝"	111

LAST REVISION	DESCRIPTION:	FDOT	FY 2023-24 STANDARD PLANS	MISCELLANEOUS DRAINAGE DETAILS	INDEX	SHEET
10/01/20					430-001	5 of 7



LAST REVISION	DESCRIPTION:	FDOT	FY 2023-24 STANDARD PLANS	PIPE GUIDERAIL (ALUMINUM)	INDEX	SHEET
11/01/17					515-070	2 of 5



LAST REVISION	DESCRIPTION:	FDOT	FY 2023-24 STANDARD PLANS	PIPE GUIDERAIL (ALUMINUM)	INDEX	SHEET
11/01/17					515-070	4 of 5

ZEVCOHEN & ASSOCIATES, INC.
CIVIL ENGINEERING
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL
PLANNING
TRANSPORTATION
WWW.ZEVCOHEN.COM

NO.	DATE	BY	SUBMITTALS REVISIONS
1	07-02-24	RH/SM	REVISED PER CITY OF ORMOND BEACH COMMENTS

CASSEN PARK
REDEVELOPMENT
FINAL ENGINEERING PLANS
CONSTRUCTION DETAILS

CITY OF ORMOND BEACH VOLUSIA COUNTY, FLORIDA

PROJECT NO: ZC 22138
DESIGNED BY: SM
DRAFTED BY: SM
CHECKED BY: RH
DWG FILE:

RANDY M. HUDAK
LICENSE NO. 68057
STATE OF FLORIDA
PROFESSIONAL ENGINEER

RANDY M. HUDAK, P.E., NO. 68057
NOT VALID WITHOUT SEAL

SHEET: C13 OF 13

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CASSEN PARK

100% CONSTRUCTION DOCUMENT SET
JULY 30, 2024

Marquis Latimer + Halback, Inc.
Project Management + Landscape Architecture
Project Manager: Jeremy Marquis | jeremy@halback.com
34 Cordova Street, Suite A, St. Augustine, FL 32084
Ph: 904.825.6747
Florida LA6667110

Prepared For
ZEV COHEN & ASSOCIATES
300 INTERCHANGE BLVD, SUITE C
ORMOND BEACH, FLORIDA 32174

Project Manager
DWIGHT DURANT
JAKE STEHR, PLA

Site Location
1 SOUTH BEACH STREET, ORMOND BEACH, FLORIDA, 32174

Jurisdictional Review
CITY OF ORMOND BEACH
ST JOHNS RIVER WATER MANAGEMENT DISTRICT

[PERMITTING BY ZEV COHEN]

Sheet List Table

Sheet Number	Sheet Title	Sheet Revision Date
COVER	COVER	07.30.2024
L-2.1	HARDSCAPE PLAN	07.30.2024
L-2.2	HARDSCAPE DETAILS - VETERANS PLAZA	07.12.2024
L-2.3	HARDSCAPE DETAILS - PAVEMENT	07.12.2024
L-2.4	HARDSCAPE DETAILS - PLANTER PLAZA	07.12.2024
L-2.5	HARDSCAPE DETAILS	07.30.2024
L-2.6	HARDSCAPE SCHEDULE & NOTES	07.30.2024
L-3.1	LANDSCAPE PLAN	07.30.2024
L-3.2	LANDSCAPE PLAN ENLARGEMENT - FORMAL GARDEN	07.30.2024
L-3.3	LANDSCAPE SCHEDULE & NOTES	07.30.2024
L-3.4	LANDSCAPE TREE TABLES + DETAILS	07.30.2024
L-3.5	LANDSCAPE DETAILS	07.30.2024
L-4.1	IRRIGATION PLAN	07.30.2024
L-4.2	IRRIGATION SCHEDULE + NOTES	07.30.2024
L-4.3	IRRIGATION DETAILS	07.30.2024

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St. Augustine, FL 32084
Ph 904.825.6747
www.halback.com
LA6667110 Qualifier

Digitally signed by Jeremy Marquis
Date: 2024.07.30 -04'00'

LANDSCAPE ARCHITECT OF RECORD
Jeremy Marquis, RLA (LA6667110)
DRAWN BY: JRM | CS | NS | EG

ZEV COHEN

CASSEN PARK
1 SOUTH BEACH STREET, ORMOND BEACH, FLORIDA, 32174
COVER

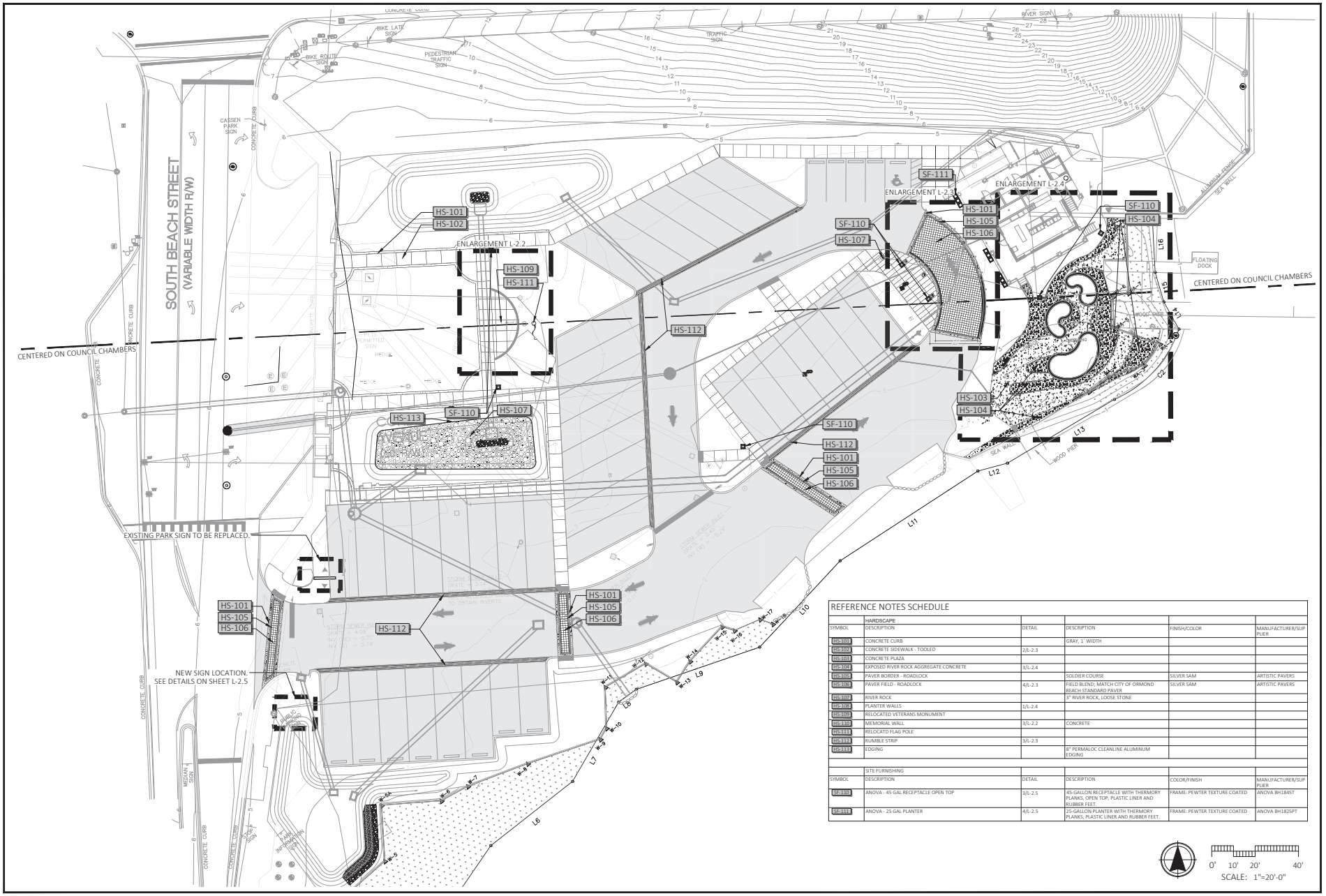
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REFERENCE NOTES SCHEDULE

	HARDSCAPE				
SYMBOL	DESCRIPTION	DETAIL	DESCRIPTION	FINISH/COLOR	MANUFACTURER/SUPPLIER
HS-101	CONCRETE CURB		GRAY, 1' WIDTH		
HS-102	CONCRETE SIDEWALK - TOOLED	2/L-2.3			
HS-103	CONCRETE PLAZA				
HS-104	EXPOSED RIVER ROCK AGGREGATE CONCRETE	3/L-2.4			
HS-105	PAVER BORDER - ROADLOCK		SOLDIER COURSE	SILVER SAM	ARTISTIC PAVERS
HS-106	PAVER FIELD - ROADLOCK	4/L-2.3	FIELD BLEND; MATCH CITY OF ORMOND BEACH STANDARD PAVER	SILVER SAM	ARTISTIC PAVERS
HS-107	RIVER ROCK		3" RIVER ROCK, LOOSE STONE		
HS-108	PLANTER WALLS	1/L-2.4			
HS-109	RELOCATED VETERANS MONUMENT				
HS-110	MEMORIAL WALL	3/L-2.2	CONCRETE		
HS-111	RELOCATD FLAG POLE				
HS-112	RUMBLE STRIP	3/L-2.3			
HS-113	EDGING		8" PERMALOC CLEANLINE ALUMINUM EDGING		

	SITE FURNISHING				
SYMBOL	DESCRIPTION	DETAIL	DESCRIPTION	COLOR/FINISH	MANUFACTURER/SUPPLIER
SF-110	ANOVA - 45 GAL RECEPTACLE OPEN TOP	3/L-2.5	45-GALLON RECEPTACLE WITH THERMORY PLANKS, OPEN TOP, PLASTIC LINER AND RUBBER FEET.	FRAME: PEWTER TEXTURE COATED	ANOVA BH1845T
SF-111	ANOVA - 25 GAL PLANTER	4/L-2.5	25-GALLON PLANTER WITH THERMORY PLANKS, PLASTIC LINER AND RUBBER FEET.	FRAME: PEWTER TEXTURE COATED	ANOVA BH1825PT

0' 10' 20' 40'
SCALE: 1"=20'-0"

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St. Augustine, FL 32084
Ph 904.825.6747
www.halback.com
LA6667110 Qualifier

REGISTERED LANDSCAPE ARCHITECT JEREMY R. MARQUIS LA 6667110 STATE OF FLORIDA

LANDSCAPE ARCHITECT OF RECORD
Jeremy Marquis, RLA (LA6667110)

DRAWN BY: JRM | CS | NS | EG

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CASSEN PARK

1 SOUTH BEACH STREET, ORMOND BEACH, FLORIDA, 32174

HARDSCAPE PLAN

REV	DESCRIPTION	DATE
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	5+5 Set	05/15/24
	90% SUBMITTAL	03/14/24
	60% SUBMITTAL	12/15/23

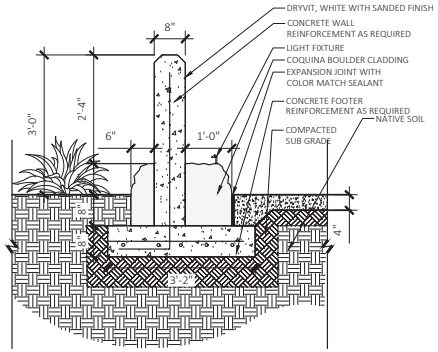
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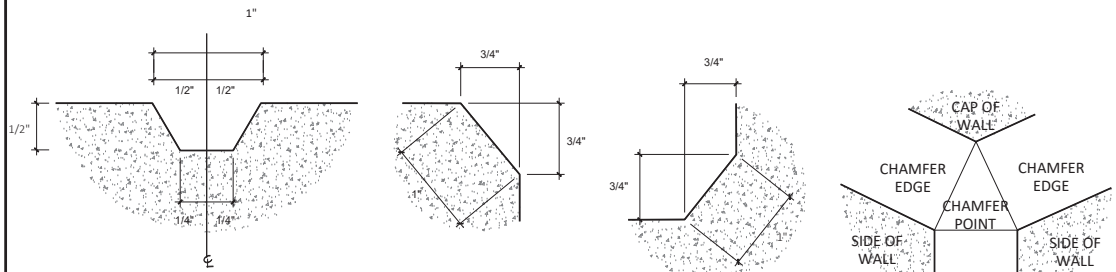
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3 VETERAN MEMORIAL WALL - SECTION

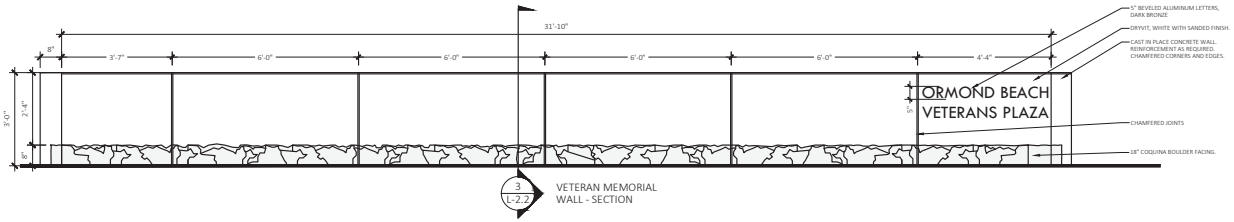
3/4" = 1'-0" P-MU-CAS-19



TYP. CHAMFER JOINT SECTION | TYP. CHAMFER EDGE SECTION | TYP. FILLET SECTION | CORNER CHAMFER ISOMETRIC VIEW

2 WALL JOINT CHAMFER DETAILS

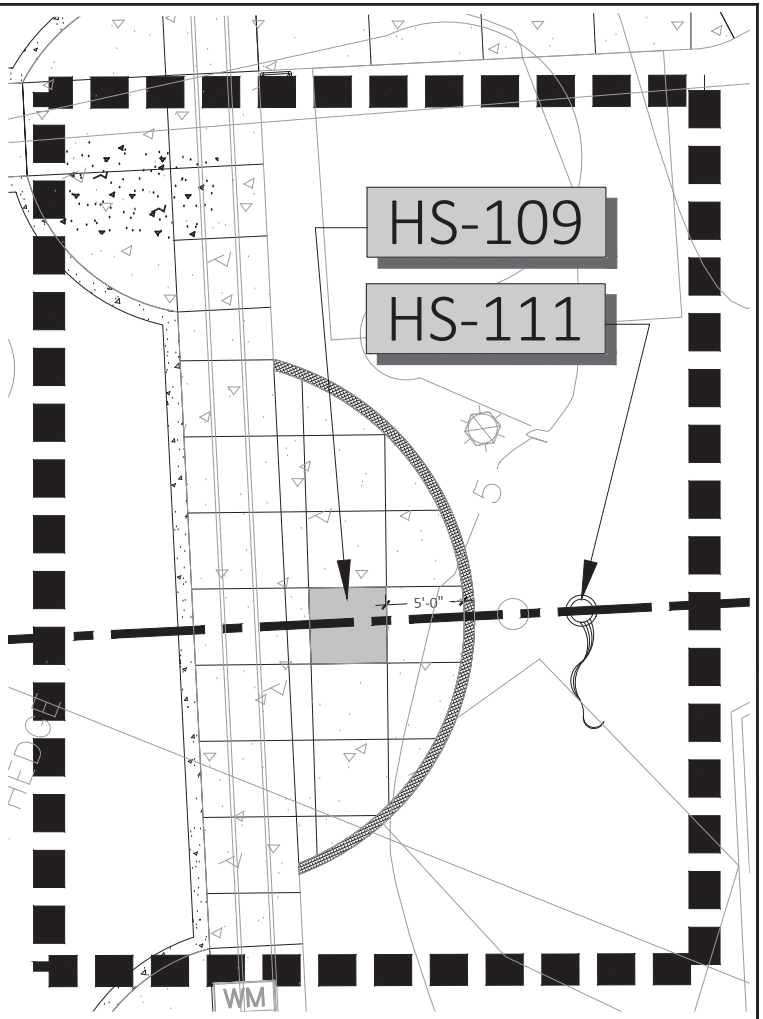
NOT TO SCALE P-MU-CAS-12



3 L-2.2 VETERAN MEMORIAL WALL - SECTION

1 VETERAN MEMORIAL WALL - ELEVATION

1/2" = 1'-0" P-MU-CAS-21



REFERENCE NOTES SCHEDULE ENLARGEMENT L-2.02

	HARDSCAPE			
SYMBOL	DESCRIPTION	QTY	DETAIL	DESCRIPTION
HS-109	RELOCATED VETERANS MONUMENT			
HS-110	MEMORIAL WALL	29 SF	3/L-2.2	CONCRETE
HS-111	RELOCATD FLAG POLE	1		

0' 2' 4' 8'

SCALE: 1/4"=1'-0"

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LA6667110 Qualifier

REGISTERED LANDSCAPE ARCHITECT JEREMY R. MARQUIS LA 6667110 STATE OF FLORIDA

LANDSCAPE ARCHITECT OF RECORD
Jeremy Marquis, RLA (LA6667110)

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CASSEN PARK

1 SOUTH BEACH STREET, ORMOND BEACH, FLORIDA, 32174

HARDSCAPE DETAILS - VETERANS PLAZA

REV	DESCRIPTION	DATE
	100%	07/30/24
	5+5 Set	05/15/24
	90% SUBMITTAL	03/14/24
	60% SUBMITTAL	12/15/23

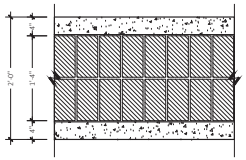
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ML+H PROJECT #: 23.02.00

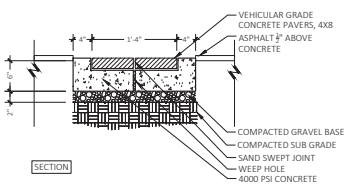
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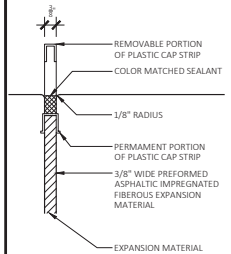




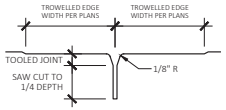
3 RUMBLE STRIP

1" = 1'-0" P-MU-CAS-18

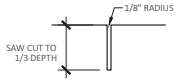
NOTE:
SEE DRAWING FOR LOCATION OF CONCRETE JOINTS. EXPANSION JOINTS ARE TO BE PLACED AT JUNCTURE WITH ALL VERTICAL SURFACES AND CHANGES IN MATERIAL, UNLESS OTHERWISE INDICATED EXPANSION JOINT MAXIMUM SPACING SHALL NOT EXCEED 3 TIMES THE WIDTH OF ANY SEGMENT OF CONCRETE. MAXIMUM AREA OF CONCRETE WITHOUT AN EXPANSION JOINT SHALL NOT EXCEED 120 SF. FT. CONTROL JOINTS TO BE SPACED A DISTANCE EQUIVALENT TO THE WIDTH OF SIDEWALK - IF NOT SHOWN ON PLAN.



EXPANSION JOINT
REFER TO LAYOUT PLANS FOR TYPICAL LOCATIONS



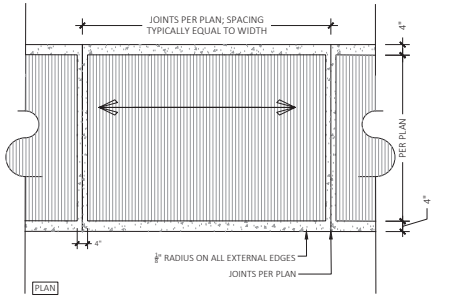
CONTROL JOINT
REFER TO LAYOUT PLANS FOR TYPICAL LOCATIONS



SAW CUT - CONTROL JOINT
REFER TO LAYOUT PLANS FOR TYPICAL LOCATIONS

5 CONCRETE JOINTS

6" = 1'-0" P-MU-CAS-01

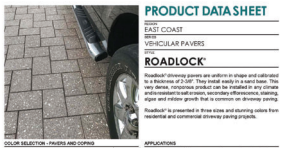


PEDESTRIAN SIDEWALK WITH PICTURE FRAME FINISH

BORDER: 4" SMOOTH TROWELLED EDGE
FIELD: LIGHT BROOM FINISH PERPENDICULAR TO PATH OF TRAVEL

2 CONCRETE SIDEWALK

1/2" = 1'-0" P-MU-CAS-04



PRODUCT DATA SHEET

EAST COAST
VEHICULAR PAVERS

ROADLOCK®

Roadlock® driveway pavers are uniform in shape and calibrated to a thickness of 2-3/8". They install easily in a sand base. This very dense, nonporous product can be installed in any climate and is resistant to salt erosion, secondary efflorescence, staining, algae and mildew growth that is common on driveway paving.

Roadlock® is presented in three sizes and stunning colors from residential and commercial driveway paving projects.

COLOR SELECTION - PAVERS AND COPING

SHELLOCK STYLE

GRANITELOCK STYLE

APPLICATIONS

Roadlock® driveway pavers have a stunning look and are a refreshing change to the old concrete driveways. Its polished and smooth surface adds beauty to any project.

Our high-quality driveway pavers will redefine your concept on how to keep your driveway looking its best. Built with the latest technology, they are durable and require very little maintenance.

Choose from a classic pattern or create your own. Mix and match colors to express your style and preferences. The end result will be an elegant entrance, while also enhancing the value of your property.

ARCHITECTURAL FINISH
Polished

PAVER AND PAVING SLABS

NOMINAL SIZE (W)	ACTUAL SIZE (W)	SQ FT PALLET	WEIGHT PALLET
4 x 8 x 2 3/8	3.94 x 7.87	90 SQ/FT	3,780 LBS
10 x 10 x 2 3/8	9.84 x 9.84	100 SQ/FT	3,941 LBS

CUSTOM COLORS
Custom colors available typically for minimum quantities of 10,000 square feet.

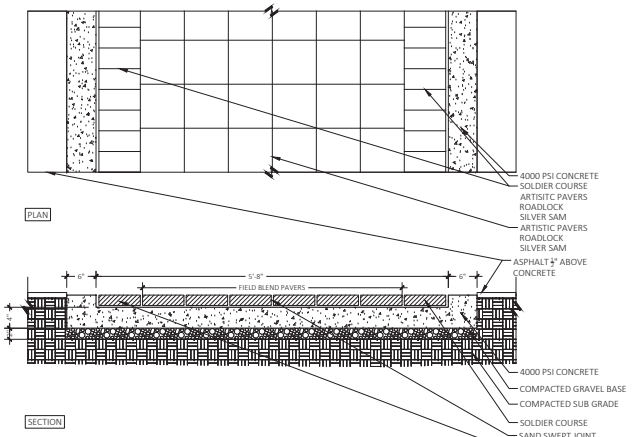
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Ansin Port Rtg
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North Miami Beach, FL 33162
(305) 893-7300

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Casa Grande, AZ 85193
(520) 426-3439

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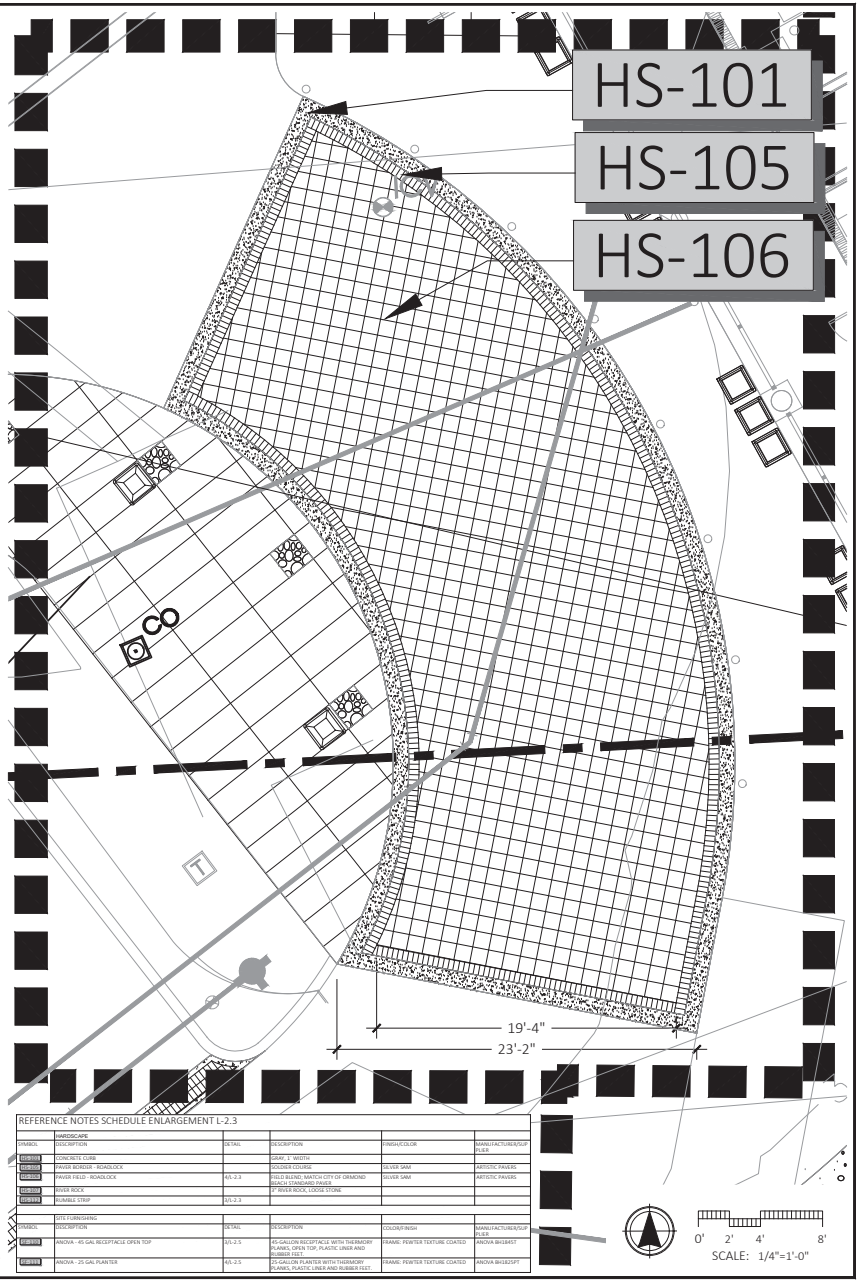
4 ROADLOCK CUT SHEET

1" = 1" P-MU-CAS-25



1 CROSSWALK

1" = 1'-0" P-MU-CAS-20



REFERENCE NOTES SCHEDULE ENLARGEMENT L-2.3

	HARDSCAPE				
SYMBOL	DESCRIPTION	DETAIL	DESCRIPTION	FINISH/COLOR	MANUFACTURER/SUPPLIER
HS-101	CONCRETE CURB		GRAY, 1' WIDTH		
HS-105	PAVER BORDER - ROADLOCK		SOLDIER COURSE	SILVER SAM	ARTISTIC PAVERS
HS-106	PAVER FIELD - ROADLOCK	A/L-2.3	FIELD BLEND; MATCH CITY OF ORMOND BEACH STANDARD PAVER	SILVER SAM	ARTISTIC PAVERS
HS-107	RIVER ROCK		4" RIVER ROCK, LOOSE STONE		
HS-108	RUMBLE STRIP	A/L-2.3			
	SITE FURNISHING				
SYMBOL	DESCRIPTION	DETAIL	DESCRIPTION	COLOR/FINISH	MANUFACTURER/SUPPLIER
SF-101	ANOVA - 45 GAL RECEPTACLE OPEN TOP	A/L-2.5	45-GALLON RECEPTACLE WITH THERMORY PLANKS, OPEN TOP, PLASTIC LINER AND RUBBER FEET.	FRAME: PEWTER TEXTURE COATED	ANOVA BH1845T
SF-102	ANOVA - 25 GAL PLANTER	A/L-2.5	25-GALLON PLANTER WITH THERMORY PLANKS, PLASTIC LINER AND RUBBER FEET.	FRAME: PEWTER TEXTURE COATED	ANOVA BH1825PT

0' 2' 4' 8'
SCALE: 1/4"=1'-0"

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LA6667110 Qualifier

REGISTERED LANDSCAPE ARCHITECT JEREMY R. MARQUIS LA 6667110 STATE OF FLORIDA

LANDSCAPE ARCHITECT OF RECORD
Jeremy Marquis, RLA (LA6667110)

DRAWN BY: JRM | CS | NS | EG

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ZEV COHEN & ASSOCIATES, INC.

CASSEN PARK

1 SOUTH BEACH STREET, ORMOND BEACH, FLORIDA, 32174

HARDSCAPE DETAILS - PAVEMENT

REV	DESCRIPTION	DATE
	100%	07/30/24
	5+5 Set	05/15/24
	90% SUBMITTAL	03/14/24
	60% SUBMITTAL	12/15/23

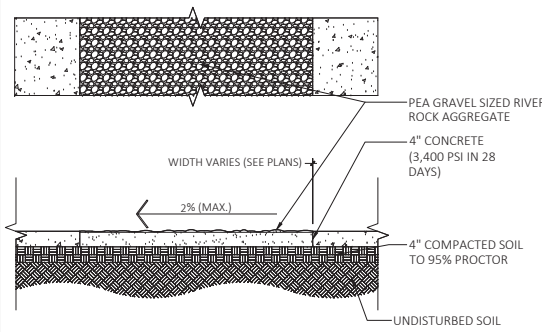
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ML+H PROJECT #: 23.02.00

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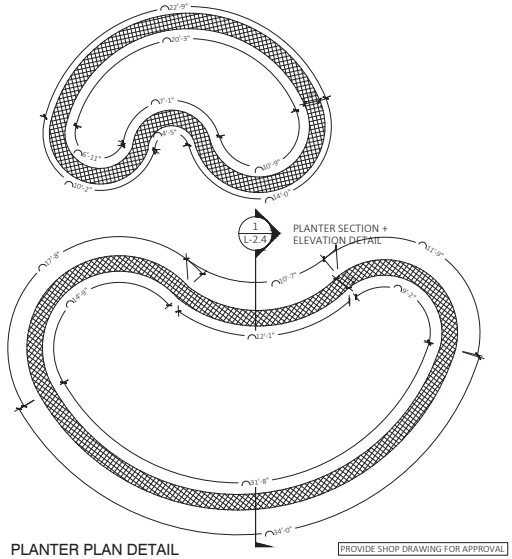
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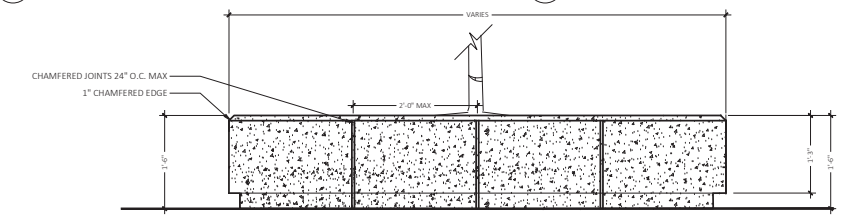


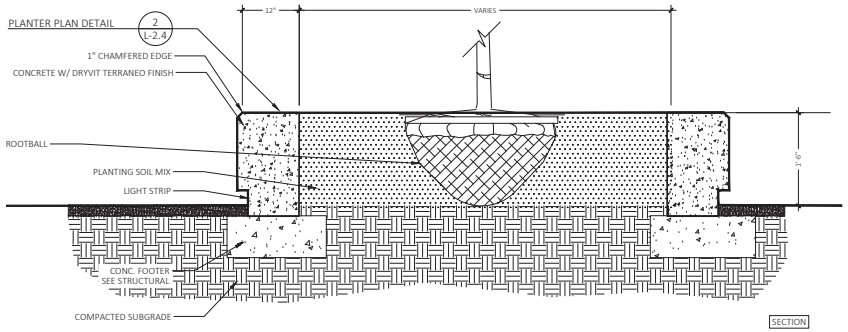
3 EXPOSED AGGREGATE CONCRETE
3/4" = 1'-0" P-MU-CAS-26



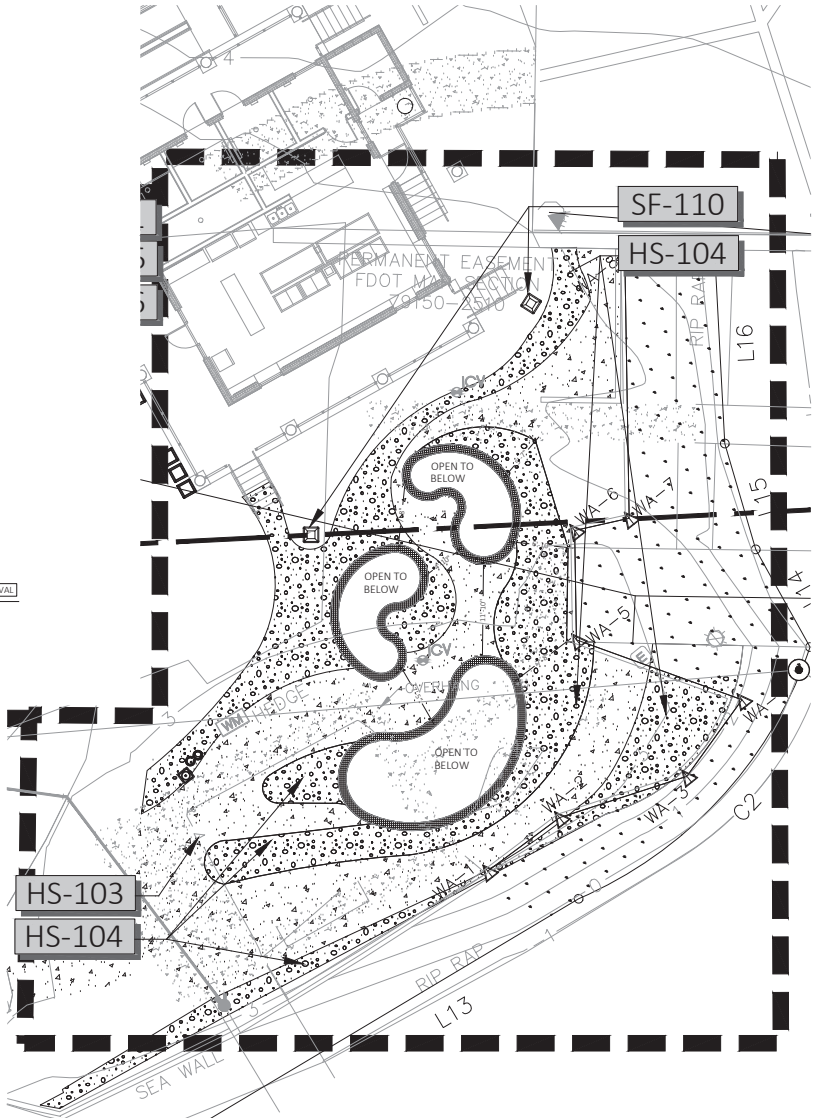
2 PLANTER PLAN DETAIL
1/4" = 1'-0" P-MU-CAS-24

PROVIDE SHOP DRAWING FOR APPROVAL





1 PLANTER SECTION + ELEVATION DETAIL
1" = 1'-0" P-MU-CAS-03



REFERENCE NOTES SCHEDULE ENLARGEMENT 03

	HARDSCAPE					
SYMBOL	DESCRIPTION	QTY	DETAIL	DESCRIPTION		
CONC-01	CONCRETE PLAZA	1,988 SF				
CONC-02	EXPOSED RIVER ROCK AGGREGATE CONCRETE	1,416 SF	3/L-2.4			
CONC-03	PLANTER WALLS	167 SF	1/L-2.4			

	SITE FURNISHING					
SYMBOL	DESCRIPTION	QTY	DETAIL	DESCRIPTION	COLOR/FINISH	MANUFACTURER/SUPPLIER
FURN-01	ANOVA - 45 GAL RECEPTACLE OPEN TOP	2	3/L-2.5	45-GALLON RECEPTACLE WITH THERMORY PLANKS, OPEN TOP, PLASTIC LINER AND RUBBER FEET	FRAME: PEWTER TEXTURE COATED	ANOVA BH 1845T
FURN-02	ANOVA - 25 GAL PLANTER	0	4/L-2.5	25-GALLON PLANTER WITH THERMORY PLANKS, PLASTIC LINER AND RUBBER FEET.	FRAME: PEWTER TEXTURE COATED	ANOVA BH 1825PT

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LA6667110 Qualifier

REGISTERED LANDSCAPE ARCHITECT JEREMY R. MARQUIS LA 6667110 STATE OF FLORIDA

LANDSCAPE ARCHITECT OF RECORD
Jeremy Marquis, RLA (LA6667110)

DRAWN BY: JRM | CS | NS | EG

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ZEV COHEN & ASSOCIATES, INC.

CASSEN PARK
1 SOUTH BEACH STREET, ORMOND BEACH, FLORIDA, 32174
HARDSCAPE DETAILS - PLANTER PLAZA

REV	DESCRIPTION	DATE
	100%	07/30/24
	5+5 Set	05/15/24
	90% SUBMITTAL	03/14/24
	60% SUBMITTAL	12/15/23

SIZE: ANSI D
PRIME PROJECT #:
ML+H PROJECT #: 23.02.00

DRAWING NO. L-2.4

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Tuesday, July 30, 2024

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ANOVA.

BH1825PT

Beacon Hill 25 Gallon Thermory® Planter



Material
The planter is composed of 7" x 4" Thermory planks made from thermally-modified North American White Ash—a sustainably harvested and renewable temperate hardwood. Frame is made from extruded aluminum.
The top is made from 15-gauge steel with an 17.30" square top opening. Top lifts off for easy maintenance. The reusable plastic liner is made of high-density polyethylene with pre-drilled holes for excess water drainage.

Features
Thermory is a low-maintenance, environmentally-friendly hardwood and a great alternative to commonly used tropical rainforest hardwoods because of its dimensional stability and Class 1 durability (25+ years). Thermory has a lower carbon footprint than tropical hardwoods.
The planter is designed to be portable for flexibility in placement or surface mounted using 3" pre-drilled holes in the base to prevent movement. The rubber feet are adjustable to assist in leveling the planter. **Mounting hardware is not included.**
Flexible modular design allows for customization; call for information.

Finish
Thermory is a lustrous chocolate brown color when new and will naturally age to a uniform silver/gray overtime. The color-changing process begins immediately and varies with the amount of UV-exposure.
Rust-proof aluminum and rust-resistant primed steel components feature a fade-resistant powder coating. Treated components exceed the industry standard by 54% in testing by independent sources.

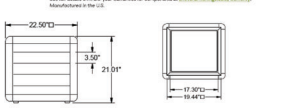
Assembly
This product ships fully assembled and ready-to-use.

Color
See website or sales representative for color choices.

Maintenance
Clean with mild soap and water. Let dry thoroughly. To maintain original color, regularly apply standard deck oil, such as Cutek® Extreme Wood Protection Oil.

Warranty
20-year limited structural warranty, 10-year warranty on Thermory, and 3-year finish warranty on powder-coated steel and aluminum; 7-year warranty against fading from the date of purchase. See full details on multi-year warranties for components at anovafurnishings.com/warranty. Manufactured in the U.S.

Plants not included.



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3 25 GAL PLANTER
1" = 1" P-MU-CAS-28

ANOVA.

BH1845T

Beacon Hill 45 Gallon Thermory® Receptacle with Open Top



Material
The receptacle is composed of 7" x 4" Thermory planks made from thermally-modified North American White Ash—a sustainably harvested and renewable temperate hardwood. Frame is made from extruded aluminum.
The top is made from 15-gauge steel with an 12.63" square waste opening. Top lifts off for easy waste disposal. The reusable plastic liner is made of high-density polyethylene.

Features
Thermory is a low-maintenance, environmentally-friendly hardwood and a great alternative to commonly used tropical rainforest hardwoods because of its dimensional stability and Class 1 durability (25+ years). Thermory has a lower carbon footprint than tropical hardwoods.
The receptacle is designed to be portable for flexibility in placement or surface mounted using 3" pre-drilled holes in the base to prevent movement. The rubber feet are adjustable to assist in leveling the receptacle. **Mounting hardware is not included.**
Flexible modular design allows for customization; call for information.

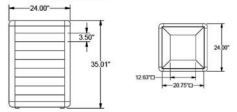
Finish
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Rust-proof aluminum and rust-resistant primed steel components feature a fade-resistant powder coating. Treated components exceed the industry standard by 54% in testing by independent sources.

Assembly
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Color
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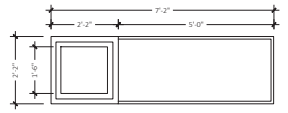
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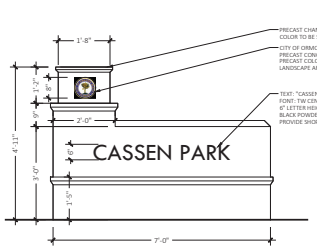


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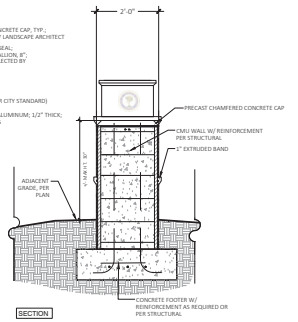
2 45 GAL RECEPTACLE OPEN TOP
1" = 1" P-MU-CAS-27



PLAN



ELEVATION



SECTION

1 ENTRY SIGN OPTION B
1/2" = 1'-0" P-MU-CAS-23

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JEREMY R. MARQUIS
LA 6667110
STATE OF FLORIDA

LANDSCAPE ARCHITECT OF RECORD
Jeremy Marquis, RLA (LA6667110)

DRAWN BY: JRM | CS | NS | EG

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ZEV COHEN & ASSOCIATES, INC.

CASSEN PARK

1 SOUTH BEACH STREET, ORMOND BEACH, FLORIDA, 32174

HARDSCAPE DETAILS

REV	DESCRIPTION	DATE
	100%	07/30/24
	5+5 Set	05/15/24
	90% SUBMITTAL	03/14/24
	60% SUBMITTAL	12/15/23

SIZE: ANSI D
PRIME PROJECT #:
ML+H PROJECT #: 23.02.00

DRAWING NO. L-2.5

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REFERENCE NOTES SCHEDULE

	HARDSCAPE				
SYMBOL	DESCRIPTION	DETAIL	DESCRIPTION	FINISH/COLOR	MANUFACTURER/SUPPLIER
HS-101	CONCRETE CURB		GRAY, 1` WIDTH		
HS-102	CONCRETE SIDEWALK - TOOLED	2/L-2.3			
HS-103	CONCRETE PLAZA				
HS-104	EXPOSED RIVER ROCK AGGREGATE CONCRETE	3/L-2.4			
HS-105	PAVER BORDER - ROADLOCK		SOLDIER COURSE	SILVER SAM	ARTISTIC PAVERS
HS-106	PAVER FIELD - ROADLOCK	4/L-2.3	FIELD BLEND; MATCH CITY OF ORMOND BEACH STANDARD PAVER	SILVER SAM	ARTISTIC PAVERS
HS-107	RIVER ROCK		3" RIVER ROCK, LOOSE STONE		
HS-108	PLANTER WALLS	1/L-2.4			
HS-109	RELOCATED VETERANS MONUMENT				
HS-110	MEMORIAL WALL	3/L-2.2	CONCRETE		
HS-111	RELOCATD FLAG POLE				
HS-112	RUMBLE STRIP	3/L-2.3			
HS-113	EDGING		8" PERMALOC CLEANLINE ALUMINUM EDGING		
	SITE FURNISHING				
SYMBOL	DESCRIPTION	DETAIL	DESCRIPTION	COLOR/FINISH	MANUFACTURER/SUPPLIER
SF-110	ANOVA - 45 GAL RECEPTACLE OPEN TOP	2/L-2.5	45-GALLON RECEPTACLE WITH THERMORY PLANKS, OPEN TOP, PLASTIC LINER AND RUBBER FEET.	FRAME: PEWTER TEXTURE COATED	ANOVA BH1845T
SF-111	ANOVA - 25 GAL PLANTER	3/L-2.5	25-GALLON PLANTER WITH THERMORY PLANKS, PLASTIC LINER AND RUBBER FEET.	FRAME: PEWTER TEXTURE COATED	ANOVA BH1825PT

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LA6667110 Qualifier

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JEREMY R. MARQUIS
LA 6667110
STATE OF FLORIDA

LANDSCAPE ARCHITECT OF RECORD
Jeremy Marquis, RLA (LA6667110)

DRAWN BY: JRM | CS | NS | EG

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ZEV COHEN & ASSOCIATES, INC.

CASSEN PARK
1 SOUTH BEACH STREET, ORMOND BEACH, FLORIDA, 32174
HARDSCAPE SCHEDULE & NOTES

REV	DESCRIPTION	DATE
	100%	07/30/24
	5+5 Set	05/15/24
	90% SUBMITTAL	03/14/24
	60% SUBMITTAL	12/15/23

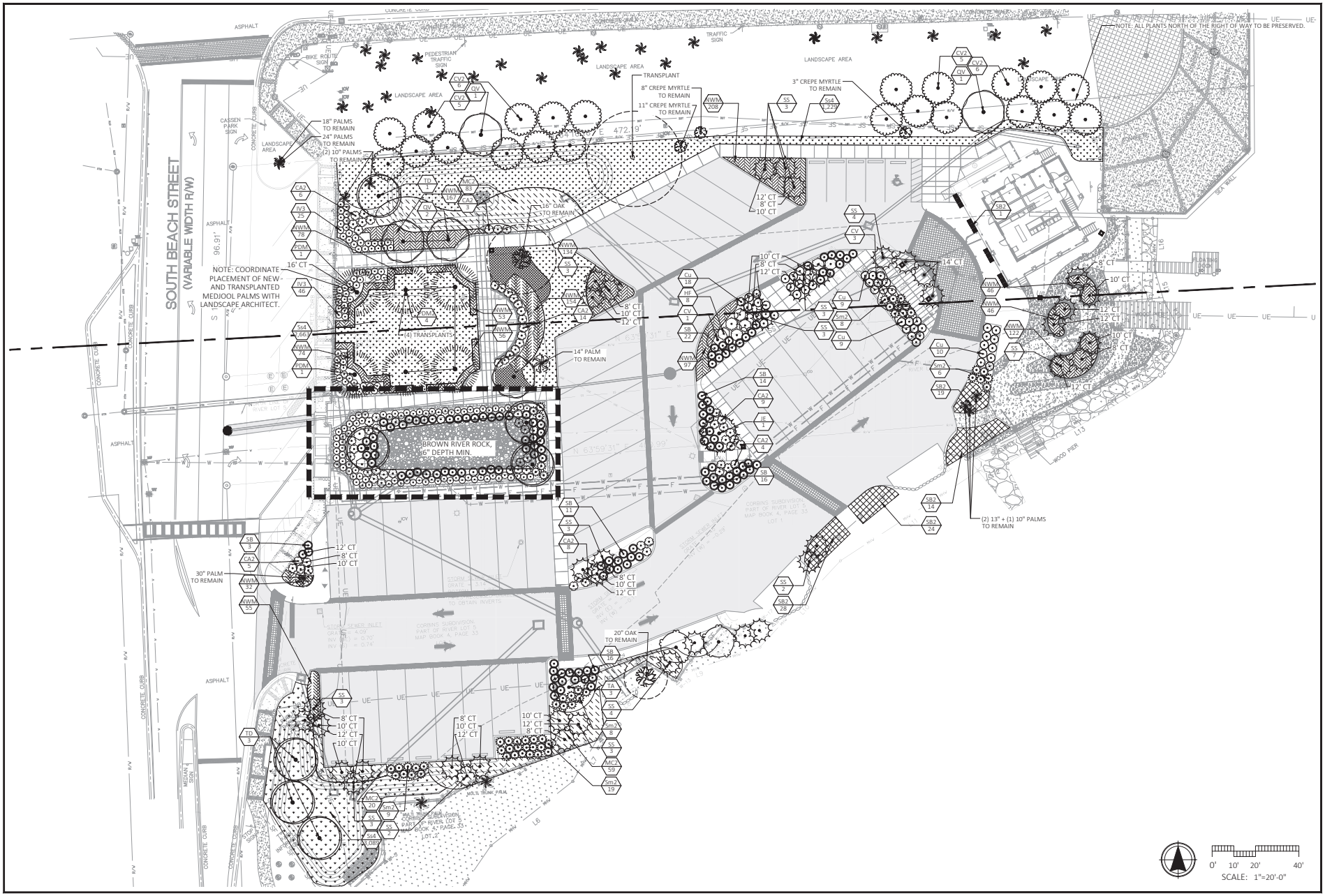
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PRIME PROJECT #:
ML+H PROJECT #: 23.02.00

DRAWING NO. L-2.6

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LANDSCAPE ARCHITECT OF RECORD
Jeremy Marquis, RLA (LA6667110)

DRAWN BY: JRM | CS | NS | EG

CASSEN PARK

1 SOUTH BEACH STREET, ORMOND BEACH, FLORIDA, 32174

LANDSCAPE PLAN

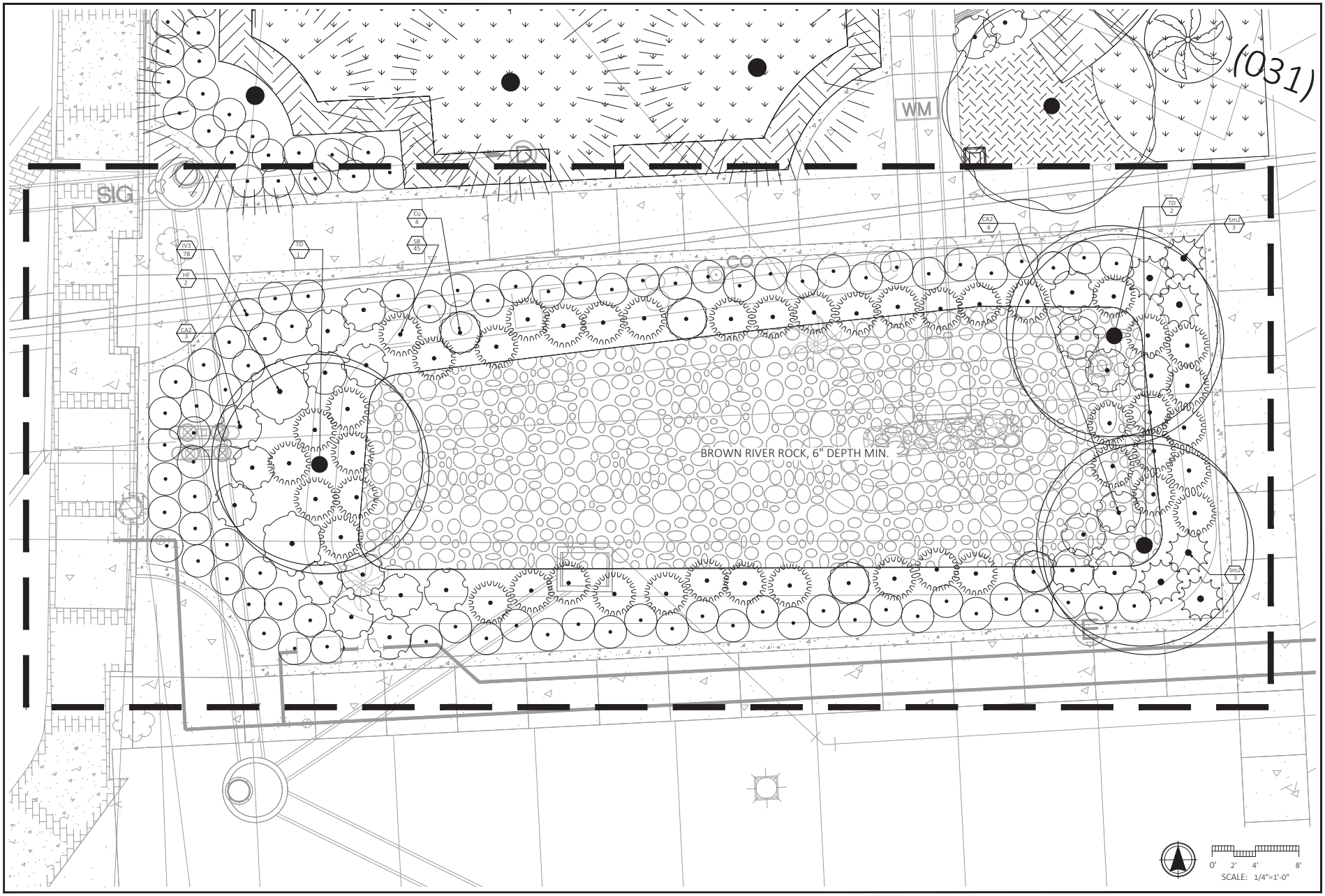
REV	DESCRIPTION	DATE
	100%	07/30/24
	5+5 Set	05/15/24
	90% SUBMITTAL	03/14/24
	60% SUBMITTAL	12/15/23

SIZE: ANSI D
PRIME PROJECT #:
ML+H PROJECT #: 23.02.00

DRAWING NO. L-3.1

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LA 6667110
STATE OF FLORIDA

LANDSCAPE ARCHITECT OF RECORD
Jeremy Marquis, RLA (LA6667110)

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CASSEN PARK

1 SOUTH BEACH STREET, ORMOND BEACH, FLORIDA, 32174

LANDSCAPE PLAN ENLARGEMENT - FORMAL GARDEN

REV	DESCRIPTION	DATE
	100%	07/12/24
	S+S Set	05/15/24
	90% SUBMITTAL	03/14/24
	60% SUBMITTAL	12/15/23

SIZE: ANSI D
PRIME PROJECT #:
ML+H PROJECT #: 23.02.00

DRAWING NO. L-3.2

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PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL / COMMON NAME	CONT	CAL	HEIGHT	NATIVE		QTY
TREES								
	CV2	CHIONANTHUS VIRGINICUS / WHITE FRINGETREE	B&B	4"	6`	YES		22
	JE	JUNIPERUS VIRGINIANA / EASTERN REDCEDAR	SPECIMEN, RPG	4"	10`	YES		1
	PDM	PHOENIX DACTYLIFERA `MEDJOOL` / DATE PALM	B&B	12"	16` CT. MATCHED	NO		2
	PDM2	PHOENIX DACTYLIFERA `MEDJOOL` / DATE PALM	B&B	12"	16` CT. MATCHED	NO		4
	QV	QUERCUS VIRGINIANA / SOUTHERN LIVE OAK	B&B	4"	14`-16`	YES		5
	SS	SABAL PALMETTO / CABBAGE PALMETTO	B&B; REGENERATED	12"	8` - 15` CT (SEE PLAN)	YES		44
	TA	TAXODIUM ASCENDENS / POND CYPRESS	B&B	2.5"	10`	YES		3
	TD	TAXODIUM DISTICHUM / BALD CYPRESS	B&B	2.5"	10`	YES		7
SYMBOL	CODE	BOTANICAL / COMMON NAME	CONT	HEIGHT	SPREAD	NATIVE	SPACING	QTY
SHRUBS								
	CV	CHIONANTHUS VIRGINICUS / WHITE FRINGETREE	7 GAL.	3`-4`	10`	YES	120" o.c.	4
	Cu	COCCOLOBA UVIFERA / SEA GRAPE	7 GAL.	3`	24"	YES	48" o.c.	50
	CA2	CRINUM AMERICANUM / SWAMP LILY	7 GAL.	2`-3`	42"	YES	48" o.c.	70
	HF	HAMELIA PATENS / FIREBUSH	3 GAL.	2`-3`	36"	YES	72" o.c.	10
	IV3	ILEX VOMITORIA / YAUPON HOLLY	7 GAL.	2`-3`	36"	YES	36" o.c.	149
	Sm2	SABAL MINOR / DWARF PALMETTO	7 GAL.	2`	24"	YES	48" o.c.	57
	SB	SPARTINA BAKERI / SAND CORDGRASS	3 GAL.	18"	36"	YES	48" o.c.	126
SHRUB AREAS								
	IV2	ILEX VOMITORIA / YAUPON HOLLY	7 GAL.	2`-3`	36"	YES	48" o.c.	86
	MC2	MUHLENBERGIA CAPILLARIS / PINK MUHLY GRASS	1 GAL.	18"	36"	YES	48" o.c.	328
	NWM	NATIVE WILDFLOWER MIX / COREOPSIS, ECHINACEA,	1 GAL.	12"	12"	YES	18" o.c.	1,322
	SB2	SPARTINA BAKERI / SAND CORDGRASS	1 GAL.	18"	36"	YES	36" o.c.	114
SYMBOL	CODE	BOTANICAL / COMMON NAME	CONT				SPACING	QTY
GROUND COVERS								
	Ss4	STENOTAPHRUM SECUNDATUM `CITRABLUE` / CITRABLUE ST. AUGUSTINE GRASS	SOD				12" o.c.	11,523

SCHEDULE NOTES: QUANTITIES ARE APPROXIMATE FOR CONTRACTOR CONVENIENCE ONLY. PLEASE VERIFY COMPLETE QUANTITIES FOR MATERIALS.

SITE DATA

ALL OTHER ZONING

0.74 ACRES = 32, 324 SQ FT

1 TREE/ 400 SQ FT LANDSCAPE AREA

32,324 / 400 = 81 TREES REQUIRED

TREES ON PLAN:

EXISTING: 27

PROPOSED: 55

TOTAL: 82

01 ADDITIONAL TREES BEYOND REQUIRED

SINGLE FAMILY/DUPLEX/REA ZONING

0.74 ACRES = 32, 324 SQ FT

1 TREE/ 1500 SQ FT LANDSCAPE AREA

32,324 / 1500 = 22 TREES REQUIRED

TREES ON PLAN:

EXISTING: 27

PROPOSED: 55

TOTAL: 82

60 ADDITIONAL TREES BEYOND REQUIRED

GENERAL NOTES

1. CONTRACTOR SHALL PROVIDE LANDSCAPE BED PREPARATION, INCLUDING REMOVAL AND DISPOSAL OF EXISTING LANDSCAPE AND TREES (TREES TO REMAIN ARE NOTED ON PLAN). CONTRACTOR SHALL PULL ANY APPLICABLE PERMITS, SUCH AS TREE REMOVAL PERMIT.
2. SPRAY DOWN BASE OF BUILDING TO REMOVE SOIL FROM CONSTRUCTION ACTIVITIES.
3. PLANT MATERIAL SHALL CONFORM TO THE STANDARDS FOR GRADE #1 OR BETTER AS GIVEN IN THE LATEST "GRADES AND STANDARDS FOR NURSERY PLANTS, PARTS I AND II," FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES . PLANT SIZE IS TO TAKE PRECEDENCE OVER CONTAINER SIZE.
4. ALL TREES AND SHRUBS ARE TO BE POSITIONED VERTICALLY REGARDLESS OF THE SLOPE OF THE GROUND IN WHICH THEY ARE PLANTED. BERMS ARE TO BE CONSTRUCTED AT RIGHT ANGLES TO THE TREE OR SHRUB OR IN A MANNER IN WHICH THEY WILL MOST EFFECTIVELY SERVE THE PURPOSE OF RETAINING WATER AT THE BASE OF THE PLANT.
5. WEEDS ARE TO BE ADEQUATELY AND PROPERLY TREATED AND REMOVED PRIOR TO LANDSCAPE INSTALLATION. ALL SOIL AMENDMENTS SHOULD BE CERTIFIED AS WEED-FREE FROM THE SUPPLIER.
6. LANDSCAPE MATERIAL IS TO BE MAINTAINED BY THE LANDSCAPE CONTRACTOR (INCLUDING MOWING, PRUNING, AND WEEDING) UNTIL PLANTING IS APPROVED BY THE LANDSCAPE ARCHITECT. THE LANDSCAPE CONTRACTOR MUST PROVIDE: (A.) A WARRANTY ON ALL TREES AND PALMS FOR A PERIOD OF (12) TWELVE MONTHS. (B.) A WARRANTY ON ALL SHRUBS AND GROUNDCOVERS FOR A PERIOD OF (12) TWELVE MONTHS. (C.) GUIDELINES FOR PROPER MAINTENANCE.
7. TREES SHALL NOT BE PLANTED CLOSER THAN 7.5' FROM THE CENTERLINE OF UNDERGROUND UTILITIES; ADJUST IN THE FIELD IF NEEDED.
8. BALLED AND BURLAPPED STRAPPING WIRE, AND ANY SYNTHETIC MATERIAL, SHALL BE REMOVED PRIOR TO FINAL INSPECTION. WIRE BASKETS SHOULD BE PULLED AWAY FROM THE TRUNK.
9. CONTRACTOR SHALL SCARIFY SOIL TO A DEPTH OF 12" IN AREAS WITH COMPACTED SOIL. CONTRACTOR SHALL EXCAVATE AND DISPOSE OF ALL STONE, DEBRIS AND BASE MATERIAL FROM PREVIOUS PARKING AREAS. BACK FILL WITH TOP SOIL WITH HIGH ORGANIC CONTENT AND CERTIFIED WEED FREE.

COORDINATION WITH PROJECT WORK

1. THE CONTRACTOR SHALL COORDINATE WITH ALL OTHER WORK THAT MAY IMPACT THE COMPLETION OF THE WORK.
2. PRIOR TO THE START OF WORK, PREPARE A DETAILED SCHEDULE OF THE WORK FOR COORDINATION WITH OTHER TRADES.
3. COORDINATE THE RELOCATION OF ANY IRRIGATION LINES, HEADS OR THE CONDUITS OF OTHER UTILITY LINES THAT ARE IN CONFLICT WITH TREE LOCATIONS. ROOT BALLS SHALL NOT BE ALTERED TO FIT AROUND LINES. NOTIFY THE LANDSCAPE ARCHITECT OF ANY CONFLICTS ENCOUNTERED.

LAYOUT AND PLANTING SEQUENCE

1. RELATIVE POSITIONS OF ALL PLANTS AND TREES ARE SUBJECT TO APPROVAL OF THE LANDSCAPE ARCHITECT.
2. NOTIFY THE LANDSCAPE ARCHITECT, ONE (1) WEEK PRIOR TO LAYOUT. LAYOUT ALL INDIVIDUAL TREE AND SHRUB LOCATIONS. PLACE PLANTS ABOVE SURFACE AT PLANTING LOCATION OR PLACE A LABELED STAKE AT PLANTING LOCATION. LAYOUT BED LINES WITH PAINT FOR THE LANDSCAPE ARCHITECT'S APPROVAL. SECURE THE LANDSCAPE ARCHITECT'S ACCEPTANCE BEFORE DIGGING AND START OF PLANTING WORK.

PLANTING GUIDELINES: TREES, SHRUBS & GROUNDCOVER

1. ASSURE THAT SOIL MOISTURE IS WITHIN THE REQUIRED LEVELS PRIOR TO PLANTING. IRRIGATION, IF REQUIRED, SHALL NOT BE APPLIED LESS THAN 12 HOURS PRIOR TO PLANTING TO AVOID PLANTING IN MUDDY SOILS.
2. ASSURE THAT SOIL GRADES IN THE BEDS ARE SMOOTH AND AS SHOWN ON THE PLANS.
3. PLANTS SHALL BE PLANTED IN EVEN, TRIANGULARLY SPACED ROWS, AT THE INTERVALS CALLED OUT FOR ON THE DRAWINGS, UNLESS OTHERWISE NOTED.
4. DIG PLANTING HOLES TWO TIMES (2x) THE WIDTH OF THE ROOT BALL AND BACK FILL WITH PLANTING MIX. SEE "SOIL MIX" GUIDELINES.
5. PRESS SOIL TO BRING THE ROOT SYSTEM IN CONTACT WITH THE SOIL.
6. SPREAD ANY EXCESS SOIL AROUND IN THE SPACES BETWEEN PLANTS.
7. APPLY MULCH TO THE BED BEING SURE NOT TO COVER THE TOPS OF THE PLANTS WITH OR THE TOPS OF THE ROOT BALL WITH MULCH.
8. WATER EACH PLANTING AREA AS SOON AS THE PLANTING IS COMPLETED. APPLY ADDITIONAL WATER TO KEEP THE SOIL MOISTURE AT THE REQUIRED LEVELS. DO NOT OVER WATER.

PALM PLANTING

1. PALM TREES SHALL BE PLACED AT GRADE MAKING SURE NOT TO PLANT THE TREE ANY DEEPER IN THE GROUND THAN THE PALM TREES ORIGINALLY STOOD.
2. THE TREES SHALL BE PLACED WITH THEIR VERTICAL AXIS IN A PLUMB POSITION.
3. ALL BACKFILL SHALL BE NATIVE SOIL EXCEPT IN CASES WHERE PLANTING IN ROCK. WATER-SETTLE THE BACK FILL.
4. DO NOT COVER ROOT BALL WITH MULCH OR TOPSOIL.
5. PROVIDE A WATERING BERM AT EACH PALM. BERMS SHALL EXTEND A MINIMUM OF 18 INCHES OUT FROM THE TRUNK ALL AROUND AND SHALL BE A MINIMUM OF (6) INCHES HIGH.
6. REMOVE TWINE WHICH TIES FRONDS TOGETHER AFTER PLACING PALM IN PLANTING HOLE AND SECURING IT IN THE UPRIGHT POSITION.

PRUNING OF TREES AND SHRUBS

1. IF PRUNING OF EXISTING TREES OR PLANT MATERIAL IS REQUIRED THE CONTRACTOR SHALL ADHERE TO ANSI Z133.1 STANDARDS FOR TREE CARE AND INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA) BEST MANAGEMENT PRACTICES.

MULCHING OF PLANTS

1. SCHEDULE THE PLANTING TO OCCUR PRIOR TO APPLICATION OF THE MULCH. IF THE BED IS ALREADY MULCHED, PULL THE MULCH FROM AROUND THE HOLE AND PLANT INTO THE SOIL. DO NOT PLANT THE ROOT SYSTEM IN THE MULCH. PULL MULCH BACK SO IT IS NOT ON THE ROOT BALL SURFACE.
2. APPLY A MINIMUM OF 3 INCHES DEPTH OF SHREDDED HARDWOODS OR PINE BARK MULCH BEFORE SETTLEMENT, COVERING THE ENTIRE PLANTING BED AREA. INSTALL NO MORE THAN 1 INCH OF MULCH OVER THE TOP OF THE ROOT BALLS OF ALL PLANTS. TAPER TO 2 INCHES WHEN ABUTTING PAVEMENT.
3. FOR TREES PLANTED IN LAWN AREAS THE MULCH SHALL EXTEND TO A 5 FOOT RADIUS AROUND THE TREE OR TO THE EXTENT INDICATED ON THE PLANS AND SPACED AT LEAST SIX INCHES AWAY FROM THE TREE TRUNK. MULCH TREES IN TURF AREAS PRIOR TO SOD INSTALLATION.
4. LIFT ALL LEAVES, LOW HANGING STEMS AND OTHER GREEN PORTIONS OF SMALL PLANTS OUT OF THE MULCH IF COVERED.

TREE DATA

ONLY TREES TO REMAIN AND PROPOSED ARE INCLUDED IN CALCULATIONS BELOW.

TREES ON PLAN:

(QTY) TYPE (RATIO)

(08) EXISTING TREES	= 08 TREES
(04) EXISTING MEDJOOL PALMS (1:1)	= 04 TREES
(44) EXISTING PALMS (3:1)	= 15 TREES
(02) PROPOSED MEDJOOL PALMS (1:1)	= 02 TREES
(44) PROPOSED PALMS (3:1)	= 15 TREES
(10) PROPOSED TREES AT 2.5" (1 CREDIT)	= 10 TREES
(28) PROPOSED TREES AT 4" (3 CREDITS)	= 28 TREES
TOTAL TREES PROVIDED	= 82 TREES

TREE RELOCATION

1. TREES TO BE RELOCATED SHALL BE HELD ON SITE IN THE AREA NORTH OF THE MAIN LAWN UNTIL FINAL RELOCATION.
2. CONTRACTOR TO PROVIDE TREE SPADE FOR TREE RELOCATION.
3. TREES TO BE RELOCATED SHALL BE ROOT PRUNED SIX MONTHS PRIOR TO RELOCATION.
4. CONTRACTOR TO PROVIDE ADDITIONAL IRRIGATION FROM TIME OF ROOT PRUNING TO FINAL RELOCATION FOR ALL TREES TO BE RELOCATED.
5. CONTRACTOR SHALL IRRIGATE RELOCATED TREES UNTIL ESTABLISHED IN FINAL LOCATION.

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Marquis Latimer + Halback, Inc.
54 Cordova Street, Suite A
St. Augustine, FL 32084
Ph 904.825.6747
www.halback.com
LA6667110 Qualifier

REGISTERED LANDSCAPE ARCHITECT JEREMY R. MARQUIS LA 6667110 STATE OF FLORIDA

LANDSCAPE ARCHITECT OF RECORD
Jeremy Marquis, RLA (LA6667110)

DRAWN BY: JRM | CS | NS | EG

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Per Florida Statute 61G20-11.003, "a registered landscape architect may sign and seal any index sheet or sheets which depict the overall project and any detail sheets for which a registered landscape architect is required, rather than signing and sealing each individual sheet."

ZEV COHEN & ASSOCIATES, INC.

CASSEN PARK
1 SOUTH BEACH STREET, ORMOND BEACH, FLORIDA, 32174
LANDSCAPE SCHEDULE & NOTES

REV	DESCRIPTION	DATE
	100%	07/12/24
	5+5 Set	05/15/24
	90% SUBMITTAL	03/14/24
	60% SUBMITTAL	12/15/23

SIZE: ANSI D
PRIME PROJECT #:
ML+H PROJECT #: 23.02.00

DRAWING NO. L-3.3

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SPECIMEN TREE CALCULATIONS

Address	1 SOUTH BEACH STR	Date	07.26.2024
Lot size sq ft	32324	Min Trees	21.5
acreage	0.74	saved/acre	0.0
Saved trees			

SPECIMEN TREES BEING REMOVED

Caliper	Variety	Quantity	4 1/2" equiv. each	4 1/2" total	Tree fund equiv. Ea.	Tree fund total
17	LIVE OAK	1	4	4	$ 27.00	$ 108.00
18	LIVE OAK	1	4	4	$ 27.00	$ 108.00
				0		$ -
				0		$ -
				0		$ -
				0		$ -
				0		$ -
				0		$ -
				0		$ -
				0		$ -
				0		$ -
				0		$ -
			TOTAL MITIGATION	8	TOTAL	$ 216.00

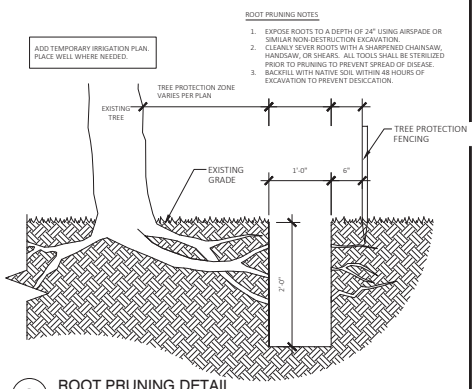
SPECIMEN TREES BEING SAVED

Caliper	Variety	Quantity	4 1/2" equiv. each	4 1/2" total	Tree fund equiv. Ea.	Tree fund total
16	LIVE OAK	1	4	4	$ 27.00	$ 108.00
34	LIVE OAK	1	8	8	$ 27.00	$ 216.00
22	LIVE OAK	1	5	5	$ 27.00	$ 135.00
				0		$ -
				0		$ -
				0		$ -
				0		$ -
				0		$ -
				0		$ -
				0		$ -
				0		$ -
				0		$ -
				0		$ -
				0		$ -
			TOTAL CREDITS	-17	TOTAL	$ (459.00)

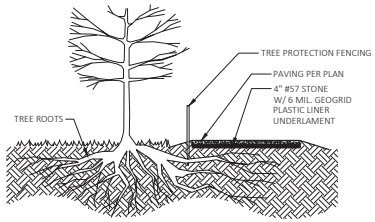
TOTAL MITIGATION	8		$ 216.00
TOTAL CREDITS	-17		$ (459.00)
4 1/2" to plant	-9	OR Donation OF	$ -

TREE DATA

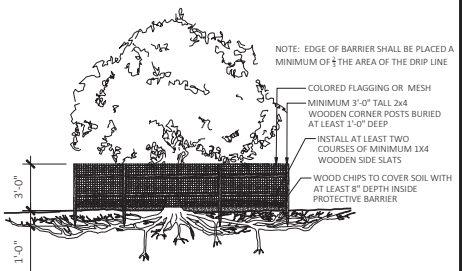
TREE NUMBER	TREE SPECIE	TREE DBH (IN)	PROPOSED PLAN OF ACTION	SPECIMEN TREE?	REMOVED TREE INCHES REQUIRING MITIGATION	TREE INCHES PRESERVED
001	PALM	18	TO REMAIN			18
002	PALM	18	TO REMAIN			18
003	PALM	18	TO REMAIN			18
004	PALM	18	TO REMAIN			18
005	PALM	18	TO REMAIN			18
006	PALM	20	TO REMAIN			20
007	PALM	15	TO REMAIN			15
008	PALM	15	TO REMAIN			15
009	PALM	15	TO REMAIN			15
010	PALM	10	TO REMAIN			10
011	PALM	13	TO REMAIN			13
012	PALM	11	TO REMAIN			11
013	PALM	32	TO REMAIN			32
014	PALM	28	TO REMAIN			28
015	PALM	36	TO REMAIN			36
016	PALM	9	TO REMAIN			9
017	PALM	15	TO REMAIN			15
018	PALM	9	TO REMAIN			9
019	PALM	29	TO REMAIN			29
020	PALM	10	TO REMAIN			10
021	PALM	22	TO REMAIN			22
022	PALM	22	TO REMAIN			22
023	PALM	13	TO REMAIN			13
024	PALM	13	TO REMAIN			13
025	PALM	40	TO REMAIN			40
026	PALM	30	TO REMAIN			30
027	PALM	18	TO REMAIN			18
028	PALM	24	TO REMAIN			24
029	PALM	10	TO REMAIN			10
030	PALM	10	TO REMAIN			10
031	PALM	14	TO BE RELOCATED			14
032	CREPE MYRTLE	3	TO REMAIN			3
033	CREPE MYRTLE	8	TO REMAIN			8
034	CREPE MYRTLE	8	TO REMAIN			8
035	CREPE MYRTLE	11	TO REMAIN			11
036	OAK	16	TO REMAIN	YES		16
037	PALM	13	TO REMAIN			13
038	PALM	13	TO REMAIN			13
039	PALM	10	TO REMAIN			10
040	PALM	30	TO REMAIN			30
041	OAK	34	TO REMAIN	YES		34
042	PALM	13	TO REMAIN			13
043	PALM	8	TO REMAIN			8
044	PALM	13	TO REMAIN			13
045	PALM	9	TO REMAIN			9
046	PALM	10	TO REMAIN			10
047	PALM	12	TO REMAIN			12
048	PALM	12	TO REMAIN			12
049	PALM	8	TO REMAIN			8
050	PALM	8	TO REMAIN			8
051	PALM	9	TO REMAIN			9
052	OAK	22	TO BE RELOCATED	YES		22
053	PALM	9	TO BE REMOVED		9	
054	PALM	8	TO BE REMOVED		8	
055	PALM	11	TO BE REMOVED		11	
056	PALM	11	TO BE REMOVED		11	
057	PALM	13	TO BE REMOVED		13	
058	PALM	10	TO BE REMOVED		10	
059	PALM	13	TO BE REMOVED		13	
060	PALM	11	TO BE REMOVED		11	
061	PALM	12	TO BE REMOVED		12	
062	PALM	11	TO BE REMOVED		11	
063	PALM	18	TO BE REMOVED		18	
064	PALM	13	TO BE RELOCATED			13
065	OAK	17	TO BE REMOVED	YES	17	
066	OAK	10	TO BE REMOVED		10	
067	OAK	10	TO BE REMOVED		10	
068	OAK	18	TO BE REMOVED	YES	18	
069	PALM	24	TO REMAIN			24
070	PALM	15	TO BE REMOVED		15	
071	PALM	12	TO BE RELOCATED			12
072	PALM	13	TO BE REMOVED		13	
073	PALM	14	TO BE REMOVED		14	
074	PALM	13	TO BE REMOVED		13	
075	PALM	11	TO BE REMOVED		11	
076	PALM	11	TO BE REMOVED		11	
077	PALM	11	TO BE REMOVED		11	
078	PALM	15	TO BE REMOVED		15	
079	PALM	12	TO BE REMOVED		12	
080	PALM	11	TO BE REMOVED		11	
081	PALM	8	TO BE REMOVED		8	
082	CREPE MYRTLE	7	TO BE REMOVED		7	
083	CREPE MYRTLE	7	TO BE REMOVED		7	
084	CREPE MYRTLE	7	TO BE REMOVED		7	
085	CREPE MYRTLE	4	TO BE REMOVED		4	
086	CREPE MYRTLE	4	TO BE REMOVED		4	
087	OAK	20	TO REMAIN			20
088	OAK	20	TO BE REMOVED		20	
089	PALM		TO REMAIN			
090	PALM		TO REMAIN			
TOTALS					365	912



3 ROOT PRUNING DETAIL
1" = 1'-0" P-MU-CAS-31



2 NO DIG ROOT PROTECTION DETAIL
1" = 1" P-MU-CAS-30



1 STANDARD TREE PROTECTION BARRIER
1/4" = 1'-0" P-MU-CAS-29

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LA667110 Qualifier

REGISTERED LANDSCAPE ARCHITECT JEREMY R. MARQUIS LA 6667110 STATE OF FLORIDA

LANDSCAPE ARCHITECT OF RECORD
Jeremy Marquis, RLA (LA6667110)

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ZEV COHEN & ASSOCIATES, INC.

CASSEN PARK
1 SOUTH BEACH STREET, ORMOND BEACH, FLORIDA, 32174
LANDSCAPE TREE TABLES + DETAILS

REV	DESCRIPTION	DATE
	100%	07/30/24
	5+5 Set	05/15/24
	90% SUBMITTAL	03/14/24
	60% SUBMITTAL	12/15/23

SIZE: ANSI D
PRIME PROJECT #:
ML+H PROJECT #: 23.02.00

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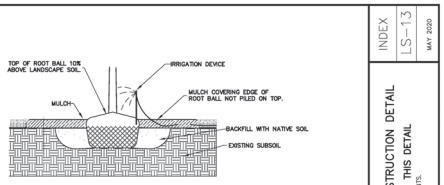
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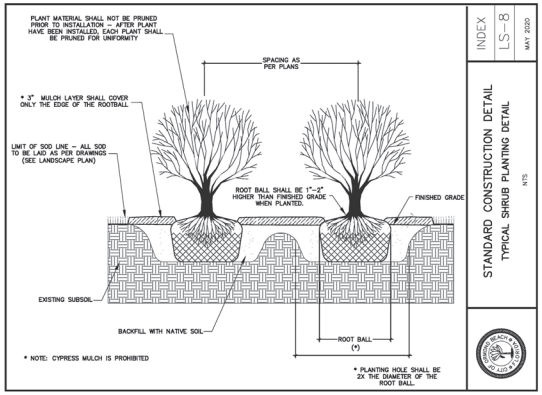


NEVER PLACE ANY SOIL OVER THE ROOT BALL. THE ROOT BALL SHOULD BE POSITIONED IN THE HOLE SHALLOW ENOUGH SO THE FINISHED GRADE OF THE BACKFILL SOIL DOES NOT REACH THE TOP. IN OTHER WORDS, LEAVE THE TOP FEW INCHES OF THE ROOT BALL SIDES EXPOSED TO THE AIR. MULCH WILL COVER THE REMAINING COUPLE INCHES. THE TOP OF THE ROOT BALL SHOULD BE SEVERAL INCHES HIGHER THAN THE SURROUNDING LANDSCAPE SOIL. BE SURE THAT WHEN YOU ARE FINISHED PLANTING, THERE IS **NO SOIL** OVER THE ROOT BALL. SOIL (AS WELL AS THICK MULCH LAYERS MORE THAN 3 INCHES DEEP) OVER THE ROOT BALL CAN PREVENT WATER AND AIR FROM ENTERING THE ROOT BALL. YOU SHOULD BE ABLE TO SEE THE TOP--MOST ROOT ORIGINATING FROM THE TRUNK AT THE SOIL SURFACE OR WITHIN THE TOP INCH OF SOIL IN THE ROOT BALL. THE TRUNK FLARE SHOULD BE VISIBLE.

MULCH SHOULD COVER ONLY THE EDGE OF THE ROOT BALL, SINCE THICK LAYERS OVER THE ROOT BALL CAN KEEP THE TRUNK TOO MOIST OR TOO DRY AND CAN CAUSE OTHER PROBLEMS. LOCATE THE IRRIGATION DEVICE SO IT DELIVERS WATER DIRECTLY TO THE ROOT BALL. THERE IS USUALLY NO NEED TO WATER AREAS OUTSIDE THE ROOT BALL. NO AMENDMENTS OF ANY KIND ARE NECESSARY IN THE BACKFILL SOIL. BECAUSE EXTENSIVE RESEARCH CLEARLY SHOWS THAT THEY TYPICALLY DO NOT NOT INCREASE THE SURVIVAL, NOR GROWTH AFTER PLANTING. NO SOIL BERM IS NEEDED IF TREES WILL BE IRRIGATED WITH A LOW--VOLUME DEVICE. PLACE THE BERM AT THE EDGE OF THE ROOT BALL IF THE ROOT BALL IS FINER TEXTURE THAN THE BACKFILL SOIL. THIS WILL HELP INSURE THAT WATER PERCOLATES INTO THE ROOT BALL.

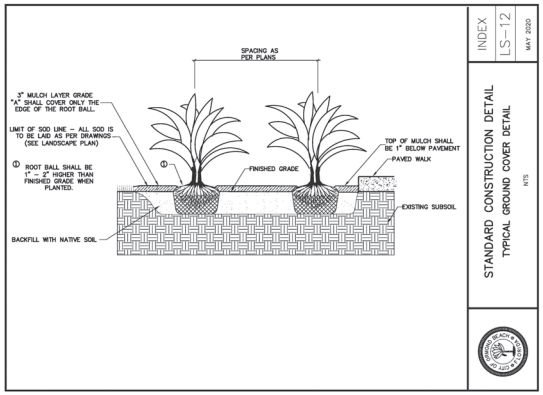
STANDARD CONSTRUCTION DETAIL
PLANT LIKE THIS DETAIL
NTS.

INDEX LS-13 MAY 2020



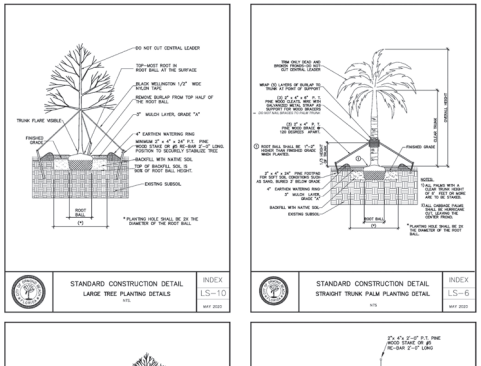
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TYPICAL SHRUB PLANTING DETAIL
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INDEX LS-8 MAY 2020



STANDARD CONSTRUCTION DETAIL
TYPICAL GROUND COVER DETAIL
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INDEX LS-12 MAY 2020

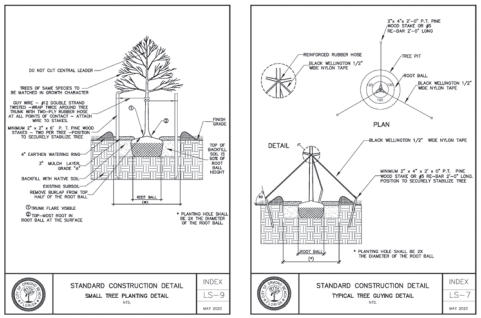


STANDARD CONSTRUCTION DETAIL
LARGE TREE PLANTING DETAILS
NTS.

INDEX LS-10 MAY 2020

STANDARD CONSTRUCTION DETAIL
STRAIGHT TRUNK PALM PLANTING DETAIL
NTS.

INDEX LS-6 MAY 2020

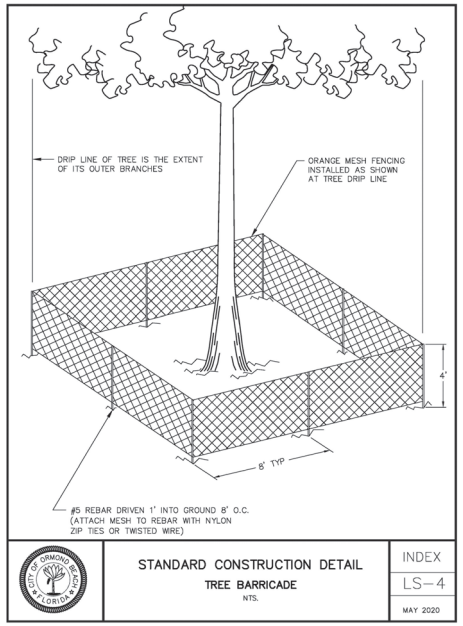


STANDARD CONSTRUCTION DETAIL
SMALL TREE PLANTING DETAIL
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INDEX LS-9 MAY 2020

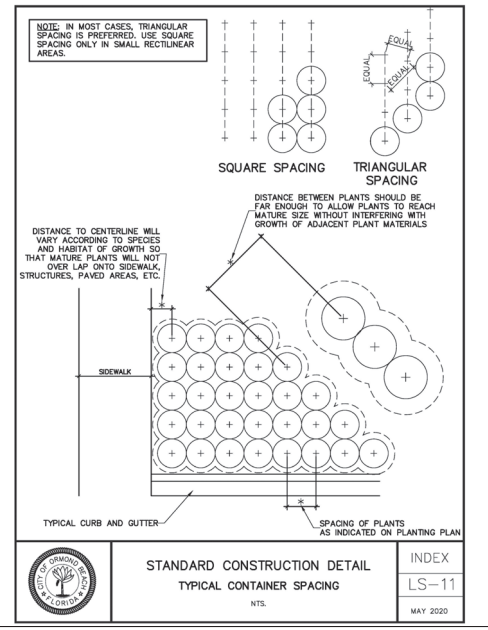
STANDARD CONSTRUCTION DETAIL
TYPICAL TREE GUYING DETAIL
NTS.

INDEX LS-7 MAY 2020



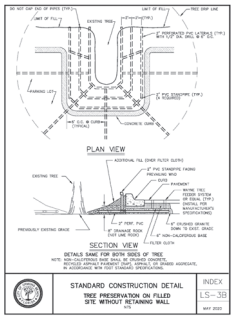
STANDARD CONSTRUCTION DETAIL
TREE BARRICADE
NTS.

INDEX LS-4 MAY 2020



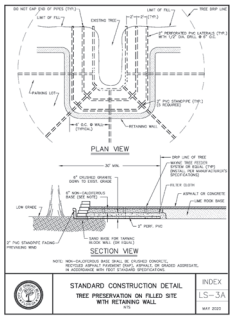
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TYPICAL CONTAINER SPACING
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INDEX LS-11 MAY 2020



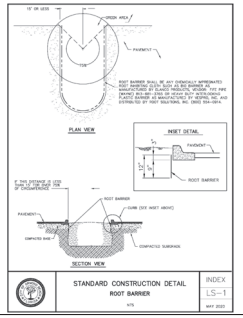
STANDARD CONSTRUCTION DETAIL
TREE PRESERVATION ON FILLED SITE WITHOUT RETAINING WALL
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INDEX LS-3B MAY 2020



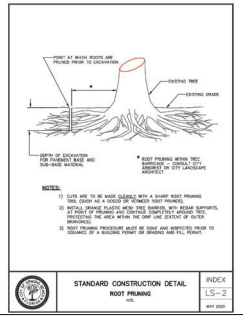
STANDARD CONSTRUCTION DETAIL
TREE PRESERVATION ON FILLED SITE WITH RETAINING WALL
NTS.

INDEX LS-3A MAY 2020



STANDARD CONSTRUCTION DETAIL
ROOT BARRIER
NTS.

INDEX LS-1 MAY 2020



STANDARD CONSTRUCTION DETAIL
ROOT PRUNING
NTS.

INDEX LS-2 MAY 2020

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REGISTERED LANDSCAPE ARCHITECT JEREMY R. MARQUIS LA 6667110 STATE OF FLORIDA

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DRAWN BY: JRM | CS | NS | EG

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Per Florida Statute 61G20-11.003, "a registered landscape architect may sign and seal any index sheet or sheets which identify the work prepared by registered professionals under the direction of a registered landscape architect is required, rather than signing and sealing each individual work."

ZEV COHEN & ASSOCIATES, INC.
CIVIL ENGINEERS • LANDSCAPE ARCHITECTS
PLANNERS • CONSERVATION • ENVIRONMENTAL
AND SURVEYORS

CASSEN PARK
1 SOUTH BEACH STREET, ORMOND BEACH, FLORIDA, 32174

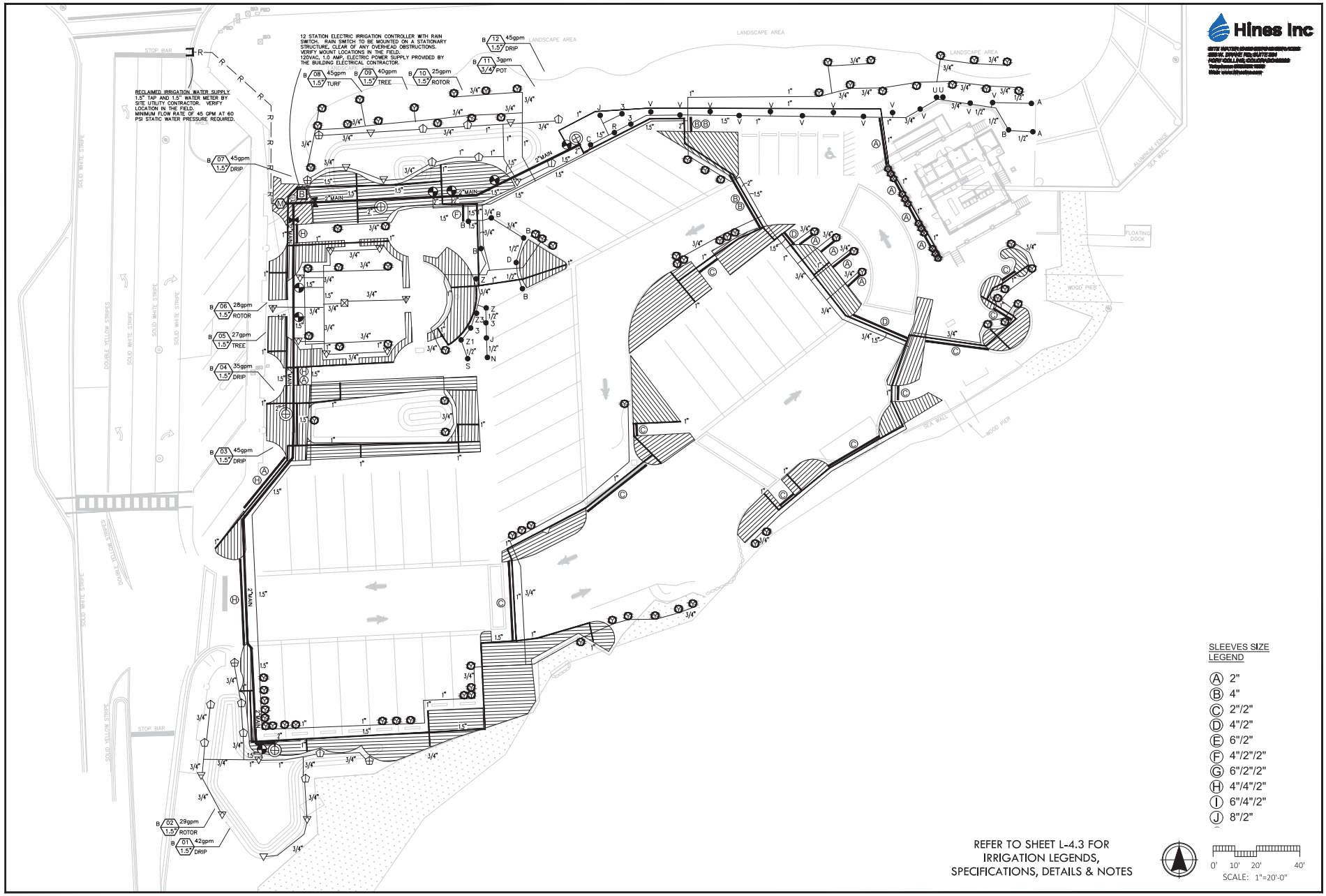
LANDSCAPE DETAILS

REV	DESCRIPTION	DATE
	100%	07/12/24
	5+5 Set	05/15/24
	90% SUBMITTAL	03/14/24
	60% SUBMITTAL	12/15/23

SIZE: ANSI D
PRIME PROJECT #:
ML+H PROJECT #: 23.02.00

DRAWING NO. L-3.5

NOT FOR CONSTRUCTION; FOR COORDINATION, REVIEW, AND BIDDING PURPOSES ONLY.



SLEEVES SIZE LEGEND

- Ⓐ 2"
- Ⓑ 4"
- Ⓒ 2"/2"
- Ⓓ 4"/2"
- Ⓔ 6"/2"
- Ⓕ 4"/2"/2"
- Ⓖ 6"/2"/2"
- Ⓗ 4"/4"/2"
- Ⓘ 6"/4"/2"
- Ⓙ 8"/2"

REFER TO SHEET L-4.3 FOR IRRIGATION LEGENDS, SPECIFICATIONS, DETAILS & NOTES

0' 10' 20' 40'
SCALE: 1"=20'-0"

Hines Inc

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Marquis Latimer + Halback, Inc.
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LA6667110 Qualifier

DRAWN BY:

CASSEN PARK
1 SOUTH BEACH STREET, ORMOND BEACH, FLORIDA, 32174

IRRIGATION PLAN

SYM	DESCRIPTION	DATE

SIZE: ANSI D
PRIME PROJECT #:
ML+H PROJECT #: 23.02.00

DRAWING NO.: L-4.1

Tuesday, July 30, 2024
C:\Hines Inc Dropbox\Design\Design PSI Projects\PSI Drawings\Projects 2024\MLH\24-450 Cassen Park\VIRR PLOT.dwg

IRRIGATION NOTES

1. LANDSCAPE AREAS SHALL BE PROVIDED WITH AN IRRIGATION SYSTEM THAT SUPPLIES ONE HUNDRED PERCENT (100%) COVERAGE TO ALL REQUIRED LANDSCAPING PLANT MATERIAL.
2. 2. THE IRRIGATION SYSTEM SHALL MAXIMIZE WATER CONSERVATION, BE FULLY AUTOMATIC, AND SHALL CONSIST OF A DRIP SYSTEM FOR SHRUB AREAS AS NOTED. SOD AREAS SHALL BE IRRIGATED THROUGH SPRAY HEADS WHEN INDICATED.
3. 3. REFER TO THE LANDSCAPE PLANS WHEN TRENCHING TO AVOID TREES. STAKE OUT MAINLINE FOR APPROVAL PRIOR TO TRENCHING BY CIVIL AND GENERAL CONTRACTOR.
4. 4. ALL MAINLINE PIPING SHALL BE BURIED TO A MINIMUM DEPTH OF 24" OF COVER. ALL LATERAL PIPING SHALL BE BURIED TO A MINIMUM DEPTH OF 12" OF COVER.
5. 5. THE CONTRACTOR SHALL EXERCISE CARE SO AS NOT TO DAMAGE ANY EXISTING UTILITIES. COORDINATION WITH THE GENERAL CONTRACTOR AND SITE SUPERINTENDENT SHALL BE REQUIRED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMMEDIATE REPAIRS AND COST OF ANY DAMAGE CAUSED BY HIS WORK.
6. 6. ALL WORK SHALL BE GUARANTEED FOR TWELVE (12) MONTHS FROM THE DATE OF FINAL ACCEPTANCE AGAINST ALL DEFECTS IN EQUIPMENT AND WORKMANSHIP.
7. 7. ALL IRRIGATION SHOWN ON PLANS IS SCHEMATIC AND DOES NOT REFLECT ALL FITTINGS AND APPURTENANCES WHICH SHALL BE INCLUDED TO PROVIDE A FULLY FUNCTIONAL IRRIGATION SYSTEM CAPABLE OF PROVIDING 100 PERCENT COVERAGE WITH A 50 PERCENT OVERLAP.
8. 8. ALL TREES LOCATED IN NON-IRRIGATED ZONES AND SPRAY AREAS SHALL BE TEMPORARILY IRRIGATED BY A BUBBLER. TREES LOCATED IN DRIP ZONES SHALL BE IRRIGATED BY A DOUBLE RING OF DRIP LINES.
9. 9. CONTRACTOR SHALL PROVIDE AS BUILT TO INCLUDE MAINLINE LOCATIONS, LATERAL LOCATIONS, VALVES AND ZONES..

Permit Requirements

Property owners who wish to install, expand or substantially modify an irrigation system are required, in advance of such work, to obtain an irrigation permit from the Florida Department of Health in Volusia County. Irrigation installation requirements are described in the following county ordinances:

Landscape Irrigation Ordinance (http://www.volusia.org/services/growth-and-resource-management/environmental-management/pollution-control/waterwise-landscape-irrigation-ordinance/)

Wells, Pumping Facilities & Irrigation Systems - Section 74-31 to 48 County Ordinance (http://volusia.floridahealth.gov/programs-and-services/environmental-health/irrigation-construction/irrigation-forms.html)

We Volusia County Health Department developed an Irrigation Permitting Packet (http://volusia.floridahealth.gov/programs-and-services/environmental-health/irrigation-construction/_documents/irrigation-permit.pdf) in order assist applicants. It includes the application form, a Contractor/Owner Irrigation Self Certification Checklist and a site plan template. Please call our office at 386-274-0694 for more information.

A summary of site specific requirements is as follows:

1. Automatic irrigation controllers, when utilized, shall contain a functional rain sensor device, capable of being set to one minute run times, and battery backup capability to retain programming in the event of a power failure.
2. A rain sensor placed on a stationary structure, free and clear of any overhead obstructions and above the height of the sprinkler coverage.
3. Equipment with check valves used in low-lying areas to prevent low head drainage.
4. Backflow prevention methods and other provisions prescribed in section 74-42.
5. Irrigation design with the appropriate uniformity for the type of plant being grown and for the type of soil.
6. Irrigation system equipment installed as designed.
7. Irrigation zones divided according to: available flow rate, vegetated groupings (i.e., turf, shrubs, native plants, etc.), sprinkler types (i.e., sprinklers with matching precipitation rates) and soil characteristics.
8. Spray heads and rotors not mixed in same zone.
9. Distribution equipment in a given zone having matched precipitation rates.
10. Application rates that avoid runoff and permit uniform water infiltration into the soil, considering land slope, soil hydraulic properties, vegetative ground cover and prevailing winds.
11. A minimum separation of four inches between distribution equipment and pavement.
12. A minimum separation of 12 inches between distribution equipment and buildings and other vertical structures.
13. No direct spray onto walkways, buildings, roadways and drives.
14. Lawn spray patterns providing head to head coverage.
15. Water conveyance systems with a flow velocity of five feet per second or less.
16. Pipelines designed to provide the system with the appropriate pressure required for maximum irrigation uniformity.
17. Pressure regulating heads.
18. A maintenance checklist provided to the property owner by the irrigation contractor accompanied by a recommended maintenance schedule, proper irrigation system settings according to season, recommendations for checking rain sensor device, filter cleaning recommendations and information on the current water restrictions.

Landscape Requirements

1. A high volume irrigation area shall not exceed 50 percent of the landscaped area. Low or medium volume irrigation areas may be utilized in lieu of any high volume irrigation area.
2. A medium volume irrigation area shall not exceed 25 percent of the landscaped area. However, the landscaped area may contain up to 75 percent medium volume irrigation area, if no high volume irrigation area is utilize on site.
3. A low volume irrigation area may be utilized for an entire landscaped area with the exception of native vegetation areas regulated by section 50-373(b)(4).
4. In the alternative to (1), (2), and (3) above, if 25 percent of the pre-existing native vegetation is retained on site, the remaining 75 percent of the landscaped area may be a high volume irrigation area. For all pre-existing native vegetation retained on a parcel:
   - No supplemental water shall be applied to the native vegetation area.
   - Only hand pruning of native vegetation is allowed.
   - Mechanical mowing or clearing is prohibited.

License Requirements

No person may install or repair an irrigation system in Volusia County unless they possess a valid irrigation certificate of competency from the Department. The following persons are exempted from having to possess a certificate of competency:

- Licensed Florida Water Well Contractors and Florida State Certified Pluming Contractors.
- Florida State Registered Plumbing Contractors.
- Property owners who personally perform construction, maintenance or repairs on an irrigation system that serves his or her owner-occupied single family residence.

	STANDARD CONSTRUCTION DETAIL IRRIGATION SYSTEM REQUIREMENTS NTS.	INDEX LS-14A MAY 2020

	STANDARD CONSTRUCTION DETAIL IRRIGATION SYSTEM REQUIREMENTS NTS.	INDEX LS-14B MAY 2020

CITY OF ORMOND BEACH IRRIGATION REQUIREMENTS PER LAND DEVELOPMENT CODE:

SEC. 3-05. - LANDSCAPE AND IRRIGATION PLAN REQUIREMENTS. (CHAPTER 3 ARTICLE I LANDSCAPING)

(e) IRRIGATION.
(1) THE IRRIGATION SYSTEM SHALL BE UNDERGROUND AND DESIGNED TO PROVIDE ADEQUATE IRRIGATION TO ALL LANDSCAPED AREAS. AFTER INSTALLATION, THE SYSTEM SHALL BE REGULARLY MAINTAINED AS REQUIRED UNDER SECTION 3-08.
(2)NONPOTABLE WATER USE DEMANDS SHALL BE MET USING WATER OF THE LOWEST QUALITY SUPPLY WHICH IS BOTH AVAILABLE AND ACCEPTABLE FOR THE INTENDED APPLICATION. WATER REUSE OR WATER RECLAMATION PROGRAMS SHALL BE USED, WHEREVER ECONOMICALLY AND ENVIRONMENTALLY FEASIBLE, TO REDUCE GROUNDWATER OR SURFACE WATER WITHDRAWALS FOR WATER USE APPLICATIONS WHICH DO NOT REQUIRE POTABLE WATER.
(3)ALL COMMERCIAL IRRIGATION SYSTEMS MUST HAVE A RAIN SENSOR CUTOFF DEVICE AS REQUIRED UNDER STATE STATUTES THAT POSTPONES FUTURE IRRIGATION DURING PERIODS OF NORMAL RAINFALL.
(4)ALL PLANT MATERIAL AND TREES THAT HAVE BEEN USED TO FULFILL THE REQUIREMENTS FOR FIFTY PERCENT (50%) DROUGHT-TOLERANT OR NATIVE PLANTS MUST BE IRRIGATED SEPARATELY ON SEPARATE ZONES FROM NON-DROUGHT-TOLERANT PLANT MATERIALS AND GRASSES.
(5)ALL LANDSCAPED AREAS ARE TO BE PROVIDED WITH AUTOMATIC IRRIGATION SYSTEM SHALL PROVIDE ONE HUNDRED PERCENT (100%) COVERAGE AND FIFTY PERCENT (50%) OVERLAP AT A MINIMUM.
(6)IRRIGATION SYSTEMS SHALL BE DESIGNED TO AVOID CASTING WATER ON TO ADJACENT RIGHT-OF-WAY, PAVED PARKING SURFACED, OR DIRECTLY ON TO THE SIDES OF BUILDINGS OR LANDSCAPE BUFFER WALLS.
(7)IRRIGATION SHALL ONLY OCCUR DURING THOSE TIMES, EXCEPT FOR THE FIRST YEAR OR PLANT ESTABLISHMENT, PERMITTED BY THE COUNTY, THE CITY AND THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT, WHICHEVER REGULATION IS MORE RESTRICTIVE APPLIES.
(8)IRRIGATION SYSTEMS SHALL BE MAINTAINED IN WORKING OPERATIONAL CONDITION AT ALL TIMES. SUCH SYSTEMS MAY BE INSPECTED BY THE LANDSCAPE ARCHITECT OR OTHER PERMITTING AUTHORITY, CHIEF BUILDING OFFICIAL AND IF FOUND TO BE DEFECTIVE, THE PROPERTY OWNER SHALL BE GIVEN WRITTEN NOTICE AND DIRECTED TO REPAIR THE SYSTEM, INCLUDING MODIFICATION TO SPRINKLER CASTING AREAS, WITHIN TEN (10) WORKING DAYS OF THE DATE OF RECEIPT OF THE NOTICE. FAILURE TO MAKE SUCH REPAIR, OR TO SUBMIT A WRITTEN INTERIM PROPOSAL SATISFACTORY TO THE LANDSCAPE ARCHITECT TO MAINTAIN THE LANDSCAPING, SHALL RESULT IN A HEARING BEFORE THE SPECIAL MAGISTRATE.

SEC. 3-08. - MAINTENANCE OF PLANTINGS AND IRRIGATION SYSTEMS/ENFORCEMENT. (CHAPTER 3 ARTICLE I LANDSCAPING)

(b) IRRIGATION SYSTEMS.
(1)IRRIGATION SYSTEMS SHALL BE MAINTAINED IN WORKING CONDITION AT ALL TIMES. SUCH SYSTEMS MAY BE INSPECTED BY THE LANDSCAPE ARCHITECT OR THE CHIEF BUILDING OFFICIAL AND, IF FOUND TO BE DEFECTIVE, THE PROPERTY OWNER SHALL BE GIVEN WRITTEN NOTICE AND DIRECTED TO REPAIR THE SYSTEM WITHIN TEN (10) WORKING DAYS OF THE DATE OF RECEIPT OF THE NOTICE. FAILURE TO MAKE SUCH REPAIR, OR TO SUBMIT A WRITTEN INTERIM PROPOSAL SATISFACTORY TO THE LANDSCAPE ARCHITECT TO MAINTAIN THE LANDSCAPING, SHALL RESULT IN A HEARING BEFORE THE SPECIAL MAGISTRATE.
(2)IF A PROJECT IS SUBMITTED FOR LANDSCAPE APPROVAL WITH ONE HUNDRED PERCENT (100%) OF THE PLANTINGS DETERMINED TO BE XERIC BY THE LANDSCAPE ARCHITECT, THEN ONLY TEMPORARY IRRIGATION DURING THE ESTABLISHMENT PERIOD WILL BE REQUIRED. THIS TIMEFRAME WILL BE DETERMINED BY THE LANDSCAPE ARCHITECT, AND THE PROJECT SHALL BE INSPECTED AT THE END OF THIS PERIOD TO DETERMINE IF IRRIGATION MAY BE REMOVED.
(3)ALL PLANT MATERIAL AND TREES THAT HAVE BEEN USED TO FULFILL THE REQUIREMENT FOR FIFTY PERCENT (50%) XERIC OR NATIVE PLANTS MUST BE IRRIGATED SEPARATELY FROM NONXERIC PLANT MATERIAL AND GRASSES.

SEC. 22-182. - LANDSCAPE IRRIGATION SCHEDULES. (CHAPTER 22 ARTICLE VII WATER CONSERVATION)

(a) WHEN DAYLIGHT SAVINGS TIME IS IN EFFECT, LANDSCAPE IRRIGATION SHALL OCCUR ONLY IN ACCORDANCE WITH THE FOLLOWING IRRIGATION SCHEDULE:
(1)RESIDENTIAL LANDSCAPE IRRIGATION AT ODD-NUMBERED ADDRESSES OR NO ADDRESS MAY OCCUR ONLY ON WEDNESDAY AND SATURDAY AND SHALL NOT OCCUR BETWEEN 10:00 A.M. AND 4:00 P.M.;
(2)RESIDENTIAL LANDSCAPE IRRIGATION AT EVEN-NUMBERED ADDRESSES MAY OCCUR ONLY ON THURSDAY AND SUNDAY AND SHALL NOT OCCUR BETWEEN 10:00 A.M. AND 4:00 P.M.;
(3)NONRESIDENTIAL LANDSCAPE IRRIGATION MAY OCCUR ONLY ON TUESDAY AND FRIDAY AND SHALL NOT OCCUR BETWEEN 10:00 A.M. AND 4:00 P.M.; AND
(4)NO MORE THAN THREE-QUARTER INCH OF WATER MAY BE APPLIED PER IRRIGATION ZONE ON EACH DAY THAT IRRIGATION OCCURS, AND IN NO EVENT SHALL IRRIGATION OCCUR FOR MORE THAN ONE HOUR PER IRRIGATION ZONE ON EACH DAY THAT IRRIGATION OCCURS.
(b) WHEN EASTERN STANDARD TIME IS IN EFFECT, LANDSCAPE IRRIGATION SHALL OCCUR ONLY IN ACCORDANCE WITH THE FOLLOWING IRRIGATION SCHEDULE:
(1)RESIDENTIAL LANDSCAPE IRRIGATION AT ODD-NUMBERED ADDRESSES OR NO ADDRESS MAY OCCUR ONLY ON SATURDAY AND SHALL NOT OCCUR BETWEEN 10:00 A.M. AND 4:00 P.M.;
(2)RESIDENTIAL LANDSCAPE IRRIGATION AT EVEN-NUMBERED ADDRESSES MAY OCCUR ONLY ON SUNDAY AND SHALL NOT OCCUR BETWEEN 10:00 A.M. AND 4:00 P.M.;
(3)NONRESIDENTIAL LANDSCAPE IRRIGATION MAY OCCUR ONLY ON TUESDAY AND SHALL NOT OCCUR BETWEEN 10:00 A.M. AND 4:00 P.M.; AND
(4)NO MORE THAN THREE-QUARTER INCH OF WATER MAY BE APPLIED PER IRRIGATION ZONE ON EACH DAY THAT IRRIGATION OCCURS, AND IN NO EVENT SHALL IRRIGATION OCCUR FOR MORE THAN ONE HOUR PER IRRIGATION ZONE ON EACH DAY THAT IRRIGATION OCCURS.
(c) ALL LANDSCAPE IRRIGATION SHALL BE LIMITED IN AMOUNT TO ONLY THAT NECESSARY TO MEET LANDSCAPE NEEDS.

SEC. 22-183. - EXCEPTIONS TO THE LANDSCAPE IRRIGATION SCHEDULES.

LANDSCAPE IRRIGATION SHALL BE SUBJECT TO THE FOLLOWING IRRIGATION SCHEDULE EXCEPTIONS:

(1) IRRIGATION USING A MICRO-SPRAY, MICRO-JET, DRIP OR BUBBLER IRRIGATION SYSTEM IS ALLOWED ANYTIME.(2)IRRIGATION OF NEW LANDSCAPE IS ALLOWED AT ANYTIME OF DAY ON ANY DAY FOR THE INITIAL 30 DAYS AND EVERY OTHER DAY FOR THE NEXT 30 DAYS FOR A TOTAL OF ONE 60-DAY PERIOD, PROVIDED THAT THE IRRIGATION IS LIMITED TO THE MINIMUM TIME NECESSARY FOR SUCH LANDSCAPE ESTABLISHMENT.(3)WATERING IN OF CHEMICALS, INCLUDING INSECTICIDES, PESTICIDES, FERTILIZERS, FUNGICIDES, AND HERBICIDES, WHEN REQUIRED BY LAW, THE MANUFACTURER, OR BEST MANAGEMENT PRACTICES, IS ALLOWED AT ANYTIME OF DAY ON ANY DAY WITHIN 24 HOURS OF APPLICATION. WATERING IN OF CHEMICALS SHALL NOT EXCEED ONE-QUARTER INCH OF WATER PER APPLICATION, EXCEPT AS OTHERWISE REQUIRED BY LAW, THE MANUFACTURER, OR BEST MANAGEMENT PRACTICES.(4)IRRIGATION SYSTEMS MAY BE OPERATED AT ANYTIME OF THE DAY ON ANY DAY FOR MAINTENANCE AND REPAIR PURPOSES NOT TO EXCEED 20 MINUTES PER HOUR PER ZONE.(5)IRRIGATION USING A HAND-HELD HOSE EQUIPPED WITH AN AUTOMATIC SHUT-OFF NOZZLE IS ALLOWED AT ANYTIME OF DAY ON ANY DAY.(6)DISCHARGE OF WATER FROM A WATER-TO-AIR AIR CONDITIONING UNIT OR OTHER WATER-DEPENDENT COOLING SYSTEM IS NOT LIMITED.(7)THE USE OF WATER FROM A RECLAIMED WATER SYSTEM IS ALLOWED ANYTIME, FOR THE PURPOSE OF THIS SUBSECTION, A RECLAIMED WATER SYSTEM INCLUDES SYSTEMS IN WHICH THE PRIMARY SOURCE IS RECLAIMED WATER, WHICH MAY OR MAY NOT BE SUPPLEMENTED FROM ANOTHER SOURCE DURING PEAK DEMAND PERIODS.(8)THE USE OF RECYCLED WATER FROM WET DETENTION TREATMENT PONDS FOR IRRIGATION IS ALLOWED ANYTIME PROVIDED THE PONDS ARE NOT AUGMENTED FROM ANY GROUND OR OFF-SITE SURFACE WATER, OR PUBLIC SUPPLY SOURCES.

SEC. 22-184. - ADDITIONAL REQUIREMENTS.

ANY PERSON WHO PURCHASES AND INSTALLS AN AUTOMATIC LANDSCAPE IRRIGATION SYSTEM MUST PROPERLY INSTALL, MAINTAIN, AND OPERATE TECHNOLOGY THAT INHIBITS OR INTERRUPTS OPERATION OF THE SYSTEM DURING PERIODS OF SUFFICIENT MOISTURE.

SEC. 22-185. - VARIANCES FROM SPECIFIC DAY OF WEEK LIMITATIONS.

AN ADMINISTRATIVE VARIANCE FROM THE SPECIFIC LANDSCAPE IRRIGATION DAYS OR DAY SET FORTH IN SECTION 22-182 MAY BE GRANTED BY THE CITY UTILITIES MANAGER OR DESIGNEE IF STRICT APPLICATION OF THE SCHEDULED DAYS OR DAY WOULD LEAD TO UNREASONABLE OR UNFAIR RESULTS IN PARTICULAR INSTANCES, PROVIDED THAT THE APPLICANT DEMONSTRATES IN WRITING AND WITH PARTICULARITY THAT COMPLIANCE WITH THE SCHEDULED DAYS OR DAY WILL RESULT IN A SUBSTANTIAL ECONOMIC, HEALTH OR OTHER HARDSHIP ON THE APPLICANT REQUESTING THE VARIANCE OR THOSE SERVED BY THE APPLICANT. WHERE A CONTIGUOUS PROPERTY IS DIVIDED INTO DIFFERENT ZONES, A VARIANCE MAY BE GRANTED HEREUNDER SO THAT EACH ZONE MAY BE IRRIGATED ON DIFFERENT DAYS OR DAY THAN OTHER ZONES OF THE PROPERTY. HOWEVER, IN NO EVENT SHALL A VARIANCE ALLOW A SINGLE ZONE TO BE IRRIGATED MORE THAN TWO DAYS PER WEEK DURING DAYLIGHT SAVINGS TIME OR MORE THAN ONE DAY PER WEEK DURING EASTERN STANDARD TIME.

SEC. 22-186. - APPLICATION OF ARTICLE.

THE PROVISIONS OF THIS ARTICLE SHALL APPLY TO EACH PERSON LOCATED WITHIN THE CITY.

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IRRIGATION SCHEDULE + NOTES

SYM	DESCRIPTION	DATE

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Tuesday, July 30, 2024
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Tuesday, July 30, 2024

IRRIGATION NOTES

1.) SOME PIPE LINES ARE DRAWN OFF SET FOR CLARITY. INSTALL ALL IRRIGATION LINES IN LANDSCAPED AREAS.

2.) REFER TO THE LANDSCAPE PLANS WHEN TRENCHING TO AVOID TREE ROOT BALLS AND TO INSTALL HEADS AT APPROPRIATE LOCATIONS.

3.) ADJUST ALL NOZZLES TO REDUCE OVERTHROW ON PAVING & WALLS. THROTTLE ALL IRRIGATION CONTROL VALVES AS REQUIRED TO PREVENT FOGGING. SET CONTROLLER RUN TIMES TO MATCH PLANT WATER NEEDS AND SOIL CONDITIONS.

4.) INSTALL RISERS 18" FROM WALLS OR BUILDINGS, AND 24" FROM PAVED SURFACES. PAINT ALL RISERS AND SUPPORTS FLAT BLACK.

5.) INSTALL POP-UP HEADS 18" FROM WALLS, 6" FROM WALKS, DECKS AND CURBS, 6 FEET FROM CURBLESS ROADS, AND 30" FROM THE END OF PARKING SPACES. PROVIDE PURPLE CAPS AS REQUIRED.

6.) SET TOP OF POP-UP HEAD CAPS 1" ABOVE FINISHED GRADE PRIOR TO SOD OR MULCH INSTALLATION.

7.) REFER TO UTILITY PLANS PRIOR TO TRENCHING. THE IRRIGATION INSTALLER SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGE TO UTILITIES CAUSED BY THEIR WORK DURING THE PROJECT.

8.) ALL WORK SHALL BE GUARANTEED FOR ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE AGAINST ALL DEFECTS IN EQUIPMENT AND WORKMANSHIP.

9.) ELECTRIC POWER SUPPLY FOR THE IRRIGATION CONTROLLER SHALL BE BROUGHT TO A JUNCTION BOX AT THE CONTROLLER LOCATION BY THE BUILDING ELECTRICAL CONTRACTOR. IRRIGATION INSTALLER TO PROVIDE ELECTRICAL PERMITS AND LICENSED ELECTRICIAN TO CONNECT THE IRRIGATION CONTROLLER EQUIPMENT TO THE POWER SUPPLY.

10.) IRRIGATION WATER CONNECTIONS AND SYSTEM CONSTRUCTION SHALL COMPLY WITH THE REQUIREMENTS OF LOCAL CODES FOR IRRIGATION INSTALLATION, SIGNAGE, PLACARDS AND CONNECTIONS TO THE RECLAIMED WATER SUPPLY. THE TERM PURPLE COLOR ON THESE PLANS REFERS TO PANTONE COLOR #512, PER PLUMBING CODES AND THE USE OF RECLAIMED WATER FOR LANDSCAPE IRRIGATION.

11.) IRRIGATION INSTALLER TO ACQUIRE ALL PERMITS AND UTILIZE ALL SAFETY PRECAUTIONS REQUIRED TO WORK IN ROW OF ROADWAY.

12.) SIXTY (60) PSI MINIMUM STATIC WATER PRESSURE IS REQUIRED FOR THE EFFICIENT OPERATION OF THE IRRIGATION SYSTEM AS DESIGNED. VERIFY THE MINIMUM STATIC WATER PRESSURE AND VOLUME IS AVAILABLE AT THE PROJECT SITE PRIOR TO BEGINNING THE IRRIGATION INSTALLATION. NOTIFY THE LANDSCAPE ARCHITECT IN WRITING IF THE MINIMUM STATIC WATER PRESSURE OR WATER VOLUME IS NOT AVAILABLE.

13.) AT THE END OF PARKING SPACES PLACE HEADS IN LINE WITH PARKING STRIPES OR 2.5 FEET FROM BACK OF CURB. (TYPICAL)

14.) PRIOR TO STARTING THE WORKS INSPECT THE SITE AND LOCATE ALL EXISTING IRRIGATION PIPES, WIRES AND EQUIPMENT. PROVIDE LABOR AND MATERIALS TO REPAIR ANY DAMAGED EXISTING IRRIGATION. PROVIDE "LIFELINE" PIPES AND WIRES TO KEEP ADJACENT IRRIGATION ZONES OPERATIONAL THROUGHOUT THE WORKS.

15.) THE IRRIGATION MAINLINE IS DRAWN OFFSET FOR GRAPHIC CLARITY. DO NOT SCALE THE MAINLINE FROM THE DRAWING FOR INSTALLATION. LAYOUT THE IRRIGATION MAINLINE ROUTE IN THE FIELD TO AVOID PROPOSED AND EXISTING TREE ROOT ZONES AND UTILITIES.

IRRIGATION LEGEND

- R-M — REUSE WATER TAP AND REUSE WATER METER, PER LOCAL AND STATE CODES. SIZE INDICATED ON PLAN. PROVIDED BY THE SITE UTILITY CONTRACTOR, PER LOCAL CODES.
- RS A — IRRIGATION CONTROLLER WITH RAIN SWITCH. NUMBER OF STATIONS INDICATED ON PLAN. 120 VOLT, 1.0 AMP, ELECTRIC CIRCUIT FROM NEAREST ELECTRICAL PANEL, BY THE BUILDING CONTRACTOR. PROVIDE CONTROLLER GROUNDING WITH 15' #6 BARE COPPER WIRE, 5/8" X 6' COPPER CLAD GROUND ROD AND ACORN CLAMP. HUNTER ICC2 SERIES + SOLAR SYNC. RAINBIRD ESP-LXME MODULAR SERIES + RSD RAIN SWITCH.
- CONTROL VALVE. PLASTIC BODY WITH PURPLE FLOW CONTROL + VALVE ID TAG. MOUNT IN 19" RECTANGULAR VALVE BOX WITH PURPLE LID. SIZE INDICATED ON PLAN. PROVIDE UF 14AWG COPPER CONTROL WIRE TO ALL VALVES. HUNTER ICV VALVE SERIES, OR EQUAL. RAINBIRD PEB VALVE SERIES, OR EQUAL.
- 04 / 1.5" / A / 55 GPM — IRRIGATION CONTROL VALVE TAG. INDICATES VALVE LOCATION, STATION NUMBER, SIZE AND ZONE FLOW RATE.
- IRRIGATION ISOLATION VALVE. SIZE SAME SIZE AS PIPE. MOUNT IN 19" RECTANGULAR VALVE BOX WITH 8" NDS DRAIN PIPE EXTENSION AS NEEDED. 2.5" AND SMALLER – BRONZE THREAD ON TYPE WITH WHEEL HANDLE.
- SIZE — PVC MAIN LINE PIPE WITH METALLIC MARKING TAPE. CLASS 200, PURPLE PVC. INSTALL 18" DEEP. 2.5" AND SMALLER, SOLVENT WELD PVC PIPE AND FITTINGS.
- SIZE — PVC LATERAL LINE PIPE. PURPLE PVC. INSTALL 12" DEEP. 3/4" AND LARGER, CLASS 200, PVC. 1/2" PIPE SIZE, CLASS 315, PVC. 2.5" AND SMALLER, SOLVENT WELD PVC PIPE AND FITTINGS.
- SIZE SLV. — PVC SLEEVE PIPE. CLASS 200, PVC. SOLVENT WELD PVC PIPE AND FITTINGS.
- DRIP IRRIGATION ZONE KIT – BALL VALVE, CONTROL VALVE, FILTER AND PRESSURE REGULATOR IN JUMBO VALVE BOX.
  .2–5 GPM (3/4") – RAIN BIRD LOW FLOW CONTROL ZONE KIT (XCZ-075-PRF)
  3–15 GPM (1") – RAIN BIRD MEDIUM CONTROL ZONE KIT (XCZ-PRB-100-COM)
  15–40 GPM (1.5") – RAIN BIRD CONTROL ZONE KIT (XCZ-PRB-150-COM)
  40–60 GPM (1.5") – RAIN BIRD INLINE CONTROL ZONE KIT (XCZ-150-LCDR)
- DRIP EMITTER TUBING – .9 GPHX 12" EMITTER SPACING, AND 18" ROW SPACING. PVC PIPE SUPPLY AND EXHAUST HEADERS WITH AIR RELEASE VALVES, AND AUTO FLUSH VALVES IN VALVE BOXES PER HIGH, LOW, AND END POINTS OF THE TUBING. PROVIDE A 12" POP-UP SPRAY HEAD WITH THE NOZZLE SHUT OFF AS A SYSTEM OPERATION INDICATOR. USE PVC PIPE TO, AND BETWEEN, EACH PLANTING AREA. NETAFIM UNI-TECHLINE–CNL – 1 GPH – 12" OC, OR EQUAL.

TREE IRRIGATION

(3) 0.25 GPM TREE BUBBLERS ON FLEX PE PIPE
(3) RAIN BIRD 1401 PRESSURE REGULATED BUBBLERS

SPRAY BODIES

RAINBIRD RD1800–PRS PRESSURE REGULATED SERIES SPRAY BODIES & ADAPTERS
PROVIDE PURPLE CAP FOR RECLAIMED WATER
POLY PIPE AND INSERT FITTING SWING JOINTS
PROVIDE U–SERIES SPRAY NOZZLES PER PLAN
HE–VAN SERIES NOZZLES FOR "Z" SERIES NOZZLE DESIGNATIONS

S ● 6" POP–UP TURF SPRAY BODY
0.25 GPM PLANTING POT ON FLEX PE PIPE

LETTER	GPM AT 30 PSI	RADIUS	PATTERN
A	0.92	15'	QUARTER
B	1.30	15'	ONE THIRD
C	1.85	15'	HALF
D	2.48	15'	TWO THIRD
E	2.92	15'	THREE QTR.
F	3.70	15'	FULL
G	0.65	12'	QUARTER
H	0.90	12'	ONE THIRD
J	1.30	12'	HALF
K	1.75	12'	TWO THIRD
L	2.00	12'	THREE QTR.
M	2.60	12'	FULL
N	0.39	10'	QUARTER
P	0.57	10'	ONE THIRD
R	0.79	10'	HALF
S	1.58	10'	FULL
U	0.61	4' X 15'	END STRIP
Ul	0.5	4' X 15'	LEFT CORNER STRIP
Ur	0.5	4' X 15'	RIGHT CORNER STRIP
V	1.21	4' X 30'	SIDE STRIP
W	1.2	4' X 30'	CENTER STRIP
X	0.5	2' X 4'	SQUARE PATTERN
Z1	VARIES	10'	10' ADJUSTABLE ARC
Z2	VARIES	12'	12' ADJUSTABLE ARC
Z	VARIES	15'	15' ADJUSTABLE ARC
Y	0.5	1'	FLOOD BUBBLER
O	1.0	5'	STREAM BUBBLER
1	0.26	8'	QUARTER
2	0.32	8'	ONE THIRD
3	0.52	8'	HALF
4	1.05	8'	FULL
5	.1	5'	QUARTER
6	.2	5'	ONE THIRD
7	.2	5'	HALF
8	.38	5'	FULL
9	.38	5'	FLOOR EMITTER

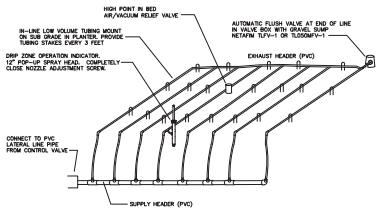
Cassen Park
Irrigation Water Use Estimate

By Prevost Stamper Inc. — **2 Day / Week** — **4 Hour Water Window**
4/23/2024

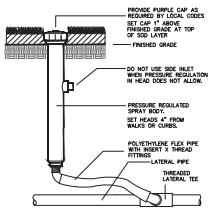
TREES	0.02	acres	880 square feet
Tree water inches per week	2.50	inches	
Tree area gallons per week	1,371	gal/week	44 Trees
Use at 60% Irr System Efficiency	2,286	gal/week	20 s.f. per Tree
Water window	8	hours	
Tree Flow Rate Required	5	GPM	
Tree Maximum Daily Use	326	Gallons per day	
Tree Maximum Monthly Use	9,905	Gallons per month	
PLANTINGS	0.27	acres	11,620 square feet
Shrub & GC water inches per week	0.75	inches	
Shrub area gallons per week	5,433	gallons	
Use at 60% Irr System Efficiency	9,054	gal/week	
Water window	8	hours	
Shrub Flow Rate Required	19	GPM	
Shrub Maximum Daily Use	1,290	Gallons per day	
Shrub Maximum Monthly Use	39,236	Gallons per month	
TURF	0.14	acres	6,100 square feet
Turf water inches per week	1.25	inches	
Turf area gallons per week	4,753	gallon	
Use at 60% Irr System Efficiency	7,922	gal/week	
Water window	8	hours	
Turf Flow Rate Required	17	GPM	
Turf Maximum Daily Use	1,129	Gallons per day	
Turf Maximum Monthly Use	34,329	Gallons per month	

ESTIMATED TOTAL WATER USE

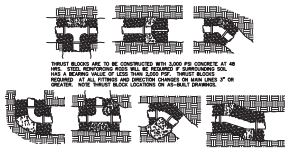
Flow Rate Required	40	Gallons per Minute
Maximum Daily Use	2,744	Gallons per Day
Maximum Monthly Use	83,469	Gallons per Month
Maximum Annual Use	1,001,631	Gallons per Year
Average Daily Use	2,195	GPD
Average Monthly Use	66,776	GPM
Average Annual Use	801,305	GPY



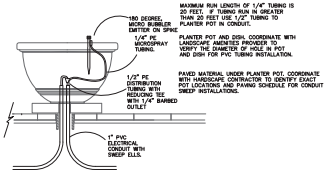
DRIP IRRIGATION LINES IN PLANTERS — NOT TO SCALE



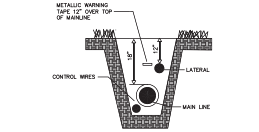
POP UP SPRAY — NOT TO SCALE



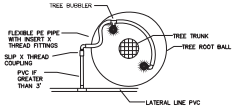
THRUST BLOCK DETAILS — NOT TO SCALE



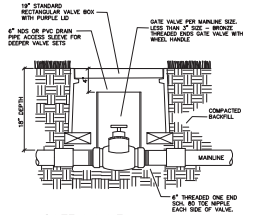
IRRIGATION TO PLANTER POTS — NOT TO SCALE



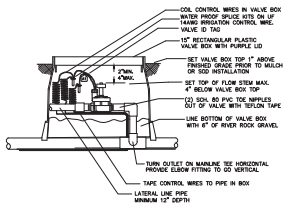
TYPICAL TRENCHING — NOT TO SCALE



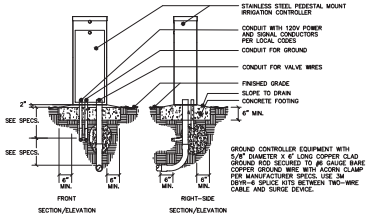
DOUBLE 0.25 GPM TREE BUBBLERS — NOT TO SCALE



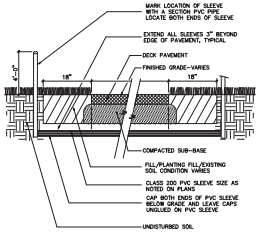
GATE VALVE — NOT TO SCALE



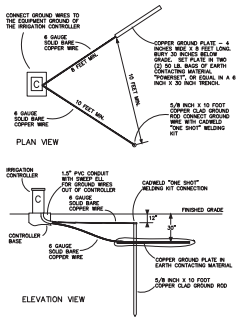
SOLENOID CONTROL VALVE — NOT TO SCALE



PEDESTAL MOUNT CONTROLLER — NOT TO SCALE



SLEEVE UNDER PAVING — NOT TO SCALE



CONTROLLER GROUNDING — NOT TO SCALE

Hines Inc

ML+H
Marquis Latimer + Halback, Inc.
34 Cordova Street, Suite A
St. Augustine, FL 32084
Ph 904.825.6747 www.halback.com
LA6667110 Qualifier

DRAWN BY:

CASSEN PARK
1 SOUTH BEACH STREET, ORMOND BEACH, FLORIDA, 32174
IRRIGATION DETAILS

SYM	DESCRIPTION	DATE

SIZE: ANSI D
PRIME PROJECT #:
ML+H PROJECT #: 23.02.00

DRAWING NO.: L-4.3

C:\Hines Inc Dropbox\Design\Design PSI Projects\PSI Drawings\Projects 2024\MLH\24-450 Cassen Park\VIRR.PLOT.dwg



1 A3.0 NORTH ELEVATION
SCALE: 1/4" = 1'-0"



2 A3.0 WEST ELEVATION
SCALE: 1/4" = 1'-0"



3 A3.0 SOUTH ELEVATION
SCALE: 1/4" = 1'-0"



4 A3.0 EAST ELEVATION
SCALE: 1/4" = 1'-0"

CONTEMPORARY MEDITERRANEAN STYLE

O.B.F.L. LDG SEC.3-69 ARCHITECTURAL STYLE
MATCHING EXISTING CITY HALL STYLE/ COLORS

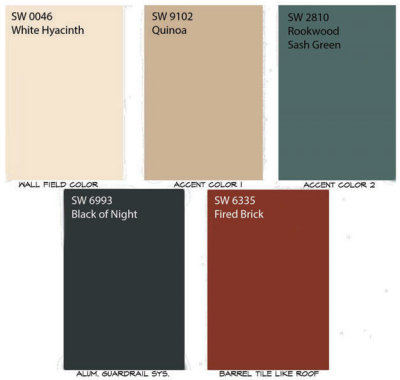
DESIGN ATTRIBUTES:

REQUIRED:

ATTRIBUTE #1	LOW PITCH HIP OR GABLED ROOFS 5/12 ROOF PITCH USED
ATTRIBUTE #2	ARCHES WITH COLUMNS COLUMNS WITH FLAT BEAMS AT PORCHES ALL (4) ELEVATIONS
ATTRIBUTE #3	DECORATIVE AWNINGS ALL WINDOWS UNDER LARGE PORCHES
ATTRIBUTE #4	BARREL CLAY TILE ROOF TERRACOTTA STONE COATED METAL VILLA TILE ROOF SYS. DECRA VILLA TILE OR EQUAL

OPTIONAL:

ATTRIBUTE #5	DECORATIVE WALL TILE DETAILING NOT UTILIZED
ATTRIBUTE #6	BLACK WROUGHT IRON RAILING PREFINISHED BLACK ALUM. RAILING SYS.
ATTRIBUTE #7	STUCCO SURFACE ON CMU WALLS SMOOTH FINISHED STUCCO UTILIZED
ATTRIBUTE #8	ARCHED WINDOWS WITH BALCONIES NOT UTILIZED
ATTRIBUTE #9	ARCADES NOT UTILIZED
ATTRIBUTE #10	CERAMIC TILE PAVING ACCENT BANDS IN PORCH SLABS



EXTERIOR BUILDING COLOR SCHEDULE

MATCHING EXISTING CITY HALL STYLE/ COLORS
COLORS SELECTED FROM SHERWIN WILLIAMS PAINT COLLECTION

BLDG. ELEMENT	COLOR SPECIFIED
MAIN EXT. WALLS FIELD WALL COLOR	COLOR SW 0046 WHITE HYACINTH (OFF WHITE)
ACCENT COLOR	SW 9102 QUINOA (SAND STONE)
PORCH COLUMNS FIELD COLOR	COLOR SW 0046 WHITE HYACINTH (OFF WHITE)
ACCENT COLOR 1	SW 9102 QUINOA (SAND STONE) SW 2810 ROOKWOOD SASH GREEN (MATT CITY HALL GREEN)
BASE OF WALLS/ COLUMNS ACCENT COLOR 1	COLOR SW 9102 QUINOA (SAND STONE)
PORCH GUARDRAIL SYS PREFINISHED ALUM SYS.	COLOR SW 6993 BLACK OF NIGHT (WROUGHT IRON)
STOREFRONT DOORS WINDOW FRAMES PRE-FINISHED ALUM. SYS.	COLOR SW 2810 ROOKWOOD SASH GREEN (MATT CITY HALL GREEN)
FASCIAS/ SOFFITS FIELD COLOR	COLOR SW 0046 WHITE HYACINTH (OFF WHITE)
BARREL TILE LIKE ROOF	COLOR SW 6335 FIRED BRICK (TERRACOTTA)

HALL & OGLE
ARCHITECTS, INC.
208 MAGNOLIA AVENUE
DAYTONA BEACH, FLORIDA 32114
www.hoarchitects.com
PH (386) 255-8163
FAX (386)257-5650
AA-C000925

CASSEN PARK IMPROVEMENTS
RESTROOM/BAIT HOUSE FACILITY
CITY OF ORMOND BEACH, FL.

NO.	REVISION/ SUBMISSIONS	DATE

SHT. TITLE: EXTERIOR ELEVATIONS
SEAL
JOHN E. HALL AR0010727
COMMISSION NO. 2014
SCALE:
PROJECT ARCH: JH
DRAWN: JB
CHECKED: JH
DATE: 14-JUNE-2024
SHEET NO. A3.0

City of Ormond Beach
AGENDA ITEM

August 20, 2024 - City Commission

Number: 7.O

Section:	CONSENT AGENDA		
Item Category:	Consent - Disposition Item	**Res./Ord. No:**	
Strategic Goal:	Governance – Other		
Department:	City Manager		
Subject:	Travel Approval for City Commission		
Summary:	Members of the City Commission, the City Manager and the City Attorney attend various conferences and events during the year. It is proposed the City Commission consider approving the addition of the 2024 Florida Resilience Conference, sponsored by the Florida Shores and Beach Preservation Association, to the list of approved travel. Details are located on the Florida Resilience Conference website, www.floridaresilienceconference.org.		
Financial Impact:	Travel for the City Commission, City Manager and City Attorney are budgeted items.		
Citizen Impact:	None		
Recommended Action (Staff, Advisory Board and/or Other):	It is requested the City Commission approve this additional travel if they should decide to attend.		
Staff Contact:	Joyce Shanahan, City Manager, (386) 676-3200		
Attachments:			
Approval:	Kelly McGuire, Finance Director Shawn Finley, Assistant City Manager Joyce Shanahan, City Manager	8/6/2024 8/9/2024 8/14/2024	

City of Ormond Beach
AGENDA ITEM

August 20, 2024 - City Commission

Number: 7.P

Section:	CONSENT AGENDA		
Item Category:	Consent - Disposition Item	**Res./Ord. No:**	
Strategic Goal:	Governance - Other		
Department:	City Manager		
Subject:	City Manager's Monthly Report, August 2024		
Summary:	The following reports provide information regarding the City's finances and capital improvement projects, building permits and development activity, and economic development activities and trends.		
Financial Impact:	None		
Citizen Impact:	None		
Recommended Action (Staff, Advisory Board and/or Other):	This report is for informational purposes. Additional information provided upon request.		
Staff Contact:	Joyce Shanahan, City Manager, (386) 676-3200		
Attachments:	1. Financial Status Report - June 2024 2. Capital Improvements Projects, Status Report - July 2024 3. Economic Development Report - July 2024 4. Development Activity Report - July 2024 5. Building Permit Activity - July 2024		
Approval:	Kelly McGuire, Finance Director 8/6/2024 Shawn Finley, Assistant City Manager 8/9/2024 Joyce Shanahan, City Manager 8/14/2024		

Monthly Financial Status Report
June 2024

This report provides the City Commission with an update of the financial status of the City's operating funds. The purpose of the report is to identify any significant variances from the adopted budget and to identify any adverse trends and their implications for the current and future years' budgets.

The first table following this introduction provides a summary of the revenues and expenditures to date by fund. Additional detail by fund type is provided in subsequent tables.

Revenues at or above 75% benchmark is favorable, while expenses at or below the 75% benchmark is also favorable.

The airport fund has revenue and expense impacts from FAA grants.
The Impact Fee funds experienced an increase in revenue due to new subdivision (Ridge Haven).

Budget Summary

Fund	Final Budget	YTD Actual Revenues	YTD %	YTD Actual Expenses	YTD %
001 - General Fund	43,461,840	34,295,194	79%	32,780,144	75%
104 - Community Redevelopment	1,609,825	1,490,967	93%	558,512	35%
106 - Ormond Crossing	329,996	285,188	86%	-	0%
107 - Stormwater	4,478,430	2,095,168	47%	1,670,272	37%
108 - Airport	2,725,948	239,232	9%	315,592	12%
109 - Local Law Enforcement Trust Fund	-	11,370	0%	1,621	0%
110 - Economic Development Fund	-	12,256	0%	79,021	0%
115 - Recreation Facility Fee	57,225	40,168	70%	78,957	138%
205 - Financing Debt Service	803,545	602,658	75%	212,456	26%
211 - Debt Service 2005 CIP Note	162,000	117,747	73%	156,545	97%
220 - Debt Service GOB 2010	392,114	390,314	100%	360,448	92%
301 - General Capital Improvement	1,614,840	698,387	43%	1,767,380	109%
302 - General Equipment & Vehicle	290,000	229,988	79%	170,146	59%
305 - Public Safety Vehicle & Equip	2,455,000	943,238	38%	528,842	22%
308 - Transportation	2,121,284	1,316,856	62%	2,583,050	122%
310 - Recreation Impact Fee	100,000	234,195	234%	-	0%
316 - Local Roads Impact Fee	50,000	525,202	1050%	-	0%
317 - Facilities Renewal & Replacement	808,736	901,218	111%	624,264	77%
318 - Stormwater Impact Fee	50,000	28,076	56%	-	0%
319- Police Impact Fees	-	21,984	0%	-	0%
320- Fire Impact Fees	-	27,376	0%	-	0%
322 - Leisure Services Capital Fund	1,149,749	502,162	44%	13,398	1%
401 - Water/Wastewater Operating Fund	24,006,719	17,319,908	72%	18,513,382	77%
408 - Water/Wastewater E&V Fund	250,000	209,634	84%	-	0%
409 - Water/Wastewater Capital	7,000,000	2,660,304	38%	2,009,977	29%
414 - Water/Wastewater Consolidated Debt	5,209,000	3,156,750	61%	852,024	16%
433 - Reuse Impact Fee Fund	-	23,461	0%	11,876	0%
434 - Water Impact Fee	2,772,500	533,275	19%	99,690	4%
435 - Wastewater Impact Fee	675,000	948,162	140%	127,126	19%
460 - Solid Waste	13,285,500	12,096,499	91%	8,672,156	65%
502 - Workers Compensation	806,612	616,008	76%	720,631	89%
504 - General Liability	2,455,253	2,462,318	100%	2,537,199	103%
Total	**$ 120,121,116**	**$ 85,035,261**	**71%**	**$ 75,446,981**	**63%**

General Fund Revenues

Ad valorem Taxes- Annual revenue is estimated at $16 million and is based on the taxable value ($4.6 billion) and the General Fund operating millage (3.761). Actuals to date are $15.9 million of the budgeted amount.

Utility Taxes- The City levies a utility tax of 10% on electric and gas sales. To date, the City has collected $3.47 million

Communication Taxes – Communication service taxes collected as of June 2024 are $1.05 million.

Business Tax –Business tax collections amounted to $64,420. The majority of business taxes are collected in the last quarter of the fiscal year.

Licenses, Permits and Franchise Fees – This revenue source includes building permits, plan review and franchise fees. The City has franchise fee agreements which require electric and natural gas providers to remit 6% of gross sales to the City. Payments made to the City for franchise fees often occur several months after they are collected by FPL and other providers. Collections through June 2024 are $3.47 million.

Intergovernmental – This revenue source includes municipal revenue sharing and sales tax. Through June 2024, the City received a total of $3.4 million in this category. This category was impacted by the COVID Pandemic in previous years.

Charges for Services – This category includes Leisure Services user charges and additional revenue from contracts for right of way mowing, traffic signal maintenance, and street lighting. The Volusia County Library is no longer charged as it has been in previous years in this category. The City received $896,000 in this category through June.

Fines and Forfeitures – Traffic, code enforcement, and court fines make up this revenue category. Revenues were $46,666 as of June 2024.

Miscellaneous Revenue – Interest and internal service charges for Fleet and Engineering are included in this revenue category. Revenues collected were $1.6 million

Transfers In –Transfers have been recorded in the amount of $4.28 million.

General Fund Revenues - June 2024

	Final Budget	YTD FY 2023-24	Remaining Budget	% of Budget	YTD FY 2022-23	$ FY Variance	% FY Variance
Property Tax	$ 16,188,466	$ 15,927,585	$ 260,881	98.4%	$ 14,380,060	$ 1,547,525	10.76%
Utility Taxes	4,585,000	3,471,770	1,113,230	75.7%	2,761,735	710,036	25.71%
Communication Tax Receipts	1,700,000	1,052,534	647,466	61.9%	1,009,905	42,629	4.22%
Business Tax	283,500	64,420	219,080	22.7%	64,989	(569)	-0.88%
Licenses, Permits & Fees	5,184,350	3,465,212	1,719,138	66.8%	2,933,399	531,813	18.13%
Intergovernmental	5,256,300	3,443,109	1,813,191	65.5%	3,422,608	20,502	0.60%
Charges for Services	858,138	895,978	(37,840)	104.4%	926,658	(30,679)	-3.31%
Fines & Forfeitures	73,000	46,666	26,334	63.9%	47,720	(1,054)	-2.21%
Miscellaneous Revenues	3,553,765	1,645,936	1,907,829	46.3%	1,508,604	137,332	9.10%
Transfers In	5,709,321	4,281,984	1,427,337	75.0%	3,584,331	697,653	19.46%
Use of Fund Balance	70,000	-	70,000	0.0%	-	-	0.00%
	$ 43,461,840	$ 34,295,194	$ 9,166,646	78.9%	$ 30,640,008	$ 3,655,186	11.9%

General Fund Reserve – This category includes commitments made by the City Commission by resolution or Commission comments at the City Commission meeting.

Purpose	Amount	CC Meeting Date	Approval Process
NOVA Sports Field Reconstruction	$70,000.00	9/20/2023	Original Budget
Downtown Community Center Design	$783,059.00		
OBSC LED Softball Quad Lighting (add'l funds)	$53,000.00	5/7/2024	Res No. 2024-70
Nova Fields 2-5 (add'l funds)	$44,000.00	5/7/2024	Res No. 2024-71
OBSC Lease True- up	$340,000.00	5/14 workshop	

General Fund Expenditures

Personnel Services - This category includes wages and benefits paid by the City. Personnel services account for $28.2 million of the General Fund gross budget. Expenditures through June 2024 were $21.3 million.

Operating Expenditures - This category includes $13 million for maintenance contracts, utilities, tools, fuel, insurance, supplies and contracts for service with community agencies. Through June 2024, $10.14 million has been spent.

Grants and Aids - This category includes contributions made to not for profit organizations which were budgeted at $201,000. $72,960 has been expended year to date.

Transfers Out – The budget for transfers from the General Fund to other funds is $1.7 million with $1.2 made through June 2024.

General Fund Expenditures - June 2024

	Final Budget	YTD FY 2023-24	Remaining Budget	% of Budget	YTD FY 2022-23	$ FY Variance	% FY Variance
City Commission	$ 398,297	$ 291,230	$ 107,067	73.1%	$ 313,030	$ (21,800)	-6.96%
City Administration	766,686	612,650	154,036	79.9%	516,517	96,133	18.61%
Support Services	436,052	320,686	115,366	73.5%	324,310	(3,624)	-1.12%
City Attorney	897,617	1,049,880	(152,263)	117.0%	627,371	422,509	67.35%
Legislation & Policy	2,498,652	2,274,445	224,207	91.0%	1,781,228	493,217	27.69%
Finance	1,126,785	843,746	283,039	74.9%	757,556	86,190	11.38%
Information Technology	1,661,794	1,515,892	145,902	91.2%	819,652	696,241	84.94%
Human Resources	610,162	418,589	191,573	68.6%	439,120	(20,531)	-4.68%
Planning	815,894	570,527	245,367	69.9%	508,336	62,191	12.23%
Building Inspections	1,208,177	967,397	240,780	80.1%	774,552	192,845	24.90%
Police Administration	1,197,397	820,179	377,218	68.5%	701,916	118,263	16.85%
Police Operations	7,508,510	5,933,492	1,575,018	79.0%	4,974,273	959,219	19.28%
Community Outreach	620,646	408,295	212,351	65.8%	397,289	11,006	2.77%
Criminal Investigations	1,527,310	1,160,316	366,994	76.0%	961,874	198,442	20.63%
Community Services	444,250	328,754	115,496	74.0%	308,245	20,509	6.65%
Records	193,324	138,716	54,608	71.8%	123,577	15,139	12.25%
Neighborhood Impr.	496,897	267,315	229,582	53.8%	301,444	(34,129)	-11.32%
Police	11,988,334	9,057,066	2,931,268	75.5%	7,768,617	1,288,449	16.59%
Fire	7,363,742	5,659,608	1,704,134	76.9%	5,166,867	492,741	9.54%
Streets	2,622,263	1,799,858	822,405	68.6%	1,620,900	178,958	11.04%
Engineering	1,251,822	876,524	375,298	70.0%	816,857	59,667	7.30%
Fleet	1,823,290	1,290,612	532,678	70.8%	1,360,625	(70,013)	-5.15%
Public Works	5,697,375	3,966,994	1,730,381	69.6%	3,798,382	168,612	4.44%
Economic Development	410,971	239,172	171,799	58.2%	260,915	(21,743)	-8.33%
Building Maintenance	937,759	757,090	180,669	80.7%	738,487	18,603	2.52%
Administration	819,430	585,099	234,331	71.4%	467,268	117,831	25.22%
Nova Recreation	376,439	295,208	81,231	78.4%	268,819	26,389	9.82%
S. Ormond Neigh. Center	384,201	282,263	101,938	73.5%	244,822	37,442	15.29%
Athletic Fields Mnt.	1,657,484	1,180,026	477,458	71.2%	1,060,064	119,962	11.32%
Parks	2,650,336	1,914,998	735,338	72.3%	1,834,312	80,686	4.40%
Environmental Learning	205,132	157,665	47,467	76.9%	130,361	27,304	20.95%
The Casements	389,713	326,203	63,510	83.7%	246,584	79,618	32.29%
Performing Arts Center	299,738	252,335	47,403	84.2%	201,650	50,685	25.14%
Senior Center	118,154	61,586	56,568	52.1%	57,823	3,763	6.51%
Community Events	246,067	155,562	90,505	63.2%	119,175	36,387	30.53%
Leisure Services	8,084,453	5,968,034	2,116,419	73.8%	5,369,363	598,671	11.15%
Grants & Aid*	91,528	62,615	28,913	68.4%	68,615	(6,000)	-8.74%
Transfers	1,718,073	1,236,060	482,013	71.9%	1,684,746	(448,686)	-26.63%
Contingency	185,900	-	185,900	0.0%	-	-	0.00%
	$ 43,461,840	$32,780,144	$ 10,681,696	75.4%	$29,197,949	$ 3,582,196	12.27%

Downtown Redevelopment Trust

Revenues – Budgeted revenues are comprised of City, County, Hospital, and special district property taxes levied on property within the Downtown Redevelopment boundaries and amount to $1.6 million consisting of $653,000 in transfers into this fund. $1.49 million has been received as of June 2024. The growth in miscellaneous income is due to the increase of interest.

Expenditures – A total of $559,000 has been expended for capital projects and service contracts (Ormond Main Street and property improvement grants).

Downtown Redevelopment Fund Revenues - June 2024

	Final Budget	YTD FY 2023-24	Remaining Budget	% of Budget	YTD FY 2022-23	$ FY Variance	% FY Variance
Grant	$ -	$ -	$ -	0.0%	$ -	$ -	0.0%
Local Units	956,586	906,892	49,694	94.8%	951,005	(44,113)	-4.6%
Miscellaneous	500	94,520	(94,020)	18903.9%	36,424	58,096	159.5%
Transfers In	652,739	489,555	163,184	75.0%	394,155	95,400	24.2%
Use of Fund Balance	-	-	-	0.0%	-	-	0.0%
	$ 1,609,825	$ 1,490,967	$ 118,858	92.6%	$ 1,381,584	$ 109,383	7.92%

Downtown Redevelopment Fund Expenditures

	Final Budget	YTD FY 2023-24	Remaining Budget	% of Budget	YTD FY 2022-23	$ FY Variance	% FY Variance
Planning	$ 131,050	$ 60,850	$ 70,200	46.4%	$ 53,014	$ 7,836	14.8%
Public Works	86,976	236,595	(149,619)	272.0%	36,939	199,656	540.5%
Grants	200,000	-	200,000	0.0%	-	-	0.0%
Leisure Services	264,500	261,067	3,433	98.7%	145,393	115,674	79.6%
Contingency	927,299	-	927,299	0.0%	-	-	0.0%
	$ 1,609,825	$ 558,512	$ 1,051,313	34.7%	$ 235,346	$ 323,165	137.31%

Stormwater Fund

Revenues – The primary revenue source is stormwater user fees. User fees were budgeted at $2.6 million with $1.95 million received through June 2024 along with $141,000 in miscellaneous income. The growth in miscellaneous income is due to the increase of interest.

Expenditures – The budget for stormwater expenses is $4.5 million with $1.67 million spent to date.

Stormwater Fund Revenues - June 2024

	Final Budget	YTD FY 2023-24	Remaining Budget	% of Budget	YTD FY 2022-23	$ FY Variance	% FY Variance
Grants	$ -	$ -	$ -	0.0%	$ -	$ -	0.00%
Stormwater Fees	2,575,000	1,954,537	620,463	75.9%	1,944,603	9,935	0.51%
Miscellaneous	50,000	140,631	(90,631)	281.3%	66,671	73,960	110.93%
Intergovernmental	-	-	-	0.0%	-	-	0.00%
Use of Fund Balance	1,853,430	-	1,853,430	0.0%	-	-	0.00%
	$ 4,478,430	$ 2,095,168	$ 2,383,262	46.8%	$ 2,011,273	$ 83,895	4.17%

Stormwater Fund Expenditures

	Final Budget	YTD FY 2024-24	Remaining Budget	% of Budget	YTD FY 2022-23	$ FY Variance	% FY Variance
Maintenance	4,031,830	1,479,778	2,552,052	36.7%	1,547,059	(67,281)	-4.35%
Engineering Support	$ 192,607		$ 192,607	0.0%		$ -	0.00%
Transfers Out	253,993	190,494	63,499	75.0%	166,230	24,264	14.60%
Contingency	-	-	-	0.0%	-	-	0.00%
	$ 4,478,430	$ 1,670,272	$ 2,808,158	37.3%	$ 1,713,289	$ (43,017)	-2.51%

Water and Wastewater Fund

Revenues – The primary revenue sources are water and sewer user fees. User fees were budgeted at $22.2 million with $16.9 million collected year to date. The revenue also includes $461,792 budgeted for transfers, of which $346,000 has been received.

Expenditures – Operating expenses for utility billing and water/wastewater public works services is budgeted in the amount of $24 million with $17.3 million expended to date. This total also includes $10.9 million in expected transfers, of which $8.1 million have been expensed in as of June.

Water/Wastewater Fund Revenues - June 2024

	Final Budget	YTD FY 2023-24	Remaining Budget	% of Budget	YTD FY 2022-23	$ FY Variance	% FY Variance
Water/Sewer Charges	$ 22,187,000	$ 16,888,916	$ 5,298,084	76.1%	$ 15,914,418	$ 974,498	6.12%
Miscellaneous	60,000	61,662	(1,662)	102.8%	45,728	15,935	0.00%
Transfers In	461,792	346,347	115,445	75.0%	319,419	26,928	8.43%
Intergovernmental	-	22,982	-	0.0%	-	22,982	0.00%
Use of Fund Balance	1,297,927	-	1,297,927	0.0%	-	-	0.00%
	$ 24,006,719	$ 17,319,908	$ 6,709,794	72.1%	$ 16,279,564	$ 1,040,343	6.39%

Water/Wastewater Fund Expenditures

	Final Budget	YTD FY 2023-24	Remaining Budget	% of Budget	YTD FY 2022-23	$ FY Variance	% FY Variance
Utility Billing	$ 1,869,278	$ 1,348,521	$ 520,757	72.1%	$ 1,228,946	$ 119,574	9.73%
Water Production	4,323,844	3,555,604	768,240	82.2%	2,793,715	761,889	27.27%
Water Distribution	1,581,713	1,183,794	397,919	74.8%	1,105,975	77,818	7.04%
Wastwater Treatment	3,728,573	3,017,911	710,662	80.9%	2,494,812	523,099	20.97%
Wastewater Collection	1,577,833	1,213,439	364,394	76.9%	984,741	228,698	23.22%
Transfers Out	10,925,478	8,194,113	2,731,365	75.0%	8,516,376	(322,263)	-3.78%
Contingency	-	-	-	0.0%	-	-	0.00%
	$ 24,006,719	$ 18,513,382	$ 5,493,337	77.1%	$ 17,124,567	$ 1,388,815	8.11%

Solid Waste Fund

Revenues – The primary revenue source is solid waste franchise and user fees. To date, $12.1 million has been received.

Expenditures – Personnel, operating, capital expenses and transfers budgeted for 2024 are $13.3 million. $8.67 million has been expended as of June. Year to year variance due to Hurricane Ian.

Solid Waste Fund Revenues - June 2024

	Final Budget	YTD FY 2023-24	Remaining Budget	% of Budget	YTD FY 2022-23	$ FY Variance	% FY Variance
Franchise Fees	$ 2,394,500	$ 1,387,738	$ 1,006,762	58.0%	$ 1,554,394	$ (166,656)	-10.72%
User Fees	10,890,000	8,632,210	$ 2,257,790	79.3%	6,516,375	2,115,835	32.47%
Miscellaneous	1,000	25,977	$ (24,977)	2597.7%	(2,196)	28,173	-1283.03%
Intergovernmental	-	2,050,574	$ (2,050,574)	0.0%	-		0.00%
Use of Fund Balance	-	-	$ -	0.0%	-	-	0.00%
	$ 13,285,500	$ 12,096,499	$ 1,189,001	91.1%	$ 8,068,573	$ 1,977,352	24.51%

Solid Waste Fund Expenditures

	Final Budget	YTD FY 2023-24	Remaining Budget	% of Budget	YTD FY 2022-23	$ FY Variance	% FY Variance
Collection & Disposal	$ 9,816,266	$ 6,437,591	$ 3,378,675	65.6%	$ 8,204,154	$ (1,766,563)	-21.53%
Recycling	1,482,796	952,461	530,335	64.2%	833,653	118,808	14.25%
Engineering		-	-	0.0%	-	-	0.00%
Transfers Out	1,709,480	1,282,104	427,376	75.0%	1,007,973	274,131	27.20%
Contingency	276,958	-	276,958	0.0%	-	-	0.00%
	$ 13,285,500	$ 8,672,156	$ 4,613,344	65.3%	$ 10,045,781	$ (1,373,624)	-13.67%

CIP Status Report as of July 31, 2024

Project Name	Grant Funded	Phase	Timeline		Budget		
			Percent Complete	Date Complete	Budget Amount	Contract Amount	Percent Spent
Fund 104 - TIF							
Cassen Park Improvements		Design/Bidding	95%		$ 203,000	$ 202,155	84%
		Construction	0%		$ 865,000		
		Total			$ 1,068,000	$ 202,155	
Downtown East Granada Utility Undergrounding - Economy Electric		Design/Bidding	100%		$ 20,000	$ 27,500	100%
		Construction	10%		$ 100,000	$ 991,928	8%
		Total			$ 120,000	$ 1,019,428	
Downtown Sidewalk Banding		Design/Bidding	95%				
		Construction	0%				
		Total					
Fund 107 - Stormwater							
Fleming Avenue Stormwater Improvements - Built Rite Construction of Central FL	HMGP	Design/Bidding	100%				
		Construction	0%			$ 2,118,530	
		Total			$ -	$ 2,118,530	
Stormewater In-Line Check Valves - EMC Divers	SJRWMD	Design/Bidding	100%			In-House	
		Construction	0%			$ 301,833	
		Total			$ -	$ 301,833	
OBSC SW Pond Expansion		Design/Bidding			$ 64,500		
		Construction	0%				
		Total			$ 64,500	$ -	
Fleming Avenue Pump Station & Force Main	HMGP Pending	Design/Bidding	100%				
		Construction	0%				
		Total			$ -	$ -	
Fund 108 - Airport							
Crosswind Business Park	FDOT	Design/Bidding	0%		$ -	$ 211,570	0%
		Construction	0%				
		Total			$ -	$ 211,570	
Fund 110 - Economic Development							
Runway Drive Ph II - JD Weber Construction	FL Commerce & FDOT	Design/Bidding	100%		$ 195,000	$ 104,695	100%
		Construction	10%		$ 1,112,000	$ 2,855,055	10%
		Total			$ 1,307,000	$ 2,959,750	
Fund 301 - General Fund							
PD HVAC Upgrades - General Mechanical		Design/Bidding	100%	7/19/2022	$ 37,000	$ 37,416	86%
		Construction	80%		$ 225,000	$ 598,596	78%
		Total			$ 262,000	$ 636,012	
PAC Fire Damage Repairs (Insurance Proceeds) - Bomar Construction		Design/Bidding	100%			In-House	
		Construction	35%			$ 626,297	35%
		Total			$ -	$ 626,297	
South Ridgewood Sidewalk East Side - Drewry Site Development	CDBG	Design/Bidding	100%			In-House	
		Construction	0%		$ 130,000	$ 185,976	0%
		Total			$ 130,000	$ 185,976	

CIP Status Report as of July 31, 2024

Project Name	Grant Funded	Phase	Timeline		Budget		
			Percent Complete	Date Complete	Budget Amount	Contract Amount	Percent Spent
Fund 308 - Transportation							
Traffic Signal Maintenance-Ph 1 - AM Weigel Construction		Design/Bidding	100%			In-House	
		Construction	100%		$ 71,500	$ 24,743	100%
		Total			$ 71,500	$ 24,743	
Fund 317 - Facility R & R Fund							
Outdoor Fitness Station-Nova Community Park - Gametime		Design/Bidding	100%	5/16/2023		In-House	
		Construction	95%		$ 97,000	$ 96,735	90%
		Total			$ 97,000	$ 96,735	
2024 Parking Restoration (shell lots) - Crosswinds Site Development		Design/Bidding	100%			In-House	
		Construction	0%		$ 51,000	$ 24,600	0%
		Total			$ 51,000	$ 24,600	
OBSC Baseball Netting Replacement - AM Weigel Construction		Design/Bidding	100%			In-House	
		Construction	20%		$ 70,000	$ 74,734	18%
		Total			$ 70,000	$ 74,734	
Central Park 1 Playground Equipment Replacement -		Design/Bidding	95%			In-House	
		Construction	0%		$ 40,000		
		Total			$ 40,000		
Fund 322 - Leisure Services Capital Fund							
Nova Community Park Ballfields 2-5 - AM Weigel Construction	ECHO	Design/Bidding	100%		$ -	$ 15,720	78%
		Construction	37%		$ 340,000	$ 427,152	37%
		Total			$ 340,000	$ 442,872	
OBSC LED Softball Quad Lighting - AM Weigel Construction	ECHO	Design/Bidding	100%		$ -	In-House	
		Construction	20%		$ 800,000	$ 907,459	1%
		Total			$ 800,000	$ 907,459	
Fund 409 - Water/Wastewater System Improvements							
Shadow Crossings Reuse Pump Facility Upgrades - Danus Utilities		Design/Bidding	100%		$ 46,000	$ 46,390	52%
		Construction	100%		$ 240,000	$ 283,029	99%
		Total			$ 286,000	$ 329,419	
Lift Station Backup Pumps - Thompson Pump	HMGP	Design/Bidding	100%			In-House	
		Construction	20%			$ 255,745	0%
		Total			$ -	$ 255,745	
WRF Upgrades - SGS Contracting		Design/Bidding	100%		$ 136,000	$ 135,642	100%
		Construction	55%		$ 2,000,000	$ 1,068,700	27%
		Total			$ 2,136,000	$ 1,204,342	
2-In Water Main Replacement Ph IV North Peninsula - Clearwater Solutions		Design/Bidding	100%	2/6/2024	$ 200,000	$ 199,872	90%
		Construction	10%		$ 2,600,000	$ 2,503,478	10%
		Total			$ 2,800,000	$ 2,703,350	
SR40 WM Loop with FM Addition		Design/Bidding	95%		$ 75,000	$ 104,275	98%
		Construction	0%		$ -		
		Total			$ 75,000	$ 104,275	

CIP Status Report as of July 31, 2024

Project Name	Grant Funded	Phase	Timeline		Budget		
			Percent Complete	Date Complete	Budget Amount	Contract Amount	Percent Spent
Fund 433 - Reuse Impact Fee Fund							
Airport Road Reclaimed Water Main PH 2	SJRWMD & FDEP	Design/Bidding	15%			In-House	
		Construction	0%				
		Total					
Fund 434 & 435 - Water/Wastewater Impact Fee Funds							
Hudson Wellfield Expansion		Design/Bidding	95%		$ 300,000	$ 292,964	91%
		Construction	0%		$ 1,300,000		
		Total			$ 1,600,000	$ 292,964	
Septic to Sewer - Oak, Magnolia & Bonita	FDEP	Design/Bidding	5%		$ 160,000	$ 148,079	4%
		Construction	0%		$ 1,440,000		0%
		Total			$ 1,600,000	$ 148,079	
WRF Ultraviolet Disinfection Conversion	FDEP (const only)	Design/Bidding	95%		$ 270,000	$ 272,800	93%
		Construction	0%		$ 2,430,000		0%
		Total			$ 2,700,000	$ 272,800	
Hurricanes IAN & NICOLE - FEMA							
Hurricane Ian-ARBP Seawall		Design/Bidding	95%			$ 93,965	63%
		Construction	0%		$ -		
		Total			$ -	$ 93,965	
Annual Projects Fund 107 - Stormwater							
2024 Stormwater Pipe Lining		Design/Bidding	95%			In-House	
		Construction	0%		$ 950,000		
		Total			$ 950,000	$ -	
Annual Projects Fund 308 - Transportation							
2024 Roadway Resurfacing - Masci General Contractor		Design/Bidding	100%			In-House	
		Construction	32%		$ 750,000	$ 791,358	32%
		Total			$ 750,000	$ 791,358	
Annual Projects Fund 409 - Water/Wastewater System Improvements							
2023 Lift Station Rehabilitation - 4P Construction deferred to FY 24/25		Design/Bidding	80%		$ 165,000	$ 164,612	79%
		Construction	0%				
		Total			$ 165,000	$ 164,612	

Economic Development Monthly Report

July, 2024

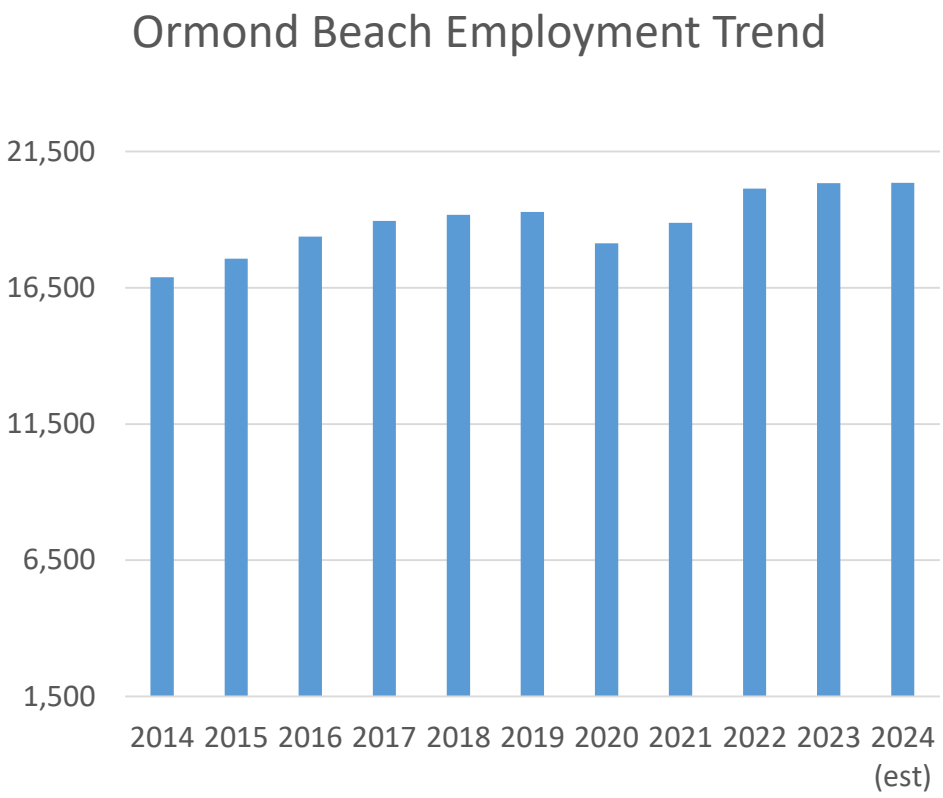
Ormond Beach
June Employment

20,307

This is up 0.05% from last year

Ormond Beach
Unemployment Rate

3.5%



Notes and Updates:

- **Employment for June** was 20,307 down 0.4% from the same month last year. Similarly, employment is down year over year in the metro area and State, 0.5% & 0.15% respectively. The unemployment rate is 3.5%, up 60 basis points from the previous month. In the first five months of the year, employment has stayed within a modest range with employment numbers falling slightly since the high in March of 20,489.

- **Construction has commenced** on Business Park Drive in the Airport Business Park. This road will provide for a secondary collector road allowing for improved logistics for existing businesses in the park and provide for additional opportunities of expansion and relocation of target industry to the business park. Construction is estimated to take nine months with completion in the first quarter of 2025.

- **EconDev Staff coordinated** with Team Volusia EDC and co-led a site visit as part of the Florida Power and Light *Florida First Sites* meeting for Ormond Crossings. This is a 'site ready' program, which identifies property that is available and ready for the expansion and relocation of Florida's target industry. Ormond Crossing Commerce Park was the site selected in Volusia County for this Statewide program.

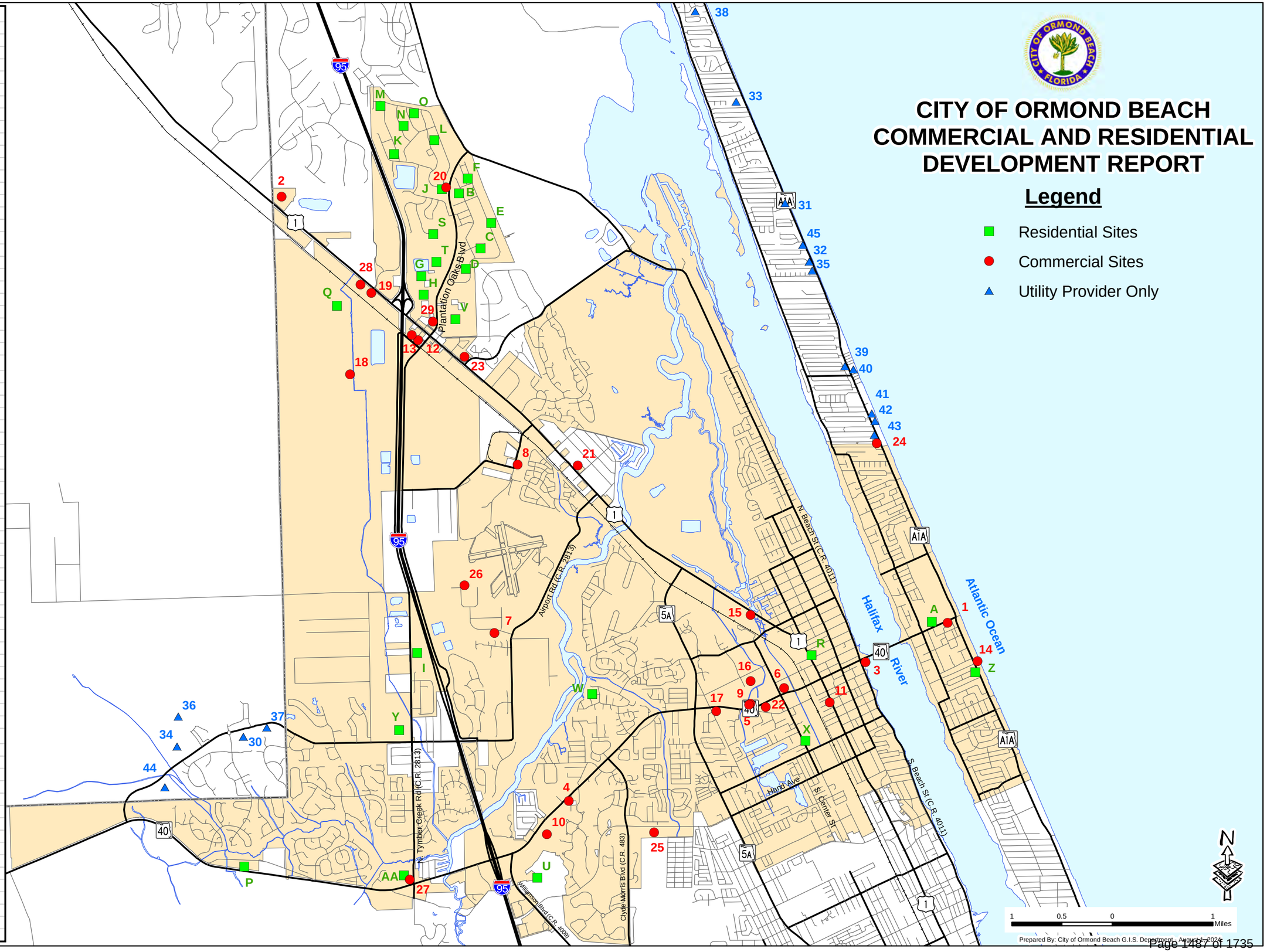
- **Volusia Business Resources** recently rolled out the Funding Readiness Center, which helps businesses in Volusia County be "funding ready". It is a helpful resource for businesses of all types and sizes.

CITY OF ORMOND BEACH COMMERCIAL AND RESIDENTIAL DEVELOPMENT REPORT

Legend

- Residential Sites
- Commercial Sites
- Utility Provider Only

RESIDENTIAL PROJECTS	
A	121 East
B	Archers Mill Phase 2 - Final Plat
C	Archers Mill Phase 3 - Preliminary Plat
D	Archers Mill Phase 4 - Preliminary Plat
E	Archers Mill Phase 5 - Preliminary Plat
F	Archers Mill Phase 6 - Final Plat
G	Bradford Lakes - Final Plat
H	Bradford Park - Final Plat
I	Enclave - Preliminary Plat
J	Fountain View - Amenity Center
K	Fountain View Phase 1B -Final Plat
L	Fountain View Phase 1C - Preliminary Plat
M	Fountain View Phase 1D - Preliminary Plat
N	Fountain View Phase 1E - Preliminary Plat
O	Fountain View Phase 1F - Preliminary Plat
P	Little Tomoka Village
Q	Ormond Crossings Phase 1
R	Ormond Enclave (FKA Courtyards)
S	Plantation Oaks - 2C
T	Plantation Oaks - 2D
U	Regal Multifamily
V	Ridgehaven
W	Rivell Subdivision
X	Stanton Grove
Y	Tattersall at Tymber Creek
Z	Tides Edge - Final Plat
AA	Tymber Creek Apartments
COMMERCIAL PROJECTS	
1	200 East Granada Blvd Parking Lot
2	A&M Frozen
3	Cassen Park
4	Complete Cardiology Expansion
5	Culvers Restaurant
6	Ellianos OB Granada Blvd
7	Germfree Driveway Expansion
8	Hull Road RV & Boat Storage
9	IHOP
10	Lowes Outdoor Storage
11	MetroNet
12	North Interchange Industrial Flex Space
13	North Interchange Self Storage
14	Ormond Beach Holdings LLC
15	Ormond Beach Self Storage
16	Ormond Beach YMCA Parking Modification
17	Ormond Central Self Storage
18	Ormond Crossings West CDD
19	Ormond Gateway Revision
20	PO OB - Neighborhood Commerical
21	Public House Restaurant
22	Shoppes at Granada Pointe
23	Stor - It
24	Temporary Construction Trailer
25	Tomoka Christian Church
26	Valiant Diner Phase 4
27	Walgreens/Commerical Area Improvements
28	Wawa
29	Woodsprings Suites
ORMOND BEACH - UTILITY PROVIDER ONLY	
30	Amberwoods
31	Baileys by the Sea
32	Baileys by the Sea 2
33	Beachview Cove
34	Brookside at Ormond Station
35	Corinthian Villas
36	Garden Side Phase 2
37	Hunters Ridge Storage Site
38	North Peninsula WWTP
39	Ocean Shore Plaza Sewer
40	Regency Plaza Condominium
41	Sands Point Condominium
42	Surf Side Club South
43	Surf Style
44	Woodside
45	Villas at Spanish Waters



Prepared By: City of Ormond Beach G.I.S. Department - August 1, 2024

City of Ormond Beach Commercial Development Report, as of August 1, 2024

Applications, site plans, and public hearing documents may be viewed at the Planning Department website: http://fl-ormondbeach.civicplus.com/index.aspx?NID=247

Change in project status | **Project nearing completion** | **Projects reviewed this month**

#	Project	Description	Application Date	1st Review	2nd Review	3rd Review	4th Review	Neigh-borhood meeting	Advisory Board	City Commis-sion	Final Approval	DO Expiration	LDC Extension Expiration	Building Permit Info	Building Permit Value	Eng. Permit	Eng. Permit Constr. Value	Under Construc tion	CO Issued	E or Arc = Project Engineer or Architect O = Owner A = Applicant
1	**200 E. GRANADA BLVD. PARKING LOT** 200 East Granada Boulevard SPRC-2024-000020	Re-striping of existing paved parking lot.	02.29.24	03.15.24				NA	NA	NA	04.09.24	04.09.26		Not applied	Not applied	Not applied	Not applied			E = Zev Cohen & Associates O = MDSS, Inc.
2	**A & M FROZEN** 1899 N U.S. Highway 1 SPRC-2024-000031	Expansion of existing site to include the construction of a 50,400 square foot cold storage building and associated site improvements.	04.19.24	05.09.24				Not applicable	Not applicable	Not applicable				Not applied	Not applied	Not applied	Not applied			E = Zev Cohen & Associates O = 1899 N US HWY 1, LLC
3	**CASSEN PARK** 1 S. Beach Street SPRC-2024-000034	Redesign of city owned Cassen park including relocation of the bait shop, addition of stormwater ponds, and increase in paved parking.	05.17.24	06.09.24	In Review			Not applicable	Required	Required				Not applied	Not applied	Not applied	Not applied			E = Zev Cohen & Associates O = City of Ormond Beach
4	**COMPLETE CARDIOLOGY EXPANSION** 1240 West Granada Boulevard PZ# 2022-090	Enclosing of the former bank drive through with new building square footage totaling 4,326 square feet and associated site improvements. Total building square footage = 12,714. Acreage = 1.49.	07.29.22	08.14.22	11.21.22			Not applicable	Not applicable	Not applicable	12.13.23 revision 07.25.23	12.13.25		Issued 04.01.23	$1,726,850	Issued 03.15.23	$58,000	50%		E = Zev Cohen & Associates, Inc. O = Complete Cardiology, LLC ARC = BPF Design Inc.
5	**CULVER'S RESTAURANT** 655 West Granada Boulevard PZ# 2023-008	Construction of a 4,460 square foot drive-thru restaurant on a vacant 3.04 acre parcel. Part of Granada Pointe PBD.	11.04.22	11.20.22	12.23.22	02.01.23	02.21.23	Not applicable	Not applicable	Not applicable	02.27.23	02.27.25		Issued 04.03.24	$2,000,000	Issued 05.31.24	$753,137	15%		E = Newkirk Engineering, Inc. O = Granada Pointe Investors, LLC APP = Jemini Investments, LLC
6	**ELLIANOS OB GRANADA BLVD** 353 West Granada Boulevard SPRC-2024-000011	Re-purpose portion of existing Winn-Dixie parking lot to construct an ±800 sf free standing dual drive through only coffee shop with added drive isles, handicap space, and utility services.	01.04.24	01.31.24	05.16.24			Not applicable	Not applicable	Not applicable				Not applied	Not applied	Not applied	Not applied			E = Gmuer Engineering O = Kjump, Inc.
7	**GERMFREE DRIVEWAY EXPANSION** 4 Sunshine Boulevard PZ-23-00000087	Addition of two new driveways to existing facility.	09.29.23	10.10.23				Not applicable	Not applicable	Not applicable	11.06.23	Under Constr.		In review	$178,000	Issued 02.16.24	$83,000	0%		E = Mark Dowst & Associates, Inc. O = Griffin Fund 3 Bidco, Inc.
8	**HULL ROAD RV & BOAT STORAGE** 835 Hull Road PZ# 2023-065	Storage of RV and boats. 20 parking spaces on 0.90 acres. Re-permit of expired site plan.	05.31.23					Not applicable	Not applicable	Not applicable	05.31.23	Under Constr.		Not applicable	Not applicable	Issued 06.21.23	$26,450	20%		E = Newkirk Engineering, Inc. O = B Mill Inc
9	**IHOP** 675 West Granada Boulevard PZ# 2023-023	IHOP restaurant consisting of 3,550 square feet on 1.52 acres.	02.05.23	02.17.23	03.30.23	05.09.23	06.21.23	Not applicable	Not applicable	Not applicable	01.02.24	01.02.26		Early Review	$1,600,000	Issued 07.26.24	706743	0%		E = Newkirk Engineering, Inc. APP = Sunshine Restaurant Partners O = Granada Pointe Investors, LLC
10	**LOWE'S OUTDOOR STORAGE** 1340 West Granada Boulevard PZ-2024-000060	Special Exception for outdoor activity and outdoor storage	05.31.24	6.19.24	07.23.24			Not applicable	07.11.24 Approved	08.20.24				Not applicable	Not applicable	Not applicable	Not applicable			APP = Storch Law Firm O = Lowes
11	**METRONET** 124 South Yonge Street PZ# 2023-002	Proposed 344 square foot concrete unmanned fiberoptic communication hut.	10.28.22	11.15.22	01.17.23			01.23.23	Not applicable	Not applicable	1.27.23	Under Constr.		Issued 02.24.23; Re-issued 05.17.24	$180,000	Issued 02.02.23	$180,000	95%		E = Metro Fibernet LLC O = Coast to Coast Construction
12	**NORTH INTERCHANGE INDUSTRIAL FLEX SPACE** 520 Flagler Road PZ# 2022-076	Proposed two 11,999 square foot industrial flex space buildings on 2.34 acres and associated site improvements.	06.29.22	07.18.22	08.16.22	09.01.22		Not applicable	09.08.22, Recommended for Approval (5-0)	10.18.22 (Approved) & 11.01.22	11.17.22	11.17.24		Not applied	Not applied	Not applied	Not applied			E = Newkirk Engineering, Inc. O = BHT Holdings, LLC
13	**NORTH INTERCHANGE SELF STORAGE** 540 Flagler Road PZ# 2022-075	Proposed 4-story self storage facility (110,900 square feet) with 28 RV and boat parking spaces on 3.40 acres and associated site improvements.	06.30.22	07.18.22	08.17.22	09.01.22		Not applicable	09.08.22, Recommended for Approval (5-0)	10.18.22 (Approved) & 11.01.22	11.22.22	11.22.24		Not applied	Not applied	Not applied	Not applied			E = Newkirk Engineering, Inc. O = BHT Holdings, LLC
14	**ORMOND BEACH HOLDINGS LLC** 251 South Atlantic Avenue PZ #22-018(b)	Proposed five story, 95,700 square foot hotel with 137 rooms,	03.09.22	04.04.22	06.13.22	08.24.22	09.07.22; 01.31.23	09.14.22	12.05.22 Approved 5-0	01.10.23 & 01.24.23 (Approved)	05.24.23	05.24.25		Issued 02.29.24	$34,000,000	Issued 04.12.24	$1,400,000	20%		E = Parker Mynchenberg & Associates, Inc. APP/O = Ormond Beach Holdings, LLC
14	**ORMOND BEACH HOLDINGS LLC AMENDMENT** 251 South Atlantic Avenue SPRC-2024-000009	Planned Development Amendment to remove the requirement for inclusion of beach approach improvements.	12.26.23	01.17.24	03.30.24			02.19.24	03.14.24 (Approved)	Continued - Date uncertain				See Above	See Above	See Above	See Above			E = Parker Mynchenberg & Associates, Inc. APP/O = Ormond Beach Holdings, LLC

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Change in project status | **Project nearing completion** | **Projects reviewed this month**

#	Project	Description	Application Date	1st Review	2nd Review	3rd Review	4th Review	Neigh-borhood meeting	Advisory Board	City Commis-sion	Final Approval	DO Expiration	LDC Extension Expiration	Building Permit Info	Building Permit Value	Eng. Permit	Eng. Permit Constr. Value	Under Construc tion	CO Issued	E or Arc = Project Engineer or Architect O = Owner A = Applicant
15	**ORMOND BEACH SELF STORAGE** 490 N. U.S. Highway 1 PZ #2023-021	Proposed 166,423 of storage square footage on 24.28 acres and associated site improvements.	01.27.23	02.20.23	06.07.23			Not applicable	Not applicable	Not applicable	10.28.23	10.28.25		Pending payment	A =$9,039,174 B= $240,741 C= $665,681 D= $294,240 E= $294,240 F= $9,796,008 G= $1,035,710	Not applied	Not applied			E = Mark Dowst & Associates, Inc. O = TSO Ormond Beach, LP ARC = Smith Boland Architects, LLC
16	**ORMOND BEACH YMCA PARKING MODIFICATION** SPRC-2024-000033 500 Sterthaus Drive	Modification and expansion of the current parking lot in front of the main building to provide additional parking spaces and provide better means of drop-off and pick-up of children and members at the facility.	04.25.24	05.17.24				Not applicable	Not applicable	Not applicable				Not applied	Not applied	Not applied	Not applied			E = Upham, inc. O = Volusia Flagler Family YMCA
17	**ORMOND CENTRAL SELF STORAGE** 768 West Granada Boulevard PZ# 2022-092	Proposed three story building for a 106,140 square foot climate controlled self-storage facility. Overall building square footage allowed of 131,140 on 8.73 acres.	08.07.22	08.25.22	11.20.22	12.17.22		09.13.22 and 10.20.22	12.08.22 - Approved	01.24.23 & 02.07.23	02.10.23	02.10.25		Issued 10.19.23	$13,488,271	Issued 10.19.23	$523,892	70%		E = Newkirk Engineering, Inc. APP = Ormond Beach Dunamis Storage, LLC O = Ormond Central Investors, LLC
18	**ORMOND CROSSINGS WEST CDD** 1030 N Tymber Creek Road PZ#-2024-000058	Community Development District for proposed residential community within the Ormond Crossings PMUD	5.24.24	06.18.24				Not applicable	Not applicable	08.06.24 & 08.20.24				Not applicable	Not applicable	Not applicable	Not applicable			APP = Kutak Rock LLP O = Ormond Crossings West
19	**ORMOND GATEWAY REVISION** 1670 North U.S. Highway 1 PZ# 2023-025	Development of an eight lot commercial subdivision and associated site improvements.	02.07.23	02.20.23				Not applicable	03.09.23 Approved	04.18.23 Approved				Not applied	Not applied	Not applied	Not applied			E = Zev Cohen & Associates, Inc. O = Destination Interchange, LLC
20	**PO OB - NEIGHBORHOOD COMMERCIAL** 1730 Plantation Oaks Boulevard SPRC-2024-000023	Construction of a 2-story, 25,520 square foot building with air conditioned storage on 2nd floor.	03.13.24	04.12.24	06.19.24			06.10.24	07.11.24	Tentatively 08.20.24 & 09.04.24				Not applied	Not applied	Not applied	Not applied			E = Parker Mynchenberg & Associates, Inc.
21	**PUBLIC HOUSE RESTAURANT** 1113 & 1117 North U.S. Highway 1 PZ-23-00000048	Proposed 6,316 square foot restaurant and site improvements.	04.26.23	05.11.23	08.04.23	11.22.23		10.30.23	Not applicable	Not applicable	01.12.24	01.12.26		Not applied	Not applied	Not applied	Not applied			E = Engineered Permits, Inc. O = Lee Munizzi
22	**SHOPPES AT GRANADA POINTE** 550 West Granada Boulevard PZ-23-00000082	Construction of a 21,114 square foot building on 2.52 acres within the Granada Pointe development and associated site work.	09.22.23	10.06.23	11.18.23	01.12.24		Not applicable	Not applicable	Not applicable	02.16.24	02.16.26		In review	$2,030,000	Not applied	Not applied			E = Newkirk Engineering, Inc. O = Granada Pointe Investors, LLC ARC = BPF Design, Inc.
23	**STOR-IT** 1405 North US Highway 1 PZ# 2022-096	Proposed indoor self-storage facility of 123,534 square feet (three stories) on 5.26 acres and associated site improvements.	08.11.22	08.29.22	11.09.22	03.21.23		11.17.22	12.08.22 Approved	01.24.23 & 02.07.23	04.20.23	Under Constr.		Issued 10.17.23	$7,000,000	Issued 06.13.23	$821,773	45%		E = Parker Mynchenberg & Associates, Inc. O = Vanacore Commercial Property, Inc.
24	**TEMPORARY CONSTRUCTION TRAILER** 1030 Ocean Shore Boulevard SPRC-2024-000030	Temporary construction trailer/office associate with FDOT project.	04.12.24	05.01.24				Not applicable	To be determined	To be determined				Not applied	Not applied	Not applied	Not applied			E = LAV Engineering, LLC O = Candia South Branch Brook Holdings LLC
25	**TOMOKA CHRISTIAN CHURCH** 1450 Hand Avenue SPRC-2024-000005	Proposed construction of a new ±20,000 square feet 2 story building for a thrift shop, food pantry and care center to include the associated infrastructure.	12.07.23	12.21.23	02.29.24	04.08.24	05.22.24	02.22.24	03.14.24 (Approved)	04.16.24 (Approved)				Not applied	Not applied	Not applied	Not applied			E = Zev Cohen & Associates O = Tomoka Christian Church
26	**VALIANT DINER, PHASE 4** 15 W Tower Circle PZ-22-027	Phase 4 building of 11,500 square feet.	Previously approved					Not applicable	Not applicable	Not applicable	11.14.22	Under Constr.		Issued 12.21.23	$1,279,800	Approved	$150,000	25%		E = Zev Cohen & Associates, Inc. O = Valiant Equipment, LLC
27	**WALGREENS/COMMERCIAL AREA IMPROVEMENTS** 2001 West Granada Boulevard PZ# 2022-038	Modifications to the access to West Granada Boulevard and stormwater improvements to Walgreens site.	03.21.22	04.05.22	04.22.22	06.03.22	06.28.22	Not applicable	Not applicable	Not applicable	07.14.22	07.14.24		Not applied	Not applied	Not applied	Not applied			E = Newkirk Engineering, Inc.
27	**WALGREENS REVISIONS** 2001 West Granada Boulevard SPRC-2024-000013	Modifications to the access to West Granada Boulevard and stormwater improvements to Walgreens site.	02.05.24	03.06.24	03.22.24	05.16.24								Not applied	Not applied	Not applied	Not applied			E = Newkirk Engineering, Inc.
28	**WAWA** 1670 North U.S. Highway 1 PZ# 2023-076	Pending submittal. Proposed 6,119 square foot convenience store with 20 fueling stations and associated site improvements.	08.01.23	08.15.23				Not applicable	Not applicable	Not applicable				Early Review	Not applied	Not applied	Not applied			E = Kelly, Collins & Gentry, Inc. APP = WaWa, Inc. O = Destination Interchange, LLC
29	**WOODSPRINGS SUITES** 1119 Benton Street PZ-2024-000073	122 room Woodsprings Suites	07.28.24	07.24.24				Required	Required	Required				Not applicable	Not applicable	Not applicable	Not applicable			E = Germana Engineering
29	**WOODSPRINGS SUITES** 1119 Benton Street PZ-2024-000015	Comprehensive Plan map amendment from Medium Density Residential to Low Intensity Commercial.	02.16.24	03.06.24				Not applicable	03.14.24 (Approved)	07.23.24 & 08.06.24				Not applicable	Not applicable	Not applicable	Not applicable			E = Germana Engineering

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Change in project status | **Project nearing completion** | **Projects reviewed this month**

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Ormond Beach is Utility Provider Only																				
30	**AMBERWOODS** Flagler County PZ-23-00000078	Utility connection, Flagler County for 40 lots on 14.39 acres	07.31.23	08.15.23	11.06.23	12.18.23		Outside City	Outside City	Outside City	01.12.24	01.12.26		Not applicable	Not applicable	Not applied	Not applied			E = Alann Engineering Group O = U.S. Capital Alliance, LLC
31	**BAILEYS BY THE SEA** 2360 Ocean Shore Boulevard SPRC-2024-000003	Utility connection, Ormond By the Sea, 5 multi-family buildings units with 32 total units	11.02.23					Outside City	Outside City	Outside City	11.26.23	Under constr.		Not applicable	Not applicable	Issued 07.19.24	$536,995 (Utilities only)	10%		O = Trisha Bailey E = Kimley-Horn & Associates APP = Jeannimarie, LLC
32	**BAILEYS BY THE SEA 2** 2020 Ocean Shore Boulevard SPRC-2024-000026	Utility connection, Ormond By the Sea, 2 multi-family buildings units with 8 total units	03.27.24	04.19.24				Outside City	Outside City	Outside City	07.26.24	07.26.26		Not applicable	Not applicable	Not applied	Not applied			O = Trisha Bailey E = Kimley-Horn & Associates APP = Jeannimarie, LLC
33	**BEACHVIEW COVE** 2960 Ocean Shore Boulevard PZ #2021-094	Utility connection of 28 lots on 7.81 acres in Ormond by the Sea area.	08.19.21	09.06.21	10.01.21	10.31.21	09.24.23 revision	Outside City	Outside City	Outside City	11.22.21	Under constr.		Not applicable	Not applicable	Issued 10.18.2023	$711,679 (Utilities Only)	50%		E = Alliant engineering, Inc. O = Seagate Communities, LLC
34	**BROOKSIDE AT ORMOND STATION** Flagler County SPRC-2024-000004	Flagler County utility connection, 162 lots on 53.16 acres	11.21.23	12.11.23	In Review			Outside City	Outside City	Outside City	05.17.24	05.17.26		Not applicable	Not applicable	Not applied	Not applied			E = Alann Engineering Group O = U.S. Capital Alliance, LLC
35	**CORINTHIAN VILLAS** PZ# 2023-011 1926 Ocean Shore Boulevard	Utility connection for existing multi-family development.	11.29.22	12.06.22	07.10.23			Outside City	Outside City	Outside City	08.08.23	Under constr.		Not applicable	Not applicable	Issued 09.15.23	$356,177 (Utilities only)	75%		E = Clearwater Solutions, LLC O = Corinthian Villas
36	**GARDEN SIDE, PHASE II** Flagler County SPRC-2024-000021	Flagler County utility connection,89 lots on 40.145 acres	03.05.24	04.04.24				Outside City	Outside City	Outside City				Not applicable	Not applicable	Not applied	Not applied			E = Alann Engineering Group O = U.S. Capital Alliance, LLC
37	**HUNTER'S RIDGE STORAGE SITE** 2730 Airport Road PZ# 2022-100	Flagler County utility connection for self-storage facility. Building square footage = 102,214 on 10.44 acres	09.19.22	09.27.22				Outside City	Outside City	Outside City	12.20.22	Under constr.		Not applicable	Not applicable	Issued 08.03.23	$22,590 (Utilities only)	80%		E = Alann Engineering Group O = Preston Court II, LLC
38	**NORTH PENINSULA WWTP** SPRC-2024-000027 16 Seabridge Drive	Converting the existing WWTP to City owned and maintained master lift station and associated 6-in FM from Seabridge development to connection on A1A.	04.02.24	04.24.24	07.15.24			Outside City	Outside City	Outside City				Not applicable	Not applicable	Not applied	Not applied			E = Kimley-Horn and Associates APP = Central States Water Resources, Inc.
39	**OCEAN SHORE PLAZA SEWER** 1452 Ocean Shore Boulevard SPRC-2024-000025	Construction of new private lift station to connect to city sewer in Ormond by the Sea	03.21.24	04.17.24				Outside City	Outside City	Outside City				Not applicable	Not applicable	Not applied	Not applied			E = Parker Mynchenberg & Associates, Inc. O = Ocean Shore Plaza
40	**REGENCY PLAZA CONDOMINIUM** 1415 Ocean Shore Boulevard PZ# 2022-104	Sewer connection for an existing 133 multi-family condominium.	09.13.22	09.27.22				Outside City	Outside City	Outside City	11.07.22	11.07.24		Not applicable	Not applicable	Issued 01.08.24	$257,165 (Utilities only)	70%		E = Saltus Engineering, Inc. O = Regency Plaza Condominium
41	**SANDS POINT CONDOMINIUM** 1167 Ocean Shore Boulevard PZ# 2022-103	Sewer connection for an existing 20 multi-family condominium.	10.03.22	10.22.22				Outside City	Outside City	Outside City	11.14.22	11.14.24		Not applicable	Not applicable	Issued 11.03.23	$148,490 (Utilities only)	90%		E = Robert Marshall. P.E. O = Sands Point Condominium
42	**SURFSIDE CLUB SOUTH** 1133 Ocean Shore Boulevard #PZ-23-086	Sewer connection for an existing 76 multi-family condominium.	09.29.23	10.10.23				Outside City	Outside City	Outside City				Not applicable	Not applicable	Issued 04.22.24	$250,000 (Utilities only)	30%		E = Saltus Engineering, Inc. O = Surfside Club South Condo Association
43	**SURF STYLE** 1054 Ocean Shore Boulevard PZ# 2022-006	Volusia County project. Development of a 10,890 building. SPRC review is for the utility connection.	11.16.21	11.29.21				Outside City	Outside City	Outside City	01.10.22	01.10.24		Not applicable	Not applicable	Not applied	Not applied			E = Zev Cohen and Associates, Inc. O = 1054 Ocean Shores Blvd, LLC
44	**WOODSIDE** PZ-23-00000090 Flagler County	Utility connection for 63 single-family homes. Flagler County (Hunter's Ridge).	10.19.23	11.06.23	03.04.24			Outside City	Outside City	Outside City	05.06.24	Under Const		Not applicable	Not applicable	Pending	$1,526,866 (Utilities Only)	0%		E = Alann Engineering Group O = U.S. Capital Alliance, LLC
45	**VILLAS AT SPANISH WATERS** 2120 Ocean Shore Boulevard PZ# 2023-053	Volusia County project. Provide utilities for an 18 unit townhome project	05.04.23					Outside City	Outside City	Outside City	05.24.23	05.24.25		Not applicable	Not applicable	Not applied	Not applied			E = The Performance Group O = Coquina Dunes, LLC

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A	**121 EAST** 121 East Granada Boulevard PZ-22-00000098	. Proposed multi-story multi-family development of 24 units	08.12.22	09.01.22	05.17.23	08.23.23		03.14.23	06.08.23 (Approved)	07.18.23 & 08.01.23 (Approved)				Not applied	Not applied		E = Zev Cohen & Associates, Inc. O = Dime Rock Properties, LLC
B	**ARCHER'S MILL PHASE 2 PRELIMINARY PLAT** 313 Bracer Way PZ# 2023-051	68 lots on 25.53 acres, Plantation Oaks PRD (Phase 3)	05.01.23	05.22.23	08.08.23	09.11.23		Not Required	06.08.23 (Approved)	07.18.23 (Approved)	11.10.23	Under construction		Issued 11.27.23	$1,883,146.98	70%	E = Parker Mynchenberg & Associates, Inc. O = Forestar USA Real Estate Group Inc.
B	**ARCHER'S MILL PHASE 2 FINAL PLAT** 313 Bracer Way PZ-2024-000033	68 lots on 25.53 acres, Plantation Oaks PRD (Phase 3)	03.08.24	04.25.24				Required	05.09.24 (Approved)	7.23.24 & 08.06.24				See Preliminary Plat	See Preliminary Plat	See Prem. Plat	E = Parker Mynchenberg & Associates, Inc. O = Forestar USA Real Estate Group Inc.
C	**ARCHER'S MILL PHASE 3 PRELIMINARY PLAT** 3016 Bonspiel Drive PZ# 2023-052	59 lots on 22.42 acres, Plantation Oaks PRD (Phase 3)	05.01.23	05.24.23	08.08.23	09.15.23		Not Required	06.08.23 (Approved)	07.18.23 (Approved)	10.17.23	10.17.25		Not applied	Not applied		E = Parker Mynchenberg & Associates, Inc. O = Forestar USA Real Estate Group Inc.
D	**ARCHER'S MILL PHASE 4 PRELIMINARY PLAT** 3150 Arch Avenue PZ# 2023-059	111 lots on 51.56 acres, Plantation Oaks PRD (Phase 3)	05.19.23	06.29.23	09.19.23			Not Required	08.10.23 (Approved)	09.20.23 (Approved)	10.30.23	10.23.25		Not applied	Not applied		E = Parker Mynchenberg & Associates, Inc. O = Forestar USA Real Estate Group Inc.
E	**ARCHER'S MILL PHASE 5 PRELIMINARY PLAT** 3343 Bonspiel Drive PZ# 2023-060	114 lots on 92.71 acres, Plantation Oaks PRD (Phase 3)	05.19.23	06.29.23	09.18.23			Not Required	08.10.23 (Approved)	09.20.23 (Approved)	10.17.23	10.17.25		Issued 11.27.23	$1,225,490.57	65%	E = Parker Mynchenberg & Associates, Inc. O = Forestar USA Real Estate Group Inc.
F	**ARCHER'S MILL PHASE 6 PRELIMINARY PLAT** 3665 Bonspiel Drive PZ# 2023-061	78 lots on 46.54 acres, Plantation Oaks PRD (Phase 3)	05.19.23	07.10.23	09.18.23			Not Required	08.10.23 (Approved)	09.20.23 (Approved)	10.17.23	Under construction		Issued 11.27.23	$2,668,369.85	65%	E = Parker Mynchenberg & Associates, Inc. O = Forestar USA Real Estate Group Inc.
F	**ARCHER'S MILL PHASE 6 FINAL PLAT** 3665 Bonspiel Drive PZ-2024-000035	78 lots on 46.54 acres, Plantation Oaks PRD (Phase 3)	03.08.24					Required	05.09.24 (Approved)	7.23.24 & 08.06.24				See Preliminary Plat	See Preliminary Plat	See Prem. Plat	E = Parker Mynchenberg & Associates, Inc. O = Forestar USA Real Estate Group Inc.
G	**BRADFORD LAKES PRELIMINARY PLAT** 140 Bradford Lakes Way PZ-23-00000042	80 single-family lots on 53.12 acres, Plantation Oaks PRD (Phase 4)	03.23.23	05.01.23, 1st 07.19.23 2nd	09.15.23, 3rd	11.22.23, 4th 02.07.24 5th	02.29.24	Not Required	08.10.23 (Approved)	09.20.23 (Approved)	03.08.24			Issued 05.08.24	$3,586,560.00	20%	E = Parker Mynchenberg & Associates, Inc. O = Meritage Homes of Florida, Inc.
G	**BRADFORD LAKES FINAL PLAT** 140 Bradford Lakes Way PZ-2024-000071	80 single-family lots on 53.12 acres, Plantation Oaks PRD (Phase 4)	06.26.24	07.16.24				Not Required	08.08.24	09.18.24 & 10.02.24				See Preliminary Plat	See Preliminary Plat	See Prem. Plat	A = Poulos & Bennett, LLC O = Meritage Homes of Florida, Inc.

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City of Ormond Beach Residential Development Report, as of August 1, 2024

#	Project	Description	Application Date	1st Review	2nd Review	3rd Review	4th Review	Neigh-borhood meeting	Advisory Board	City Commis-sion	Final Approval	DO Expiration	LDC Extension Expiration	Eng. Permit	Eng. Permit Constr. Value	Under construc-tion	E or Arc = Project Engineer or Architect O = Owner A = Applicant
H	**BRADFORD PARK PRELIMINARY PLAT** 1175 Bradford Park Way SPRC-2024-000012	180 townhomes and associated site improvements on 25.31 acres.	07.06.23	07.31.23	09.15.23	10.19.23 3rd 12.21.23 4th		Not Required	01.11.24 (Approved)	2.20.23 (Approved)	03.04.24			Issued 05.08.24	$2,855,823.00	20%	E = Parker Mynchenberg & Associates, Inc. O = Meritage Homes of Florida, Inc.
H	**BRADFORD PARK FINAL PLAT** 1175 Bradford Park Way PZ-2024-000072	180 townhomes and associated site improvements on 25.31 acres.	06.26.24	07.15.24				Not Required	08.08.24	09.18.24 & 10.02.24				See Preliminary Plat	See Preliminary Plat	See Prem. Plat	A = Poulos & Bennett, LLC O = Meritage Homes of Florida, Inc.
I	**ENCLAVE PRELIMINARY PLAT** 475 North Tymber Creek Road PZ# 2023-066	12 lots on 26.17 acres.	06.05.21	06.15.23	08.08.23	07.26.24		Not Required	09.14.23 (Approved)	10.17.23 (Approved)				Not applied	Not applied		E = Zev Cohen & Associates, Inc. APP = Paylin Tymber 1 and 2, LLC
J	**FOUNTAIN VIEW, AMENITY CENTER** 1400 Fountain View Street SPRC-2024-000022	Modification to approved site plan. A 5,040 square foot amenity center with pool and associated improvements	03.07.24	03.30.24	06.21.24			Not Required	Not Required	Not Required	07.07.24	07.07.26		Not applied	Not applied		E = Parker Mynchenberg & Associates, Inc. O = Plantation Oaks of Ormond Beach, LLC
K	**FOUNTAIN VIEW PHASE 1B, PRELIM. PLAT** 1177 Fountain View Street PZ-23-00000084	137 lots on 77.91 acres Plantation Oaks PRD (Phase 1)	09.22.23	10.15.23	12.12.23	1.29.24		Not Required	01.11.24 (Approved)	2.20.23 (Approved)	02.27.24	Under construction		Issued 02.29.24	$4,090,127.00	60%	E = Parker Mynchenberg & Associates, Inc. O = Plantation Oaks of Ormond Beach, LLC
K	**FOUNTAIN VIEW PHASE 1B, FINAL PLAT** 1177 Fountain View Street PZ-2024-000010	Final Plat 137 lots on 77.91 acres, Plantation Oaks PRD (Phase 1)	01.29.24	03.06.24				Not Required	04.11.24	05.21.24 & 06.04.24				See Preliminary Plat	See Preliminary Plat		E = Parker Mynchenberg & Associates, Inc. O = Plantation Oaks of Ormond Beach, LLC
L	**FOUNTAIN VIEW PHASE 1C, PRELIM. PLAT** 1160 Fountain View Street SPRC-2024-000007	141 lots on 90.33 acres, Plantation Oaks PRD (Phase 1)	12.11.23	01.10.24	03.01.24			Not Required	02.08.24	04.02.24	05.06.24	05.06.26		Not applied	Not applied		E = Parker Mynchenberg & Associates, Inc. O = Plantation Oaks of Ormond Beach, LLC
M	**FOUNTAIN VIEW PHASE 1D, PRELIM. PLAT** 1789 Houmas Street SPRC-2024-000016	103 lots on 62.14 acres, Plantation Oaks PRD (Phase 1)	02.08.23	03.15.24				Not Required	04.11.24 (Approved)	05.21.24 (Approved)				Not applied	Not applied		E = Parker Mynchenberg & Associates, Inc. O = Plantation Oaks of Ormond Beach, LLC
N	**FOUNTAIN VIEW PHASE 1E, PRELIM. PLAT** 1587 Nottoway Circle SPRC-2024-000017	110 lots on 36.20 acres, Plantation Oaks PRD (Phase 1)	02.08.23	03.18.24				Not Required	04.11.24 (Approved)	05.21.24 (Approved)				Not applied	Not applied		E = Parker Mynchenberg & Associates, Inc. O = Plantation Oaks of Ormond Beach, LLC
O	**FOUNTAIN VIEW PHASE 1F, PRELIM. PLAT** 1130 Evelyton Lane SPRC-2024-000018	97 lots on 32.13 acres, Plantation Oaks PRD (Phase 1)	02.08.23	03.21.24				Not Required	04.11.24 (Approved)	06.04.24 (Approved)				Not applied	Not applied		E = Parker Mynchenberg & Associates, Inc. O = Plantation Oaks of Ormond Beach, LLC

* Highlighted projects indicate change in status (such as SPRC approval, CC approval, building permits issued, or CO issued).

City of Ormond Beach Residential Development Report, as of August 1, 2024

#	Project	Description	Application Date	1st Review	2nd Review	3rd Review	4th Review	Neigh-borhood meeting	Advisory Board	City Commis-sion	Final Approval	DO Expiration	LDC Extension Expiration	Eng. Permit	Eng. Permit Constr. Value	Under construc-tion	E or Arc = Project Engineer or Architect **O = Owner** **A = Applicant**
P	**LITTLE TOMOKA VILLAGE** 2425 West Granada Boulevard PZ-2024-000068	Developm ent of a 31 lot subdivision and parcel for a House of Worship	06.12.24	07.03.24				Required	Required	Required				Not applied	Not applied		E = Zev Cohen and Associate APP = Cobb Cole
Q	**ORMOND CROSSINGS,PHASE 1** SPRC-2024-000036	Preliminary Site Plan for Ormond Crossings Phase 1 which consists of 444 detached, single-family residential units.	0.17.24	In Review				Preliminar y only	Preliminar y only	Preliminary only				Not applied	Not applied		E = Poulos & Bennett O = Ormond Crossings West
R	**ORMOND ENCLAVE (FKA COURTYARDS)** 135 North Yonge Street PZ# 2021-079	Construct 64 unit multi family apartment complex.	06.17.21	07.09.21	10.19.22	05.08.23	06.17.23	08.15.21; 01.17.23	06.08.23 (Approved)	07.18.23 (Approved) & 08.01.23 (Approved)				Not applied	Not applied		E = Parker Mynchenberg & Associates, Inc. O = CST Holdings, LLC ARC = BPF Design
S	**PLANTATION OAKS, 2C** 2124 Esplanada Drive PZ# 2020-025	Development of 121 lots on 63.12 acres. Manufactured home phase. Plantation Oaks PRD (Phase 2)	12.14.17	2.07.18	07.17.18			Volusia County approval	Volusia County approval	Volusia County approval	09.20.18	Under construction	Under construction	Issued 09.17.21	$3,044,572	85%	E = Parker Mynchenberg & Associates, Inc. O = Plantation Oaks of Ormond Beach, LLC
T	**PLANTATION OAKS, 2D** 2258 Chretien Drive PZ# 2020-026	Development of 84 units on 27.32 acres. Manufactured home phase. Plantation Oaks PRD (Phase 2)	12.14.17	02.12.18	08.24.18			Volusia County approval	Volusia County approval	Volusia County approval	09.20.18	Under construction	Under construction	Issued 09.17.21	$1,784,746	85%	E = Parker Mynchenberg & Associates, Inc. O = Plantation Oaks of Ormond Beach, LLC
U	**REGAL MULTIFAMILY** 215 Williamson Boulevard PZ# 2022-047	Redevelopment of 310 multi-family units on 12 acres	04.22.22	05.11.22	07.20.22	09.21.22	10.19.22 11.20.22 12.11.22 02.02.23	Not Required	06.09.22 (Approved)	07.19.22 & 08.03.22 (Approved)	02.01.23	02.01.25		Not applied	Not applied		O = Southwest I-95, LLC E = Newkirk Engineering APP = LIV Development
V	**RIDGEHAVEN PRELIMINARY PLAT** 1066 Cliffhaven Court PZ# 2022-061	84 duplex units and 202 single-family lots within a Planned Residential Development on 103.45 acres	05.23.22	06.13.22	10.14.22	12.20.22	02.03.23 07.26.22 09.20.23	Completed	04.13.23 (Approved)	05.16.23 & 06.06.23 (Approved)	10.17.23 Revision 02.01.24	Under construction		Issued 12.21.23	$6,950,757	60%	O = Meritage Homes of Florida, Inc. E = Parker Mynchenberg & Associates, Inc.
V	**RIDGEHAVEN AMENITY CENTER** 1066 Cliffhaven Court SPRC-2024-000032	The project consists of modifying the amenity area site plan	04.23.24	05.17.24	07.12.24			Not Required	Not Required	Not Required				See Preliminary Plat	See Preliminary Plat		O = Meritage Homes of Florida, Inc. E = Parker Mynchenberg & Associates, Inc.
W	**RIVELL SUBDIVISION** 100 Rivell Trail SPRC-2024-0000032	Residential subdivision converting one 5.16 acre lot into 4 lots of record	02.05.24	03.07.24				Not Required	Required	Required							E = Newkirk Engineering, Inc O = Marie Lilienstern
X	**STANTON GROVE** 183 South Orchard PZ# 2022-062	21 unit rental townhome project consisting of three buildings on 3.92 acres.	05.27.22	06.13.22	8.25.22	09.07.22	09.23.22	Not required	Not required	Not required	10.29.22	10.29.24	Not applied	Not applied	Not applied		E = Newkirk Engineering O = Stanton Grove, LLC
Y	**TATTERSALL AT TYMBER CREEK** Tymber Creek Road and Airport Road PZ# 2023-041	Preliminary Plat for a 129 lot subdivision and associated site improvements.	03.14.23	05.01.23	11.14.23	1.29.24 03.06.24	05.22.24	01.18.24	02.08.24 (Approved)	05.07.24 (Approved)	06.12.24	06.12.26		Not applied	Not applied		E = Zev Cohen & Associates, Inc. O = Tymber Sky, LLC & Enclave of Tymber Creek LLC APP = Paylin Tymber 1 and 2, LLC

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Z	**TIDES EDGE PRELIMINARY PLAT** 300 South Atlantic Avenue PZ# 2022-018	Preliminary plat for 15 single-family lots.	05.31.22	06.13.22	09.07.22	11.20.22		09.14.22	12,05.22	01.10.23 & 01.24.23	03.27.23	Under construction		Approved	$718,460	70%	E = Parker Mynchenberg & Associates, Inc. O = Ormond Beach Holdings, LLC
Z	**TIDES AT ORMOND BEACH FINAL PLAT** 300 South Atlantic Avenue PZ# 2023-062	Final Pat for 15 single-family lots.	05.24.23	06.06.23	10.03.23	10.30.23		Not Required	03.14.24 (Approved)	To be determined				See Preliminary Plat	See Preliminary Plat		E = Parker Mynchenberg & Associates, Inc. O = Ormond Beach Holdings, LLC
AA	**TYMBER CREEK APARTMENTS** 2011 West Granada Boulevard SPRC -2024-000015	270 multi-family units and associated site improvements on a vacant 19.62 acre parcel.	12.07.21	3.4.24				06.08.22	12.08.22 Denial (5-0)	05.16.23 & 06.06.23 (Approved)	03.20.24	03.30.26		Not applied	Not applied		E - Newkirk Engineering O = VCP Ormond Beach, LLC ARC = English Associates, Inc.

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Planning public hearing items

		City Commission items			
File Number	**Item**	**Description**	**Planning Board**	**City Commission, 1st or only**	**City Commission, 2nd reading**
PZ-2024-033	Archer's Mill, Phase 2 Final Plat	This application was submitted from Forestar USA Real Estate Group, Inc. for a final plat for Archer's Mill, Phase 2 (a portion of Phase 3 of the Plantation Oaks Planned Residential Development), consisting of 68 single-family lots on 25.53 acres. The subdivision land area is east of Plantation Oaks Boulevard and located at 313 Bracer Way (Volusia County parcel ids 3125-00-00-0012, 3124-00-00-0023 and 3125-08-00-0006).	05.09.2024 (Approved)	07.23.2024 (Approved)	**08.06.2024**
PZ-2024-035	Archer's Mill, Phase 6 Final Plat	This application was submitted from Forestar USA Real Estate Group, Inc. for a final plat for Archer's Mill, Phase 6 (a portion of Phase 3 of the Plantation Oaks Planned Residential Development), consisting of 78 single-family lots on 46.54 acres. The subdivision land area is east of Plantation Oaks Boulevard and is located at 3665 Bonspiel Drive, (Volusia County parcel ids 3125-00-00-0012, 3124-00-00-0023 and 3239-01-01-0011).	05.09.2024 (Approved)	07.23.2024 (Approved)	**08.06.2024**
PZ-2023-062	Tides Edge at Ormond Beach Subdivision, Final Plat	This is a request submitted by Ormond Beach Holdings, LLC, for a final plat of the subdivision of 3.49 acres into fifteen (15) single-family lots and associated site improvements. The subject property includes a portion of 264 South Atlantic Avenue, 225 Magnolia Avenue, and 300 South Atlantic Avenue.	03.14.2024 (Approved)	07.23.2024 (Approved)	**08.06.2024**
PZ-2024-015	Woodsprings Suites, Comprehensive Plan Land Use Map Amendment	This is a request submitted by Ridge Land Holdings, LLC and RCM Properties, LLC, property owners, for a Small-Scale Comprehensive Plan Land Use Map amendment for an approximately 1.33 acres located at Benton Street and Atlantic Avenue, Volusia County Parcel Identification Numbers (3136-01-34-0220, 3136-01-01-0022, and 3136-0134-0140), from "Medium Density Residential" to "Low Intensity Commercial". The property is within the North U.S. 1 Interlocal Service Boundary Agreement (ISBA) area that contain land use conditions of a maximum of 8 units per acre and a maximum Floor Area Ratio that shall not exceed 0.50 for Retail and 0.55 for all other Nonresidential uses.	03.14.2024 (Approved)	07.23.2024 (Approved)	**08.06.2024**
PZ-24-040	Land Development Code Amendment, Stout-MacDonald House name change to Local Landmark List	An administrative request to amend the Land Development Code (LDC), Chapter 2, District and General Regulations, Article VI, Overlay Districts, Section 2-71, Historic districts and landmarks, subsection (k), Ormond Beach Historic Landmark List, number (31) to amend the name of the historic landmark at 38 East Granada Boulevard from the MacDonald House to the Stout-MacDonald House.	04.11.2024 (Approved)	07.23.2024 (Approved)	**08.06.2024**
PZ-23-077	Comprehensive Plan Amendments, Water Supply Work Plan	This is an administrative request to amend the Comprehensive Plan related to the Water Supply Work Plan, including text amendments to the (1) Utilities Element, (2) Conservation Element, and (3) Capital Improvements Element and adoption of the Water Supply Plan as Appendix A to the Utilities Element.	04.11.2024 (Approved)	05.21.24 (Approved)	**08.06.2024**
	Ormond Crossings West, Establishment of a Community Development District	This is an application submitted by Jonathan T. Johnson, Kutak Rock, LLP, on behalf of the property owner, Ormond Crossing West, LLC, for a petition to establish the Ormond Crossings West Community Development District (District or CDD) in accordance with Chapter 190, Florida Statutes. The proposed District comprises approximately 1,847.32 acres, generally located north of Durrance Lane, south of U.S. Highway 1, and west of Interstate 95.	NA	**08.06.2024**	**08.20.2024**
LDC 2024-040	LDC amendment, Local Landmark List addition - 78 East Granada Boulevard, gardens	This is an administrative amendment to the Land Development Code (LDC), Chapter 2, District and General Regulations, Article VI, Overlay Districts, Section 2-71, Historic Districts and Landmarks, subsection (k), Ormond Beach Historic Landmarks List, to add (54) 78 East Granada Boulevard, the Gardens at the Ormond Memorial Art Museum to the Ormond Beach Historic Landmarks List.	06.13.2024 (Approved)	**08.06.2024**	**08.20.2024**
PZ-24-037	Plantation Oaks, Neighborhood Commercial Amendment, Planned Residential Development Amendment, 1730 Plantation Oaks Boulevard	This is a Planned Residential Development (PRD) amendment submitted by Plantation Oaks of Ormond Beach LLC. The PRD allowed a neighborhood commercial parcel with certain uses permitted and the amendment seeks to allow Warehouse Indoor Mini Rental as a permitted use. The 1.58-acre Neighborhood Commercial property is located at 1730 Plantation Oaks Boulevard.	07.11.2024 (Approved)	**08.20.2024**	**09.04.2024**
PZ-24-060	Lowe's Home Improvement Store, Special Exception for Outdoor Activity, 1340 West Granada Boulevard	This is a request submitted by Joseph Posey, Esquire-Storch Law Firm, on behalf of the property owner, Lowe's Home Centers, LLC, f/k/a Lowe's Home Centers, Inc. for a Special Exception to authorize an outdoor activity use. The application seeks to expand the previously approved permanent outdoor storage, display, and sales of merchandise areas approved by Special Exception, Resolution 2021-73, under certain conditions, at the Lowe's home improvement store. The subject property is located at 1340 West Granada Boulevard and is zoned B-8 (Commercial) and SE (Special Environmental).	07.11.2024 (Approved)	**08.20.2024**	
NA	Interlocal Agreement with Volusia County, Transportation Impact Fees Collection	This is a request to enter into an interlocal agreement with Volusia County to maintain the existing method of the collection of Volusia County thoroughfare road impact fees.	NA	**08.20.2024**	
NA	Comprehensive Plan 2045 Update, Disposition Item	Description of the state required Comprehensive Plan update.	NA	**08.20.2024**	

Note: City Commission items are based upon the best information available as of the publishing of this report and are subject to change. City Commission agendas are available at: https://ormondbeach.iqm2.com/citizens/default.aspx?. For additional information, please contact the Planning Department via e-mail at comdev@ormondbeach.org or by telephone at (386) 676-3238.

Board of Adjustment and Appeals - August 7, 2024		
		Canceled
Note: Board and Adjustment and Appeals information is based upon the best information available as of the publishing of this report and are subject to change. Board and Adjustment and Appeals agendas are available at: https://www.ormondbeach.org/218/Board-of-Adjustments-Appeals For additional information, please contact the Planning Department via e-mail at comdev@ormondbeach.org or by telephone at (386) 676-3238.		

Planning Board - August 8, 2024		
PZ-24-070	First United Methodist Church Land Development Code Amendment, Setbacks in the Rear and Side Yards	This is an application submitted from Jessica Gow, Esquire, Cobb Cole, on behalf of First United Methodist Church, for a Land Development Code amendment to Chapter 2, District and General Regulations, Article IV, Conditional and special exception regulations, Section 2-57, Criteria for review of specific conditional and special exception, subsection (37), House of Worship, to allow a mechanism to reduce the required rear and side yard setback from the standard of 100 feet when a house of worship abuts a single-family use through the Special Exception process.
PZ-24-071	Bradford Lakes, Final Plat	This is an application submitted from Meritage Homes of Florida, Inc., for a final plat for the Bradford Lakes subdivision (a portion of Phase 4 of the Plantation Oaks Planned Residential Development), which consists of 80 single-family lots on 53.12 acres. The Bradford Lakes subdivision is located on the west side of Plantation Oaks Boulevard, north of the unopened Pennsylvania Avenue right-of-way.
PZ-24-072	Bradford Park, Final Plat	This is an application from Meritage Homes of Florida, Inc., for a final plat for a 180-lot townhouse subdivision titled Bradford Park on approximately 24.92 acres. The Bradford Park subdivision is located south of Pennsylvania Avenue right-of-way, east of I-95, and west of Plantation Oaks Boulevard.
PZ-24-004	Zoning Districts Review Discussion Item	Determination if there is a desire to review the residential zoning districts.
NA	Discussion item, Comprehensive Plan 2045 Update, Evaluation and Appraisal Report	Discussion item, Comprehensive Plan 2045 Update, Evaluation and Appraisal Report
The Planning Board agenda is available at: https://www.ormondbeach.org/224/Planning-Board. For additional information, please contact the Planning Department via e-mail at comdev@ormondbeach.org or by telephone at (386) 676-3238.		

Comprehensive Plan 2045 Update, Evaluation and Appraisal Report - August 26, 2024, 5:30 p.m. to 7:00 p.m.
The community engagement meeting is planned for Monday, August 26, 2024. It will include each Comprehensive Plan element as a station with a city staff member available to discuss aspects of the element and take any input. A PowerPoint would describe the Comprehensive Plan and the 2045 update process. Finally, there would be a city map station where any comment could be made. The community engagement meeting would be from 5:30 pm to 7:00 pm, where individuals can walk through. any time.
Website: https://www.ormondbeach.org/1057/Comprehensive-Plan-2045-Update

PERMIT ISSUANCE SUMMARY (07/01/2024 TO 07/31/2024)
FOR CITY OF ORMOND BEACH

Permit Type	Permit Work Class*	Permits Issued	Square Feet	Valuation	Fees Paid
Building Non-Residential	Demolition, Partial or Interior	1	16,247	$10,000.00	$117.75
	Electrical	12	0	$233,380.00	$1,770.17
	Exterior	6	27,400	$366,926.00	$3,124.55
	Interior Build Out	5	10,491	$455,000.00	$9,877.33
	Low Voltage Alarm Labels	2	7,900	$28,784.00	$148.50
	Mechanical	16	0	$82,823.75	$1,805.25
	New Construction, Addition	1	750	$48,500.00	$874.51
	Plumbing	1	0	$1,300.00	$112.50
	Reroof	7	90,566	$900,640.02	$3,994.21
	Signage	8	307	$56,168.00	$1,414.03
	BUILDING NON-RESIDENTIAL TOTAL:	**59**	**153,661**	**$2,183,521.77**	**$23,238.80**
Building Residential	Demolition, Complete	3	6,125	$31,114.00	$1,189.35
	Detached Accessory Structure	5	947	$48,905.00	$802.75
	Dock/Seawall	4	0	$97,001.00	$1,232.36
	Electrical	24	1,418	$116,415.00	$3,201.35
	Exterior	72	2,505	$793,489.34	$10,857.81
	Gas	10	0	$38,535.68	$897.40
	Generator	8	1,850	$59,029.00	$1,507.09
	Interior	3	340	$223,000.00	$1,502.39
	Mechanical	98	7,962	$841,402.89	$7,458.50
	New Construction, Addition	9	4,354	$695,327.60	$5,522.36
	New, Single Family Residential	9	22,626	$3,211,540.29	$116,748.12
	Outside the City Utility Permit	28	57,931	$0.00	$158,032.20
	Plumbing	11	0	$62,896.85	$11,267.34
	Pool/Spa	4	0	$337,000.00	$3,063.26
	Reroof	80	148,715	$1,527,650.66	$13,222.75
	Screen Enclosure	8	6,888	$86,055.00	$1,288.92
	Solar	11	0	$290,418.90	$3,519.11
	BUILDING RESIDENTIAL TOTAL:	**387**	**261,661**	**$8,459,781.21**	**$341,313.06**
Engineering Non-Residential	Tree Removal	1	0	$5,000.00	$160.00
	ENGINEERING NON-RESIDENTIAL TOTAL:	**1**	**0**	**$5,000.00**	**$160.00**
Engineering Residential	Tree Removal	27	0	$5,000.00	$420.00
	ENGINEERING RESIDENTIAL TOTAL:	**27**	**0**	**$5,000.00**	**$420.00**
Fire Non-Residential	Fire Protection Systems	3	293,248	$77,250.00	$375.25
	Fireworks	1	700	$0.00	$119.00
	FIRE NON-RESIDENTIAL TOTAL:	**4**	**293,948**	**$77,250.00**	**$494.25**
LDC Non-Residential	LDC	3	3,588	$112,400.00	$1,750.00
	Master Solicitor	4	0	$4.00	$200.00
	Non-Residential SPRC Site Improvem	3	25,000	$756,473.00	$8,254.73
	Special Event Permit	2	0	$2.00	$0.00
	LDC NON-RESIDENTIAL TOTAL:	**12**	**28,588**	**$868,879.00**	**$10,204.73**
LDC Residential	Garage Sale	16	0	$64.00	$80.00
	LDC	32	0	$244,266.00	$2,375.00
	Residential Subdivision SPRC Site Im	1	0	$536,995.93	$13,424.90

** Double-click the Permit Work Class Name while in the browser to see Permit details for that Work Class.*

PERMIT ISSUANCE SUMMARY (07/01/2024 TO 07/31/2024)

Permit Type	Permit Work Class*	Permits Issued	Square Feet	Valuation	Fees Paid
	Sheds less than 150 square feet in siz	2	0	$14,120.00	$153.75
	LDC RESIDENTIAL TOTAL:	**51**	**0**	**$795,445.93**	**$16,033.65**
	GRAND TOTAL:	**541**	**737,858**	**$12,394,877.91**	**$391,864.49**

** Double-click the Permit Work Class Name while in the browser to see Permit details for that Work Class.*

City of Ormond Beach
AGENDA ITEM

August 20, 2024 - City Commission

Number: 8.A

Section:	PUBLIC HEARINGS		
Item Category:	Public Hearing - Ordinances	**Res./Ord. No:**	2024-22
Strategic Goal:	Transportation & Community Development - Other		
Department:	Planning & Building		
Subject:	Land Development Code Amendment, Local Landmark List, 78 East Granada Boulevard (SECOND READING)		
Summary:	This is an administrative amendment to the Land Development Code (LDC), Chapter 2, District and General Regulations, Article VI, Overlay Districts, Section 2-71, Historic Districts and Landmarks, subsection (k), Ormond Beach Historic Landmarks List, to add (54) 78 East Granada Boulevard, the Gardens at the Ormond Memorial Art Museum, to the Ormond Beach Historic Landmarks List. The City is in receipt of correspondence from the Executive Director of the Ormond Memorial Art Museum & Gardens, dated May 10, 2024, indicating they support placing the Ormond Memorial Art Museum & Gardens, specifically the mound location, on the historic landmark list. The Historic Landmark Preservation Board recommended adding the Gardens only area of the property at the Ormond Memorial Are Museum & Gardens at 78 E. Granada Blvd to the Ormond Beach Historic Landmarks List by means of a Land Development Code amendment at their regular meeting on May 20, 2024. The Planning Board recommend approval of the Land Development Code amendment with a 7-0 vote at the June 13, 2024 meeting.		
Financial Impact:	None		
Citizen Impact:	The Land Development Code amendment is not expected to have any negative impact on citizens.		
Recommended Action (Staff,	The Historic Landmark Preservation Board and Planning Board both recommended unanimously to approve the Land Development Code		

Advisory Board and/or Other):	amendment to add the Gardens at the Ormond Memorial Art Museum at 78 East Granada Boulevard to the Ormond Beach Historic Landmarks List.
Staff Contact:	Steven Spraker, Planning Director, (386) 676-3341
Attachments:	1. 24-22 78 EGB, Gardens, Historic Landmarks List (P24-0125G) 2. 6.13.2024 LDC Amendment-78 EGB, Gardens-PB Packet 3. 06.13.2024, DRAFT Planning Board minutes, 78 EGB 4. Ordinance BIE, 78 EGB (gardens only)
Approval:	Kelly McGuire, Finance Director 8/7/2024 Shawn Finley, Assistant City Manager 8/7/2024 Joyce Shanahan, City Manager 8/14/2024

ORDINANCE NO. 2024-22

AN ORDINANCE AMENDING CHAPTER 2, DISTRICT AND GENERAL REGULATIONS, ARTICLE VI, OVERLAY DISTRICTS, SECTION 2-71, HISTORIC DISTRICTS AND LANDMARKS, OF THE CITY OF ORMOND BEACH *LAND DEVELOPMENT CODE* BY ADDING THE PROPERTY AT 78 EAST GRANADA BOULEVARD, THE GARDENS AT THE ORMOND MEMORIAL ART MUSEUM, TO THE HISTORIC LANDMARKS LIST; REPEALING ALL INCONSISTENT ORDINANCES OR PARTS THEREOF; PROVIDING FOR SEVERABILITY; AND SETTING FORTH AN EFFECTIVE DATE.

WHEREAS, at the Historic Landmark Preservation Board Meeting held on May 20, 2024, a recommendation was made that the Gardens at the Ormond Memorial Art Museum, located at 78 East Granada Boulevard, be added to the Ormond Beach Historic Landmarks List, and

WHEREAS, the local planning agency, being the Planning Board of the City of Ormond Beach, has conducted a public hearing on June 13, 2024, on the requested *Land Development Code* amendment and has made recommendations thereon to the City Commission, and

WHEREAS, all applicable notice requirements of Section 166.041(3)(a), *Florida Statutes*, have been complied with, and

WHEREAS, the City Commission finds the amendment to be consistent with the provisions of the *Comprehensive Plan* of the City of Ormond Beach, and in the overall best interest of the public health, safety and welfare, now therefore,

BE IT ENACTED BY THE PEOPLE OF THE CITY OF ORMOND BEACH, FLORIDA, THAT:

SECTION ONE. Subsection (k), *Ormond Beach Historic Landmarks list*, of Section 2-71, Historic districts and landmarks, of Article VI, Overlay Districts, of Chapter 2, District and General Regulations, of the City of Ormond Beach *Land Development Code*, is hereby amended to read as follows:

(k) Ormond Beach Historic Landmarks list.

(1) - (53) *(No change to existing text)*

(54) 78 East Granada Boulevard, the Gardens at the Ormond Memorial Art Museum.

SECTION TWO. All Ordinances or parts of Ordinances in conflict herewith are hereby repealed to the extent of such conflict.

SECTION THREE. In the event any word, phrase, clause, sentence, paragraph, term, or provision of this Ordinance shall be held to be invalid by a court of competent jurisdiction, such judicial determination shall not affect any other word, phrase, clause, sentence, paragraph, term or provision, of this Ordinance, and the remainder of this Ordinance shall remain in full force and effect.

SECTION FOUR. This Ordinance shall take effect immediately upon its adoption.

PASSED UPON at the first reading of the City Commission, this 6th day of August, 2024.

PASSED UPON at the second and final reading of the City Commission, this 20th day of August, 2024.

_____

BILL PARTINGTON
Mayor

ATTEST:

_____

SUSAN CARROLL DAUDERIS
City Clerk

PLANNING BOARD
STAFF REPORT
Land Development Code (LDC) Amendment
Ormond Beach Historic Landmarks List
78 E. Granada Blvd., the Gardens at the Ormond Memorial Art Museum

PLANNING BOARD DATE:	June 13, 2024
TENTATIVE CITY COMMISSION DATES:	July 23, 2024 (1st Reading), August 6, 2024 (2nd Reading)
APPLICANT:	Administrative
PROJECT NUMBER:	LDC 2024-040
SUBJECT:	LDC amendment: Section 2-71(k) Ormond Beach Historic Landmarks List, addition of (54) 78 East Granada Boulevard, the Gardens at the Ormond Memorial Art Museum to the City's historic landmarks list.
PLANNING STAFF RECOMMENDATION:	Approval
STAFF CONTACT:	Noel Eaton, Senior Planner
78 EAST GRANADA BOULEVARD (gardens only):	

INTRODUCTION:

This is an administrative amendment to the Land Development Code (LDC), Chapter 2, District and General Regulations, Article VI, Overlay Districts, Section 2-71, Historic Districts and Landmarks, subsection (k), Ormond Beach Historic Landmarks List, to add (54) 78 East Granada Boulevard, the Gardens at the Ormond Memorial Art Museum to the Ormond Beach Historic Landmarks List.

BACKGROUND:

The Ormond Memorial Art Museum & Gardens is located at 78 E. Granada Blvd. The property is owned by the City of Ormond Beach and located in the southeast corner of the intersection of E. Granada Boulevard and Halifax Drive. The property is home to the Ormond Memorial Art Museum & Gardens, founded in 1946. The museum was expanded and renovated in 2022. There are four war memorials on the property, two located in the gardens honoring Korean War veterans and Vietnam War veterans. The gardens are also home to the historic Emmons Cottage, a 240 square foot green house, garden shed, 900 square foot octagonal gazebo, as well as a system of concrete walking paths and water features. A notable water feature is the waterfall, constructed in 1998, made from native coquina rock, and located at the main gardens entrance on the west side of the property along S. Halifax Drive. The waterfall is on the north side of a fairly large “hill” that encompasses the southwest corner of the gardens.

Correspondence indicates that the “hill” was evaluated by the Smithsonian Institute in the 1920’s and was determined to be a Timucua burial mound. At that time, a human skull was removed, and donated to the Mary Karl Technical School in Daytona Beach. Its whereabouts is currently unknown. The mound is a protected site per the Florida State Antiquities Act of 1906.

The waterfall and paths on the mound, plus some minor revisions over time were done in innocence. Staff acknowledges the prior improvements that have been made atop of the mound. It should be noted that improvements, repairs and maintenance of the sidewalk system and waterfall can be accomplished by an administrative Certificate of Appropriateness (COA) by the Planning Director. Other improvements to the gardens, not located atop the mound shall not require any COA determination. Further, this designation does not include any structures or buildings on the property.

The city is in receipt of correspondence from the Executive Director of the Ormond Memorial Art Museum & Gardens, dated May 10, 2024, indicating that they support placing the Ormond Memorial Art Museum & Gardens, specifically the mound location, on the historic landmark list.

ANALYSIS:

Section 2-71(b)(3) of the Land Development Code states that a historic landmark designation may be placed on any site, natural or improved, including any building, improvement or structure located thereon, or any area of a particular historic, architectural or cultural significance to the city, such as historic structures or sites which:

a. Exemplify or reflect the broad cultural, political, economic or social history of the nation, state or community;

b. Are identified with historic personages or with important events in national, state or local history.; or

c. Embody the distinguishing characteristics of an architectural type specimen, inherently valuable for a study of a period, style, method of construction or of indigenous materials or craftsmanship.

Based on the established criteria and background history, Planning staff concludes the property satisfies the first and second criteria. The Ormond Memorial Art Museum & Gardens site is reflective of the cultural and social history of the community showcasing the location of important events in national, state, and local history.

Inclusion into the Ormond Beach Historic Landmarks List requires a Land Development Code amendment which is reviewed by the Planning Board and acted upon by the City Commission.

CONCLUSION:

The purpose of this Land Development Code amendment is to change the name of the historic landmark in the Land Development Code. The underlined text are additions to the original text and ~~strike through~~ are the deleted text of the amendment.

Subparagraph k, Ormond Beach Historic Landmarks List, of Section 2-71, Historic Districts and Landmarks, of Chapter 2, District and General Regulations, of Article VI, Overlay District, of the *Land Development Code*, is proposed to be amended to read as follows

(k) *Ormond Beach Historic Landmarks list.*

(1) - (53) ****No change to existing text*****

(54) 78 E. Granada Boulevard, the Gardens at Ormond Memorial Art Museum.

****No change to existing text*****.

Section 1-15(e) of the Land Development Code requires certain criteria must be evaluated before adoption of a Land Development Code amendment when making their recommendation, as follows:

1. **The proposed development conforms to the standards and requirements of this Code and will not create undue crowding beyond the conditions normally permitted in the zoning district, or adversely affect the public health, safety, welfare or quality of life.**

   There is no development proposed as part of the proposed amendment. The amendment seeks to add the Gardens at the Ormond Memorial Art Museum to the City's historic landmark list.

2. The proposed development is consistent with the Comprehensive Plan.

The proposed Land Development Code amendment is consistent with the Comprehensive Plan in several ways. Objective 2.1 of the Future Land Use Element of the Comprehensive Plan discussed the need to update Land Development Code regulations. Further, Objective 1.6. of the Cultural and Historical Resources Element of the comprehensive plan discusses coordination with other agencies to ensure that cultural and historic services are available to City residents. Finally, Policy 1.6.2.b. Cultural and Historical Resources Element documents the goal for enhanced identification, preservation and use of historic properties and resources.

3. The proposed development will not adversely impact environmentally sensitive lands or natural resources, including but not limited to waterbodies, wetlands, xeric communities, wildlife habitats, endangered or threatened plants and animal species or species of special concern, wellfields, and individual wells.

The proposed Land Development Code amendment does not approve any site-specific development and will not have an adverse impact on environmentally sensitive lands. The amendment seeks to add the Gardens at the Ormond Memorial Art Museum to the Ormond Beach Historic Landmarks List in the Land Development Code. The existing use of the property will not change.

4. The proposed use will not substantially or permanently depreciate the value of surrounding property; create a nuisance; or deprive adjoining properties of adequate light and air; create excessive noise, odor, glare, or visual impacts on the neighborhood and adjoining properties.

The proposed Land Development Code amendment does not approve any site-specific development and will not have any impacts on surrounding properties. A community benefits socially and economically when historic buildings are protected and made a focal point of revitalization. The historic landmark site exists in the well-established public gardens at the Ormond Memorial Art Museum.

5. There are adequate public facilities to serve the development, including but not limited to roads, sidewalks, bike paths, potable water, wastewater treatment, drainage, fire and police safety, parks and recreation facilities, schools, and playgrounds.

The proposed Land Development Code amendment seeks to add the historic landmark to the Ormond Beach Historic Landmarks List in the Land Development Code. The amendment would not have a negative impact to public facilities. The property already supports the recently expanded Ormond Memorial Art Museum and Gardens and has existing access to public facilities.

6. Ingress and egress to the property and traffic patterns are designed to protect and promote motorized vehicle and pedestrian/bicycle safety and convenience, allow for desirable traffic flow and control, and provide adequate access in case of fire or catastrophe. This finding shall be based on a traffic report where available, prepared by a qualified traffic consultant, engineer or planner which details the anticipated or projected effect of the project on adjacent roads and the impact on public safety.

There is no development proposed as part of the proposed amendment. The application pertains to a Land Development Code amendment. The proposed historic landmark has existing pedestrian and vehicular access from E. Granada Blvd., S. Halifax Drive, and Seton Trail. Parking is located on the south side of the property adjacent to the Gardens.

7. The proposed development is functional in the use of space and aesthetically acceptable.

There is no development proposed as part of the proposed amendment. The application pertains to adding the gardens portion of the property at the Ormond Memorial Art Museum to the Ormond Beach Historic Landmarks List in the Land Development Code. The Gardens at the museum are an existing functional use of the property and aesthetically acceptable to residents and visitors.

8. The proposed development provides for the safety of occupants and visitors.

There is no development proposed as part of the proposed amendment. The application pertains to adding the recognized historic landmark to the Ormond Beach Historic Landmarks List.

9. The proposed use of materials and architectural features will not adversely impact the neighborhood and aesthetics of the area.

There is no development proposed as part of the proposed amendment. The application pertains to adding the Gardens at the Ormond Memorial Art Museum to the Ormond Beach Historic Landmarks List in the Land Development Code. The addition of the Gardens does not include adding any existing on-site structures to the landmark list.

10. The testimony provided at public hearings.

The Historic Landmark Preservation Board recommended adding the Gardens only area of the property at the Ormond Memorial Are Museum & Gardens at 78 E. Granada Blvd to the Ormond Beach Historic Landmarks List by means of a Land Development Code amendment at their regular meeting on May 20, 2024.

RECOMMENDATION: It is recommended that the Planning Board **APPROVE** the amendment to the Land Development Code, Chapter 2, District and General Regulations, Article VI, Overlay Districts, Section 2-71, Historic Districts and Landmarks, subsection (k), Ormond Beach Historic Landmarks List by adding (54) 78 East Granada Boulevard, the Gardens at the Ormond Memorial Art Museum to the local landmark list as shown in Attachment 1.

Attachments:

Attachment 1: Proposed Land Development Code amendment
Attachment 2: Historic Landmark Preservation Board minutes (05.20.2024)
Attachment 3: Supporting Documents

ATTACHMENT 1

Proposed Land Development Code amendment

Subparagraph k, Ormond Beach Historic Landmarks List, of Section 2-71, Historic Districts and Landmarks, of Chapter 2, District and General Regulations, of Article VI, Overlay District, of the *Land Development Code*, is hereby amended to read as follows:

(k) *Ormond Beach Historic Landmarks list.*

(1) - (53) ****No change to existing text****

(54) 78 E. Granada Boulevard, the Gardens at Ormond Memorial Art Museum.

****No change to existing text****.

ATTACHMENT 2

Historic Landmark Preservation Board meeting draft minutes from May 20, 2024

M I N U T E S

ORMOND BEACH HISTORIC LANDMARK PRESERVATION BOARD

Regular Meeting

May 20, 2023 4:00 PM

Ormond Beach City Hall
City Commission CR 103
22 South Beach Street
Ormond Beach, Florida

I. CALL TO ORDER

Ms. Marcella Miller, Recording Technician, called the meeting to order at 4:00 p.m.

II. ROLL CALL

Members Present	Staff Present
Tim Stockman	Ann Margret Emery, Deputy City Attorney
Suzanne Heddy	Noel Eaton, Senior Planner
Shannon Julien	Marcella Miller, Recording Secretary
Ellen Needham	
Miriam Hughey-Guy	
Faith Wilson (Excused)	
Bill Denny	
Joyce Kresge (Absent)	
Dr. Philip Shapiro	

III. ADMINISTRATIVE ITEMS

A. Election of Chairperson and Vice Chairperson

Ms. Julien nominated Dr. Shapiro for Chair. Ms. Heddy seconded the motion. Vote was called and the nomination unanimously approved (7-0).

Dr. Shapiro thanked the Board for their confidence in him and then announced that the Board needs to elect a Vice Chair, and added that the nominee must understand City Hall, historic preservation, and how the Board works.

Ms. Heddy nominated Ms. Julien for Vice Chair. Ms. Needham seconded the motion. Vote was called and the nomination unanimously approved (7-0).

B. Approval of the 2024 HLPB Rules of Procedures

Dr. Shapiro introduced the Board-staff liaison, Ms. Noel Eaton, Senior Planner. He added that there is a new Board member by the name of Joyce Kresge, the new liaison from the Casements.

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Dr. Shapiro thanked Ms. Heddy for making it clear that the name of the MacDonald House needed to be amended to the Stout-MacDonald House in the local landmarks list. Ms. Heddy went before the Planning Board and her and Dr. Shapiro went before the City Commission, making the case for the amendment. The City Commission voted 5-0 and it is now moving forward with a Land Development Code amendment. Dr. Shapiro emphasized the importance of records and minutes accuracy so that they can be referenced in instances such as these type of details.

Dr. Shapiro explained that the third Monday of each month the Board is potentially on-call for the 4:00 p.m. meeting unless hearing otherwise from staff.

Dr. Shapiro entertained a motion to accept the 2024 Rules of Procedures.

Mr. Stockman made a motion to accept the 2024 Rules of Procedures. Ms. Julien seconded the motion. Vote was called and the motion unanimously approved (7-0).

IV. APPROVAL OF MINUTES

A. November 20, 2023

Dr. Shapiro asked if there were any corrections to the November 20, 2023 minutes.

Ms. Heddy moved to approve the minutes. Ms. Needham seconded the motion. Vote was called and the motion unanimously approved (7-0).

Ms. Heddy and Dr. Shapiro commended staff for the detailed HLPB minutes and the recent staff report prepared for the Planning Board and City Commission meetings in anticipation of the first look of the Stout-MacDonald House proposed amendment. Ms. Heddy pointed out a correction in the last line of the staff report that was presented at the City Commission meeting, stating that it requires new signage, and stated that the Board did not recommend that the building itself change its sign to say Stout-MacDonald, and only recommended that the change be on the Ormond Beach historic landmarks list.

V. PUBLIC HEARING

PZ 2024-000056 78 East Granada Boulevard Administrative Request – Addition of the gardens at the Ormond Memorial Art Museum & Gardens located at 78 East Granada Boulevard, to the Ormond Beach Historic Landmark List

Dr. Shapiro opened the Public Hearing for PZ 2024-000056 and explained that it is an administrative request to add the gardens at the Ormond Memorial Art Museum & Gardens, located at 78 E. Granada Boulevard, to the Ormond Beach Historic Landmarks List. Dr. Shapiro delivered background information on the property and said that the HLPB, as well as the local landmarks list, was formed in 1986, and he expressed uncertainty on why the Memorial Art Museum & Gardens would not automatically include that they were eligible back then. He continued that the historical record includes a Mayor,

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George Rigby, owned the property and in 1915 he built the frontage of the art museum as a law office and that piece of the building still exists today at 78 East Granada Boulevard. When the art museum kept their expansion, they kept the room and the original windows and the gardens was bequeathed to the City in 1931. Dr. Shapiro continued that in the 1920s, the question arose about the mound. In the Smithsonian Institute, they specified they did an evaluation of several mounds in the community, including the one at the gardens, determining that it was a Timucua burial mound. Innocently, things were built on the mound, including the gazebo, trails, and a waterfall. Within the last ten years, a Florida university professor confirmed that it was a Timucua mound and in the 1920's the Smithsonian evaluated, discovered, and documented that a skull was retrieved. At that time, it was given to the Mary Karl Institute, the forerunner of Daytona State College and it is now unknown what happened to the skull.

Dr. Shapiro stated that he is on the board at the art museum and there is no conflict of interest as he is not the applicant and gains nothing from whichever way the board makes the recommendation.

Ms. Noel Eaton, Senior Planner, introduced herself and further explained the administrative request in adding that the Ormond Memorial Art Museum & Gardens was founded in 1946 and expanded with renovations in 2022. The property is also home to the historic Emmons Cottage. She continued that there are several small structures on the site, including a 240-square-foot greenhouse, garden shed, 900-square-foot octagonal gazebo, as well as a system of concrete walking paths and water features. Ms. Eaton explained that there is also a waterfall on the north side of the hill that encompasses the southwest corner of the gardens, known to be the area of the burial mound.

Ms. Eaton reaffirmed that the Smithsonian Institute looked into the burial mound in 1920 and determined it to be a Timucua burial mound where a human skull was removed and donated to the Mary Karl Technical school in Daytona Beach. The whereabouts of the skull is currently unknown. She added that the waterfall and paths on the mound, plus minor revisions over time have been done.

Ms. Eaton stated that staff proposes, even with the designation of the landmark, that general maintenance of the walking paths and waterfall be administratively approved for the Certificate of Appropriateness (COA) process to keep the maintenance of the systems as they exist today. Ms. Eaton continued that the analysis of the criteria to place something on the local list of historic landmarks is it meets any of the following criteria:

a. If the building or site exemplifies or reflects the broad cultural, political, economic, or social history of the nation, state, or community;

b. If the building or site is identified with historic personages or with important events in national, state, or local history; or

c. If the building or site embodies the distinguishing characteristics of an architectural type specimen, inherently valuable for study of a period, style, method of construction, or of indigenous materials or craftsmanship.

Ms. Eaton explained that based on the established criteria and background history, the Planning Department staff concludes the property satisfies the first and second criteria. The

site is reflective of the cultural and social history of the community showcasing the location of important events in national, state, and local history. She added that inclusion into the local landmarks list requires a Land Development Code (LDC) amendment which is reviewed by the Planning Board and acted upon by the City Commission.

Ms. Eaton concluded that staff recommends approval of the addition of the gardens only portion of the Ormond Memorial Art Museum & Gardens at 78 East Granada Boulevard to the Ormond Beach Historic Landmarks List.

Ms. Eaton mentioned that she is aware that the Board is interested in adding the building in the front of the property to the local landmarks list as well but was advised by the Ormond Memorial Arts Museum & Gardens Director that they only wish to include the gardens only at this time.

Dr. Shapiro noted that ten years ago, when on the art museum board, he brought up the local landmarks list and was told no regarding adding it. When the expansion was voted on in approximately 2016, the subject was brought up again with the same answer. Dr. Shapiro mentioned that there may be a misunderstanding on if any part of the building is on the local landmarks list, they may be imposed up on in some way. He elaborated that it may be reconsidered down the road for the classroom part that was originally a law office, to be added to the local landmarks list.

Ms. Eaton responded that the perception of "red tape" may be the issue in adding the front building to the landmarks list. The building has a master site file, but she said there was not a request to add it to the list at this time.

Ms. Heddy asked Ms. Eaton to explain what a COA is. Ms. Eaton stated that a Certificate of Appropriateness (COA) is for additions and improvements to any property on the landmarks list or within the Lincoln overlay district by the HLPB or by administrative capacity. Dr. Shapiro added that the Secretary of the Interior's General Standards for Preservation Projects and Specific Standards for Rehabilitation determines the format for a Certificate of Appropriateness (COA) excluding demolition requests.

Ms. Heddy delivered hearsay information heard from John McSwain that the subject property was a bottle-dump for the old Ormond Hotel.

Dr. Shapiro brought it up to the Board for comments or questions and entertained a motion.

Mr. Denny asked for clarification on the process and if it puts any restrictions on what can be done to the gardens in the future as far as any changes or improvements. Dr. Shapiro replied that an administrative request would be the process for that since it is city property, depending on the specifics.

Ms. Eaton explained that the idea is to maintain what is already there administratively. Anything outside of the mound, located in the gardens, such as the ponds or greenhouse, would go through the general building permit process without an administrative COA. Ms. Eaton clarified that the designation is for the gardens but the administrative COA is for the ability to maintain the walking paths and waterfall on the mound. Elsewhere, outside of the

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mound would go through the general building permit process. She added that maintenance of the gazebo, for an example, would not be subject to a COA.

Ms. Heddy asked for clarification if the Local Landmarks List will specify the Gardens with a capital G. Ms. Eaton confirmed that she was correct.

Dr. Shapiro stated that it may or may not, but specified the reference to *the gardens of the Ormond Memorial Art Museum.*

Ms. Heddy made a motion to approve PZ 2024-000056. Mr. Stockman seconded the motion. Vote was called and the motion was unanimously approved (7-0).

Dr. Shapiro closed the Public Hearing.

Dr. Shapiro stated that at the time that the original building was built there was a law office and there were no city utilities on the beachside. In 1946, when the museum was built, they had to add on to the law office and covered over the cistern. When the full remodel was done to the building, it was found.

VI. DISCUSSION ITEM

No discussion items.

VII. MEMBER COMMENTS

Dr. Shapiro thanked the board and staff for their confidence and support and also thanked Ms. Julien for her availability as Vice-Chair.

VIII. ADJOURNMENT

The meeting was adjourned at 4:27 p.m.

Respectfully submitted,

_____

Marcella Miller, Recording Secretary

ATTEST:

_____

Dr. Philip J. Shapiro, Chairman

Minutes transcribed by Marcella Miller.

DRAFT

ATTACHMENT 3

Supporting Documents

Eaton, Noel

From: Partington, Bill
Sent: Wednesday, March 6, 2024 7:11 PM
To: Dr. Philip J. Shapiro
Cc: Stephanie Mason-Teague; Shanahan, Joyce; Spraker, Steven; Hayes, Randy
Subject: Re: Hill behind the OMAM waterfall (reply)

Thanks Doc and Joyce for sharing,

Is this on our list of historic sites? If not it probably should be…….Let me know what we need to do. I think comm would gladly add it if needed.

Bill
Sent from my iPad

On Mar 6, 2024, at 2:10 PM, Dr. Philip J. Shapiro <pjsdpm@yahoo.com> wrote:

[External Email-Use Caution] - OB/IT Helpdesk

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Dear Stephanie Mason-Teague, with copies to Mayor Partington and City Manager Joyce Shanahan:

That "hill" was evaluated by the Smithsonian Institute in the 1920's and was determined to be a Timucua burial mound. At that time, a human skull was removed, and donated to the Mary Karl Technical School in Daytona Beach. Its whereabouts is currently unknown. The mound is a protected site per the Florida State Antiquities Act of 1906.

The waterfall and paths on the mound, plus some minor revisions over time were apparently done in innocence. I am of the impression from your message below that the 20x30 electric transformer, being near the parking lot south of the mound, will not intrude on the Timucua Mound.

Thank you for your inquiry, and, thank you for your efforts to have the utility box in a more appropriate location. Please let me know if you need further information regarding the Timucua Mound.

Respectfully,

Dr. Philip Shapiro
Board Member and Secretary, OMAM

Chair, Historic Landmarks Preservation Board
City of Ormond Beach

Immediate Past President
Ormond Beach Historical Society Inc.

From: Stephanie Mason-Teague <smt@ormondartmuseum.org>
Sent: Wednesday, March 6, 2024 12:49 PM
To: Philip Shapiro (pjsdpm@yahoo.com) <pjsdpm@yahoo.com>
Subject: Hill behind the OMAM waterfall

Hi Dr. P,

Today FPL and the City engineer came to tell me they planned to put a large 20X30 electric transformer box near our waterfall! YUCK! Their plan was to remove several trees and vegetation, level the ground and install a concrete pad!

I talked at length with them about the integrity of the waterfall, the community love of our waterfall, and our displeasure with this idea!

The meeting ended well. They agreed to put the box near the parking lot.

I did see two very old looking coquina pillars near the area behind the waterfall, off the sidewalk. Do you know the history of them? Or the hill? Is it a historical mound?

Thank you,

Stephanie Mason-Teague
Executive Director
Ormond Memorial
Art Museum
& Gardens
HONORING OUR VETERANS
386-676-3347
78 E. Granada Blvd.
Ormond Beach, FL 32176

Eaton, Noel

From: Stephanie Mason-Teague <smt@ormondartmuseum.org>
Sent: Thursday, May 2, 2024 12:55 PM
To: Eaton, Noel
Subject: RE: Hill behind the OMAM waterfall (reply all) - Local Landmarks List

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Thank you, Noel,

I would like to pursue placing the OMAM Gardens on the list but NOT the original building.
Please let me know if you need additional information from me, or if I can be of further assistance.

Thank you,
Stephanie

Stephanie Mason-Teague
Executive Director
Ormond Memorial Art Museum & Gardens
HONORING OUR VETERANS
386-676-3347
78 E. Granada Blvd.
Ormond Beach, FL 32176

From: Eaton, Noel <Noel.Eaton@ormondbeach.org>
Sent: Thursday, May 2, 2024 11:17 AM
To: Stephanie Mason-Teague <smt@ormondartmuseum.org>
Subject: RE: Hill behind the OMAM waterfall (reply all) - Local Landmarks List

Good Morning Stephanie,

City planning staff is pursuing placing the OMAM Gardens on the historic local landmark list. I see from your email below that there is also interest in placing the original building fronting E Granada Blvd on the local landmark list.

This will be an administrative change to the list however I want to clarify if the request is for just the gardens or also the original front building of the OMAM and if so, if there is any additional information you can provide on the history of the building.

Please note that if the building is added to the list, it will need to follow the Certificate of Appropriateness regulations for all exterior changes to the building. Which is provided in the (very

long) attachment. I'm not sure if you're familiar with the COA process but wanted to make sure you were aware of the requirements when proceeding with adding both locations to the list.

Please give me a call if you have any questions or would like to discuss anything. I look forward to hearing from you.

Thank you kindly,

Noel Eaton
Senior Planner

City of Ormond Beach
Planning Department
22 South Beach St.
Ormond Beach, FL 32174
Main: (386) 676-3238
Direct: (386) 676-3342
Email: noel.eaton@ormondbeach.org

From: Shanahan, Joyce <Joyce.Shanahan@ormondbeach.org>
Sent: Thursday, March 7, 2024 3:49 PM
To: Stephanie Mason-Teague <smt@ormondartmuseum.org>; Dr. Philip J. Shapiro <pjsdpm@yahoo.com>; Partington, Bill <Bill.Partington@ormondbeach.org>
Cc: Spraker, Steven <Steven.Spraker@ormondbeach.org>; Hayes, Randy <Randy.Hayes@ormondbeach.org>
Subject: RE: Hill behind the OMAM waterfall (reply all) - Local Landmarks List

Great to hear Stefanie. Planning Director will prepare the item for the appropriate board to review. Thanks.

From: Stephanie Mason-Teague <smt@ormondartmuseum.org>
Sent: Thursday, March 7, 2024 10:22 AM
To: Dr. Philip J. Shapiro <pjsdpm@yahoo.com>; Partington, Bill <Bill.Partington@ormondbeach.org>
Cc: Shanahan, Joyce <Joyce.Shanahan@ormondbeach.org>; Spraker, Steven <Steven.Spraker@ormondbeach.org>; Hayes, Randy <Randy.Hayes@ormondbeach.org>
Subject: RE: Hill behind the OMAM waterfall (reply all) - Local Landmarks List

[External Email-Use Caution] - OB/IT Helpdesk

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Thank you everyone for your responses and interest. I am happy to help with the application(s) as needed and think it would be a good idea to have the OMAM original building and gardens listed on the historical landmarks list.

I also want to say the staff that I talked with yesterday RE: the location of the utility box, were very professional, helpful, and understanding of my concerns. I appreciate our partnership very much.

Thank you,

Stephanie

Stephanie Mason-Teague
Executive Director
Ormond Memorial Art Museum & Gardens
HONORING OUR VETERANS
386-676-3347
78 E. Granada Blvd.
Ormond Beach, FL 32176

From: Dr. Philip J. Shapiro <pjsdpm@yahoo.com>
Sent: Wednesday, March 6, 2024 9:32 PM
To: 'Partington, Bill' <Bill.Partington@ormondbeach.org>
Cc: Stephanie Mason-Teague <smt@ormondartmuseum.org>; 'Shanahan, Joyce' <Joyce.Shanahan@ormondbeach.org>; 'Spraker, Steven' <Steven.Spraker@ormondbeach.org>; 'Hayes, Randy' <Randy.Hayes@ormondbeach.org>; Dr. Philip J. Shapiro <pjsdpm@yahoo.com>
Subject: RE: Hill behind the OMAM waterfall (reply all) - Local Landmarks List

Dear Mayor Partington and all:

In response to your question below, unfortunately the Gardens were never put on the Local Landmarks List, even though that site is well qualified.

As City property, the City can put an application before the Historic Landmarks Preservation Board for review. In terms of how the Gardens are maintained and the structures already in it (The Gazebo, as well as the Korean and VietNam War memorials), I do not foresee any issues going forward should the site be listed on the Landmarks List.

Separate from the Gardens, the original structure of the Ormond Memorial Art Museum is the attorney's office that was constructed in 1915 by George Rigby, who served as a Mayor of Ormond, and willed his office building to the City in 1930. This 800 square foot pagoda, tearoom style cottage was never a private home, and served in 1946 as the north side building of the developing Ormond Memorial Art Museum. During the renovation and expansion of the Art Museum in 2020, the size and architectural style of that 1915 office room, now a classroom, has remained unchanged along the East Granada Boulevard frontage. That former office is a distinct landmark structure and also qualifies as eligible for the Local Landmarks List by virtue of its architectural uniqueness, historical value, and its cultural contribution to the community.

I hope that the above information adequately answers your question. If more information is needed, please let me know.

Dr. Philip J. Shapiro

From: Partington, Bill <Bill.Partington@ormondbeach.org>
Sent: Wednesday, March 6, 2024 7:11 PM
To: Dr. Philip J. Shapiro <pjsdpm@yahoo.com>
Cc: Stephanie Mason-Teague <smt@ormondartmuseum.org>; Shanahan, Joyce <Joyce.Shanahan@ormondbeach.org>; Spraker, Steven <Steven.Spraker@ormondbeach.org>; Hayes, Randy <Randy.Hayes@ormondbeach.org>
Subject: Re: Hill behind the OMAM waterfall (reply)

Thanks Doc and Joyce for sharing,

Is this on our list of historic sites? If not it probably should be…….Let me know what we need to do. I think comm would gladly add it if needed.

Bill
Sent from my iPad

On Mar 6, 2024, at 2:10 PM, Dr. Philip J. Shapiro <pjsdpm@yahoo.com> wrote:

[External Email-Use Caution] - OB/IT Helpdesk

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Dear Stephanie Mason-Teague, with copies to Mayor Partington and City Manager Joyce Shanahan:

That "hill" was evaluated by the Smithsonian Institute in the 1920's and was determined to be a Timucua burial mound. At that time, a human skull was removed, and donated to the Mary Karl Technical School in Daytona Beach. Its whereabouts is currently unknown. The mound is a protected site per the Florida State Antiquities Act of 1906.

The waterfall and paths on the mound, plus some minor revisions over time were apparently done in innocence. I am of the impression from your message below that the 20x30 electric transformer, being near the parking lot south of the mound, will not intrude on the Timucua Mound.

Thank you for your inquiry, and, thank you for your efforts to have the utility box in a more appropriate location. Please let me know if you need further information regarding the Timucua Mound.

Respectfully,

Dr. Philip Shapiro
Board Member and Secretary, OMAM

Chair, Historic Landmarks Preservation Board
City of Ormond Beach

Immediate Past President
Ormond Beach Historical Society Inc.

From: Stephanie Mason-Teague <smt@ormondartmuseum.org>
Sent: Wednesday, March 6, 2024 12:49 PM
To: Philip Shapiro (pjsdpm@yahoo.com) <pjsdpm@yahoo.com>
Subject: Hill behind the OMAM waterfall

Hi Dr. P,

Today FPL and the City engineer came to tell me they planned to put a large 20X30 electric transformer box near our waterfall! YUCK! Their plan was to remove several trees and vegetation, level the ground and install a concrete pad!

I talked at length with them about the integrity of the waterfall, the community love of our waterfall, and our displeasure with this idea!

The meeting ended well. They agreed to put the box near the parking lot.

I did see two very old looking coquina pillars near the area behind the waterfall, off the sidewalk. Do you know the history of them? Or the hill? Is it a historical mound?

Thank you,

Stephanie Mason-Teague
Executive Director
Ormond Memorial Art Museum & Gardens
HONORING OUR VETERANS
386-676-3347
78 E. Granada Blvd.
Ormond Beach, FL 32176

Notice: Under Florida law, e-mail addresses are public records. If you do not want your e-mail address released in response to a public-records request, do not send electronic mail to this entity. Instead, contact this office by phone or in writing.
Notice: Under Florida law, e-mail addresses are public records. If you do not want your e-mail address released in response to a public-records request, do not send electronic mail to this entity. Instead, contact this office by phone or in writing.

DRAFT

Planning Board minutes from

June 13, 2024

ITEM:

PZ-2024-056

Land Development Code (LDC) Amendment

Ormond Beach Historic Landmarks List

78 E. Granada Blvd., the Gardens at the Ormond Memorial Art Museum

Action: Recommended Approval (7-0)

V. APPROVAL OF MINUTES

May 09, 2024

Mr. Jorczak moved to approve the May 09, 2024 Minutes. Ms. Shull seconded the motion. Vote was called, and the motion was approved (7-0).

VI. PLANNING DIRECTOR'S REPORT

No report.

VII. PUBLIC HEARINGS

A. LDC 2024-040 – The gardens at the Ormond Memorial Art Museum, Local Landmarks List Designation

Ms. Noel Eaton, Senior Planner, stated that this is an administrative amendment request for a text change to the Land Development Code (LDC), Chapter 2, District and General Regulations, Article VI, Overlay Districts, Section 2-71, Historic Districts and Landmarks, subsection (k), Ormond Beach Historic Landmarks List, to add (54) 78 East Granada Boulevard, the Gardens at the Ormond Memorial Art Museum, to the Ormond Beach Historic Landmarks List. The Historic Landmark Preservation Board (HLPB) recommended approval of adding the gardens portion only to the list. Ms. Eaton concluded that staff recommends approval to add the Gardens at the Ormond Memorial Art Museum, to the Ormond Beach Historic Landmarks List.

Ms. Shull asked for clarification if the amendment is to only add the Gardens to the Ormond Beach Historic Landmarks List. Ms. Eaton confirmed that is correct.

Ms. Shull inquired if historical buildings can be commercial buildings. Ms. Eaton confirmed that statement is correct.

Board Discussion and Questions

Chairman Thomas opened it up to the Board for discussion and questions.

Board Recommendation

Chairman Thomas entertained a motion.

Mr. Galloway motioned to approve LDC 2024-040 – The gardens at the Ormond Memorial Art Museum, Local Landmarks List Designation. Mr. Scudiero seconded it. Vote was called, and the motion was approved (7-0).

VIII. PUBLIC COMMENTS

None.

IX. OTHER BUSINESS

Mr. Spraker displayed Sotheby's International Realty (Kurtz & Soderstrom) aerial map of projects and future developments in response to the Planning Board request for a summary of projects around the City of Ormond Beach.

DRAFT

Ordinance Adoption
Business Impact Estimate

Proposed ordinance's number and legal title:

2024-22

AN ORDINANCE AMENDING CHAPTER 2, DISTRICT AND GENERAL REGULATIONS, ARTICLE VI, OVERLAY DISTRICTS, SECTION 2-71, HISTORIC DISTRICTS AND LANDMARKS, OF THE CITY OF ORMOND BEACH LAND DEVELOPMENT CODE BY ADDING THE PROPERTY AT 78 EAST GRANADA BOULEVARD, THE GARDENS AT THE ORMOND MEMORIAL ART MUSEUM, TO THE HISTORIC LANDMARKS LIST; REPEALING ALL INCONSISTENT ORDINANCES OR PARTS THEREOF; PROVIDING FOR SEVERABILITY; AND SETTING FORTH AN EFFECTIVE DATE.

This Business Impact Estimate is provided in accordance with section 166.041(4), Florida Statutes. If one or more boxes are checked below, this means the City is of the view that a business impact estimate is not required by state law for the proposed ordinance, but the City is, nevertheless, providing this Business Impact Estimate as a courtesy and to avoid any procedural issues that could impact the enactment of the proposed ordinance. This Business Impact Estimate may be revised following its initial posting.

☐ The proposed ordinance is required for compliance with Federal or State law or regulation;
☐ The proposed ordinance relates to the issuance or refinancing of debt;
☐ The proposed ordinance relates to the adoption of budgets or budget amendments, including revenue sources necessary to fund the budget;
☐ The proposed ordinance is required to implement a contract or an agreement, including, but not limited to, any Federal, State, local, or private grant or other financial assistance accepted by the municipal government;
☐ The proposed ordinance is an emergency ordinance;
☐ The ordinance relates to procurement; or
☒ The proposed ordinance is enacted to implement the following:
   a. Part II of Chapter 163, Florida Statutes, relating to growth policy, county and municipal planning, and land development regulation, including zoning, development orders, development agreements and development permits;
   b. Sections 190.005 and 190.046, Florida Statutes, regarding community development districts;
   c. Section 553.73, Florida Statutes, relating to the Florida Building Code; or
   d. Section 633.202, Florida Statutes, relating to the Florida Fire Prevention Code.

In accordance with the provisions of controlling law, even notwithstanding the fact that an exemption noted above may apply, the City hereby publishes the following information:

1. A summary of the proposed ordinance, including a statement of the public purpose to be served by the proposed ordinance, such as serving the public health, safety, morals, and welfare of the City.

This is an administrative amendment to the Land Development Code (LDC), Chapter 2, District and General Regulations, Article VI, Overlay Districts, Section 2-71, Historic Districts and Landmarks, subsection (k), Ormond Beach Historic Landmarks List, to add (54) 78 East Granada Boulevard, the Gardens at the Ormond Memorial Art Museum to the Ormond Beach Historic Landmarks List.

2. An estimate of the direct economic impact of the proposed ordinance on private, for-profit businesses in the City, including the following, if any:

   a. An estimate of direct compliance costs that businesses may reasonably incur if the ordinance is enacted;

      None. This is an ordinance regarding the addition of a historic property to the city's Historic Landmark List.

   b. Identification of any new charge or fee on businesses subject to the proposed ordinance, or for which businesses will be financially responsible; and

      None. This is an ordinance regarding the addition of a historic property to the city's Historic Landmark List. There are no charges or fees proposed.

   c. An estimate of the City's regulatory costs, including an estimate of revenues from any new charges or fees that will be imposed on businesses to cover such costs.

      None. This is an ordinance regarding the addition of a historic property to the city's Historic Landmark List. There are no new fees proposed.

3. A good faith estimates of the number of businesses likely to be impacted by the ordinance.

   None. This is an ordinance regarding the addition of a historic property to the city's Historic Landmark List.

4. Any additional information the City determines may be useful.

   (This section may include: methodology or data used to prepare the Business Impact Estimate, e.g., City staff solicited comments from businesses as to the potential impact of the proposed ordinance by contacting the chamber of commerce, social media posting, direct mail/email, posting on the City's website, public workshop, etc.; efforts made to reduce the potential fiscal impact on businesses; and state the proposed ordinance is a generally applicable ordinance that applies to all persons similarly situated (individuals or businesses) and, therefore, the proposed ordinance does not affect only businesses.)

   No business impacts proposed. The item was advertised by newspaper advertisements. Information on the application is also on the city's website.

City of Ormond Beach
AGENDA ITEM

August 20, 2024 - City Commission

Number: 8.B

Section:	PUBLIC HEARINGS		
Item Category:	Public Hearing - Ordinances	**Res./Ord. No:**	2024-23
Strategic Goal:	Transportation & Community Development - Other		
Department:	Planning & Building		
Subject:	Ormond Crossings West, Establishment of a CDD (SECOND READING)		
Summary:	This is an application submitted by Jonathan T. Johnson, Kutak Rock, LLP, on behalf of the property owner, Ormond Crossing West, LLC, for a petition to establish the Ormond Crossings West Community Development District (District or CDD) in accordance with Chapter 190, Florida Statutes. The proposed District comprises approximately 1,847.32 acres, generally located north of Durrance Lane, south of U.S. Highway 1, and west of Interstate 95. The applicant has proposed to establish the District to plan, finance, acquire, construct, operate, and maintain infrastructure and community facilities which may be authorized by such District under Florida law, including but not limited to water distribution system, reclaimed water system, sanitary sewer system, utilities (water, wastewater & reuse systems), stormwater management system, roadway improvements, earthwork, storage tank and pump station, public space/hardscape/landscape, environmental/mitigation, offsite improvements and other infrastructure. The CDD is proposed for only the single-family residential portion of the Ormond Crossings project. On February 16, 2010, by Ordinance 2010-07, the City Commission approved a development agreement known as “Ormond Crossings” to develop a 2,924 mixed-use development. The development agreement envisioned the establishment of one or more CDDs to assist in constructing and maintaining project-related improvements. The Ormond Crossings development agreement was amended (first amendment) on July 25, 2024, with Ordinance 2017-14. CDDs are established with Chapter 190 of Florida Statutes and must be granted authorization by a local government and the Florida Land and		

	Water Adjudicatory Commission. CDDs are used to finance development-related improvements and maintain development-related improvements, including roads, drainage systems, parks & recreation areas, and landscaping. CDDs cannot take any action inconsistent with a jurisdiction's comprehensive plans, ordinances, or regulations of the applicable local general-purpose government. The project application has provided a summary PowerPoint of community development districts.
Financial Impact:	There is no budget impact as part of this application. The project has paid the Florida Statute required application fee. No bond, debt, or other obligations of the community development district shall constitute a debt or obligation to the City.
Citizen Impact:	The CDD is designed to establish a financial mechanism for constructing and maintaining project improvements and only applies to property owners within the district area and not to those outside the designated area. The application does not modify land use, zoning, or development agreement standards.
Recommended Action (Staff, Advisory Board and/or Other):	Staff recommends approval of the Ormond Crossings West Community Development District in accordance with Chapter 190, Florida Statutes.
Staff Contact:	Steven Spraker, Planning Director, (386) 676-3341
Attachments:	1. 24-23 Ormond Crossings West CDD (P24-0103G) 2. Exhibit A, Petition to Establish Ormond Crossings West CDD 3. WestCDD_Aerial 4. WestCDD_Parcel 5. Presentation for City of Ormond Beach - CDD Basics 6. Ordinance BIE, OCW CDD
Approval:	Kelly McGuire, Finance Director 8/7/2024 Shawn Finley, Assistant City Manager 8/7/2024 Joyce Shanahan, City Manager 8/14/2024

ORDINANCE NO. 2024-23

AN ORDINANCE GRANTING THE PETITION OF ORMOND CROSSING WEST, LLC, FOR ESTABLISHMENT OF A COMMUNITY DEVELOPMENT DISTRICT PURSUANT TO CHAPTER 190, FLORIDA STATUTES; CREATING AND ESTABLISHING THE ORMOND CROSSINGS WEST COMMUNITY DEVELOPMENT DISTRICT; PROVIDING FOR NAME, POWERS, AND DUTIES; PROVIDING DESCRIPTION AND BOUNDARIES; PROVIDING INITIAL MEMBERS OF BOARD OF SUPERVISORS; PROVIDING SEVERABILITY; AND SETTING FORTH AN EFFECTIVE DATE.

WHEREAS, Ormond Crossing West, LLC, a Florida limited liability company ("Applicant") owns approximately 1,847.32 acres of land generally located north of Durrance Lane, south of U.S. Highway 1, and west of Interstate 95 ("Subject Property"), and

WHERAS, Ormond Crossing West, LLC, a Florida limited liability company has petitioned the City of Ormond Beach for establishment of a community development district, to be known as "Ormond Crossings West Community Development District" (the "District"), the boundaries of which would include the Subject Property, and

WHERAS, the Florida Legislature created and amended Chapter 190, Florida Statutes, to provide an alternative method to finance and manage services for community development, and

WHEREAS, on February 16, 2010, by Ordinance 2010-07, the City Commission approved a development agreement known as "Ormond Crossings" for the purpose of developing

a 2,924 mixed-use development which is recorded in Official Records Book 6449, Pages 2154 through 2222, inclusive, of the Public Records of Volusia County, Florida.

WHERAS, the Ormond Crossings development agreement envisioned the use of community development districts within Ormond Crossings, and

WHEREAS, on July 25, 2017, by Ordinance 2017-14, the City Commission approved the first amended Ormond Crossings development agreement which is recorded in Official Records Book 7437, Pages 3892 through 3968, inclusive, of the Public Records of Volusia County, Florida.

WHEREAS, the City Commission, after proper published notice, has conducted a public hearing on the petition, in accordance with the requirements and procedures of Section 190.005(2), Florida Statutes, and

WHEREAS, the City Commission has determined that the District will constitute a timely, efficient, effective, responsive and economic way to deliver community development services with the Property, providing a mechanism for the delivery of public capital infrastructure therein without overburdening residents not residing within the proposed District, based upon the information provided in the petition; and

WHEREAS, the City Commission finds that the petition for the District is complete and meets the requirements of Section 190.005(1)(e), Florida Statutes; and

WHEREAS, the City Commission find the statements contained within the petition for the community development district to be true and correct; and

WHEREAS, the creation of the district is not inconsistent with any applicable element or portion of the State's comprehensive plan or the Ormond Beach Comprehensive Plan; and

WHEREAS, the area of land within the District is of sufficient size, is sufficiently compact, and is sufficiently contiguous to be developable as one functional interrelated community; and

WHEREAS, the creation of the District is the best alternative available for delivering community development services and facilities to the area that will be served by the District; and

WHEREAS, the community development services and facilities of the District will not be incompatible with the capacity and uses of existing local and regional community development services and facilities; and

WHEREAS, the area that will be served by the District is amenable to separate special-district government; and

WHEREAS, the City shall retain construction review, permitting, and inspection responsibilities regarding improvements within the District, and

WHEREAS, no bond, debt, or other obligation of the Ormond Crossings West Community Development District, nor default thereon, shall constitute a debt or obligation of the city, and

WHEREAS, Section 190.004(3), Florida Statutes, provides that all governmental planning, environmental, and land development laws, regulations, and ordinances apply to all development of land within a community development district. Community development districts do not have the power of local government to adopt a comprehensive plan, building code, or land development code, as those terms are defined in the Community Planning Act. The District shall take no action which is inconsistent with applicable comprehensive plans, ordinances, or regulations of the applicable local general-purpose government, and

WHEREAS, the City Commission finds that the District shall have those general and special powers authorized by Sections 190.011 and 190.012, Florida Statutes, as set, and that it is in the public interest of the citizens of Ormond Beach that the District have powers; now therefore,

BE IT ENACTED BY THE PEOPLE OF THE CITY OF ORMOND BEACH, FLORIDA, THAT:

SECTION ONE. The foregoing recitals are incorporated herein as the findings of the City Commission.

SECTION TWO. The petition to establish the Ormond Crossings West Community Development District, as attached hereto and incorporated herein as Exhibit A, is

hereby granted.

SECTION THREE. The boundaries of the Ormond Crossings West Community Development District are depicted as attached hereto and incorporated herein as Exhibits 1 and 2 within Exhibit A.

SECTION FOUR. The initial members of the Board of Supervisors of the Ormond Crossings West Community Development District shall be as follows:

Name: Clint Smith
Address: 8 Ocean Place
Highland Beach, FL 33487

Name: Frankie Green
Address: 8 Ocean Place
Highland Beach, FL 33487

Name: Bill Livingston
Address: 8 Ocean Place
Highland Beach, FL 33487

Name: Lee Susewitt
Address: 8 Ocean Place
Highland Beach, FL 33487

Name: Greg Ulmer
Address: 8 Ocean Place
Highland Beach, FL 33487

All of the above-listed persons are residents of the State of Florida and citizens of the United States of America.

SECTION FIVE. The name of the District shall be the "Ormond Crossings West Community Development District".

SECTION SIX. The Ormond Crossings West Community Development District is created for the purposes set forth in Chapter 190, Florida Statutes.

SECTION SEVEN. Pursuant to Section 190.005(2)(d), Florida Statutes, the charter for the Ormond Crossings West Community Development District shall be Sections 190.006 through 190.041, Florida Statutes, as amended.

SECTION EIGHT. The City Commission grants to the Ormond Crossings West Community Development District all powers authorized pursuant to Sections 190.011 and 190.012(1)(a) -(h), 2(a), and (3), Florida Statutes, and hereby finds it is in the public interest of all citizens of the city to grant such general and special powers.

SECTION NINE. All bonds issued by the Ormond Crossings West Community Development District pursuant to the powers granted by this ordinance shall be validated pursuant to Chapter 75, Florida Statutes.

SECTION TEN. No bond, debt, or other obligation of the Ormond Crossings West Community Development District, nor any default thereon, shall constitute a debt or obligation to the city.

SECTION ELEVEN. If any section, subsection, sentence, clause, or provision of this ordinance is held invalid, the remainder of the ordinance shall not be affected by such invalidity.

SECTION TWELVE. This ordinance shall become effective immediately upon its adoption.

PASSED UPON at the first reading of the City Commission this 6th day of August, 2024.

PASSED UPON at the second and final reading of the City Commission this 20th day of August, 2024.

_____
BILL PARTINGTON
Mayor

ATTEST:

_____
SUSAN CARROLL DAUDERIS
City Clerk

BEFORE THE CITY COMMISSION
CITY OF ORMOND BEACH, FLORIDA

PETITION TO ESTABLISH ORMOND CROSSINGS WEST COMMUNITY DEVELOPMENT DISTRICT

Petitioner, Ormond Crossing West, LLC (hereafter "Petitioner"), hereby petitions the City Commission of the City of Ormond Beach pursuant to the "Uniform Community Development District Act of 1980," Chapter 190, *Florida Statutes*, to establish a Community Development District with respect to the land described herein. In support of this petition, Petitioner states:

1. Location and Size. The proposed District is located entirely within the City of Ormond Beach, Florida. **Exhibit 1** depicts the general location of the proposed District. The proposed District covers approximately 1,847.32 acres of land, generally located north of Durrance Lane, south of U.S. Highway 1, and west of Interstate 95. The metes and bounds description of the external boundaries of the proposed District is set forth in **Exhibit 2**.

2. Excluded Parcels. There is no land within the external boundaries of the proposed District, which is to be excluded from the District.

3. Landowner Consent. Petitioner has obtained written consent to establish the proposed District from the owners of one hundred percent (100%) of the real property located within the proposed District in accordance with Section 190.005, *Florida Statutes*. Documentation of ownership and consent to the establishment of a community development district is contained in **Exhibit 3**.

4. Initial Board Members. The five persons designated to serve as initial members of the Board of Supervisors of the proposed District are as follows:

Name: Clint Smith
Address: 8 Ocean Place
Highland Beach, FL 33487

Name: Frankie Green
Address: 8 Ocean Place
Highland Beach, FL 33487

Name: Bill Livingston
Address: 8 Ocean Place
Highland Beach, FL 33487

Name: Lee Susewitt
Address: 8 Ocean Place
Highland Beach, FL 33487

Name: Greg Ulmer
Address: 8 Ocean Place
Highland Beach, FL 33487

All of the above-listed persons are residents of the State of Florida and citizens of the United States of America.

5. Name. The proposed name of the District is Ormond Crossings West Community Development District.

6. Future Land Uses. The future general distribution, location, and extent of the land uses proposed for the District by future land use plan element of the applicable Future Land Use Plan is identified on **Exhibit 4.** The proposed land uses for lands contained within the proposed District are consistent with the City's approved Future Land Use Plan.

7. Major Water and Wastewater Facilities and Outfalls. There are no existing major trunk water mains and wastewater interceptors within the currently undeveloped lands to be included within the proposed District. **Exhibit 5** shows the proposed major trunk water mains, sewer connections, and reclaimed water mains serving the lands within and around the proposed District.

8. District Facilities and Services. **Exhibit 6** describes the type of facilities Petitioner presently expects the proposed District to finance, fund, construct, acquire and/or

install, as well as the anticipated entity responsible for ownership and maintenance. The estimated costs of constructing the infrastructure serving land within the proposed District are identified in **Exhibit 7**. At present, these improvements are estimated to be made, constructed and installed over the time period from 2025 through 2035. Actual construction timetables and expenditures will likely vary, due in part to the effects of future changes in the economic conditions upon costs such as labor, services, materials, interest rates and market conditions.

9. Statement of Estimated Regulatory Costs. **Exhibit 8** is the statement of estimated regulatory costs ("SERC") prepared in accordance with the requirements of Section 120.541, *Florida Statutes*. The SERC is based upon presently available data. The data and methodology used in preparing the SERC accompany it.

10. Authorized Agent. The Petitioner is authorized to do business in the State of Florida**.** The authorized agent for the Petitioner is Jonathan T. Johnson. **See Exhibit 9**. Copies of all correspondence and official notices should also be sent to:

Jonathan T. Johnson
Jonathan.johnson@kutakrock.com
Kutak Rock LLP
107 West Collage Avenue
Tallahassee, Florida 32301

11. This petition to establish Ormond Crossings West Community Development District should be granted for the following reasons:

a. Establishment of the District and all land uses and services planned within the proposed District are not inconsistent with applicable elements or portions of the effective State Comprehensive Plan or the local Comprehensive Plan.

b. The area of land within the proposed District is part of a planned community. It is of a sufficient size and is sufficiently compact and contiguous to be developed as one functional and interrelated community.

c. The establishment of the District will prevent the general body of taxpayers in the City of Ormond Beach from bearing the burden for installation of the infrastructure and the maintenance of the above-described facilities within the development encompassed by the District. The District is the best alternative for delivering community development services and facilities to the proposed community without imposing an additional burden on the general population of the local general-purpose government. Establishment of the District in conjunction with a comprehensively planned community, as proposed, allows for a more efficient use of resources.

d. The community development services and facilities of the District will not be incompatible with the capacity and use of existing local and regional community development services and facilities. In addition, the establishment of the District will provide a perpetual entity capable of making reasonable provisions for the operation and maintenance of the District services and facilities.

e. The area to be served by the proposed District is amenable to separate special-district government.

WHEREFORE, Petitioner respectfully requests the City Commission of the City of Ormond Beach fto:

a. schedule a public hearing in accordance with the requirements of Section 190.005(2)(b), *Florida Statutes*;

b. grant the petition and adopt an ordinance establishing the District pursuant to Chapter 190, *Florida Statutes*;

c. consent to the District's exercise of certain additional powers to finance, fund, plan, establish, acquire, construct, reconstruct, enlarge or extend, equip, operate, and maintain systems and facilities for parks and facilities for indoor and outdoor recreational, cultural, and educational uses, and for security, including but not limited to, guardhouses, fences and gates, electronic intrusion-detection systems, and patrol cars, each as authorized and described by Sections 190.012(2)(a) and (d), *Florida Statutes*, and

c. grant such other relief as appropriate.

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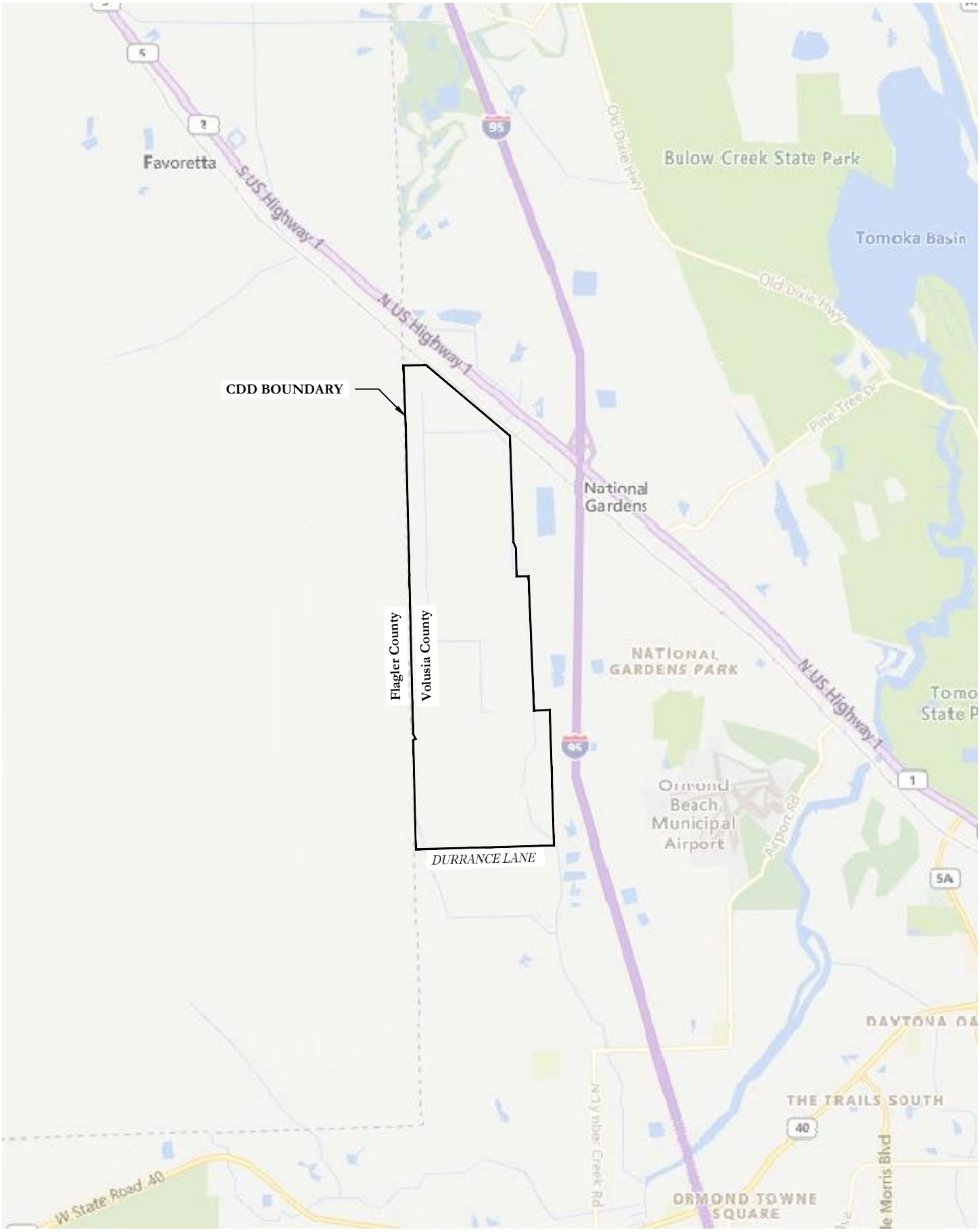
RESPECTFULLY SUBMITTED, this 23rd day of May, 2024.

KUTAK ROCK LLP



Jonathan T. Johnson
Jonathan.Johnson@kutakrock.com
Florida Bar No. 986460
107 West College Avenue
Tallahassee, Florida 32301
(850) 692-7300 (telephone)
(850) 692-7319 (facsimile)
Attorney for Petitioner

EXHIBIT 1



Location Map

Ormond Crossings West CDD

2,500 0 2,500 5,000

SCALE IN FEET

Exhibit 1

April 23, 2024

P & B Job No.: 23-091

2602 E. Livingston St.
Orlando, Florida 32803- 407.487.2594

POULOS & BENNETT

www.poulosandbennett.com
Certificate of Authorization No. 28567

Z:\2023\23-091 ORMOND CROSSING\23-091B ORMOND CROSSINGS WEST LLC\CAD\CDD\RESIDENTIAL CDD\23091-RESIDENTIAL CDD-EXHIBIT 1-LOCATION MAP

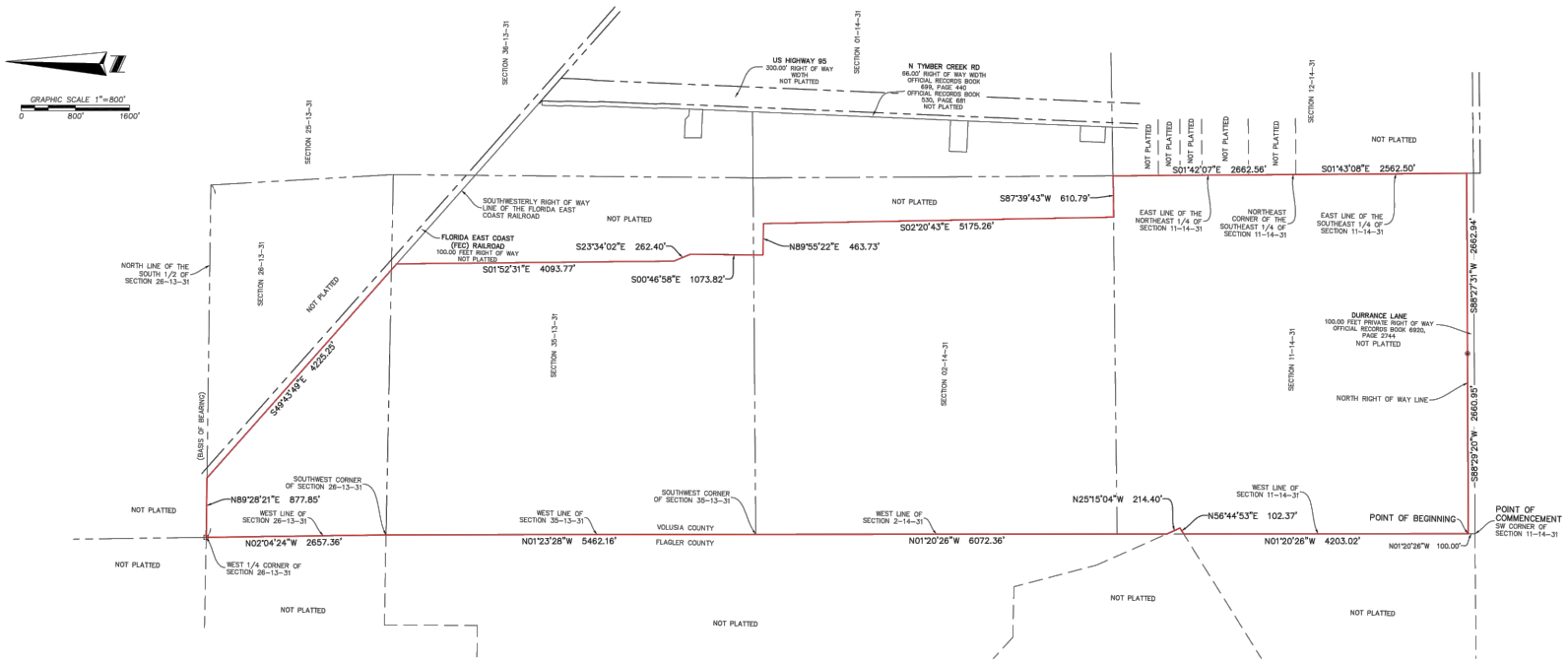
EXHIBIT 2

LEGAL DESCRIPTION:

A PARCEL OF LAND LYING IN SECTIONS 26 AND 35, TOWNSHIP 13 SOUTH, RANGE 31 EAST, AND SECTIONS 2 AND 11, TOWNSHIP 14 SOUTH, RANGE 31 EAST, VOLUSIA COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE SOUTHWEST CORNER OF SAID SECTION 11; THENCE RUN NORTH 01°20'26" WEST ALONG THE WEST LINE OF SAID SECTION 11 FOR A DISTANCE OF 100.00 FEET TO A POINT LYING ON THE NORTH RIGHT OF WAY LINE OF DURRANCE LANE, ACCORDING TO OFFICIAL RECORDS BOOK 6920, PAGE 2744 OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA AND THE POINT OF BEGINNING; THENCE CONTINUE NORTH 01°20'26" WEST ALONG SAID WEST LINE FOR A DISTANCE OF 4203.02 FEET; THENCE DEPARTING SAID WEST LINE RUN NORTH 56°44'53" EAST FOR A DISTANCE OF 102.37 FEET; THENCE RUN NORTH 25°15'04" WEST FOR A DISTANCE OF 214.40 FEET TO THE WEST LINE OF SAID SECTION 11; THENCE RUN NORTH 01°20'26" WEST ALONG SAID WEST LINE AND THE WEST LINE OF SAID SECTION 2 FOR A DISTANCE OF 6072.36 FEET TO THE SOUTHWEST CORNER OF SAID SECTION 35; THENCE RUN NORTH 01°23'28" WEST ALONG THE WEST LINE OF SAID SECTION 35 FOR A DISTANCE OF 5462.16 FEET TO THE SOUTHWEST CORNER OF SAID SECTION 26; THENCE RUN NORTH 02°04'24" WEST ALONG THE WEST LINE OF SAID SECTION 26 FOR A DISTANCE OF 2657.36 FEET TO THE WEST 1/4 CORNER OF SAID SECTION 26; THENCE RUN NORTH 89°28'21" EAST ALONG THE NORTH LINE OF THE SOUTH 1/2 OF SAID SECTION 26 FOR A DISTANCE OF 877.85 FEET TO THE SOUTHWESTERLY RIGHT OF WAY LINE OF THE FLORIDA EAST COAST RAILROAD; THENCE RUN SOUTH 49°43'49" EAST ALONG SAID SOUTHWESTERLY RIGHT OF WAY LINE FOR A DISTANCE OF 4225.25 FEET; THENCE DEPARTING SAID SOUTHWESTERLY RIGHT OF WAY LINE RUN SOUTH 01°52'31" EAST FOR A DISTANCE OF 4093.77 FEET; THENCE RUN SOUTH 23°34'02" EAST FOR A DISTANCE OF 262.40 FEET; THENCE RUN SOUTH 00°46'58" EAST FOR A DISTANCE OF 1073.82 FEET; THENCE RUN NORTH 89°55'22" EAST FOR A DISTANCE OF 463.73 FEET; THENCE RUN SOUTH 02°20'43" EAST FOR A DISTANCE OF 5175.26 FEET; THENCE RUN NORTH 87°39'43" EAST FOR A DISTANCE OF 610.79 FEET TO THE EAST LINE OF THE NORTHEAST 1/4 OF SAID SECTION 11; THENCE RUN SOUTH 01°42'07" EAST ALONG SAID EAST LINE FOR A DISTANCE OF 2662.56 FEET TO THE NORTHEAST CORNER OF THE SOUTHEAST 1/4 OF SAID SECTION 11; THENCE RUN SOUTH 01°43'08" EAST ALONG THE EAST LINE OF SAID SOUTHEAST 1/4 FOR A DISTANCE OF 2562.50 FEET TO THE NORTH RIGHT OF WAY LINE OF SAID DURRANCE LANE; THENCE RUN ALONG SAID NORTH RIGHT OF WAY LINE THE FOLLOWING BEARINGS AND DISTANCES: SOUTH 88°27'31" WEST FOR A DISTANCE OF 2662.94 FEET; THENCE RUN SOUTH 88°29'20" WEST FOR A DISTANCE OF 2660.95 FEET TO THE POINT OF BEGINNING.

CONTAINING: 1847.32 ACRES, MORE OR LESS



SURVEYOR'S NOTES:

1. THIS IS NOT A BOUNDARY SURVEY
2. THIS SKETCH IS NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER OR AN ELECTRONIC SIGNATURE THAT IS IN COMPLIANCE WITH FLORIDA ADMINISTRATIVE CODE 5J-17.062.
3. BEARINGS SHOWN HEREON ARE BASED ON THE NORTH LINE OF THE SOUTH 1/2 OF SECTION 26-13-31 AS BEING N89°28'21"E. (AN ASSUMED BEARING FOR ANGULAR DESIGNATION ONLY)
4. THIS LEGAL DESCRIPTION WAS PREPARED WITHOUT THE BENEFIT OF TITLE.
5. DELINEATION OF THE LANDS SHOWN HEREON ARE AS PER THE CLIENT'S INSTRUCTIONS.
6. THE RECORDING INFORMATION SHOWN HEREON WAS OBTAINED FROM THE VOLUSIA COUNTY PUBLIC ACCESS WEBSITE.

LEGAL DESCRIPTION:

A PARCEL OF LAND LYING IN SECTIONS 26 AND 35, TOWNSHIP 13 SOUTH, RANGE 31 EAST, AND SECTIONS 2 AND 11, TOWNSHIP 14 SOUTH, RANGE 31 EAST, VOLUSIA COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

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CONTAINING: 1847.32 ACRES, MORE OR LESS

District Boundary Map & Legal Description

Ormond Crossings West CDD

April 23, 2024
P & B Job No.: 23-091

2602 E. Livingston St.
Orlando, Florida 32803- 407.487.2594

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Exhibit 2

Z:\2023\23-091 ORMOND CROSSING\23-091B ORMOND CROSSINGS WEST LLC\CAD\CDD\RESIDENTIAL CDD\23091-RESIDENTIAL CDD-EXHIBIT 2-BM & LD

EXHIBIT 3

CONSENT AND JOINDER TO ESTABLISHMENT OF A COMMUNITY DEVELOPMENT DISTRICT

The undersigned is the owner of certain lands more fully described in **Exhibit A** attached hereto and made a part hereof ("Property").

The undersigned understands and acknowledges that Petitioner intends to submit a petition to establish a community development district in accordance with the provisions of Chapter 190 of the Florida Statutes.

As the owner of lands which are intended to constitute all or a portion of the community development district, the undersigned understands and acknowledges that pursuant to the provisions of Section 190.005, *Florida Statutes*, the Petitioner is required to include the written consent to the establishment of the community development district of one hundred percent (100%) of the owners of the lands to be included within the community development district.

The undersigned hereby consents to the establishment of the community development district which will include the Property within the lands to be a part of the community development district and agrees to further execute any documentation necessary or convenient to evidence this consent and joinder during the application process for the establishment of the community development district.

The undersigned acknowledges that the consent will remain in full force and effect until the community development district is established or a written revocation is issued, which ever shall first occur. The undersigned further agrees that it will provide to the next purchaser or successor in interest of all or any portion of the Property a copy of this consent form and obtain, if requested by Petitioner, a consent to establishment of the community development district in substantially this form.

The undersigned hereby represents and warrants that it has taken all actions and obtained all consents necessary to duly authorize the execution of this consent and joinder by the person executing this instrument.

[*signatures on following page*]

Executed this 1 day of May, 2024.

WITNESSES:

Name: Joanne T Dee

Name: Conca M Vugi

ORMOND CROSSING WEST, LLC, a Florida limited liability company

Name: Bradford Kline

Title: Manager

The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online notarization this 1 day of May, 2024, by Bradford Kline, as Manager of _____, who is ☐ personally known to me or ☑ produced FDL K450077542270 as identification.

(Official Notary Signature & Seal)

Print Name: Joanne T Dee

Notary Public, State of Florida

JOANNE T. DEE
MY COMMISSION # HH 190356
EXPIRES: December 1, 2025
Bonded Thru Notary Public Underwriters

Exhibit A: Property Description

Exhibit A

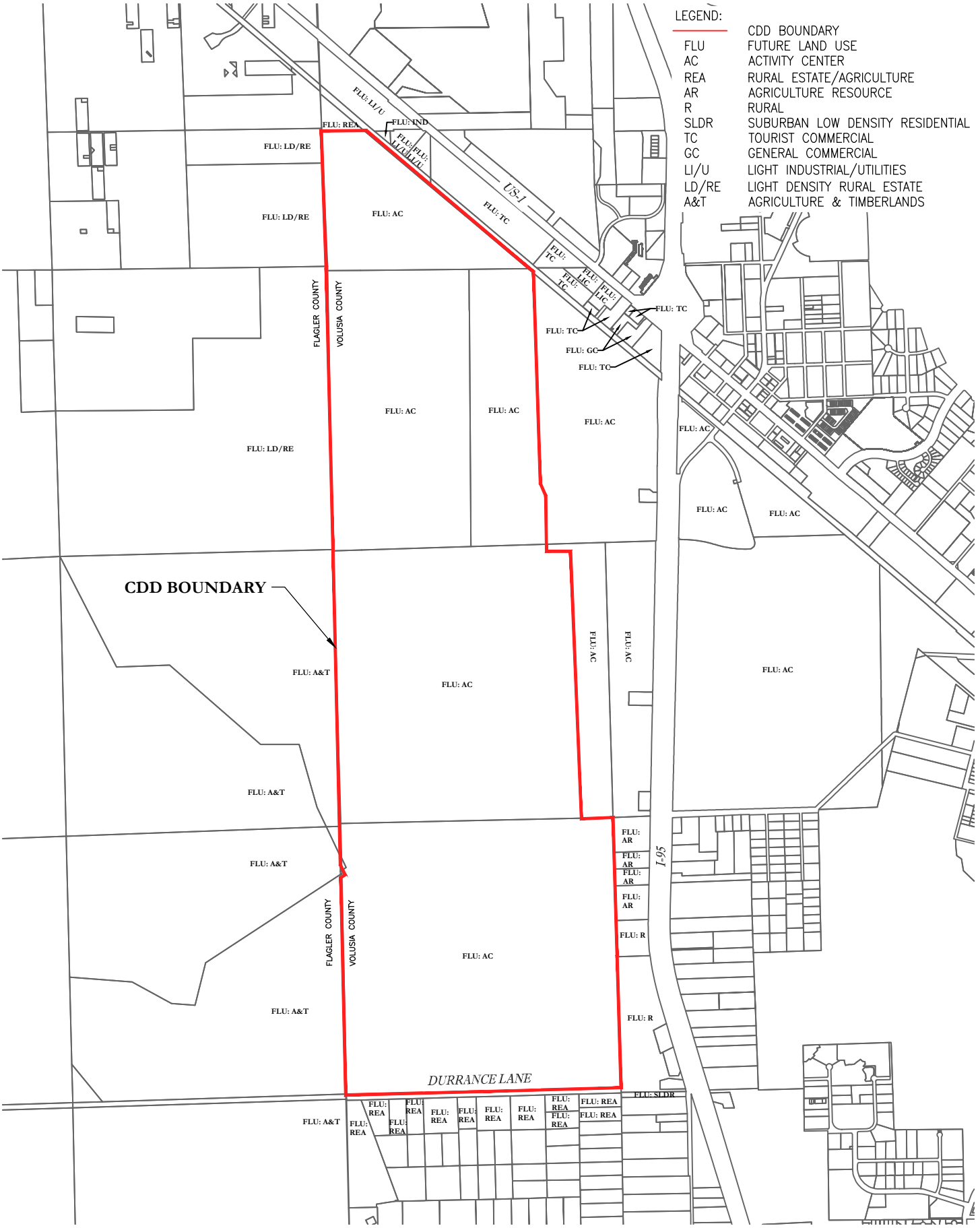
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CONTAINING: 1847.32 ACRES, MORE OR LESS

EXHIBIT 4



Future Land Use Map

Ormond Crossings West CDD

1,250 0 1,250 2,500

SCALE IN FEET

April 23, 2024

P & B Job No.: 23-091

2602 E. Livingston St.
Orlando, Florida 32803- 407.487.2594

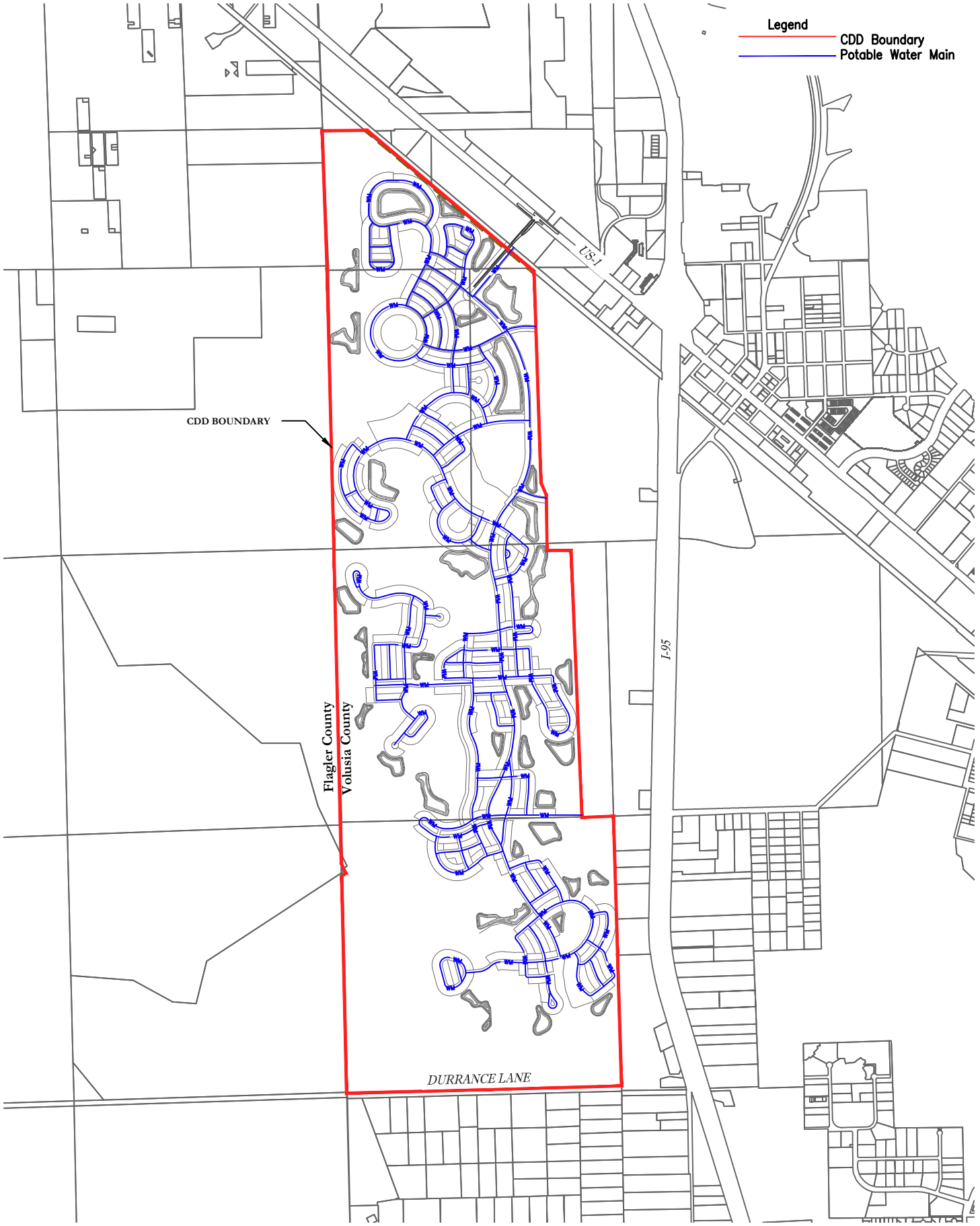
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Exhibit 4

Z:\2023\23-091 ORMOND CROSSING\23-091B ORMOND CROSSINGS WEST LLC\CAD\CDD\RESIDENTIAL CDD\23091-RESIDENTIAL CDD-EXHIBIT 4-FUTURE LAND USE MAP

EXHIBIT 5



Potable Water Map

Ormond Crossings West CDD

1,250 0 1,250 2,500

SCALE IN FEET

Exhibit 5A

April 23, 2024

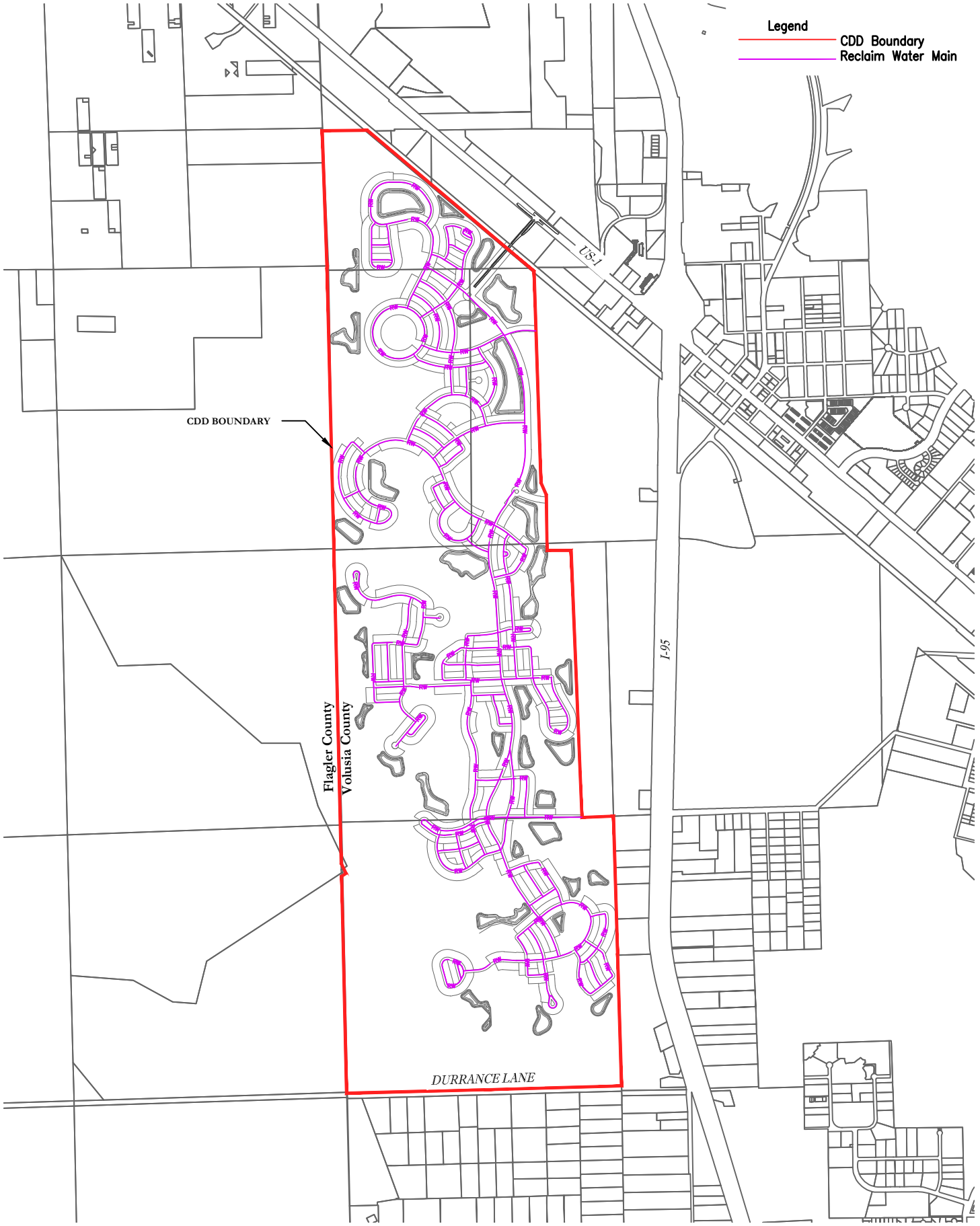
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Reclaim Water System Map

Ormond Crossings West CDD

N

1,250 0 1,250 2,500

SCALE IN FEET

Exhibit 5B

April 23, 2024

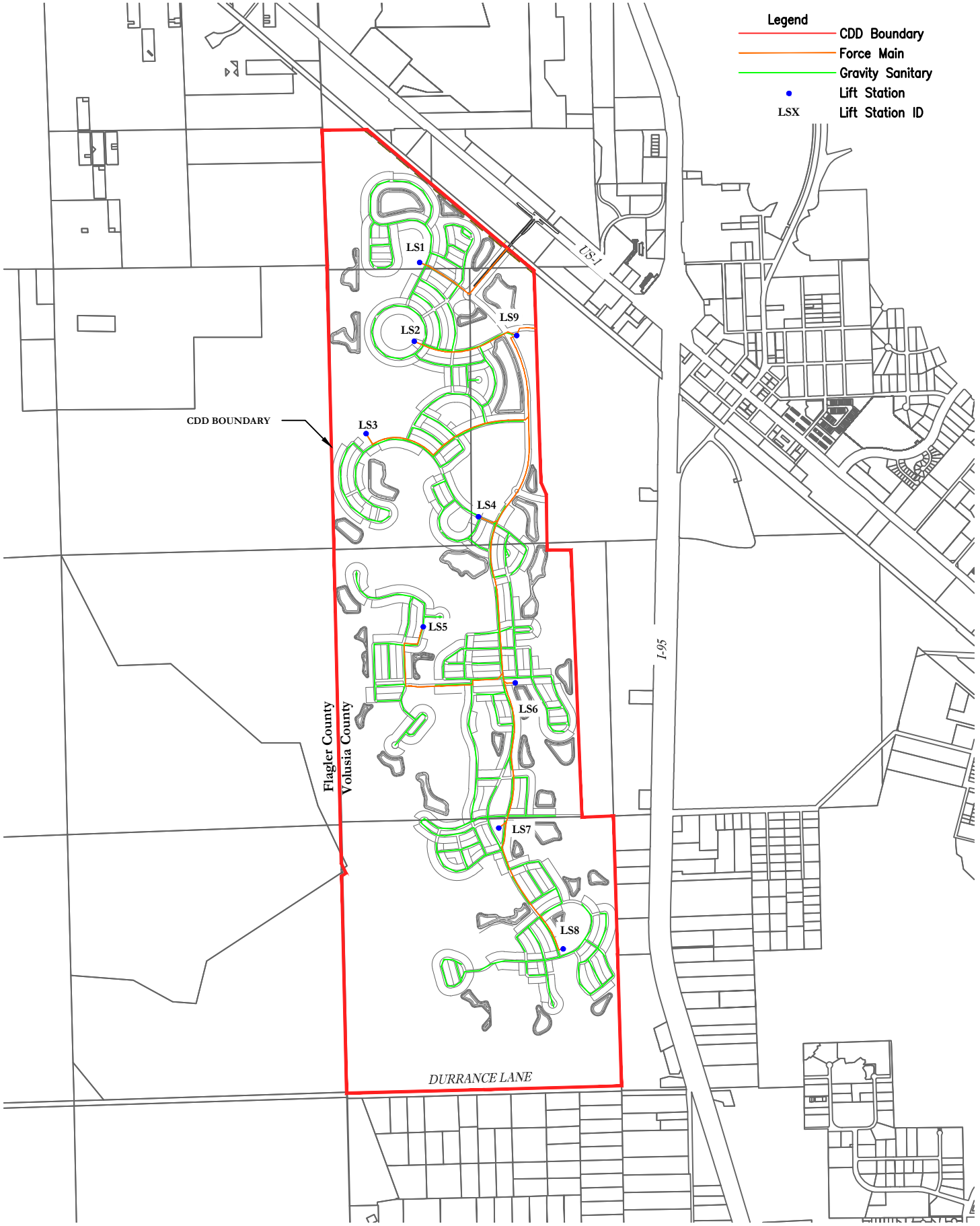
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Wastewater System Map

Ormond Crossings West CDD

1,250 0 1,250 2,500

SCALE IN FEET

April 23, 2024

P & B Job No.: 23-091

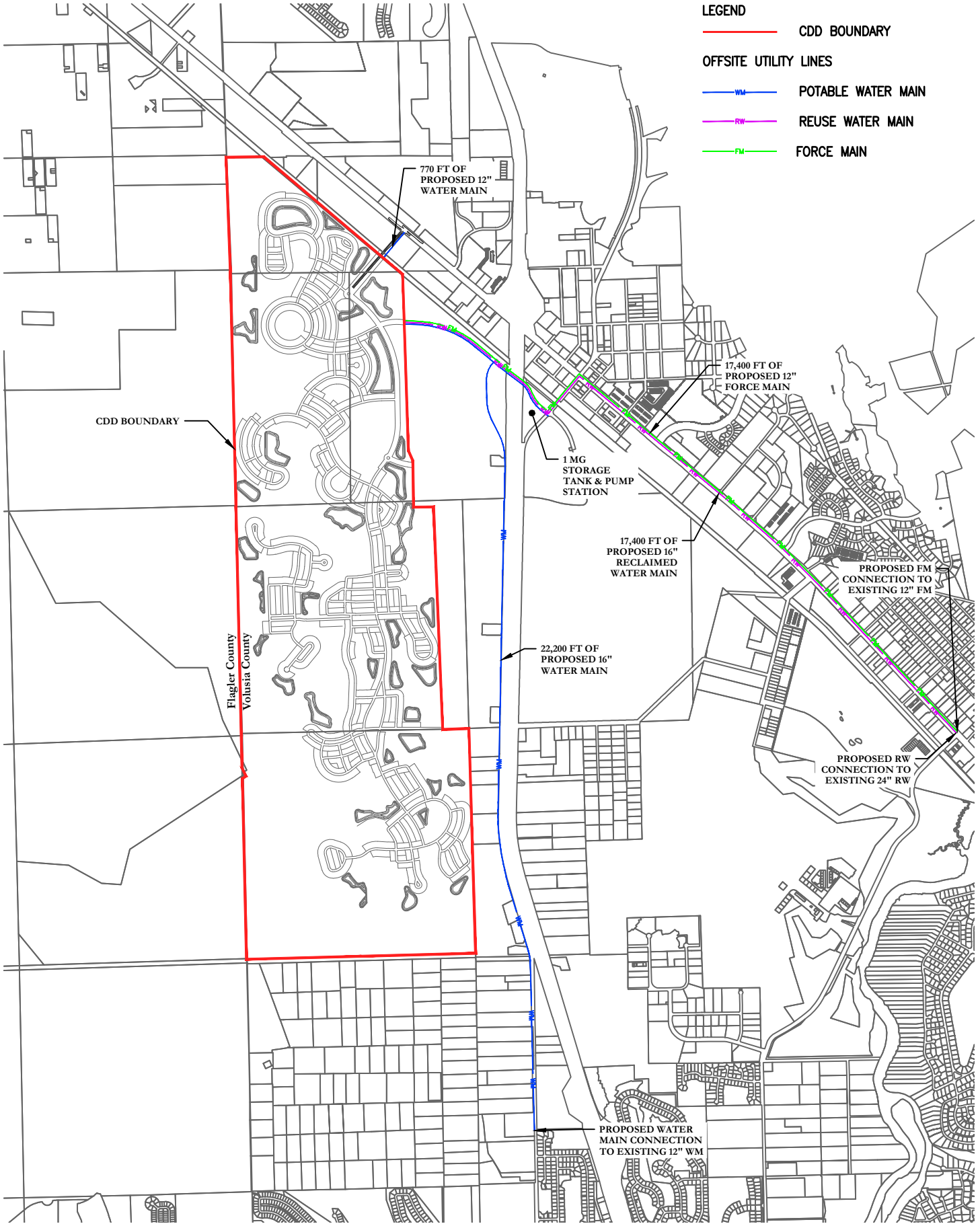
2602 E. Livingston St.
Orlando, Florida 32803- 407.487.2594

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Exhibit 5C

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Offsite Utilities Map

Ormond Crossings West CDD

N

1,500 0 1,500 3,000

SCALE IN FEET

Exhibit 5D

April 23, 2024

P & B Job No.: 23-091

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EXHIBIT 6

Ormond Crossings West CDD – Proposed Facilities

Infrastructure Ownership & Maintenance

Improvement Category	Ownership	Operation & Maintenance
Water Distribution System	City	City
Reclaimed Water System	City	City
Sanitary Sewer System	City	City
Offsite Utilities (Water, Reclaimed, & Sanitary Sewer)	City	City
Stormwater Management System	CDD	CDD
Roadways Improvements* & Sidewalk	City/County	City/County
Earthwork	CDD	CDD
US-1 Turn Lane Improvements & Signalization	FDOT	FDOT
FEC Railroad Flyover/Bridge	County	County
1 MG Storage Tank & Pump Station	City	City
Public Spaces/Landscape/Hardscape	CDD	CDD
Environmental/Mitigation	CDD	CDD

*The installation and maintenance of landscaping in the medians and the lateral rights of way will be provided by the CDD.

EXHIBIT 7

Ormond Crossings West CDD

Estimated Cost and Timeline

Improvement	**Total**
Water Distribution System	$12,364,950.00
Reclaimed Water System	$6,604,500.00
Sanitary Sewer System	$21,904,650.00
Offsite Utilities (Water, Reclaimed, & Sanitary Sewer)	$14,034,505.00
Stormwater Management System	$32,619,600.00
Roadways Improvements & Sidewalk	$27,088,650.00
Earthwork	$20,400,000.00
US-1 Turn Lane Improvements & Signalization	$600,000.00
FEC Railroad Flyover/Bridge	$5,000,000.00
1 MG Storage Tank & Pump Station	$5,000,000.00
Public Spaces/Landscape/Hardscape	$15,421,000.00
Environmental/Mitigation	$1,000,000.00
Soft Cost & Fees	$7,701,300.00
Subtotal	$169,739,155.00
Contingency (10%)	$16,973,915.50
Total	**$186,713,070.50**

Construction Timeline Estimate: 2025-2035

EXHIBIT 8

Ormond Crossings West
COMMUNITY DEVELOPMENT DISTRICT

Statement
of
Estimated Regulatory Costs

May 1, 2024

Provided by

Wrathell, Hunt and Associates, LLC
2300 Glades Road, Suite 410W
Boca Raton, FL 33431
Phone: 561-571-0010
Fax: 561-571-0013
Website: www.whhassociates.com

STATEMENT OF ESTIMATED REGULATORY COSTS

1.0 Introduction

1.1 Purpose and Scope

This Statement of Estimated Regulatory Costs ("SERC") supports the petition to establish the Ormond Crossings West Community Development District ("District") in accordance with the "Uniform Community Development District Act of 1980," Chapter 190, Florida Statutes (the "Act"). The proposed District will comprise approximately 1,847.32 +/- acres of land located within the City of Ormond Beach, Volusia County, Florida (the "City") and is projected to contain approximately 2,550 residential dwelling units, which will make up the Ormond Crossings West development ("Project"). The limitations on the scope of this SERC are explicitly set forth in Section 190.002(2)(d), Florida Statutes ("F.S.") (governing the District establishment) as follows:

> "*That the process of establishing such a district pursuant to uniform general law be fair and based only on factors material to managing and financing the service delivery function of the district, so that any matter concerning permitting or planning of the development is not material or relevant* (emphasis added)."

1.2 Overview of the Ormond Crossings West Community Development District

The District is designed to provide public infrastructure, services, and facilities, along with operation and maintenance of the same, to a master planned residential development currently anticipated to contain a total of approximately 2,550 residential dwelling units. Tables 1 and 2 under Section 5.0 detail the improvements and ownership/maintenance responsibilities the proposed District is anticipated to construct, operate and maintain.

A community development district ("CDD") is an independent unit of special purpose local government authorized by the Act to plan, finance, construct, operate and maintain community-wide infrastructure in planned community developments. CDDs provide a "solution to the state's planning, management and financing needs for delivery of capital infrastructure in order to service projected growth without overburdening other governments and their taxpayers." Section 190.002(1)(a), F.S.

A CDD is not a substitute for the local, general purpose government unit, i.e., the city or county in which the CDD lies. A CDD does not have the permitting, zoning or policing powers possessed by general purpose governments. A CDD is an alternative means of financing, constructing, operating and maintaining public infrastructure for developments, such as Ormond Crossings West.

1.3 Requirements for Statement of Estimated Regulatory Costs

Section 120.541(2), F.S., defines the elements a statement of estimated regulatory costs must contain:

(a) An economic analysis showing whether the rule directly or indirectly:
1. Is likely to have an adverse impact on economic growth, private sector job creation or employment, or private sector investment in excess of $1 million in the aggregate within 5 years after the

implementation of the rule;
2. Is likely to have an adverse impact on business competitiveness, including the ability of persons doing business in the state to compete with persons doing business in other states or domestic markets, productivity, or innovation in excess of $1 million in the aggregate within 5 years after the implementation of the rule; or
3. Is likely to increase regulatory costs, including any transactional costs, in excess of $1 million in the aggregate within 5 years after the implementation of the rule.

(b) A good faith estimate of the number of individuals and entities likely to be required to comply with the rule, together with a general description of the types of individuals likely to be affected by the rule.

(c) A good faith estimate of the cost to the agency, and to any other state and local government entities, of implementing and enforcing the proposed rule, and any anticipated effect on state or local revenues.

(d) A good faith estimate of the transactional costs likely to be incurred by individuals and entities, including local government entities, required to comply with the requirements of the rule. As used in this section, "transactional costs" are direct costs that are readily ascertainable based upon standard business practices, and include filing fees, the cost of obtaining a license, the cost of equipment required to be installed or used or procedures required to be employed in complying with the rule, additional operating costs incurred, the cost of monitoring and reporting, and any other costs necessary to comply with the rule.

(e) An analysis of the impact on small businesses as defined by s. 288.703, and an analysis of the impact on small counties and small cities as defined in s. 120.52. The impact analysis for small businesses must include the basis for the agency's decision not to implement alternatives that would reduce adverse impacts on small businesses. (The City of Ormond Beach, according to Census 2020, has a population of 43,080; therefore, it is not defined as a small city for the purposes of this requirement.)

(f) Any additional information that the agency determines may be useful.

(g) In the statement or revised statement, whichever applies, a description of any regulatory alternatives submitted under paragraph (1)(a) and a statement adopting the alternative or a statement of the reasons for rejecting the alternative in favor of the proposed rule.

Note: the references to "rule" in the statutory requirements for the Statement of Estimated Regulatory Costs also apply to an "ordinance" under section 190.005(2)(a), F.S.

2.0 An economic analysis showing whether the ordinance directly or indirectly:

1. Is likely to have an adverse impact on economic growth, private sector job creation or employment, or private sector investment in excess of $1 million in the aggregate within 5 years after the implementation of the ordinance;

2. Is likely to have an adverse impact on business competitiveness, including the ability of persons doing business in the state to compete with persons doing business in other states or domestic markets, productivity, or innovation in excess of $1 million in the aggregate within 5 years after the implementation of the ordinance; or

3. Is likely to increase regulatory costs, including any transactional costs, in excess of $1 million in the aggregate within 5 years after the implementation of the ordinance.

The ordinance establishing the District is not anticipated to have any direct or indirect adverse impact on economic growth, private sector job creation or employment, private sector investment, business competitiveness, ability of persons doing business in the state to compete with persons doing business in other states or domestic markets, productivity, or innovation. Any increases in regulatory costs, principally the anticipated increases in transactional costs as a result of imposition of special assessments by the District will be the direct result of facilities and services provided by the District to the landowners within the District. However, as property ownership in the District is voluntary and all additional costs will be disclosed to prospective buyers prior to sale, such increases should be considered voluntary, self-imposed and offset by benefits received from the infrastructure and services provided by the District.

2.1 Impact on economic growth, private sector job creation or employment, or private sector investment in excess of $1 million in the aggregate within 5 years after the implementation of the ordinance.

The purpose for establishment of the District is to provide public facilities and services to support the development of a new, master planned residential development. The development of the approximately 1,847.32 +/- acres anticipated to be within the District will promote local economic activity, create local value, lead to local private sector investment and is likely to result in local private sector employment and/or local job creation.

Establishment of the District will allow a systematic method to plan, fund, implement, operate and maintain, for the benefit of the landowners within the District, various public facilities and services. Such facilities and services, as further described in Section 5, will allow for the development of the land within the District. The provision of District's infrastructure and the subsequent development of land will generate private economic activity, economic growth, investment and employment, and job creation. The District intends to use proceeds of indebtedness to fund construction of public infrastructure, which will be constructed by private firms, and once constructed, is likely to use private firms to operate and maintain such infrastructure and provide services to the landowners and residents of the District. The private developer of the land in the District will use its private funds to conduct the private land development and construction of an anticipated approximately 2,550 residential dwelling units, the construction, sale, and continued use/maintenance of which will involve private firms. While similar economic growth, private sector job creation or employment, or private sector investment could be achieved in absence of the District by the private sector alone, the fact that the establishment of the District is initiated by the private developer means that the private developer considers the establishment and continued operation of the District as beneficial to the process of land development and the future economic activity taking place within the District, which in turn will lead directly or indirectly to economic growth, likely private sector job growth and/or support private

sector employment, and private sector investments.

2.2 Impact on business competitiveness, including the ability of persons doing business in the state to compete with persons doing business in other states or domestic markets, productivity, or innovation in excess of $1 million in the aggregate within 5 years after the implementation of the ordinance.

When assessing the question of whether the establishment of the District is likely to directly or indirectly have an adverse impact on business competitiveness, including the ability of persons doing business in the state to compete with persons doing business in other states or domestic markets, productivity, or innovation, one has to compare these factors in the presence and in the absence of the District in the development. When the question is phrased in this manner, it can be surmised that the establishment of the District is likely to not have a direct or indirect adverse impact on business competitiveness, productivity, or innovation versus that same development without the District. Similar to a purely private solution, District contracts will be bid competitively as to achieve the lowest cost/best value for the particular infrastructure or services desired by the landowners, which will ensure that contractors wishing to bid for such contracts will have to demonstrate to the District the most optimal mix of cost, productivity and innovation. Additionally, the establishment of the District for the development is not likely to cause the award of the contracts to favor non-local providers any more than if there was no District. The District, in its purchasing decisions, will not vary from the same principles of cost, productivity and innovation that guide private enterprise.

2.3 Likelihood of an increase in regulatory costs, including any transactional costs, in excess of $1 million in the aggregate within 5 years after the implementation of the ordinance.

The establishment of the District will not increase any regulatory costs of the State by virtue that the District will be one of many already existing similar districts within the State. As described in more detail in Section 4, the proposed District will pay a one-time filing fee to the City to offset any expenses that the City may incur in holding a local public hearing on the petition. Similarly, the proposed District will pay annually the required Special District Filing Fee, which fee is meant to offset any State costs related to its oversight of all special districts in the State.

The establishment of the District will, however, directly increase regulatory costs to the landowners within the District. Such increases in regulatory costs, principally the anticipated increases in transactional costs as a result of likely imposition of special assessments and use fees by the District, will be the direct result of facilities and services provided by the District to the landowners within the District. However, as property ownership in the District is completely voluntary, all current property owners must consent to the establishment of the District and all initial prospective buyers will have such additional transaction costs disclosed to them prior to sale, as required by State law. Such costs, however, should be considered voluntary, self-imposed, and as a tradeoff for the enhanced service and facilities provided by the District.

The District will incur overall operational costs related to services for infrastructure maintenance, landscaping, amenity operation and similar items. In the initial stages of development, the costs will likely be minimized. These operating costs will be funded by the landowners through direct funding agreements or special assessments levied by the District. Similarly, the District may incur costs associated with the issuance and repayment of special assessment revenue bonds. While these costs in the aggregate may approach the stated threshold over a five-year period, this would not be unusual for a Project of this nature and the infrastructure and services proposed to be provided by the District will

be needed to serve the Project regardless of the existence of the District. Thus, the District-related costs are not additional development costs. Due to the relatively low cost of financing available to CDDs, due to the tax-exempt nature of CDD debt, certain improvements can be provided more efficiently by the District than by alternative entities. Furthermore, it is important to remember that such costs would be funded through special assessments paid by landowners within the District, and would not be a burden on the taxpayers outside the District nor can the District debt be a debt of the City or the State.

3.0 A good faith estimate of the number of individuals and entities likely to be required to comply with the ordinance, together with a general description of the types of individuals likely to be affected by the ordinance.

The individuals and entities likely to be required to comply with the ordinance or affected by the proposed action (i.e., adoption of the ordinance) can be categorized, as follows: 1) The State of Florida and its residents, 2) The City of Ormond Beach and its residents, 3) current property owners, and 4) future property owners.

a. The State of Florida

The State of Florida and its residents and general population will not incur any compliance costs related to the establishment and on-going administration of the District, and will only be affected to the extent that the State incurs those nominal administrative costs outlined herein. The cost of any additional administrative services provided by the State as a result of this project will be incurred whether the infrastructure is financed through a CDD or any alternative financing method.

b. The City of Ormond Beach, Florida

The City and its residents not residing within the boundaries of the District will not incur any compliance costs related to the establishment and on-going administration of the District other than any one-time administrative costs outlined herein, which will be offset by the filing fee submitted to the City. Once the District is established, these residents will not be affected by adoption of the ordinance. The cost of any additional administrative services provided by the City as a result of this development will be incurred whether the infrastructure is financed through the District or any alternative financing method.

c. Current Property Owners

The current property owners of the lands within the proposed District boundaries will be affected to the extent that the District allocates debt for the construction of infrastructure and undertakes operation and maintenance responsibility for that infrastructure.

d. Future Property Owners

The future property owners are those who will own property in the proposed District. These future property owners will be affected to the extent that the District allocates debt for the construction of infrastructure and undertakes operation and maintenance responsibility for that infrastructure.

The proposed District will serve land that comprises an approximately 1,847.32 +/- acre master planned residential development currently anticipated to contain a total of approximately 2,550

residential dwelling units, although the development plan can change. Assuming an average density of 3.5 persons per residential dwelling unit, the estimated residential population of the proposed District at build out would be approximately 8,925 +/- and all of these residents as well as the landowners within the District will be affected by the ordinance. The City, the proposed District and certain state agencies will also be affected by or required to comply with the ordinance as more fully discussed hereafter.

4.0 A good faith estimate of the cost to the agency, and to any other state and local government entities, of implementing and enforcing the proposed ordinance, and any anticipated effect on state or local revenues.

The City is establishing the District by ordinance in accordance with the Act and, therefore, there is no anticipated effect on state or local revenues.

4.1 Costs to Governmental Agencies of Implementing and Enforcing Ordinance

Because the result of adopting the ordinance is the establishment of an independent local special purpose government, there will be no significant enforcing responsibilities of any other government entity, but there will be various implementing responsibilities which are identified with their costs herein.

State Governmental Entities

The cost to state entities to review or enforce the proposed ordinance will be very modest. The District comprises less than 2,500 acres and is located within the boundaries of The City of Ormond Beach. Therefore, the City (and not the Florida Land and Water Adjudicatory Commission) will review and act upon the Petition to establish the District, in accordance with Section 190.005(2), F.S. There are minimal additional ongoing costs to various state entities to implement and enforce the proposed ordinance. The costs to various state entities to implement and enforce the proposed ordinance relate strictly to the receipt and processing of various reports that the District is required to file with the State and its various entities. Appendix A lists the reporting requirements. The costs to those state agencies that will receive and process the District's reports are minimal because the District is only one of many governmental units that are required to submit the various reports. Therefore, the marginal cost of processing one additional set of reports is inconsequential. Additionally, pursuant to section 189.064, F.S., the District must pay an annual fee to the State of Florida Department of Economic Opportunity which offsets such costs.

City of Ormond Beach, Florida

The proposed land for the District is located within The City of Ormond Beach, Florida and consists of less than 2,500 acres. The City and its staff may process, analyze, conduct a public hearing, and vote upon the petition to establish the District. These activities will absorb some resources; however, these costs incurred by the City will be modest for a number of reasons. First, review of the petition to establish the District does not include analysis of the project itself. Second, the petition itself provides most, if not all, of the information needed for a staff review. Third, the City already possesses the staff needed to conduct the review without the need for new staff. Fourth, there is no capital required to review the petition. Fifth, the potential costs are offset by a filing fee included with the petition to offset any expenses the City may incur in the processing of this petition. Finally, the City already processes similar petitions, though for entirely different subjects, for land uses and zoning changes that are far more complex than the petition to establish a community development district.

The annual costs to the City, because of the establishment of the District, are also very small. The District is an independent unit of local government. The only annual costs the City faces are the minimal costs of receiving and reviewing the reports that the District is required to provide to the City, or any monitoring expenses the City may incur if it establishes a monitoring program for governmental entities.

4.2 Impact on State and Local Revenues

Adoption of the proposed ordinance will have no negative impact on state or local revenues. A CDD is an independent unit of local government. It is designed to provide infrastructure facilities and services to serve the development project and it has its own sources of revenue. No state or local subsidies are required or expected.

Any non-ad valorem assessments levied by the District will not count against any millage caps imposed on other taxing authorities providing services to the lands within the District. It is also important to note that any debt obligations the District may incur are not debts of the State of Florida or any other unit of local government, including the City. By Florida law, debts of the District are strictly its own responsibility.

5.0 A good faith estimate of the transactional costs likely to be incurred by individuals and entities, including local government entities, required to comply with the requirements of the ordinance.

Table 1 provides an outline of the various facilities and services the proposed District may provide. Financing for these facilities is projected to be provided by the District.

Table 2 illustrates the estimated costs of construction of the capital facilities, outlined in Table 1. Total costs of construction for those facilities that may be provided are estimated to be approximately $186,713,070.50. The District may levy non-ad valorem special assessments (by a variety of names) and may issue special assessment bonds to fund the costs of these facilities. These bonds would be repaid through non-ad valorem special assessments levied on all developable properties in the District that may benefit from the District's infrastructure program as outlined in Table 2.

Prospective future landowners in the proposed District may be required to pay non-ad valorem special assessments levied by the District to provide for facilities and secure any debt incurred through bond issuance. In addition to the levy of non-ad valorem special assessments which may be used for debt service, the District may also levy a non-ad valorem assessment to fund the operations and maintenance of the District and its facilities and services. However, purchasing a property within the District or locating in the District by new residents is completely voluntary, so, ultimately, all landowners and residents of the affected property choose to accept the non-ad valorem assessments as a tradeoff for the services and facilities that the District will provide. In addition, state law requires all assessments levied by the District to be disclosed by the initial seller to all prospective purchasers of property within the District.

Table 1

ORMOND CROSSINGS WEST COMMUNITY DEVELOPMENT DISTRICT
Proposed Facilities and Services

FACILITY	FUNDED BY	OWNED BY	MAINTAINED BY
Water Distribution System	CDD	City	City
Reclaimed Water System	CDD	City	City
Sanitary Sewer System	CDD	City	City
Offsite Utilities (Water, Reclaimed, & Sanitary Sewer)	CDD	City	City
Stormwater Management System	CDD	CDD	CDD
Roadways Improvements* & Sidewalk	CDD	City/ County	City/ County
Earthwork	CDD	CDD	CDD
US-1 Turn Lane Improvements & Signalization	CDD	FDOT	FDOT
FEC Railroad Flyover/ Bridge	CDD	County	County
1 MG Storage Tank & Pump Station	CDD	City	City
Public Space/ Landscape/ Hardscape	CDD	CDD	CDD
Environmental/ Mitigation	CDD	CDD	CDD

* The installation and maintenance of landscaping in the medians and the lateral rights of way will be provided by the CDD.

A CDD provides the property owners with an alternative mechanism of providing public services; however, special assessments and other impositions levied by the District and collected by law represent the transactional costs incurred by landowners as a result of the establishment of the District. Such transactional costs should be considered in terms of costs likely to be incurred under alternative public and private mechanisms of service provision, such as other independent special districts, the City or its dependent districts, or city management but financing with municipal service benefit units and municipal service taxing units, or private entities, all of which can be grouped into three major categories: public district, public other, and private.

Table 2

ORMOND CROSSINGS WEST COMMUNITY DEVELOPMENT DISTRICT
Estimated Costs of Construction

CATEGORY	COST
Water Distribution System	$12,364,950.00
Reclaimed Water System	$6,604,500.00
Sanitary Sewer System	$21,904,650.00
Offsite Utilities (Water, Reclaimed, & Sanitary Sewer)	$14,034,505.00
Stormwater Management System	$32,619,600.00
Roadways Improvements & Sidewalk	$27,088,650.00
Earthwork	$20,400,000.00
US-1 Turn Lane Improvements & Signalization	$600,000.00
FEC Railroad Flyover/ Bridge	$5,000,000.00
1 MG Storage Tank & Pump Station	$5,000,000.00
Public Space/ Landscape/ Hardscape	$15,421,000.00
Environmental/ Mitigation	$1,000,000.00
Soft Costs & Fees	$7,701,300.00
Contingency (10%)	$16,973,915.50
Total	**$186,713,070.50**

With regard to the public services delivery, dependent and other independent special districts can be used to manage the provision of infrastructure and services, however, they are limited in the types of services they can provide, and likely it would be necessary to employ more than one district to provide all services needed by the development.

Other public entities, such as counties, are also capable of providing services, however, their costs in connection with the new services and infrastructure required by the new development and, transaction costs, would be borne by all taxpayers, unduly burdening existing taxpayers. Additionally, other public entities providing services would also be inconsistent with the State's policy of "growth paying for growth".

Lastly, services and improvements could be provided by private entities. However, their interests are primarily to earn short-term profits and there is no public accountability. The marginal benefits of tax-exempt financing utilizing CDDs would cause the CDD to utilize its lower transactional costs to enhance the quality of infrastructure and services.

In considering transactional costs of CDDs, it shall be noted that occupants of the lands to be included within the District will receive three major classes of benefits.

First, those residents in the District will receive a higher level of public services which in most instances will be sustained over longer periods of time than would otherwise be the case.

Second, a CDD is a mechanism for assuring that the public services will be completed concurrently with development of lands within the development. This satisfies the revised growth management legislation, and it assures that growth pays for itself without undue burden on other consumers.

Establishment of the District will ensure that these landowners pay for the provision of facilities, services and improvements to these lands.
Third, a CDD is the sole form of local governance which is specifically established to provide CDD landowners with planning, construction, implementation and short and long-term maintenance of public infrastructure at sustained levels of service.

The cost impact on the ultimate landowners in the development is not the total cost for the District to provide infrastructure services and facilities. Instead, it is the incremental costs above, if applicable, what the landowners would have paid to install infrastructure via an alternative financing mechanism.

Consequently, a CDD provides property owners with the option of having higher levels of facilities and services financed through self-imposed revenue. The District is an alternative means to manage necessary development of infrastructure and services with related financing powers. District management is no more expensive, and often less expensive, than the alternatives of various public and private sources.

6.0 An analysis of the impact on small businesses as defined by Section 288.703, F.S., and an analysis of the impact on small counties and small cities as defined by Section 120.52, F.S.

There will be little impact on small businesses because of the establishment of the District. If anything, the impact may be positive because the District must competitively bid all of its contracts and competitively negotiate all of its contracts with consultants over statutory thresholds. This affords small businesses the opportunity to bid on District work.

The City of Ormond Beach has a population of 43,080 according to the Census 2020 conducted by the United States Census Bureau and is therefore not defined as a "small" city according to Section 120.52, F.S. It can be reasonably expected that the establishment of community development district for the Ormond Crossings West development will not produce any marginal effects that would be different from those that would have occurred if the Ormond Crossings West development was developed without a community development district established by the City.

7.0 Any additional useful information.

The analysis provided above is based on a straightforward application of economic theory, especially as it relates to tracking the incidence of regulatory costs and benefits. Inputs were received from the Petitioner's Engineer and other professionals associated with the Petitioner.

In relation to the question of whether the proposed Ormond Crossings West Community Development District is the best possible alternative to provide public facilities and services to the project, there are several additional factors which bear importance. As an alternative to an independent district, the City could establish a dependent district for the area or establish an MSBU or MSTU. Either of these alternatives could finance the improvements contemplated in Tables 1 and 2 in a fashion similar to the proposed District.

There are a number of reasons why a dependent district is not the best alternative for providing public facilities and services to the Ormond Crossings West development. First, unlike a CDD, this alternative would require the City to administer the project and its facilities and services. As a result, the costs for these services and facilities would not be directly and wholly attributed to the land directly benefiting from them, as the case would be with a CDD. Administering a project of the size and

complexity of the development program anticipated for the Ormond Crossings West development is a significant and expensive undertaking.
Second, a CDD is preferable from a government accountability perspective. With a CDD, residents and landowners in the District would have a focused unit of government ultimately under their direct control. The CDD can then be more responsive to resident needs without disrupting other city responsibilities. By contrast, if the City were to establish and administer a dependent special district, then the residents and landowners of the Ormond Crossings West development would take their grievances and desires to the City Commission meetings.

Third, any debt of an independent CDD is strictly that CDD's responsibility. While it may be technically true that the debt of a city-established, dependent special district is not strictly the City 's responsibility, any financial problems that a dependent special district may have may reflect on the City. This will not be the case if a CDD is established.

Another alternative to a CDD would be for a Property Owners' Association (POA) to provide the infrastructure as well as operations and maintenance of public facilities and services. A CDD is superior to a POA for a variety of reasons. First, unlike a POA, a CDD can obtain low-cost financing from the municipal capital market. Second, as a government entity a CDD can impose and collect its assessments along with other property taxes on the City's real estate tax bill. Therefore, the District is far more assured of obtaining its needed funds than is a POA. Third, the proposed District is a unit of local government. This provides a higher level of transparency, oversight and accountability and the CDD has the ability to enter into interlocal agreements with other units of government.

8.0 A description of any regulatory alternatives submitted under section 120.541(1)(a), F.S., and a statement adopting the alternative or a statement of the reasons for rejecting the alternative in favor of the proposed ordinance.

No written proposal, statement adopting an alternative or statement of the reasons for rejecting an alternative have been submitted.

Based upon the information provided herein, this Statement of Estimated Regulatory Costs supports the petition to establish the Ormond Crossings West Community Development District.

APPENDIX A
LIST OF REPORTING REQUIREMENTS

REPORT	FL. STATUE CITATION	DATE
Annual Financial Audit	190.008/218.39	9 months after end of Fiscal Year
Annual Financial Report	190.008/218.32	45 days after the completion of the Annual Financial Audit but no more than 9 months after end of Fiscal Year
TRIM Compliance Report	200.068	no later than 30 days following the adoption of the property tax levy ordinance/resolution (if levying property taxes)
Form 1 - Statement of Financial Interest	112.3145	within 30 days of accepting the appointment, then every year thereafter by 7/1 (by "local officers" appointed to special district's board); during the qualifying period, then every year thereafter by 7/1 (by "local officers" elected to special district's board)
Public Facilities Report	189.08	within one year of special district's creation; then annual notice of any changes; and updated report every 7 years, 12 months prior to submission of local government's evaluation and appraisal report
Public Meetings Schedule	189.015	quarterly, semiannually, or annually
Bond Report	218.38	when issued; within 120 days after delivery of bonds
Registered Agent	189.014	within 30 days after first meeting of governing board
Proposed Budget	190.008	annually by June 15
Adopted Budget	190.008	annually by October 1
Public Depositor Report	280.17	annually by November 30
Notice of Establishment	190.0485	within 3o days after the effective date of an ordinance establishing the District
Notice of Public Financing	190.009	file disclosure documents in the property records of the City after financing

EXHIBIT 9

AUTHORIZATION OF AGENT

This letter shall serve as a designation of Jonathan T. Johnson of Kutak Rock LLP, whose address is 107 West College Avenue, Tallahassee, Florida 32301, to act as agent for Ormond Crossing West, LLC with regard to all matters regarding the petition to establish a community development district to the City Commission of the City of Ormond Beach, Florida, pursuant to Chapter 190, Florida Statutes. The petition is true and correct. This authorization shall remain in effect until revoked in writing.

WITNESSES:

Name: JOANNA T DEE

Name: Carmen M Vacca

ORMOND CROSSING WEST, LLC, a Florida limited liability company

Name: Bradford Kline

Title: MANAG.

STATE OF FLORIDA
COUNTY OF Palm Beach

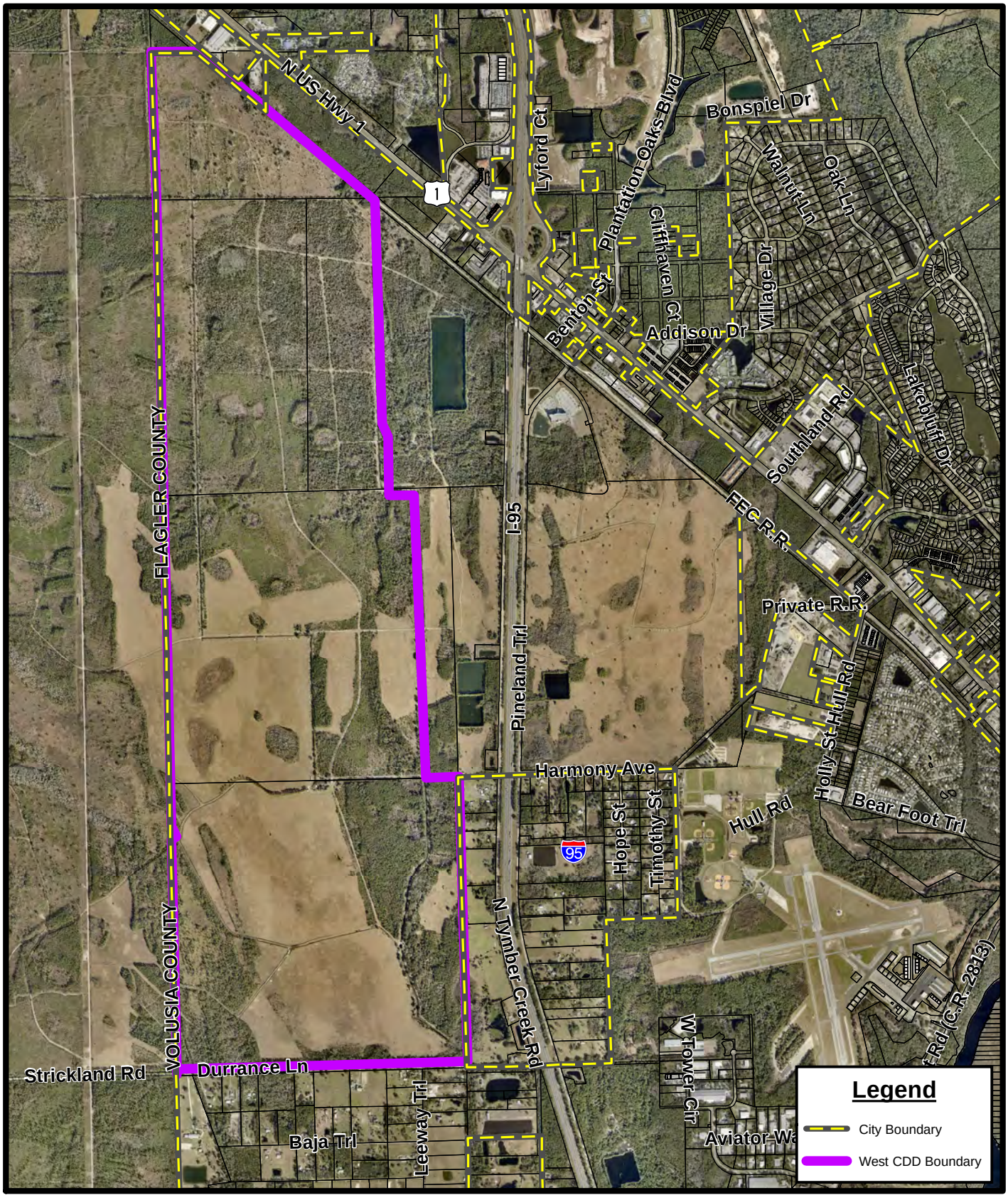
The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online notarization this 1 day of May, 2024, by Bradford Kline, as Manager of Ormond Crossing West, LLC, who is ☐ personally known to me or ☒ produced FDL KL150 077-54-227-0 as identification.

(Official Notary Signature & Seal)

Print Name: JOANNE T DEE

Notary Public, State of Florida

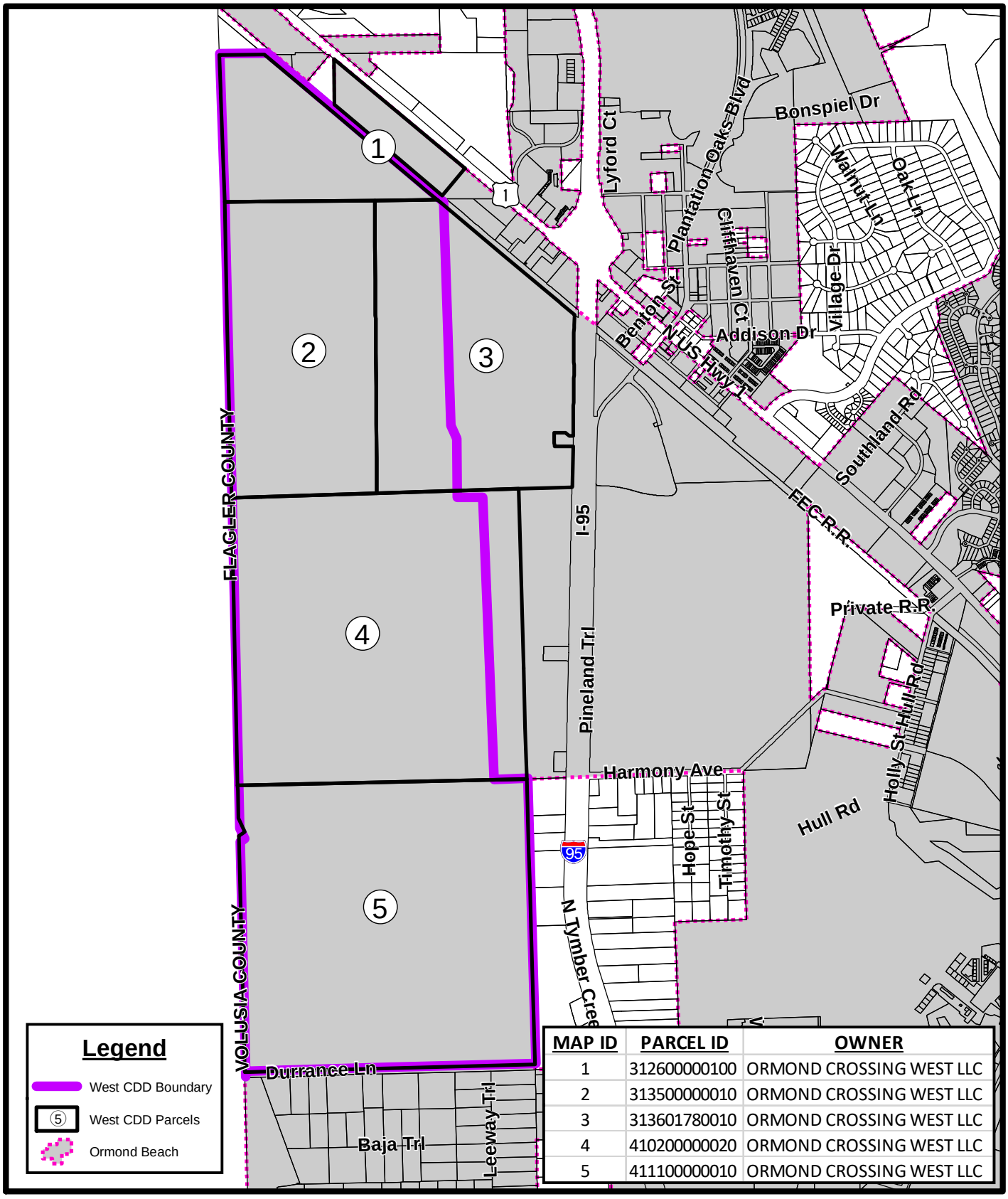
JOANNE T. DEE
MY COMMISSION # HH 190356
EXPIRES: December 1, 2025
Bonded Thru Notary Public Underwriters



AERIAL MAP
ORMOND CROSSINGS - WEST CDD

Prepared By: The City of Ormond Beach
G.I.S. Department - May 31, 2024

N.T.S.



MAP ID	PARCEL ID	OWNER
1	312600000100	ORMOND CROSSING WEST LLC
2	313500000010	ORMOND CROSSING WEST LLC
3	313601780010	ORMOND CROSSING WEST LLC
4	410200000020	ORMOND CROSSING WEST LLC
5	411100000010	ORMOND CROSSING WEST LLC

PARCEL MAP
ORMOND CROSSINGS - WEST CDD

Prepared By: The City of Ormond Beach
G.I.S. Department - May 31, 2024

N
W E
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N.T.S.

CDD Establishment
City of Ormond Beach, Florida

CDD Basics

KUTAKROCK

kutakrock.com

What is a Community Development District?

- Local unit of special purpose government
- Established under the Uniform Community Development Act of 1980 (Chapter 190, F.S.)
- Provides a mechanism to finance, construct and maintain high quality improvements and amenities
- Separate from, and NOT an arm of, the County or City



What is a Community Development District?

- CDDs can provide basic infrastructure for new development
  - Less Expensive Infrastructure - Infrastructure is less expensive because CDDs provide access to tax exempt financing
  - Non-Recourse - The CDD debt is secured by assessments that are liens on the land (i.e., non-recourse debt) The City has no responsibility for this debt.
  - Spreads Costs Over Time - Spread infrastructure costs over time, as opposed to building all costs into home up front
  - Wide Variety of Projects
- Liability protection

What Can a Community Development District Do?

- **Pursuant to Section 190.012(1), a CDD can finance, construct and acquire the following improvements:**
  - Water management and control structures
  - Water supply, sewer, and wastewater management, reclamation, and reuse
  - Bridges or culverts
  - Roadways; streetlights; alleys; landscaping; hardscaping; and the undergrounding of electric utility lines
  - Buses, trolleys, transit shelters, ridesharing facilities and services, parking improvements, and related signage
  - Environmental investigation and remediation costs
  - Conservation areas, mitigation areas, and wildlife habitat
  - Any other project within or without the boundaries of a district pursuant to a development order or interlocal agreement
  - Any other project, facility, or service required by a development approval, interlocal agreement, zoning condition, or permit issued by a governmental authority with jurisdiction in the district

What a Community Development District Can Not Do

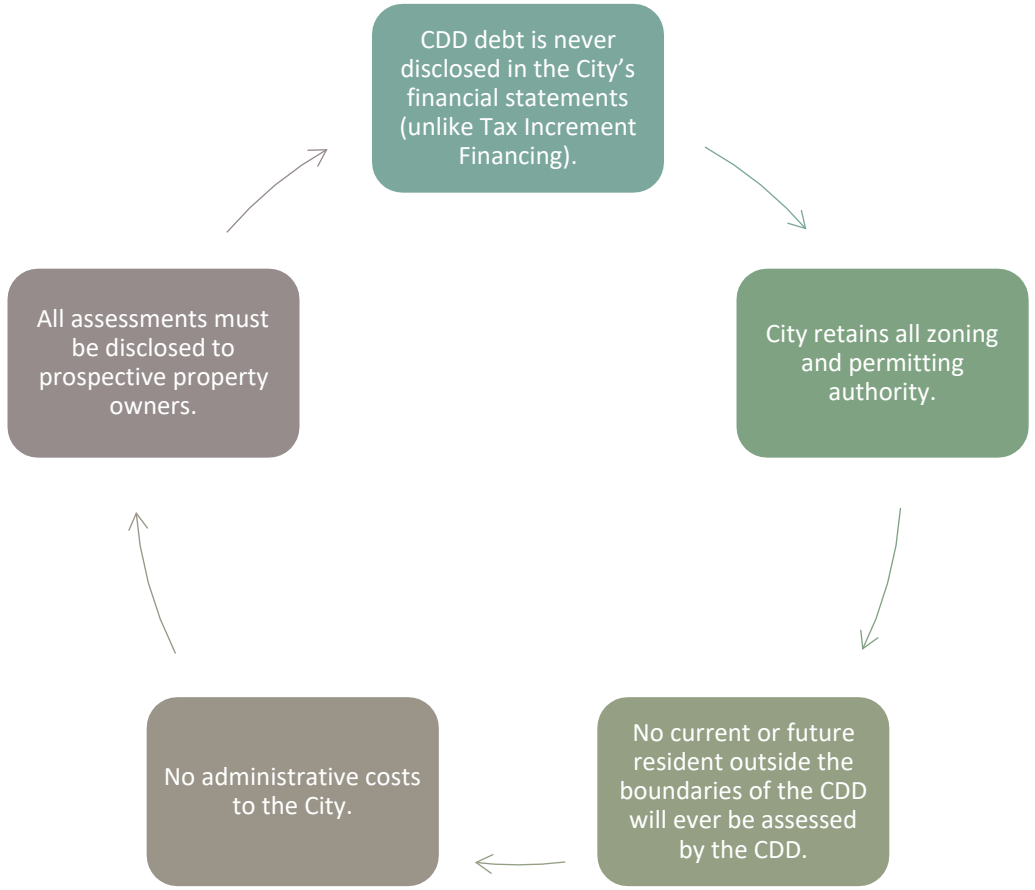
- CDD bonds cannot become the debt of the City; bondholder remedies are solely against the pledged property.
- A CDD cannot take any action which is inconsistent with the comprehensive plans, ordinances and regulations of the City.
- A CDD does not have the power to adopt its own comprehensive plan, building code or land development code – it is not a zoning authority.
- All of the CDD's powers must comply with all applicable City laws, rules, regulations, and policies governing planning and permitting of the development.

Benefits for Property Owners

- Cheaper Financing
- Allows homebuyers to purchase housing in communities with higher levels of amenities such as open space, trails, parks and lower impact developments
- Infrastructure Costs Spread Over Time
- Stable Revenue Stream – the assessments are paid along with property taxes
- Relatively Early Turnover to Residents
- Increased Accountability
- Enhanced Level of Service - Makes community more attractive and usable – allows property owners to ultimately determine their own level of service
- Excellent Long-Term Maintenance Entity - CDDs are long term maintenance entities, which provide for stable, long term property values

Benefits and protections for the City

- Allows new infrastructure to be built without the use of City funds or bonding capacity.
- No financial burden on residents outside of the CDD.
- Assures project is funded because bond proceeds are provided up front and deposited into a trust account.
- More stable maintenance entity to ensure continuation of project after the developer is gone.



KUTAKROCK

What are the CDD's Reporting Requirements?

- Must follow all applicable procedural and reporting rules required of municipal governments under Florida Statutes including:
  - Elections
  - Bidding and awarding of contracts
  - Advertising of meetings and holding meetings in the "Sunshine"
  - Preparation and distribution of minutes to appropriate governmental agencies
  - Maintenance of official records
  - Reporting and filing of financial information
  - Must establish and administer internal accounting controls
  - Must disclose to potential landowners the existence of the CDD and the special assessments levied by the CDD for both debt service and operation and maintenance

Land Secured Financing Districts Are Economic Development

Florida's Top Ranked Communities by Homes Sold (2023)

Ranking	Community	# of Homes Sold Per Year	District Type
1	Villages	3029	Multiple CDDs
2	Lakewood Ranch	2257	CDDs/Stewardship District
3	Babcock Ranch	958	Stewardship District
5	Wellen Park	887	Improvement District
6	Ave Maria	652	Stewardship District

Source: RCLO Real Estate Advisors 2024 Report



Quick Stats

- 990 CDDs in Florida (as of June 1, 2024)
- First CDD established in 1982
- Most commonly established by cities and counties

Volusia County CDDs

Community Development District:	Establishment:
Cresswind DeLand Community Development District	City of Deland
Daytona West Community Development District	City of Daytona Beach
Indigo Community Development District	City of Daytona Beach
Kepler Road Community Development District	City of Deland
Lakewood Park Community Development District	City of Deland
One Daytona Community Development District	City of Daytona Beach
Pioneer Community Development District	City of Port Orange
Rivington Community Development District	City of DeBary
Sungate Community Development District	City of Daytona Beach
SWI Community Development District	City of Port Orange
Tomoka North Community Development District	City of Daytona Beach
Walkers Green Community Development District	City of Daytona Beach
Waypointe Community Development District	City of Daytona Beach

Summary

- CDDs help ensure that growth pays for itself
- Takes burden off local government and residents outside of the CDD
- Excellent long term maintenance entity as compared to HOAs
- Provides governmental accountability
  (open meetings, public records, etc.)

Ordinance Adoption
Business Impact Estimate

Proposed ordinance's number and legal title:

2024-23

AN ORDINANCE GRANTING THE PETITION OF ORMOND CROSSING WEST, LLC, FOR ESTABLISHMENT OF A COMMUNITY DEVELOPMENT DISTRICT PURSUANT TO CHAPTER 190, FLORIDA STATUTES; CREATING AND ESTABLISHING THE ORMOND CROSSINGS WEST COMMUNITY DEVELOPMENT DISTRICT; PROVIDING FOR NAME, POWERS, AND DUTIES; PROVIDING DESCRIPTION AND BOUNDARIES; PROVIDING INITIAL MEMBERS OF BOARD OF SUPERVISORS; PROVIDING SEVERABILITY; AND SETTING FORTH AN EFFECTIVE DATE.

This Business Impact Estimate is provided in accordance with section 166.041(4), Florida Statutes. If one or more boxes are checked below, this means the City is of the view that a business impact estimate is not required by state law for the proposed ordinance, but the City is, nevertheless, providing this Business Impact Estimate as a courtesy and to avoid any procedural issues that could impact the enactment of the proposed ordinance. This Business Impact Estimate may be revised following its initial posting.

☐ The proposed ordinance is required for compliance with Federal or State law or regulation;
☐ The proposed ordinance relates to the issuance or refinancing of debt;
☐ The proposed ordinance relates to the adoption of budgets or budget amendments, including revenue sources necessary to fund the budget;
☐ The proposed ordinance is required to implement a contract or an agreement, including, but not limited to, any Federal, State, local, or private grant or other financial assistance accepted by the municipal government;
☐ The proposed ordinance is an emergency ordinance;
☐ The ordinance relates to procurement; or
☒ The proposed ordinance is enacted to implement the following:
  a. Part II of Chapter 163, Florida Statutes, relating to growth policy, county and municipal planning, and land development regulation, including zoning, development orders, development agreements and development permits;
  b. Sections 190.005 and 190.046, Florida Statutes, regarding community development districts;
  c. Section 553.73, Florida Statutes, relating to the Florida Building Code; or
  d. Section 633.202, Florida Statutes, relating to the Florida Fire Prevention Code.

In accordance with the provisions of controlling law, even notwithstanding the fact that an exemption noted above may apply, the City hereby publishes the following information:

1. A summary of the proposed ordinance, including a statement of the public purpose to be served by the proposed ordinance, such as serving the public health, safety, morals, and welfare of the City.

This is an application submitted by Jonathan T. Johnson, Kutak Rock, LLP, on behalf of the property owner, Ormond Crossing West, LLC, for a petition to establish the Ormond Crossings West Community Development District in accordance with Chapter 190, Florida Statutes. The proposed District comprises approximately 1,847.32 acres, generally located north of Durrance Lane, south of U.S. Highway 1, and west of Interstate 95. The applicant has proposed to establish the District to plan, finance, acquire, construct, operate, and maintain infrastructure and community facilities which may be authorized by such District under Florida law, including but not limited to water distribution system, reclaimed water system, sanitary sewer system, utilities (water, wastewater & reuse systems), stormwater management system, roadway improvements, earthwork, storage tank and pump station, public space/hardscape/landscape, environmental/mitigation, offsite improvements and other infrastructure. The Community Development District is proposed only for the single-family residential portion of the Ormond Crossings project.

2. An estimate of the direct economic impact of the proposed ordinance on private, for-profit businesses in the City, including the following, if any:

    a. An estimate of direct compliance costs that businesses may reasonably incur if the ordinance is enacted;

        None. This community development district does not impact any existing businesses and would be obligation of residential property owners who buy in to the community.

    b. Identification of any new charge or fee on businesses subject to the proposed ordinance, or for which businesses will be financially responsible; and

        The community development district would be established per Florida Statute requirements.

    c. An estimate of the City's regulatory costs, including an estimate of revenues from any new charges or fees that will be imposed on businesses to cover such costs.

        The community development district would be established per Florida Statute requirements.

3. A good faith estimates of the number of businesses likely to be impacted by the ordinance.

    None. This community development district does not impact any existing businesses and would be obligation of residential property owners who buy in to the community.

4. Any additional information the City determines may be useful.

    (This section may include: methodology or data used to prepare the Business Impact Estimate, e.g., City staff solicited comments from businesses as to the potential impact of the proposed ordinance by contacting the chamber of commerce, social media posting, direct mail/email, posting on the City's website, public workshop, etc.; efforts made to reduce the potential fiscal impact on businesses; and state the proposed ordinance is a generally applicable ordinance that applies to all persons similarly situated (individuals or businesses) and, therefore, the proposed ordinance does not affect only businesses.)

    The item was advertised by newspaper advertisements. Information on the application is also on the city's website.

City of Ormond Beach
AGENDA ITEM

August 20, 2024 - City Commission

Number: 8.C

Section:	PUBLIC HEARINGS		
Item Category:	Public Hearing - Ordinances	**Res./Ord. No:**	2024-24
Strategic Goal:	Economic Development - Continue attracting and retaining high-wage jobs and the development of Ormond Crossings		
Department:	Planning & Building		
Subject:	Plantation Oaks, Neighborhood Commercial, PRD Amendment		
Summary:	This is a Planned Residential Development (PRD) amendment submitted by Plantation Oaks of Ormond Beach, LLC. The PRD allowed a neighborhood commercial parcel (Tract 1A-2) with certain uses permitted. The amendment seeks to allow Warehouse Indoor Mini-Rental as a permitted use on the 1.58-acre Neighborhood Commercial property located at 1730 Plantation Oaks Boulevard. The Planning Board recommend approval of the PRD amendment under certain conditions with a 6-0 vote at the July 11, 2024 meeting.		
Financial Impact:	None		
Citizen Impact:	The PRD Amendment is not expected to have any negative impacts on citizens.		
Recommended Action (Staff, Advisory Board and/or Other):	The Planning Board recommended approving the PRD development order amendment to allow the warehouse, indoor mini-rental use within the 1.58-acre neighborhood commercial parcel of the Plantation Oaks Subdivision under certain conditions.		
Staff Contact:	Steven Spraker, Planning Director, (386) 676-3341		
Attachments:	1. 24-24 PO PRD 2nd Amendment, Commercial Area (P24-0135G) 2. PO 2nd amendment - DO 3. EXHIBIT A-Legal Description 4. Exhibit B- Site Plan 5. Exhibit C, Conditions		

	6. 07.11.2024 Plantation Oaks PRD Amendment-PB Staff Report(8.5x11) 7. 07.11.2024, DRAFT Planning Board minutes, PO NC PRD Amendment 8. BIE - PONC
Approval:	Kelly McGuire, Finance Director 7/30/2024 Shawn Finley, Assistant City Manager 8/9/2024 Joyce Shanahan, City Manager 8/14/2024

ORDINANCE NO. 2024-24

AN ORDINANCE AUTHORIZING THE EXECUTION AND ISSUANCE OF THE SECOND AMENDED DEVELOPMENT ORDER FOR A PLANNED RESIDENTIAL DEVELOPMENT KNOWN AS "PLANTATION OAKS"; AUTHORIZING AN AMENDMENT TO THE NEIGHBORHOOD COMMERCIAL LIST OF USES TO ALLOW WAREHOUSE, INDOOR MINI-RENTAL AS A PERMITTED USE UNDER CERTAIN CONDITIONS; AUTHORIZING A SITE DEVELOPMENT PLAN FOR THE NEIGHBORHOOD COMMERCIAL PARCEL LOCATED AT 1730 PLANTATION OAKS BOULEVARD; AND SETTING FORTH AN EFFECTIVE DATE.

WHEREAS, Plantation Oaks of Ormond Beach, LLC, a Florida Limited Liability Company (the "Applicant") has submitted an application for the second amendment to the "Plantation Oaks" Planned Residential Development (PRD) to amend the neighborhood commercial list of uses to allow "warehouse, indoor mini-rental" as a permitted use under certain conditions, and to authorize a site development plan on a 1.58 acre neighborhood commercial parcel within the Plantation Oaks PRD, described and depicted in Exhibit "A" to the second amended PRD Development Order attached hereto and incorporated herein by reference, and

WHEREAS, by Resolution 1986-192 the Volusia County Council on December 30, 1986 approved the National Gardens Development of Regional Impact, and authorized the execution of a Development Agreement therefor, which is recorded in Official Records Book 2934, Pages 979 through 995, inclusive, of the Public Records of Volusia County, Florida, and

WHEREAS, by Resolution 1998-108 the Volusia County Council on June 25, 1998, approved the National Gardens First Development of Regional Impact amendment, which is recorded in Official Records Book 4351, Pages 3321 through 3323, inclusive, of the Public Records of Volusia County, Florida, and

WHEREAS, by Resolution 2000-72 the Volusia County Council on April 13, 2000 approved the National Gardens Second Development of Regional Impact amendment, and

WHEREAS, by Resolution 2001-229 the Volusia County Council on December 6, 2001 approved the National Gardens Third Development of Regional Impact amendment, which is recorded in Official Records Book 4976, Pages 3426 through 3432, inclusive, of the Public Records of Volusia County, Florida, and

WHEREAS, by Resolution 2002-197 the Volusia County Council on November 21, 2002 approved the National Gardens Fourth Development of Regional Impact amendment, which is recorded in Official Records Book 4976, Pages 3433 through 3438, inclusive, of the Public Records of Volusia County, Florida, and

WHEREAS, by Resolution 2004-229 the Volusia County Council on November 11, 2004 approved the National Gardens Fifth Development of Regional Impact amendment, which is recorded in Official Records Book 5440, Pages 929 through 942, inclusive, of the Public Records of Volusia County, Florida, and

WHEREAS, by Resolution 2012-37 the Volusia County Council on February 9, 2012 approved the National Gardens Sixth Development of Regional Impact amendment, which

is recorded in Official Records Book 6683, Pages 509 through 514, inclusive, of the Public Records of Volusia County, Florida, and

WHEREAS, by Resolution 2002-199 the Volusia County Council on November 21, 2002 approved the Plantation Oaks Planned Residential Unit Development, and authorized the execution of a Development Agreement therefor, which is recorded in Official Records Book 4988, Pages 140 through 211, inclusive, of the Public Records of Volusia County, Florida, and

WHEREAS, a Volusia County minor amendment was approved on August 9, 2006 for the Plantation Oaks Planned Residential Unit Development, and authorized a utility service agreement therefor, which is recorded in Official Records Book 6281 Pages 3136 through 3161, inclusive, of the Public Records of Volusia County, Florida, and

WHEREAS, a Volusia County minor amendment was approved on July 18, 2007 for the Plantation Oaks Planned Residential Unit Development, and required an increase to the required buffer along Old Dixie Highway to 175 feet, which is recorded in Official Records Book 6100 Pages 2016 through 2020, inclusive, of the Public Records of Volusia County, Florida, and

WHEREAS, a Volusia County minor amendment was approved on August 12, 2008 for the Plantation Oaks Planned Residential Unit Development, to update the project construction phasing and schedule, which is recorded in Official Records Book 6268 Page 3768, of the Public Records of Volusia County, Florida, and

WHEREAS, a Volusia County minor amendment was approved on September 23, 2009 for the Plantation Oaks Planned Residential Unit Development, to relocate the regional wastewater plant and relocate twelve units from unit 1A to unit 2, which is recorded in Official Records Book 6407 Pages 456 through 477, inclusive, of the Public Records of Volusia County, Florida, and

WHEREAS, by Resolution 2012-24 the Volusia County Council on January 19, 2012 approved an amendment for the Plantation Oaks Planned Residential Unit Development, to allow manufactured homes, which is recorded in Official Records Book 6674 Pages 2025 through 2069, inclusive, of the Public Records of Volusia County, Florida, and

WHEREAS, a Volusia County minor amendment was approved on December 4, 2015 for the Plantation Oaks Planned Residential Unit Development, to revise the project phasing schedule and identify the City of Ormond Beach as the utility provider, which is recorded in Official Records Book 7201 Pages 1720 through 1753, inclusive, of the Public Records of Volusia County, Florida, and

WHEREAS, a Volusia County minor amendment was approved on July 15, 2016 for the Plantation Oaks Planned Residential Unit Development, to provide an alternate school site and pre-pay school impact fees for the entire project, which is recorded in Official Records Book 7285 Pages 4169 through 4175, inclusive, of the Public Records of Volusia County, Florida, and

WHEREAS, a Volusia County minor amendment was approved on August 17, 2018 for the Plantation Oaks Planned Residential Unit Development, for miscellaneous amendments including signage and irrigation, which is recorded in Official Records Book 7610 Pages 240 through 250, inclusive, of the Public Records of Volusia County, Florida, and

WHEREAS, a Volusia County minor amendment was approved on January 10, 2019 for the Plantation Oaks Planned Residential Unit Development, for miscellaneous amendments including median planting plan and lot planting requirements, which is recorded in Official Records Book 7644 Pages 2820 through 2831, inclusive, of the Public Records of Volusia County, Florida, and

WHEREAS, by Resolution 2015-168 the City Commission on August 18, 2015 approved an annexation agreement to provide utilities to the Plantation Oaks subdivision, which is recorded in Official Records Book 7155, Pages 4437 through 4462, inclusive, of the Public Records of Volusia County, Florida. The subdivision was not contiguous to the city boundary and could not be annexed in 2015, and

WHEREAS, by Ordinances 2019-30 and 2020-16 the City Commission on October 1, 2019 and May 26, 2020 approved the annexation of the Plantation Oaks subdivision, which is recorded in Official Records Book 7760, Pages 3724 through 3743, inclusive, and Official Records Book 7858, Pages 2205 through 2223, inclusive, respectively of the Public Records of Volusia County, Florida, and

WHEREAS, on February 2, 2021, by Ordinance 2021-03, the City Commission approved a Development Order for the Plantation Oaks subdivision that: (1) incorporated the Volusia County development orders and (2) deleted the age restriction for Phase 1 and required only site built single-family homes, which is recorded in Official Records Book 7985, Pages 4080 through 4339, inclusive, of the Public Records of Volusia County, Florida, and

WHEREAS, on August 27, 2021, the Planning Director on behalf of the Site Plan Review Committee approved a minor amendment to the development order to relocate 76 lots within the Phase 1 conceptual development plan based upon the sale of a land area to Volusia County generally west of Old Dixie Highway, east of the FPL easement, and north of Plantation Oaks Boulevard, which is recorded in Official Records Book 8113, Pages 4003 through 4006, inclusive, of the Public Records of Volusia County, Florida, and

WHEREAS, on June 7, 2022, by Ordinance 2022-16, the City Commission approved the first amended Development Order for the Plantation Oaks subdivision that (1) allowed additional residential units in phases 1, 3, and 4 of the PRD totaling 163 residential units, (2) lifted the age restriction and prohibited manufactured homes in phase 3 of the PRD, (3) allowed public streets in phase 4 of the PRD, and (4) removed approximately 33.10 acres of land purchased by Volusia County for a park from the PRD, which is recorded in Official Records Book 8268, Pages 2898 through 2930, inclusive, of the Public Records of Volusia County, Florida, and

WHEREAS, the Planning Board held a public hearing in accordance with Section 1-15 of the *Land Development Code,* following which it provided a recommendation of approval for the second amended Development Order for the Planned Residential Development, and

WHEREAS, the City Commission has held a public hearing in accordance with Section 166.041(3)(c)(1), *Florida Statutes* and has considered the following:

(1) The report and recommendations of the Planning Board;

(2) The testimony of the City's planning staff, the Applicant, expert witnesses, persons that may be affected as a result of the application, and documentary evidence pertaining thereto, if any, and

WHEREAS, the City Commission further finds that with respect to the application for the issuance of the second amended Development Order for the Planned Residential Development, that there is competent substantial evidence to support the following:

(1) The amended land use conforms to the standards and requirements of the *Land Development Code* and will not create undue crowding beyond the conditions normally permitted in the PRD, Planned Residential Development, zoning district, or adversely affect the public health, safety, welfare or quality of life;

(2) The amended development is consistent with the *Comprehensive Plan*;

(3) The amended development will not adversely impact environmentally sensitive lands or natural resources, including but not limited to waterbodies, wetlands, xeric communities, wildlife habitats, endangered or threatened

plants and animal species or species of special concern, wellfields, and individual wells;

(4) The amended use will not substantially or permanently depreciate the value of surrounding property; create a nuisance; or deprive adjoining properties of adequate light and air; create excessive noise, odor, glare, or visual impacts on the neighborhood and adjoining properties;

(5) There are adequate public facilities to serve the development, including but not limited to roads, sidewalks, bike paths, potable water, wastewater treatment, drainage, fire and police safety, parks and recreation facilities, schools, and playgrounds, as amended;

(6) Ingress and egress to the property and traffic patterns are designed to protect and promote motorized vehicle and pedestrian/bicycle safety and convenience, allow for desirable traffic flow and control, and provide adequate access in case of fire or catastrophe, as amended;

(7) The amended development is functional in the use of space and aesthetically acceptable;

(8) The amended development provides for the safety of occupants and visitors; and

(9) The amended use of materials and architectural features will not adversely impact the neighborhood and aesthetics of the area; now therefore,

BE IT ENACTED BY THE PEOPLE OF THE CITY OF ORMOND BEACH, FLORIDA, THAT:

SECTION ONE. The Mayor and the City Manager are authorized and directed to execute and issue the attached second amended Development Order for the "Plantation Oaks" Planned Residential Development (PRD) to amend the neighborhood commercial list of uses to allow "warehouse, indoor mini-rental" as a permitted use under certain conditions, and authorize a site development plan on a 1.58-acre neighborhood commercial parcel within the approved Planned Residential Development known as "Plantation Oaks", located at 1730 Plantation Oaks Boulevard (the "Property").

SECTION TWO. Except as otherwise provided within the attached second amended Development Order, all conditions set forth by the previous development approvals shall remain in effect and shall at all times be strictly complied with.

SECTION THREE. All Ordinances or parts of Ordinances in conflict herewith are hereby repealed to the extent of such conflict.

SECTION FOUR. This Ordinance shall take effect immediately upon its adoption.

PASSED UPON at the first reading of the City Commission this 20th day of August, 2024.

PASSED UPON at the second and final reading of the City Commission this 4th day of September, 2024.

_____
BILL PARTINGTON
Mayor

ATTEST:

_____
SUSAN CARROLL DAUDERIS
City Clerk

BEFORE THE
CITY COMMISSION
OF THE
CITY OF ORMOND BEACH

IN RE:	**Application of:**	Plantation Oaks of Ormond Beach, LLC, a Florida Limited Liability Company
	Application No.	2024-037
	Project Name:	Plantation Oaks second amendment, neighborhood commercial
	Property Location:	1730 Plantation Oaks Boulevard

SECOND AMENDED PLANNED RESIDENTIAL DEVELOPMENT DEVELOPMENT ORDER

This matter having come on for public hearing before the City Commission of the City of Ormond Beach, Florida, on August 20, 2024 and September 4, 2024, and the City Commission having considered those items as required by Section 1-18 of the *Land Development Code*, and having heard testimony and evidence from all affected persons, the City Commission hereby finds that:

1. The amended development conforms to the standards and requirements of the *Land Development Code* and will not create undue crowding beyond the conditions normally permitted in the PRD, Planned Residential Development, zoning district, or adversely affect the public health, safety, welfare or quality of life;

2. The amended development is consistent with the *Comprehensive Plan*;

3. The amended development will not adversely impact environmentally sensitive lands or natural resources, including but not limited to waterbodies, wetlands, xeric communities, wildlife habitats, endangered or threatened plants and animal species or species of special concern, wellfields, and individual wells;

4. The amended use will not substantially or permanently depreciate the value of surrounding property; create a nuisance; or deprive adjoining properties of adequate light and air; create excessive noise, odor, glare, or visual impacts on the neighborhood and adjoining properties;

5. There are adequate public facilities to serve the development, including but not limited to roads, sidewalks, bike paths, potable water, wastewater treatment, drainage, fire and police safety, parks and recreation facilities, schools, and playgrounds, as amended;

6. Ingress and egress to the property and traffic patterns are designed to protect and promote motorized vehicle and pedestrian/bicycle safety and convenience, allow for desirable traffic flow and control, and provide adequate access in case of fire or catastrophe, as amended;

7. The amended development is functional in the use of space and aesthetically acceptable;

8. The amended development provides for the safety of occupants and visitors; and

9. The amended use of materials and architectural features will not adversely impact the neighborhood and aesthetics of the area.

Thereupon and in consideration thereof, the City Commission hereby orders that:

A. The application submitted by Plantation Oaks of Ormond Beach, LLC, a Florida Limited Liability Company (the "Applicant") for the second amended Development Order for a Planned Residential Development known as "Plantation Oaks" Subdivision to amend the neighborhood commercial list of uses to allow "warehouse, indoor mini-rental" as a permitted use under certain conditions, and authorize a site development plan on a 1.58 acre neighborhood commercial parcel within the Plantation Oaks Planned Residential Development, located at 1730 Plantation Oaks Boulevard, described and depicted in Exhibit "A" attached hereto and incorporated herein by reference, is hereby granted, subject to the following conditions:

1. The amendment solely applies to the neighborhood commercial property located at 1730 Plantation Oaks Boulevard. Except as otherwise provided, all conditions set forth with Ordinance 2021-03, which is recorded in Official Records Book 7985 Pages 4080 through 4339, inclusive, and Ordinance 2022-16, which is recorded in Official Records Book 8268 Pages 2898 through 2930, inclusive, both of the Public Records of Volusia County, Florida, shall remain in effect and shall at all times be strictly complied with;

2. Full and complete compliance with the Applicant's site plan attached as Exhibit "B";

3. Full and complete compliance with the special conditions listed in Exhibit "C".

B. The final plans for the neighborhood commercial development project shall be consistent with all of the conditions listed in this second amended Development Order and as depicted in the plans attached hereto as Exhibits "B" and "C" and incorporated herein by reference.

C. No material change shall be made to the final plan for the development project without further review by the Planning Board and approval by the City Commission in accordance with the procedures for the approval or modification of development orders.

D. All site construction activity shall be performed in strict compliance with the terms and conditions of this second amended Development Order approved for this development project, and of the *Land Development Code*.

E. The Neighborhood Improvement Officer shall semi-annually prepare a report indicating which planned developments are not in compliance with Section 1-14, or with the conditions provided in the Development Order. In the event a Neighborhood Improvement Officer determines there to be any violation, such Officer shall initiate appropriate code enforcement action for hearing before the City's Special Master.

F. This second amended Development Order shall be recorded in the public records of Volusia County, Florida, at the expense of Plantation Oaks of Ormond Beach, LLC, a Florida Limited Liability Company (the "Applicant"), and shall be binding upon the Applicant, and its successors and assigns, and shall run with the real property described in Exhibit "A" attached hereto.

ORDERED this 4h day of September, 2024.

CITY COMMISSION
CITY OF ORMOND BEACH, a Florida municipal corporation

By: _____
BILL PARTINGTON
Mayor

(CITY SEAL)

Attest: _____
JOYCE A. SHANAHAN
City Manager

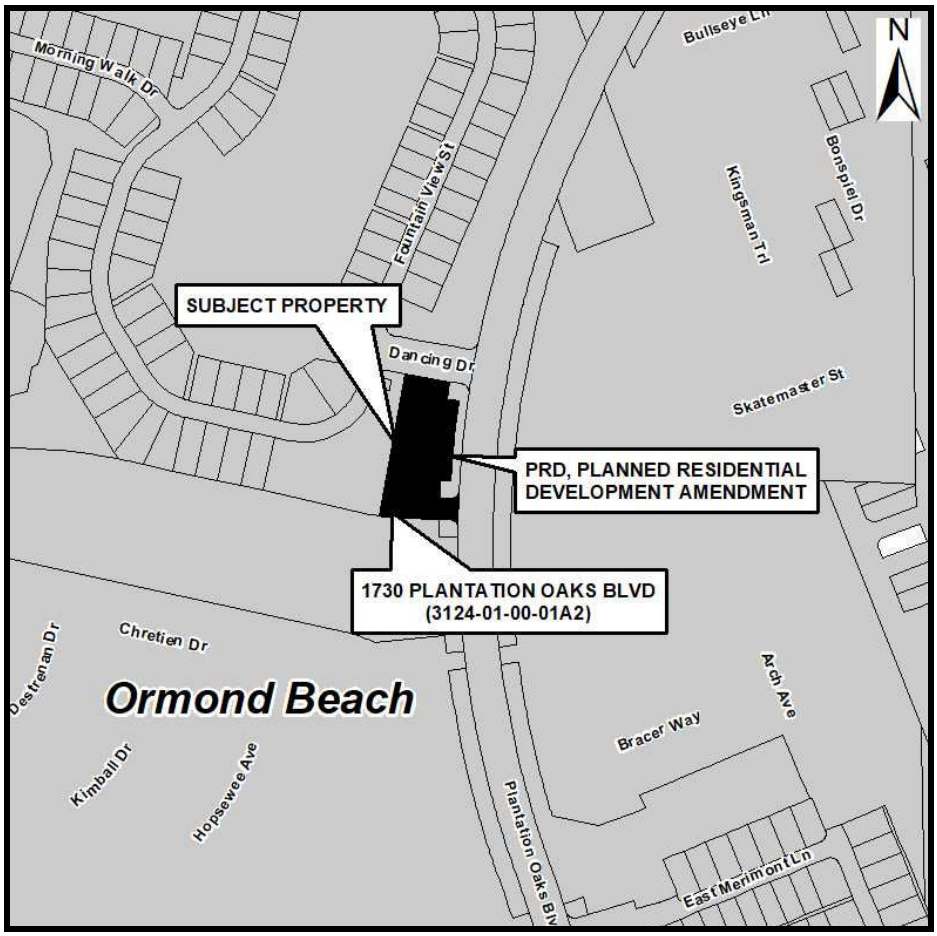
EXHIBIT "A"

LEGAL DESCRIPTION

TRACT 1A-2 FOUNTAIN VIEW PHASE 1A MAP BOOK 65, PG 59

OWNER:	PLANTATION OAKS OF ORMOND BEACH, LLC, A FLORIDA LIMITED LIABILITY COMPANY
LOCATION:	1730 PLANTATION OAKS BOULEVARD
PARCEL ID#:	3124-01-00-01A2

LOCATION MAP



PLANTATION OAKS OF ORMOND BEACH

NEIGHBORHOOD COMMERCIAL
PHASE 1A

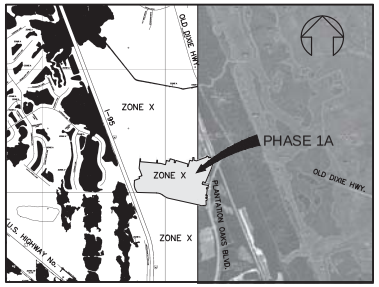
ORMOND BEACH, FLORIDA

GENERAL NOTES

1.) ALL WATER MAINS TO BE P.V.C. DR-18, C-900.
2.) ALL SANITARY SEWER MAINS SHOWN ARE PVC SDR 26 @ 0.40% FOR 8", 0.30% FOR 10" UNLESS OTHERWISE NOTED. SANITARY SERVICES TO NEIGHBORHOOD COMMERCIAL ARE 6" SDR 26 @ MINIMUM 1.0%
3.) CABLE T.V., TELEPHONE AND ELECTRIC SERVICES TO BE UNDERGROUND.
4.) CONTRACTOR TO VERIFY EXISTING UTILITIES PRIOR TO CONSTRUCTION AND TO REPORT ANY DISCREPANCIES TO DESIGN ENGINEER.
5.) WATER AND SEWER IMPROVEMENTS TO MEET CITY OF ORMOND BEACH STANDARDS.
6.) DOWNLIGHTS (STREET LIGHTS) TO BE FP&L STANDARD & CONTEMPORARY LIGHTS TO BE FP&L STANDARD LED 39 WATT. (CONTEMPORARY LIGHT) AND BLACK FIBERGLASS POLES, STREET LIGHTS AND POLES TO BE PROVIDED BY FPL. MAXIMUM HEIGHT 20 FT.
7.) MINIMUM FINISH FLOOR GRADE PER CITY OF ORMOND BEACH REQUIREMENTS.
8.) SHOP DRAWINGS FOR POTABLE WATER AND SEWER TO BE SUBMITTED TO AND APPROVED BY CITY OF ORMOND BEACH AND DESIGN ENGINEER PRIOR TO CONSTRUCTION.
9.) POTABLE WATER SERVICE TO BE SUPPLIED BY CITY OF ORMOND BEACH.
10.) SANITARY SEWER SERVICE TO BE PROVIDED BY CITY OF ORMOND BEACH.
11.) ALL DISTURBED AREAS TO BE SODDED.
12.) WHERE SANITARY FORCE MAINS CROSS POTABLE WATER LINES, THE FORCE MAIN IS TO BE CONSTRUCTED OF PVC SDR-18 FOR 20 FEET CENTERED ON THE POTABLE WATER MAIN.
13.) OFFSITE UTILITIES WILL BE CONSTRUCTED UNDER THE APPROPRIATE PHASE AND MUST BE COMPLETE PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY.
14.) ONSITE SEWER AND POTABLE WATER INFRASTRUCTURE TO BE OWNED AND MAINTAINED BY THE NEIGHBORHOOD COMMERCIAL OWNER. OFFSITE SYSTEM WILL BE OWNED AND MAINTAINED BY THE CITY OF ORMOND BEACH (UNLESS OTHERWISE NOTED).
15.) ALL STOP SIGNS, SPEED LIMIT AND STREET SIGNS REQUIRED TO BE PROVIDED BY DEVELOPER TO CITY OF ORMOND BEACH SPECIFICATIONS. ALL TRAFFIC CONTROL SIGNS SHALL BE FABRICATED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES USING 3M BRAND "SCOTCHLITE" SHEETING (ENGINEER GRADE) ON MINIMUM 0.080 GAUGE 5052-H38 ALUMINUM BLANKS. ALL STOP SIGNS SHALL BE HIGH INTENSITY 30" OR 36" OCTAGON INSTALLED ON 3"x 12' ROUND ALUMINUM POSTS. "U" CHANNEL POSTS MAY BE USED FOR ALL SIGNS SMALLER THAN 36" x 48". ALL WARNING SIGNS SHALL BE 30" X 30". ALL STREET NAME SIGNS SHALL BE 9" IN HEIGHT WITH 5" HIGH UPPER & LOWER CASE WHITE LETTERS ON A GREEN BACKGROUND WITH A MIN. 30" LENGTH. PROVIDE 24" WIDE WHITE THERMOPLASTIC STOP BARS ADJACENT TO ALL LOCAL STREET 30" STOP SIGNS. WHERE 12" WIDE WHITE CROSSWALK STRIPING IS PROVIDED, THE STOP BAR AND 30" STOP SIGN MUST BE 4' IN ADVANCE OF THE CROSSWALK IN ACCORDANCE WITH FDOT STANDARD INDEX #17346. IN ALL LOCATIONS, THE 30" STOP SIGN AND 24" WIDE WHITE STOP BARS SHOULD BE LOCATED 10' IN ADVANCE OF THE EDGE OF THE TRAVELED WAY AT THE STREET INTERSECTION.
16.) ALL MAINTENANCE OF ALL PRIVATE STREETS, LAKES, AMENITY AREAS, LANDSCAPE AND IRRIGATION TO BE THE SOLE RESPONSIBILITY OF PLANTATION OAKS OF HOME OWNERS ASSOCIATION OR PROPERTY OWNER.
17.) ALL CONSTRUCTION TRAFFIC IS REQUIRED TO USE U.S. HIGHWAY #1 ONLY. NO CONSTRUCTION TRAFFIC IS PERMITTED TO USE OLD DIXIE HIGHWAY FOR INGRESS OR EGRESS.
18.) EXCEPT WITHIN THE EXISTING FPL EASEMENT, ALL UTILITIES ARE TO BE INSTALLED UNDERGROUND, INCLUDING THE SERVICE DROPS TO INDIVIDUAL BUILDINGS OUTSIDE OF ALL REQUIRED LANDSCAPE BUFFERS, WETLANDS AND WETLAND BUFFER AREAS.
19.) ELEVATIONS REFER TO 1929 DATUM
20.) DRIVING AND/OR STAGING OF CONSTRUCTION VEHICLES IS NOT PERMITTED ON ANY SIDEWALKS IN THE RIGHT-OF-WAY. ANY DAMAGE TO SIDEWALKS WILL BE REPAIRED AND/OR REPLACED IN THE LIKE KIND BY THE CONTRACTOR.
21.) REUSE LINE, BOTH EXISTING AND PROPOSED, WILL BE OWNED AND OPERATED BY THE OWNER, HOA, POA OR DEVELOPER.
22.) ALL WATER SERVICE LINES SHALL BE INSTALLED WITH BACKFLOW PREVENTION DEVICES.

LEGAL DESCRIPTION:

TRACT 1A-2 FOUNTAIN VIEW PHASE 1A
MAP BOOK 65, PG 59



FLOOD MAP
F.I.R.M. #12127C0201J ORMOND BEACH
F.I.R.M. #12127C0182J VOLUSIA COUNTY
PHASE 1A IS LOCATED IN ZONE X IN IT'S ENTIRETY

LAND USE TABULATION:

EXISTING ZONING = PUD (PLANNED UNIT DEVELOPMENT)
SITE AREA = 69,028 SF = 1.58 AC
BUILDING COVERAGE = 12,750 SF
12,750 SF / 69,028 SF = 18.47%
F.A.R. = 25,500 SF / 69,028 SF = 0.369

IMPERVIOUS AREA CALCULATION:

PROPOSED BUILDING = 12,750 SF (FIRST FLOOR)
EXISTING PAVEMENT = 7,562 SF
PROPOSED CONCRETE/PAVEMENT = 28,921 SF
TOTAL IMPERVIOUS AREA = 36,483 SF = 52.9%
LANDSCAPE AREA = 32,545 SF = 47.1%

PARKING CALCULATION:

COMMERCIAL BUILDING PARKING REQUIREMENTS:
OFFICE/RETAIL/RESTAURANT-1 PARKING SPACE FOR EACH 200 S.F. OF GROSS FLOOR AREA (1ST FLOOR)
12,750/200 = 63.75 (64 SPACES)
MINI-WAREHOUSE-
0.18 SPACES/1,000 SF OF GROSS FLOOR AREA
12,750 SF X 0.18 SPACES/1,000 SF = 2.3
TOTAL PARKING REQUIRED
63.75 + 2.3 = 66 SPACES

PARKING PROVIDED:
STANDARD= 70
HANDICAP= 3
TOTAL= 73

SETBACKS:

FRONT.....25 FT
REAR YARD.....20 FT
SIDE YARD
ABUTTING ANY LOT.....10 FT
ABUTTING PUBLIC STREET R/W.....25 FT
ABUTTING PRIVATE STREET R/W.....20 FT

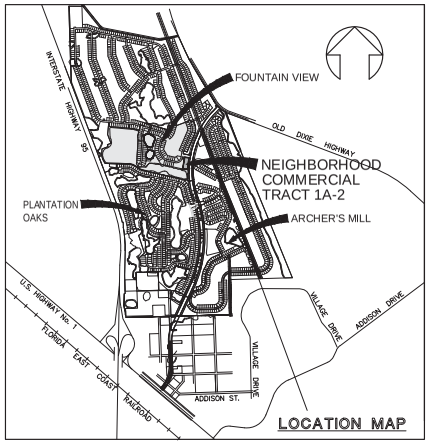


TABLE OF CONTENTS	
SHEET NO.	DESCRIPTION
1	COVER SHEET
S1	BOUNDARY SURVEY
2	DEMOLITION/EROSION CONTROL PLAN
3	SITE PLAN
4	CIVIL PLAN
5	UTILITY PLAN
6	LANDSCAPE PLAN
7	LANDSCAPE DETAILS
8	IRRIGATION PLAN
9	IRRIGATION DETAILS
10-12	PAVING AND DRAINAGE DETAILS
13	WATER STANDARD DETAILS
14	SANITARY SEWER STANDARD DETAILS
15	RECLAIMED WATER STANDARD DETAILS
A210	OVERALL FIRST FLOOR PLAN
A220	OVERALL SECOND FLOOR PLAN
A300	PROPOSED ELEVATIONS
A301	COLOR/MATERIAL CHART SF-1
A302	COLOR RENDERING



Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
6	Basinger fine sand, frequently ponded, 0 to 1 percent slopes	0.0	0.0%
13	Cassia fine sand, 0 to 2 percent slopes	25.3	25.0%
17	Daytona sand, 0 to 5 percent slopes	25.6	25.4%
29	Immokalee sand	0.1	0.1%
32	Myakka-Myakka, wet, fine sands, 0 to 2 percent slopes	27.3	27.1%
42	Pacia fine sand, 0 to 8 percent slopes	2.6	2.6%
56	Samsula muck, frequently ponded, 0 to 1 percent slopes	2.9	2.9%
99	Water	17.1	16.9%
Totals for Area of Interest		100.9	100.0%

SOILS MAP

PROJECT NAME

PLANTATION OAKS OF ORMOND BEACH
NEIGHBORHOOD COMMERCIAL – TRACT 1A-2
1730 PLANTATION OAKS BLVD.
ORMOND BEACH, FLORIDA

PROJECT DESCRIPTION

CONSTRUCTION OF 2 STORY 25,500 SF BUILDING (FIRST FLOOR IS 12,750 SF OFFICE/RETAIL/RESTAURANT, SECOND FLOOR IS 12,750 SF AIR CONDITIONED STORAGE MINI-WAREHOUSE 109 UNITS) AS WELL AS PARKING, LIGHTING, LANDSCAPE, IRRIGATION AND SIGNAGE IMPROVEMENTS.

DEVELOPER

PLANTATION OAKS OF ORMOND BEACH, LLC.
PARKER MYNCHENBERG, MANAGER
1729 RIDGEWOOD AVENUE
HOLLY HILL, FLORIDA 32117
(386) 677-6891
E:MAIL: Info@parkermynchenberg.com

SUBDIVISION DESIGNER ENGINEER & LANDSCAPE ARCHITECT

PARKER MYNCHENBERG & ASSOC., INC.
PARKER MYNCHENBERG, P.E. #32645, L.A.#1553
1729 RIDGEWOOD AVENUE
HOLLY HILL, FLORIDA 32117
(386) 677-6891
CERTIFICATE OF AUTHORIZATION #00003910
EMAIL: Info@parkermynchenberg.com

SURVEYOR

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SLIGER & ASSOCIATES, INC.
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(386) 761-5385
EMAIL: jbarnes@sligerassociates.com

TRAFFIC CONSULTANT

TURGUT DERVISH, P.E.
TRAFFIC PLANNING & DESIGN, INC.
535 VERSAILLES DRIVE-SUITE 200
MAITLAND, FLORIDA 32715-7305
(407) 628-9955

PROJECT ATTORNEY

JEFF BROCK, ESQ.
SMITH BIGMAN BROCK
444 SEABREEZE BLVD. SUITE 900
DAYTONA BEACH, FLORIDA 32118
(386) 254-6875
EMAIL: jbrock@daytonalaw.com

PARKER MYNCHENBERG & ASSOCIATES, INC.
PROFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS
1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
(386)677-6891 FAX (386)677-2114 E-MAIL: info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATION NO. 00003910

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

COVER SHEET

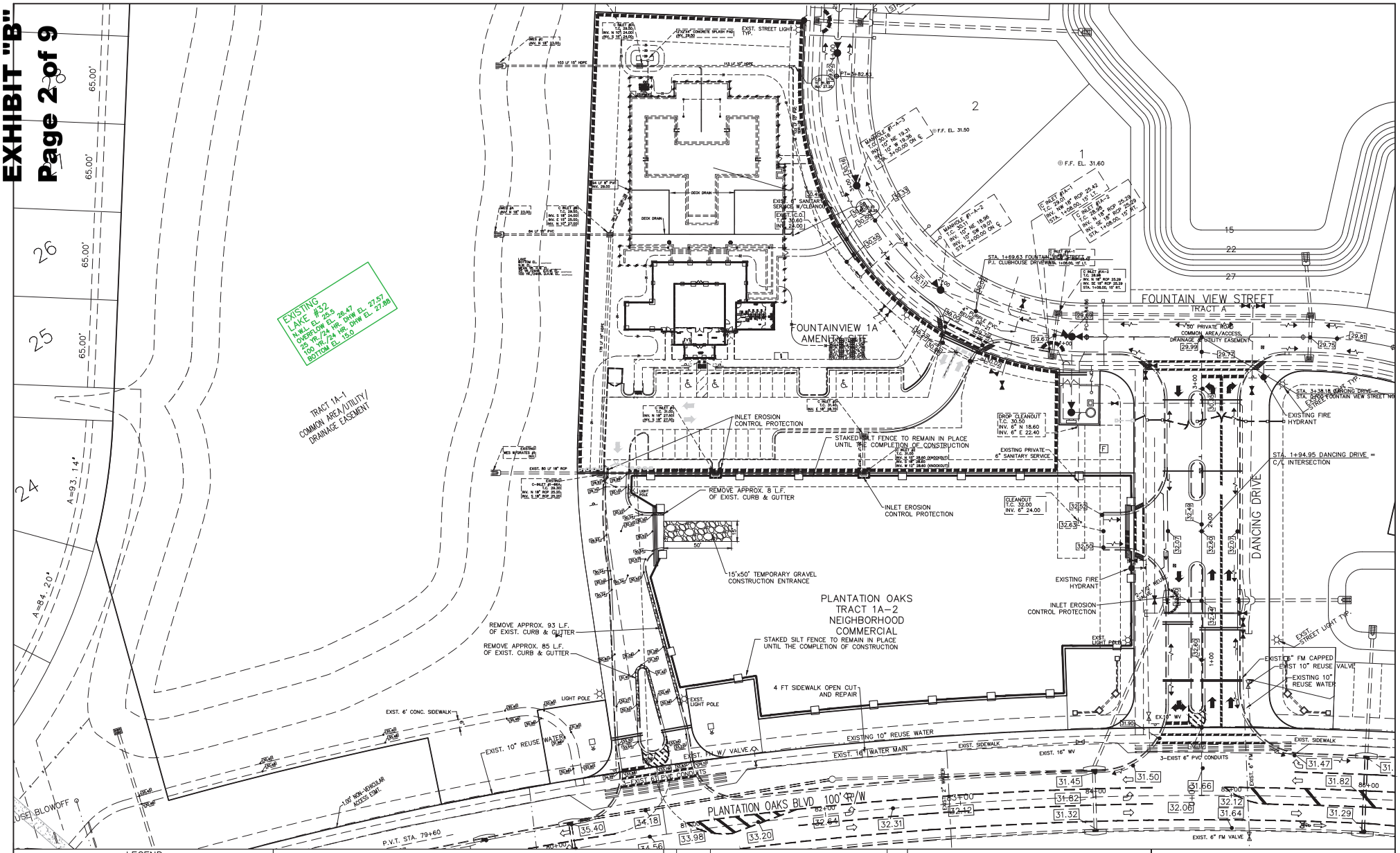
PLANTATION OAKS OF ORMOND BEACH
NEIGHBORHOOD COMMERCIAL
PHASE 1A
ORMOND BEACH * FLORIDA

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EXHIBIT "B"
Page 2 of 9



LEGEND

- EXISTING GRADE
- EXISTING CONTOUR
- PROPOSED GRADE
- PROPOSED CONTOUR
- PROPOSED DRAINAGE FLOW PATTERN
- PROPOSED NATURAL CONSERVATION EASEMENT AREA SIGN
- PROPOSED STREET LIGHT

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SCALE: 1" = 30'

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REVISIONS

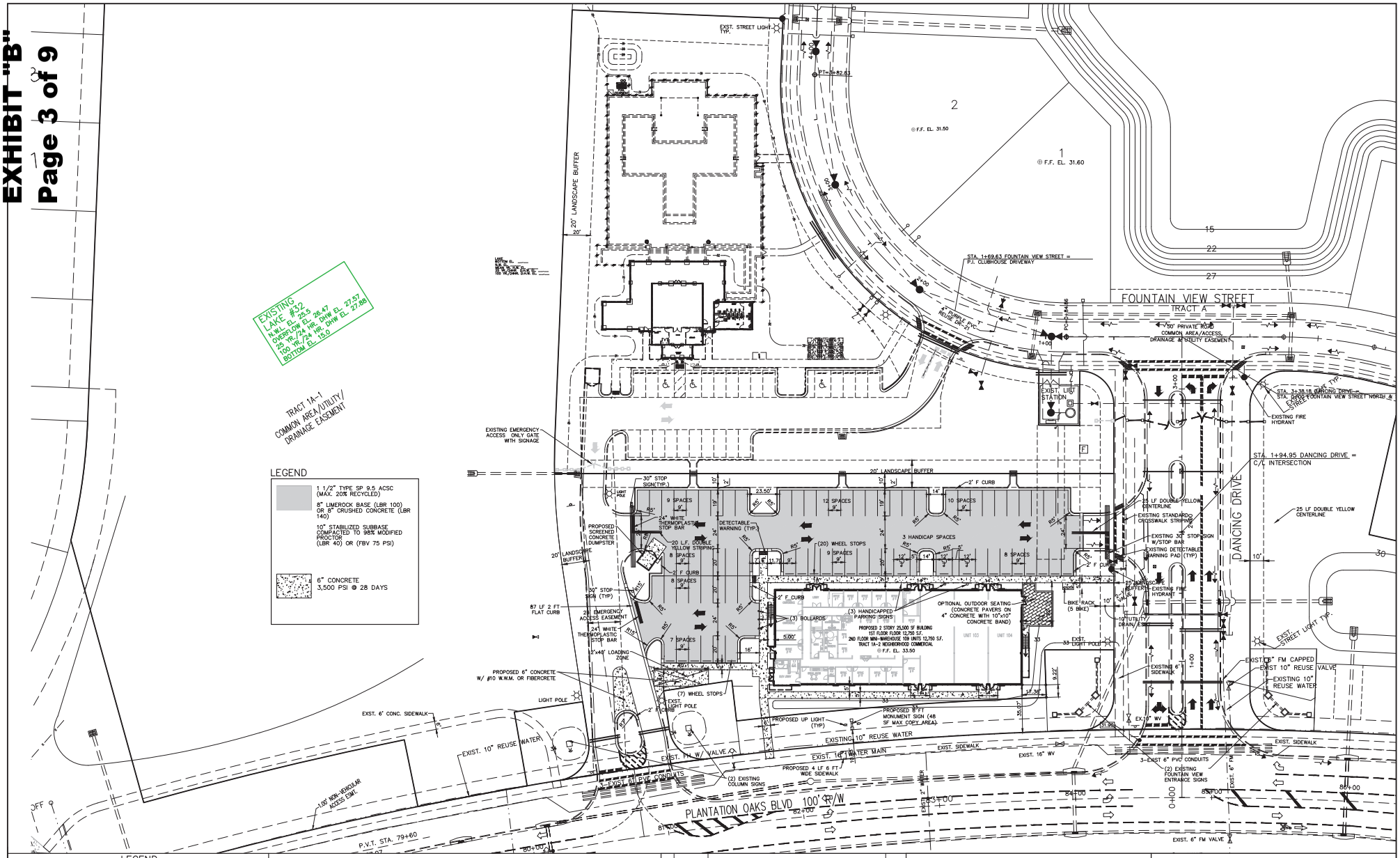
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CERTIFICATE OF AUTHORIZATION NO. 00003910

NEIGHBORHOOD COMMERCIAL – DEMOLITION PLAN

PLANTATION OAKS OF ORMOND BEACH – PH.-1A
ORMOND BEACH * FLORIDA

FILE: 15-09.1A SP.dwg	DESIGNER: P.MYNCHENBERG
DATE: 02-21-24	CADD TECH: MRB
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SEAL



LEGEND

EXISTING GRADE	PROPOSED NATURAL CONSERVATION EASEMENT AREA SIGN
EXISTING CONTOUR	PROPOSED STREET LIGHT
PROPOSED GRADE	
PROPOSED CONTOUR	
PROPOSED DRAINAGE FLOW PATTERN	

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NO.	DATE	DESCRIPTION	BY

REVISIONS

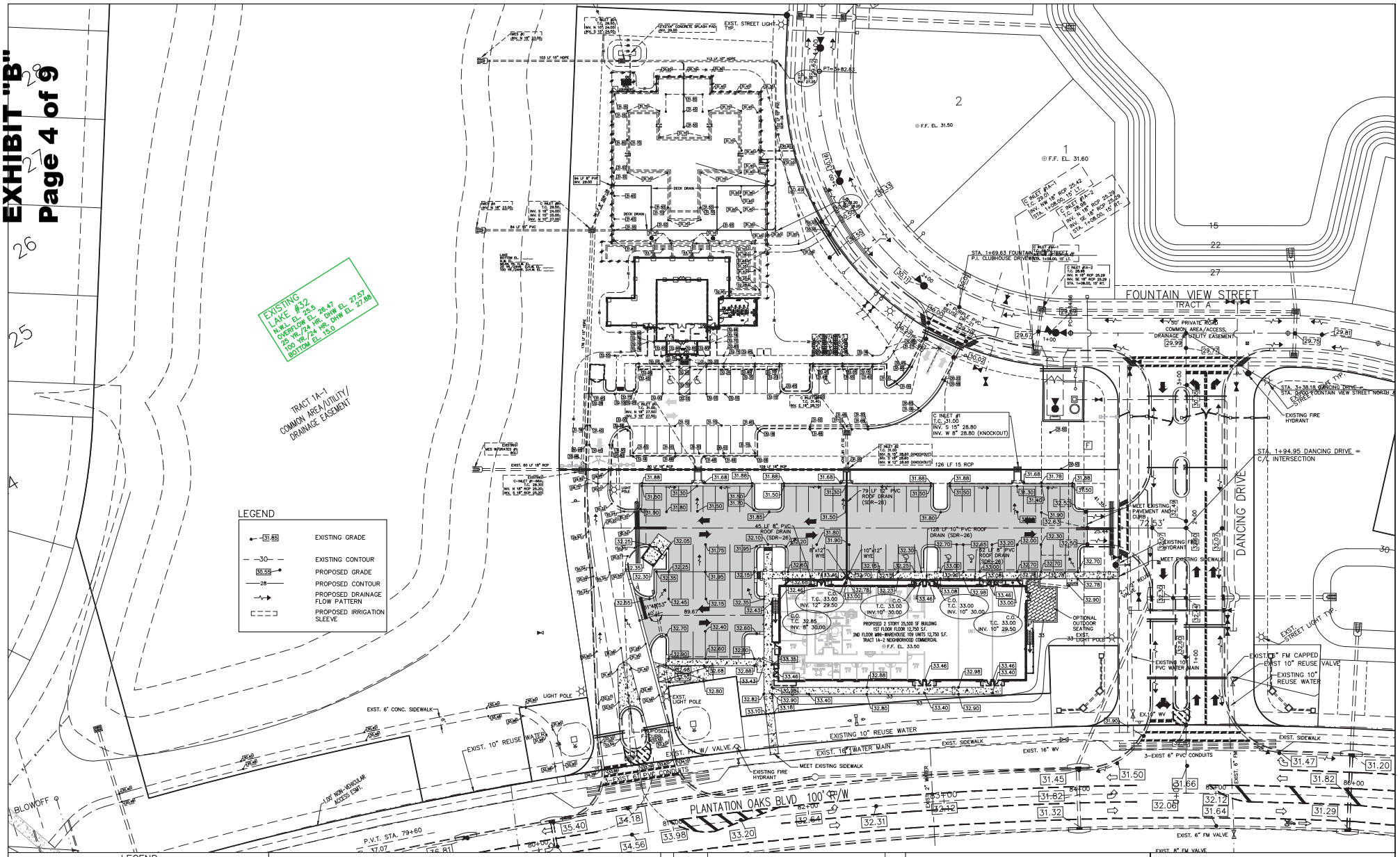
PARKER MYNCHENBERG & ASSOCIATES, INC.
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(386) 677-6891 FAX (386) 677-2114 E-MAIL: info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATION NO. 00003910

NEIGHBORHOOD COMMERCIAL – SITE PLAN

PLANTATION OAKS OF ORMOND BEACH – PH.-1A
ORMOND BEACH * FLORIDA

FILE: 15-09.1A SP.dwg	DESIGNER: P.MYNCHENBERG
DATE: 02-21-24	CADD TECH: MRB
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SEAL



LEGEND

EXISTING GRADE
EXISTING CONTOUR
PROPOSED GRADE
PROPOSED CONTOUR
PROPOSED DRAINAGE FLOW PATTERN
PROPOSED NATURAL CONSERVATION EASEMENT AREA SIGN
PROPOSED STREET LIGHT

GRAPHIC SCALE
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SCALE: 1" = 30'

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REVISIONS

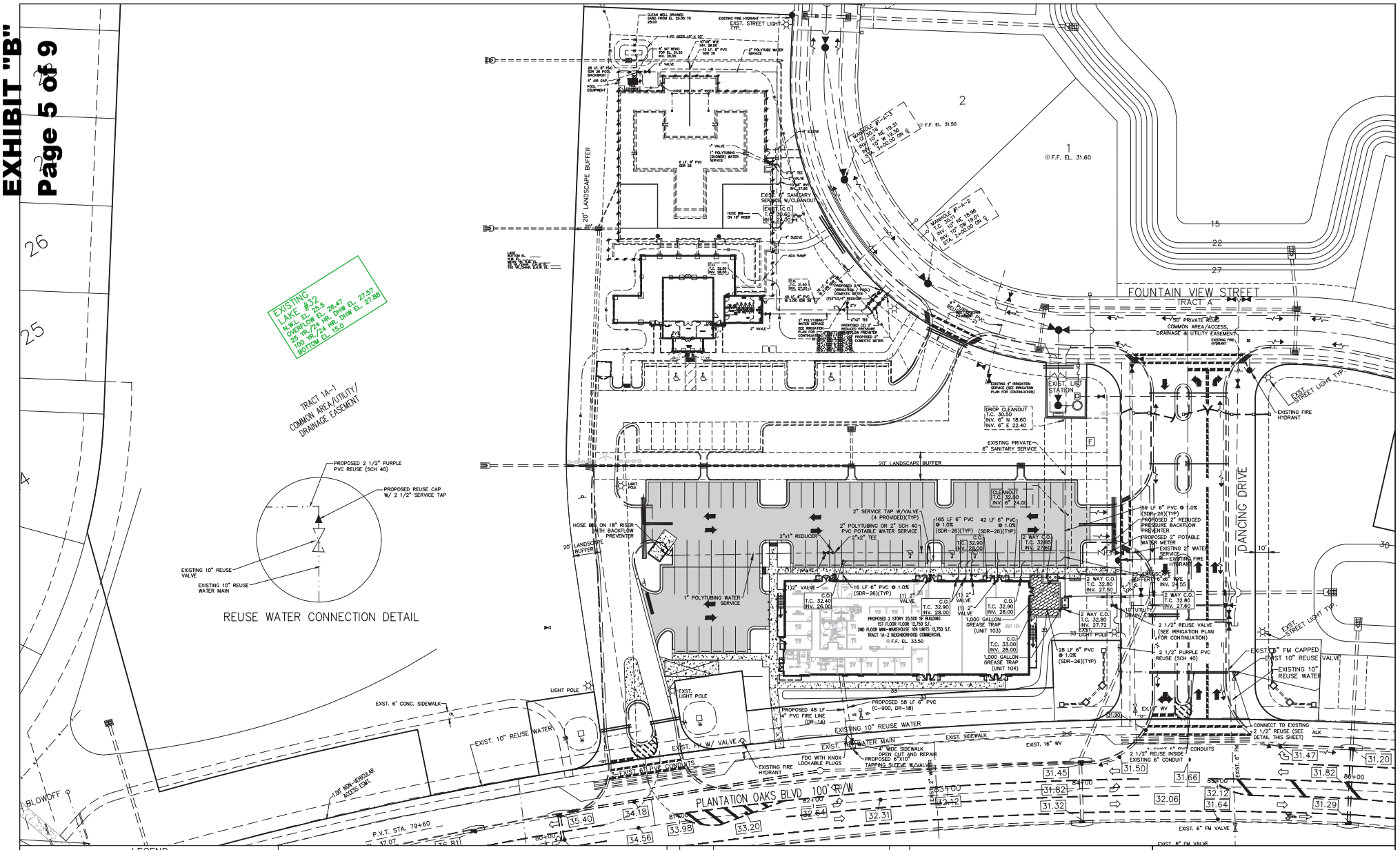
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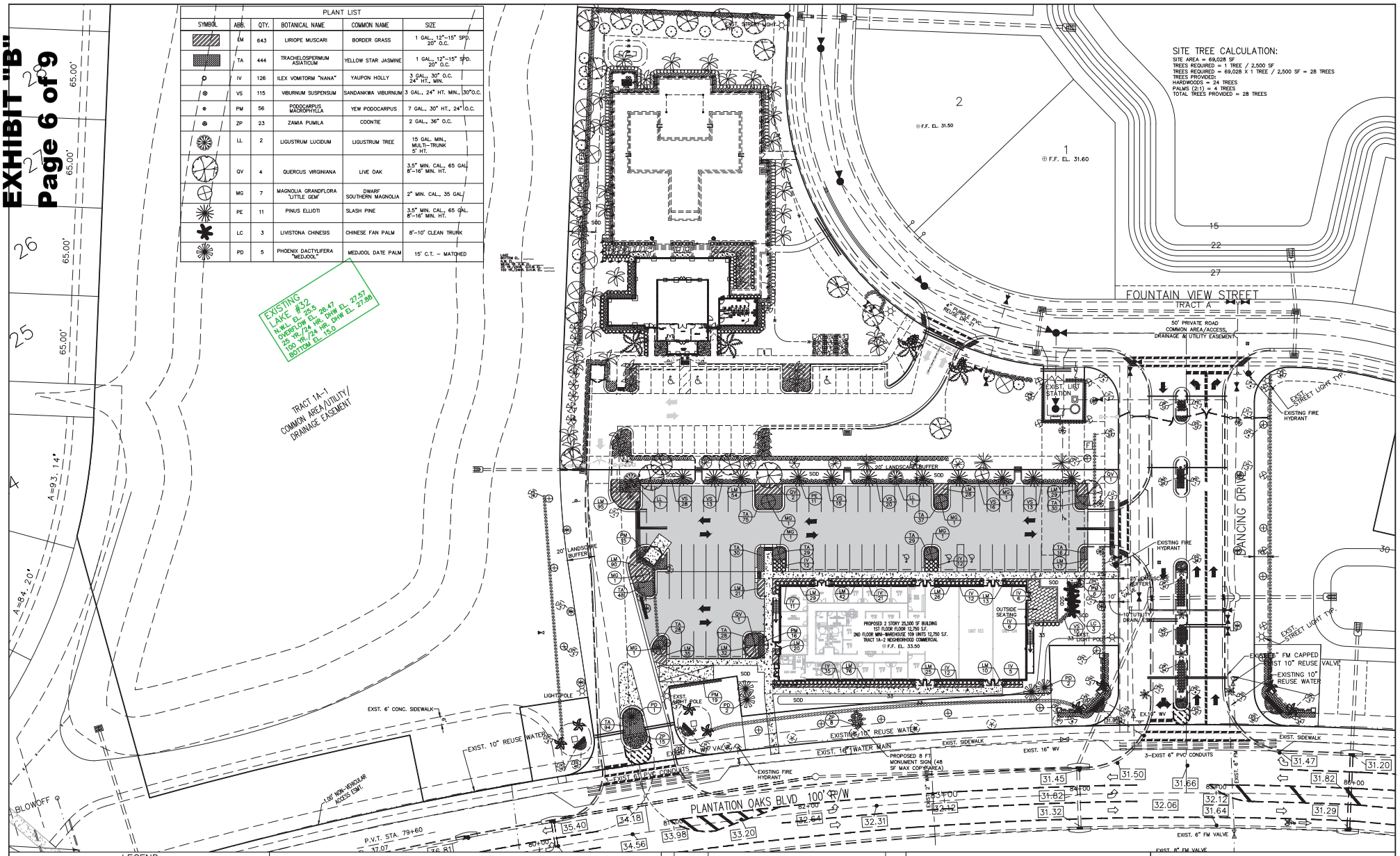
NEIGHBORHOOD COMMERCIAL – CIVIL PLAN
PLANTATION OAKS OF ORMOND BEACH – PH.-1A
ORMOND BEACH * FLORIDA

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EXISTING LAKE #32
N.W.L. EL. 25.5
OVERFLOW EL. 26.47
25 YR/24 HR. DHW EL. 27.57
100 YR/24 HR. DHW EL. 27.88
BOTTOM EL. 15.0
TRACT 1A-1
COMMON AREA/UTILITY/
DRAINAGE EASEMENT
REUSE WATER CONNECTION DETAIL
PROPOSED 2 1/2" PURPLE PVC REUSE (SCH 40)
PROPOSED REUSE CAP W/ 2 1/2" SERVICE TAP
EXISTING 10" REUSE VALVE
EXISTING 10" REUSE WATER MAIN
20' LANDSCAPE BUFFER
FOUNTAIN VIEW STREET
TRACT A
50' PRIVATE ROAD
COMMON AREA/ACCESS,
DRAINAGE & UTILITY EASEMENT
DANCING DRIVE
PLANTATION OAKS BLVD 100' R/W
EXIST. LIFT STATION
DROP CLEANOUT
EXISTING PRIVATE 6" SANITARY SERVICE
EXISTING FIRE HYDRANT
EXIST. STREET LIGHT TYP.
EXIST. 6" FM VALVE
EXIST. 8" FM CAPPED
EXIST 10" REUSE VALVE
EXISTING 10" REUSE WATER
EXIST. 10" REUSE WATER
EXIST. 6" CONC. SIDEWALK
EXIST. SIDEWALK
EXIST. 16" WV
EXIST. 6" FM
EXIST. 2" FM
EXIST. 8" FM VALVE
EXIST. 16" WM
EXIST. 10" WM
EXIST. 6" WM
EXIST. 2" WM
EXIST. 10" WM VALVE
EXIST. 6" WM VALVE
EXIST. 2" WM VALVE
EXIST. 6" FM VALVE
EXIST. 8" FM VALVE
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EXIST. 6" FM
EXIST. 2" FM
EXIST. 8" FM VALVE
EXIST. 2" FM VALVE
EXIST. 6" FM VALVE



NO.	DATE	DESCRIPTION	BY
		REVISIONS	

PARKER MYNCHENBERG & ASSOCIATES, INC.
PROFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS
1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
(386) 677-6891 FAX (386) 677-2114 E-MAIL: info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATION NO. 00003910

NEIGHBORHOOD COMMERCIAL – LANDSCAPE PLAN

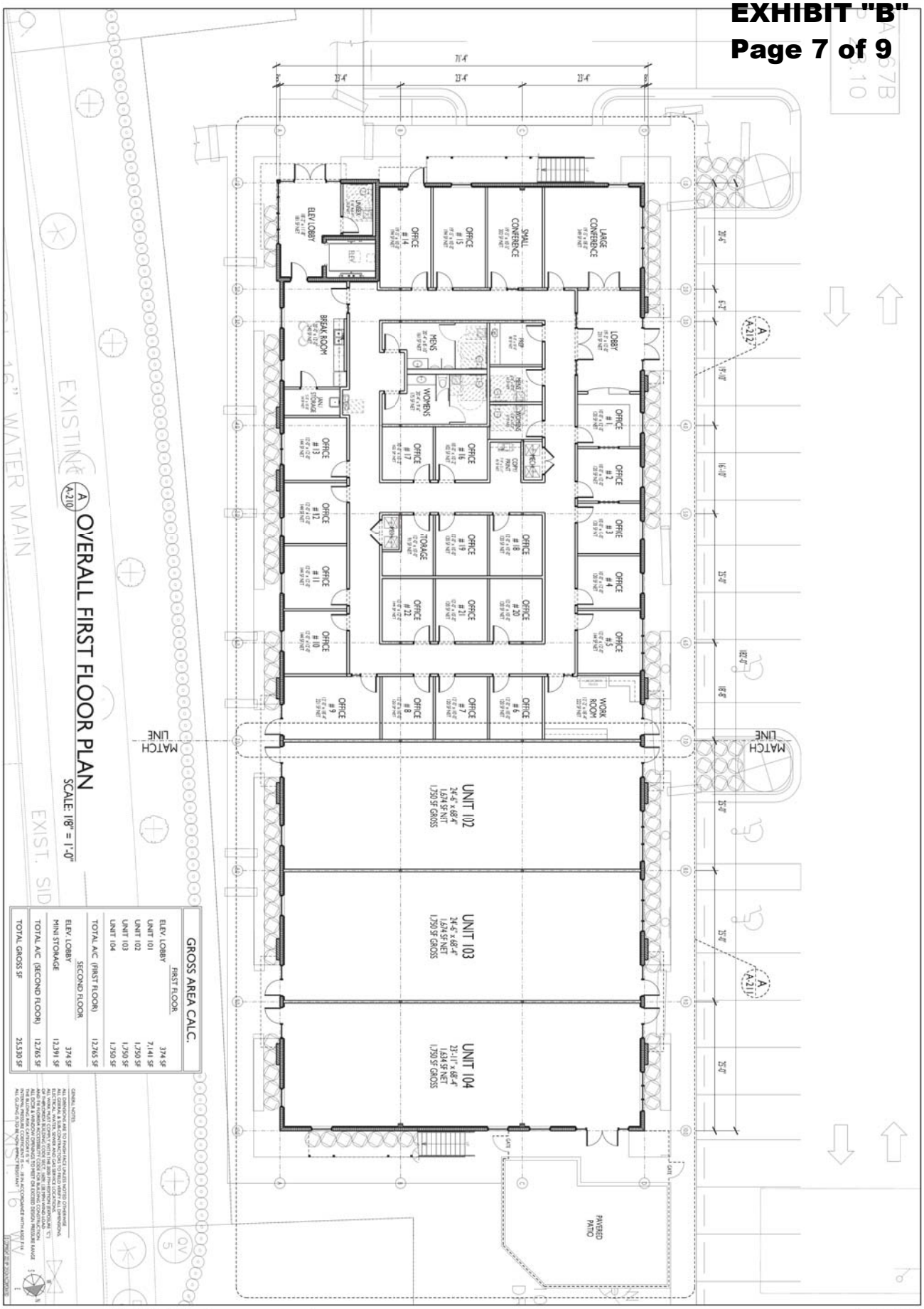
PLANTATION OAKS OF ORMOND BEACH – PH.-1A
ORMOND BEACH * FLORIDA

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DATE: 02-21-24	CADD TECH: MRB
SCALE: 1" = 30'	SHEET 6

Parker Mynchenberg, R.L.A. LA000155 — Digitally signed by Parker Mynchenberg, R.L.A. LA000155 Date: 2024.03.12 08:29:30 -04'00'

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A OVERALL FIRST FLOOR PLAN

SCALE: 1/8" = 1'-0"

GROSS AREA CALC.

FIRST FLOOR	
ELEV. LOBBY	374 SF
UNIT 101	7,141 SF
UNIT 102	1,750 SF
UNIT 103	1,750 SF
UNIT 104	1,750 SF
TOTAL A/C (FIRST FLOOR)	12,765 SF
SECOND FLOOR	
ELEV. LOBBY	374 SF
MINI STORAGE	12,391 SF
TOTAL A/C (SECOND FLOOR)	12,765 SF
TOTAL GROSS SF	25,530 SF

GENERAL NOTES:

ALL DIMENSIONS ARE TO FINISH FACES UNLESS NOTED OTHERWISE
ELEVATIONS ARE BASED ON AN ASSUMED FINISH FLOOR ELEVATION OF 100'-0"
ALL GENERAL NOTES, SPECIFICATIONS & DETAILS SHALL BE STRICTLY FOLLOWED
ALL WORK MUST COMPLY WITH THE 2020 7TH EDITION (FLORIDA)
ALL WORK SHALL COMPLY WITH THE 2020 7TH EDITION (FLORIDA) RESIDENTIAL CODE
AND THE FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION
THE BUILDING SHALL BE DESIGNED TO MEET OR EXCEED DESIGN PRESSURE RANGE
ALL GLAZING IS TO BE NON-IMPACT RESISTANT

PLANTATION OAKS - NEIGHBORHOOD COMMERCIAL

OWNER/REP.: _____

PROJECT LOCATION: _____, ORMOND BEACH, FL, 32174

GENERAL CONTRACTOR: _____

RPI DESIGN INCORPORATED
Building Design and Architecture

BRIAN P. REDLEY, ASSOCIATE AIA, PROJECT MANAGER
DALLAS B. RYCCIOCH, ARCHITECT
AAR 0009706

321 MAGNOLIA AVENUE
DAYTONA BEACH, FL 32114 PH: (386) 257-5010 FX: (386) 257-5018
EMAIL: info@rpidesign.com WEBSITE: rpidesign.com

OVERALL FIRST FLOOR PLAN

DRAWN BY: TEM
CHECKED BY: DBP/BPR
DATE: 2021/08/03 8:10:03
SCALE: 1/8"=1'-0"
SHEET NO. A-210

ARCHITECT'S / ENGINEER'S SEAL

REVISIONS

A A-220 OVERALL SECOND FLOOR PLAN

SCALE: 1/8" = 1'-0"

GROSS AREA CALC.

FIRST FLOOR	
ELEV. LOBBY	374 SF
UNIT 101	7,141 SF
UNIT 102	1,750 SF
UNIT 103	1,750 SF
UNIT 104	1,750 SF
TOTAL A/C (FIRST FLOOR)	12,765 SF
SECOND FLOOR	
ELEV. LOBBY	374 SF
MINI STORAGE	12,391 SF
TOTAL A/C (SECOND FLOOR)	12,765 SF
TOTAL GROSS SF	25,530 SF

GENERAL NOTES:

ALL DIMENSIONS ARE TO FINISH FACES UNLESS NOTED OTHERWISE
ALL EXTERIOR & INTERIOR WALLS TO BE STRUCTURAL STEEL STUD FRAMING
ALL WORK MUST COMPLY WITH THE 2020 7TH EDITION (FLORIDA) 'C1'
ALL WORK SHALL COMPLY WITH THE 2020 7TH EDITION (FLORIDA) 'C1' AND THE FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION.
THE BUILDING IS CLASSIFIED AS TYPE II (000) UNPROTECTED NON-COMBUSTIBLE
ALL CLOSETS TO BE NON-SPRINKLERED

DESIGN INCORPORATED
Building Design and Architecture
BRIAN P. RIDDLE, ASSOCIATE AIA, PROJECT MANAGER
DALLAS B. PRUCNAL, ARCHITECT
AAR 0009706
321 RAVEN HERALD
DAYTONA BEACH, FL 32114, PH: (386) 257-5151 FX: (386) 257-5155
EMAIL: info@rdpinc.com WEBSITE: rdpinc.com

PLANTATION OAKS - NEIGHBORHOOD COMMERCIAL

OWNER/REP.: _____

PROJECT LOCATION: _____, ORMOND BEACH, FL, 32174

GENERAL CONTRACTOR: _____

OVERALL SECOND FLOOR PLAN

DRAWN BY: TDH | CHECKED BY: BPR | DATE: 2021/08/03 ISSUE | SCALE: 1/8"=1'-0" | SHEET NO. A-220

ARCHITECT'S / ENGINEER'S SEAL

REVISIONS

PLANTATION OAKS - NEIGHBORHOOD COMMERCIAL

OWNER/REP.: _____

PROJECT LOCATION: _____, ORMOND BEACH, FL, 32174

GENERAL CONTRACTOR: _____

REVISIONS

PROPOSED ELEVATIONS

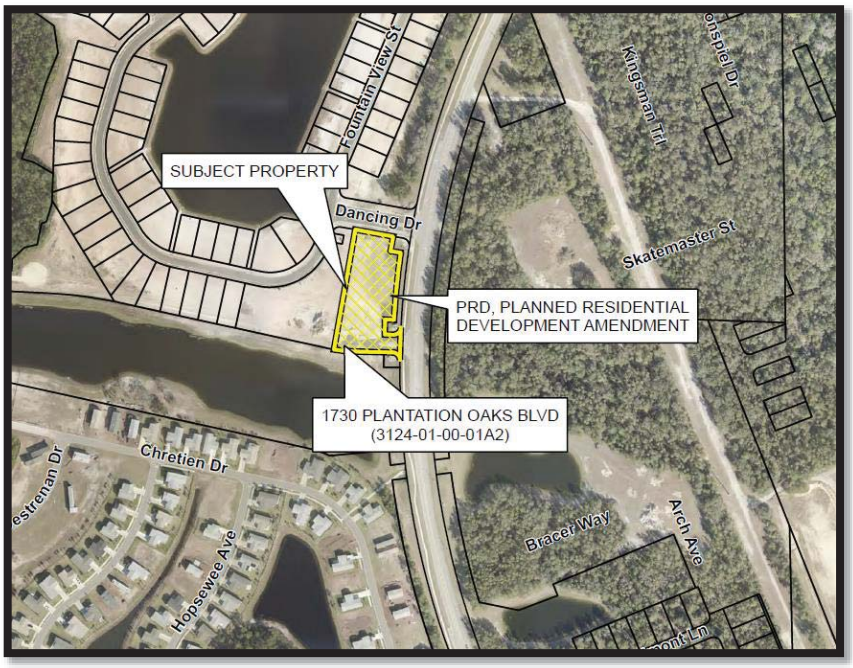
SHEET NO. A-300

EXHIBIT “C”

Planned Residential Development Amendment Conditions for the Neighborhood Commercial Parcel of the Plantation Oaks subdivision

1. The Neighborhood Commercial setback shall be measured from Plantation Oaks Boulevard and allowed to include Tract Y as shown in Map Book 59, Page 143, as an existing landscape buffer.
2. The warehouse, indoor mini-rental use is allowed and shall only be permitted on the second-floor of the neighborhood commercial structure. The entire structure (first-floor) is not permitted to allow a warehouse, indoor mini-rental use.
3. Hours of outside construction shall be Monday through Saturday from 7:00 am to 7:00 pm.

PLANNING BOARD
STAFF REPORT
Plantation Oaks of Ormond Beach, LLC, PRD Amendment
Project Number: PZ-2024-037

PLANNING BOARD DATE:	July 11, 2024
TENTATIVE CITY COMMISSION DATE:	August 20, 2024 (first reading), September 4, 2024 (second reading)
APPLICANT:	Plantation Oaks of Ormond Beach, LLC, property owner
LOCATION:	1730 Plantation Oaks Boulevard, Plantation Oaks Planned Residential Development
REQUEST:	Planned Residential Development amendment to Resolution #2012-24 to amend the development order for the Plantation Oaks of Ormond Beach, LLC, Neighborhood Commercial list of permitted uses to add Warehouse, Indoor Mini-Rental as a permitted use under certain conditions
SITE PLAN REVIEW COMMITTEE RECOMMENDATION:	Approval
STAFF CONTACT:	Noel Eaton, Senior Planner
MAP OF PROJECT AREA:	

SECTION 1, INTRODUCTION:

This is a Planned Residential Development (PRD) amendment submitted by Plantation Oaks of Ormond Beach, LLC. The PRD allowed a neighborhood commercial parcel (Tract 1A-2) with certain uses permitted and the amendment seeks to allow Warehouse Indoor Mini-Rental as a permitted use. The 1.58-acre Neighborhood Commercial property is located at 1730 Plantation Oaks Boulevard.

SECTION 2, BACKGROUND:

The Plantation Oaks subdivision is part of the National Gardens Development of Regional Impact (DRI) approved by Volusia County with Resolution 86-192, which authorized 3,930 residential units on 2,009 acres. Resolution 2001-229 reduced the density cap of the Development of Regional Impact to 2,115 units and reduced the Plantation Oaks Boulevard right-of-way to 100'.

The Volusia County approvals for the Plantation Oaks subdivision are as follows:

EXHIBIT 1: Volusia County Approvals for the Plantation Oaks Subdivision:

Action/Approval date	Description
November 21, 2002 Volusia County Council Resolution 2002-199 Book 4988, Pages 140-211	Zoning approval for 1,577 residential units. Key components include: • 1,033.75 acres in subdivision. • Units were to be site-built, single-family, standard dwellings on fee simple lots. • Adult community with at least 80% of the residents 55 years or older. • The project agreed to pay a school impact fee for all dwellings. • Established development standards. • Provided 217 acres for a golf course. • Required a 100-foot right-of-way from U.S. Highway 1 to Old Dixie Highway. • Internal roadways shall be private.
August 9, 2006 Volusia County Minor amendment Book 6281, Pages 3136-3161	Utility Service Agreement for Plantation Oaks of Ormond Beach and the County of Volusia.
July 18, 2007 Volusia County Minor amendment Book 6100, Pages 2016-2020	Minor amendment to 2002 Volusia County Residential Planned Unit Development to increase the required buffer on Old Dixie Highway to 175 feet.
August 12, 2008 Volusia County Minor amendment Book 6268, Page 3768	Minor amendment to update the project construction phasing and schedule.

Action/Approval date	Description
September 23, 2009 Volusia County Minor amendment Book 6407, Pages 456-477	Minor amendment to 2002 RPUD to locate the regional wastewater treatment facility in the northwest corner of the planned development and relocate twelve (12) single-family lots from Unit 1A to Unit 2.
January 19, 2012 Volusia County Council Resolution 2012-24 Book 6674, Pages 2025-2069	The first major amendment to 2002 RPUD to: • Delete the requirement for standard dwelling units and allow mobile homes. • Hardened central clubhouse is required for the development of manufactured homes.
December 4, 2015 Volusia County Minor amendment to Resolution 2012-24 Book 7201 Pages 1720-1753	Minor amendment to 2012 RPUD to include: • Include the option of constructing lakes and open spaces instead of golf Courses. • Revision date for the new RPUD preliminary plan. • Revises the project phasing schedule. • Revises several sections to change the project water and sewer provider from Volusia County Utilities to the City of Ormond Beach.
July 15, 2016 Volusia County Minor amendment Book 7285 Pages 4169-4175	Minor amendment to 2012 RPUD to include: • Provide alternate school site and prepay school impact fees for the entire development. • Release Plantation Oaks of Ormond Beach school site and reserve Future Development Rights on the site. • Donate a ~~23.11~~ 14.35-acre school site ~~as indicated on the preliminary plan~~ adjacent to Westside Elementary in the City of Daytona Beach to the Volusia County School Board, and prepay the remaining school impact fee for the entire age-restricted development before December 30, 2016, satisfying the school impact fee payment for the entire 1,577 age-restricted site.

Action/Approval date	Description
August 17, 2018 Volusia County Minor amendment Book 7610 Pages 240-250 **August 17, 2018** Volusia County Minor amendment Book 7610 Pages 240-250 (continued)	Minor amendments are as follows: Resolution #2002-199 Amendments • Amend Exhibit A “Legal Description”. • Amend Exhibit B “typical 65x110 lot irrigation plan” Resolution #2012-24 Amendment. • Exhibit C “Signage” adjacent to Plantation Oaks Boulevard, north of the intersection with Pennsylvania Avenue. Minimum 10-foot setback from Plantation Oaks Boulevard right-of-way, two (2) 9-foot-tall brick columns with two (2) signs (1 per column), at the sales center and maintenance yard and will be monument signs, or a 9-foot column, with a maximum copy area of 12 square feet.
January 10, 2019 Volusia County Minor amendment Book 7644 Pages 2820-2831	Amendments to Resolution #2002-199 • The 100-foot right-of-way Median Roadway Section Typical Landscape Plan is eliminated, and four specific median landscape plans for Plantation Oaks Boulevard are added, as shown in "Exhibit C" Median Landscape As-Built Plan. Amendments to Resolution #2002-199 and Resolution #2012-24 • Development Standards o Lots adjacent to Lake #32 may provide the 15ft landscape perimeter buffer plantings before issuing a Certificate of Occupancy for single-family dwellings. • Open Space o Adjacent to Plantation Oaks Boulevard: allow areas to remain unplanted as to retain the existing views of Lakes #32, #47, #56, #65, #70, and #71, as delineated on Exhibit B, preliminary plan, Sheets 9 and 10, Order and Resolution #2002-199, as amended; plantings within the required 50-foot open space corridor may be completed with the construction of individual development phases; and retain the existing native vegetation adjacent to the bank areas of these lakes which do not directly front on this roadway.

Action/Approval date	Description
January 14, 2019 Volusia County Plat Plat Book 59, Pages 138-154	Plantation Oaks of Ormond Beach – Unit 1 plat – includes roadways and landscape buffers abutting Plantation Oaks Boulevard.

The table below summarizes the City of Ormond Beach approvals for the overall Plantation Oaks subdivision:

EXHIBIT 2: Ormond Beach Approvals for the Plantation Oaks Subdivision:

Action/Approval date	Description
August 18, 2015 Resolution 2015-168 Book 7155, Pages 4437-4462 Annexation Agreement	An annexation agreement was approved to serve utilities to Plantation Oaks. Annexation was required to provide utility services, but the property was not contiguous and could not be annexed in 2015.
October 1, 2019 Ordinance 2019-30 Book 7760 Page 3724 Annexation	The annexation includes 1,055.36± acres of the Plantation Oaks subdivision. It contains a condition that 427 units may be constructed until additional utility improvements are made.
January 21, 2020 Ordinance 2019-43 Future Land Use Map	This action amended the Future Land Use Map designations for the Plantation Oaks subdivision and the 11 enclaves within the First Amended Interlocal Service Boundary Agreement Area.
May 26, 2020 Ordinance 2020-016 Annexation	Three parcels totaling 0.44+ were not included in the original legal description of the annexation owned by Plantation Oaks, which was annexed on May 26, 2020.
February 2, 2021 Ordinance 2021-02 & 2021-03 Book 7985, Page 4080	Zoning map amendment and issuance of a development order incorporating Volusia County approvals. The age restriction that limits residents to 55 years of age and over within Phase 1 was also deleted. All homes constructed within Phase 1 shall only be site-built, single-family, standard dwellings on fee-simple lots, with no manufactured or mobile homes allowed.

Action/Approval date	Description
June 7, 2022 Ordinance 2022-16 Book 8268, Page 2898	First Amendment. 1. Converted golf course in Phase 1 to add 40 lots; a total 709 lots; 2. Convert the golf course in Phase 3 to add 43 lots, a total of 524; 3. Lift age restriction in all phases except Phase 2; 4. Prohibit manufactured homes except Phase 2; and 5. Convert the former school area, Phase 4, to 80 lots.

SECTION 3, ANALYSIS:

Project description: The project has an approved development order for the Neighborhood Commercial parcel. The applicant has an active site plan under review by the Site Plan Review Committee (SPRC). **The amendments of the application seek to (1) add the warehouse, indoor mini-rental use to the neighborhood commercial parcel located at 1730 Plantation Oaks Blvd and (2) acknowledge the front yard building setback is to be taken from the Plantation Oaks Blvd. right-of -way and allowed to include Tract Y as shown in Map Book 59, Page 143, as an existing landscape buffer.**

Below are key attributes of the project:

1. The site is approximately 1.58 acres and includes the property at 1730 Plantation Oaks Boulevard.
2. The proposed use is a 12,500 sq./ft. commercial structure with a mixture of office, retail and restaurant uses on the first floor and warehouse, indoor mini-rental storage use on the second floor. Staff recommends a development order condition that the warehouse, indoor mini-rental storage use can only be located on the second floor to prevent the entire structure from being an indoor warehouse.
3. During the site plan process, the applicant expressed concern with the ability to meet parking requirements with all commercial uses and has proposed the second- floor storage use.
4. The NC-Neighborhood Commercial parcel allows the following permitted uses from the approved development order:
    a. Retail Bakeries and confectionery.
    b. Barber shops, beauty shops, shoe repair shops, and similar person service stores.
    c. Book stationary, newsstands, pharmacies, hardware and similar retail convenience stores.
    d. Convenience of general stores.
    e. Type A and B restaurants.
    f. Professional, financial, administrative, and medical offices.

g. Laundry and dry-cleaning pickup stations and self-service establishments.
h. Child care centers, private schools, and House of Worship.
i. Essential utility service uses and facilities.
j. Excavation for lakes and stormwater management facilities serving the golf course or NC area.
k. Customary accessory uses and structures to the permitted uses.
l. Warehouse, Indoor Mini-Rental second-floor only) **sought as part of this amendment**.

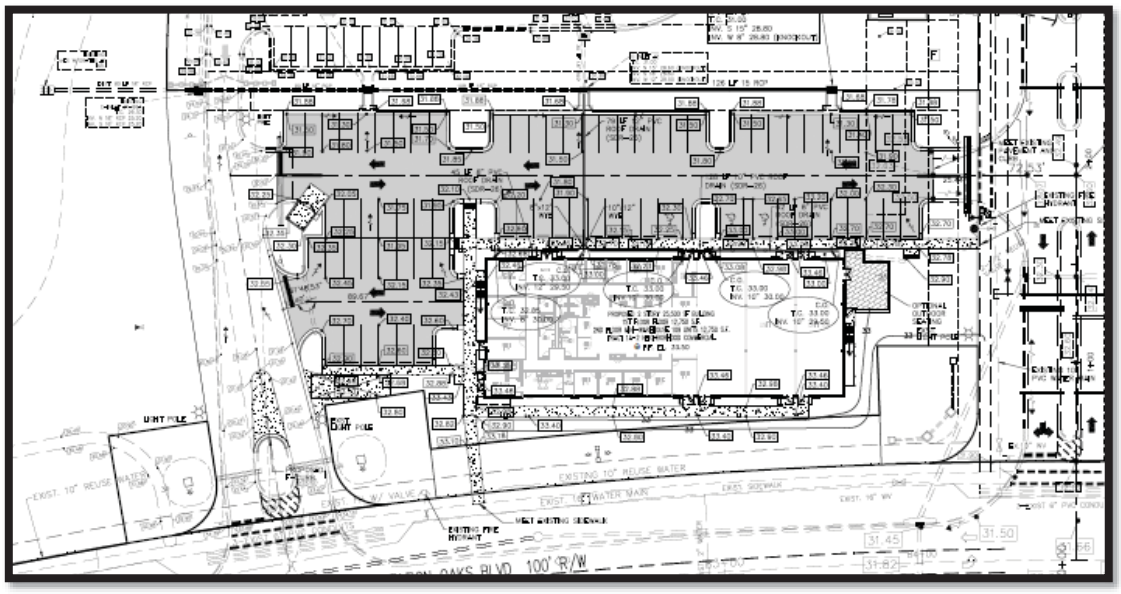
The site is designated “Low Density Residential” (LDR) on the city’s Future Land Use Map and is zoned PRD, Planned Residential Development, incorporating the Volusia County approvals. The following table shows the surrounding land uses and zoning:

EXHIBIT 3: Adjacent land uses and zoning:

Direction	Uses	Land Use designation	Zoning designation
North	Plantation Oaks	“Low Density Residential”	PRD, Planned Residential Development
South	Plantation Oaks	“Low Density Residential”	PRD, Planned Residential Development
East	Plantation Oaks	“Low Density Residential”	PRD, Planned Residential Development
West	Fountain View Amenity Center	“Low Density Residential”	PRD, Planned Residential Development

Below is an image from the proposed site plan for the commercial development project at 1730 Plantation Oaks Boulevard:

EXHIBIT 4: Proposed site plan:



A neighborhood meeting was held at the Plantation Oaks Clubhouse on June 10, 2024. An explanation of the amendment was presented along with descriptions of the current permitted uses and the requested warehouse, indoor mini-rental use located on the second story. There were no objections to the request heard at the neighborhood meeting.

SECTION 4, CONCLUSION:
In considering an application for a Planned Residential Development, the Planning Board may recommend to approve, approve with conditions, or disapprove, and the City Commission may base its conditions of approval or denial of the issuance of a development order on the extent to which the development offers site amenities above that normally found for permitted uses in the district with regard to the following:

a) Innovative site design.

The proposed PRD amendment to add the warehouse, indoor mini-rental use would not impact site design. The amendment also seeks to take the front yard setback for the principle commercial structure from the Plantation Oak Boulevard right-of-way line which incorporates the existing landscape buffer (Tract Y as shown in Map Book 59, Page 143).

b) Coordinated architectural design.

The proposed building utilizes the neo-eclectic architectural style in accordance with the Land Development Code.

c) Open space, recreation, common areas.

The site plan has been designed to mitigate any off-site impacts. The proposed amendment does not have any impact to already designated open space, recreation or common areas in the subdivision.

d) Coordinated streetscape elements.

The proposed amendment does not have any impact to streetscape elements. The amendment seeks to add the warehouse, indoor mini-rental use as a permitted use on the second- floor of the commercial structure.

SECTION 5, CRITERIA FOR APPROVAL: There are certain criteria that must be evaluated before a Planned Residential Development amendment can be approved. According to Chapter 1, Article II, Section 1-15(e) (1-10) of the Land Development Code, the Planning Board shall consider the following when making its decision:

1. **The proposed development conforms to the standards and requirements of this Land Development Code and will not create undue crowding beyond the conditions normally permitted in the zoning district, or adversely affect the public health, safety, welfare or quality of life.**

   The proposed PRD amendment seeks to add the warehouse, indoor mini-rental use as a permitted use. The site plan application has been reviewed by the Site Plan Review Committee and conforms with the Land Development Code requirements. The warehouse, indoor mini-rental use allows for a reduction of required parking spaces and lessens impacts from vehicle trips that could be associated with a more intense

use already allowed within the Development Order. Neighborhood Commercial is specifically allowed within the approved Plantation Oaks development order

2. **The proposed development is consistent with the Comprehensive Plan.**

   The property is designated “Low Density Residential” on the City’s Future Land Use Map. The proposed amendment is consistent with the land use designation and the City’s Comprehensive Plan.

3. **The proposed development will not adversely impact environmentally sensitive lands or natural resources, including but not limited to waterbodies, wetlands, xeric communities, wildlife habitats, endangered or threatened plants and animal species or species of special concern, wellfields, and individual wells.**

   The proposed PRD amendment will not have any impacts to this criterion. The amendment seeks to add the warehouse, indoor mini-rental use as a permitted use. The subject property is part of a master-planned subdivision and will not adversely impact environmentally sensitive lands or natural resources, including but not limited to waterbodies, wetlands, xeric communities, wildlife habitats, endangered or threatened plants and animal species or species of special concern, wellfields, and individual wells.

4. **The proposed use will not substantially or permanently depreciate the value of surrounding property; create a nuisance; or deprive adjoining properties of adequate light and air; create excessive noise, odor, glare, or visual impacts on the neighborhood and adjoining properties.**

   The PRD amendment will not create excessive noise, odor, glare, or visual impacts on the neighborhood and adjoining properties. The application seeks to add a use that is needed in the area to the second floor only of the proposed commercial structure. The structure has been architecturally treated to comply with the City’s LDC.

5. **There are adequate public facilities to serve the development, including but not limited to roads, sidewalks, bike paths, potable water, wastewater treatment, drainage, fire and police safety, parks and recreation facilities, schools, and playgrounds.**

   There are adequate public facilities serving the proposed development, including roads, sidewalks, bike paths, potable water, wastewater treatment, drainage, fire, and police safety. The proposed PRD amendment would not impact public facilities.

6. **Ingress and egress to the property and traffic patterns are designed to protect and promote motorized vehicle and pedestrian/bicycle safety and convenience, allow for desirable traffic flow and control, and provide adequate access in case of fire or catastrophe. This finding shall be based on a traffic report where available, prepared by a qualified traffic consultant, engineer or planner which details the anticipated or projected effect of the project on adjacent roads and the impact on public safety.**

   The PRD amendment has no traffic impacts. As discussed, the subject property is part of a master-planned subdivision. The amendment seeks to add a low trip generator use as a permitted use to the second floor of the commercial structure.

7. **The proposed development is functional in the use of space and aesthetically acceptable.**

   The site plan is functional and provides an aesthetically acceptable landscape plan and building elevations. The proposed warehouse, indoor mini-rental storage use is a needed use in the community. The PRD amendment will not impact the functional use of space. The use is only proposed on the second-story of the commercial structure.

8. **The proposed development provides for the safety of occupants and visitors.**

   The PRD amendment will not impact the safety of occupants and visitors.

9. **The proposed use of materials and architectural features will not adversely impact the neighborhood and aesthetics of the area.**

   The PRD amendment is solely to add a use that is not currently allowed by right and is needed in the community. The site plan application has provided architectural elevations that are consistent with the City's LDC requirements.

10. **The testimony provided at public hearings**.

    This application has not been heard and no public testimony has been provided. A neighborhood meeting was held at the Plantation Oaks Clubhouse on June 10, 2024 and a summary of this meeting has been provided in the applicant provided information attachment.

SECTION 6, RECOMMENDATION:

It is recommended that the Planning Board **APPROVE** the development order amendment to allow the warehouse, indoor mini-rental use within the neighborhood commercial parcel of the Plantation Oaks Subdivision with the following conditions:

1. The Neighborhood Commercial setback shall be measured from Plantation Oaks Boulevard and allowed to include Tract Y as shown in Map Book 59, Page 143, as an existing landscape buffer.
2. The warehouse, indoor mini-rental use is allowed and shall only be permitted on the second-floor of the neighborhood commercial structure. The entire structure (first-floor) is not permitted to allow a warehouse, indoor mini-rental use.
3. Hours of outside construction shall be Monday through Saturday from 7:00 am to 7:00 pm.

Attachments:

Attachment 1: Project maps
Attachment 2: Development Order excerpt for Neighborhood Commercial
Attachment 3: Applicant provided information

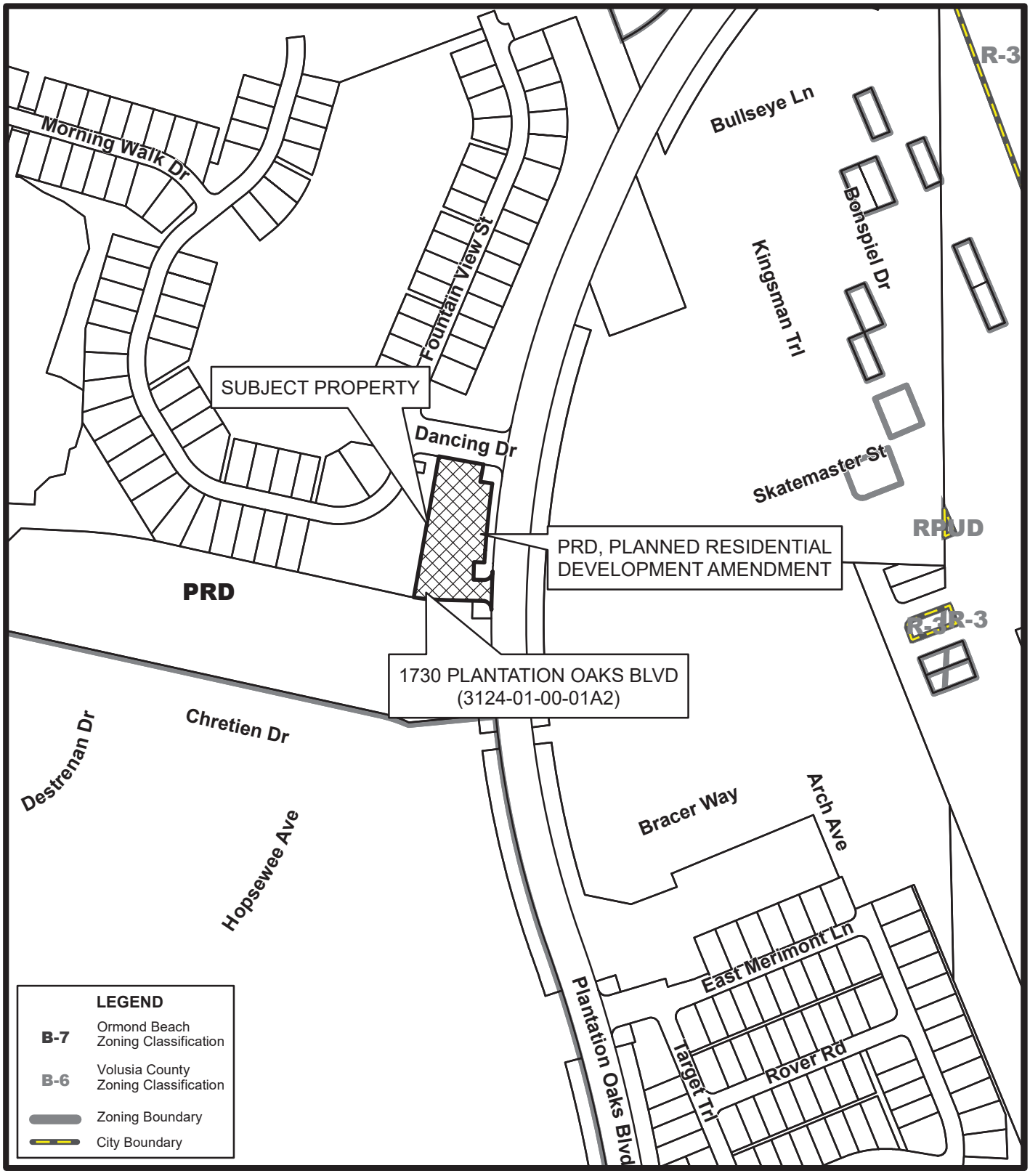
Attachment 1: Project maps



AERIAL MAP
1730 PLANTATION OAKS BLVD
(3124-01-00-01A2)

Prepared By: The City of Ormond Beach
G.I.S. Department - May 24, 2024

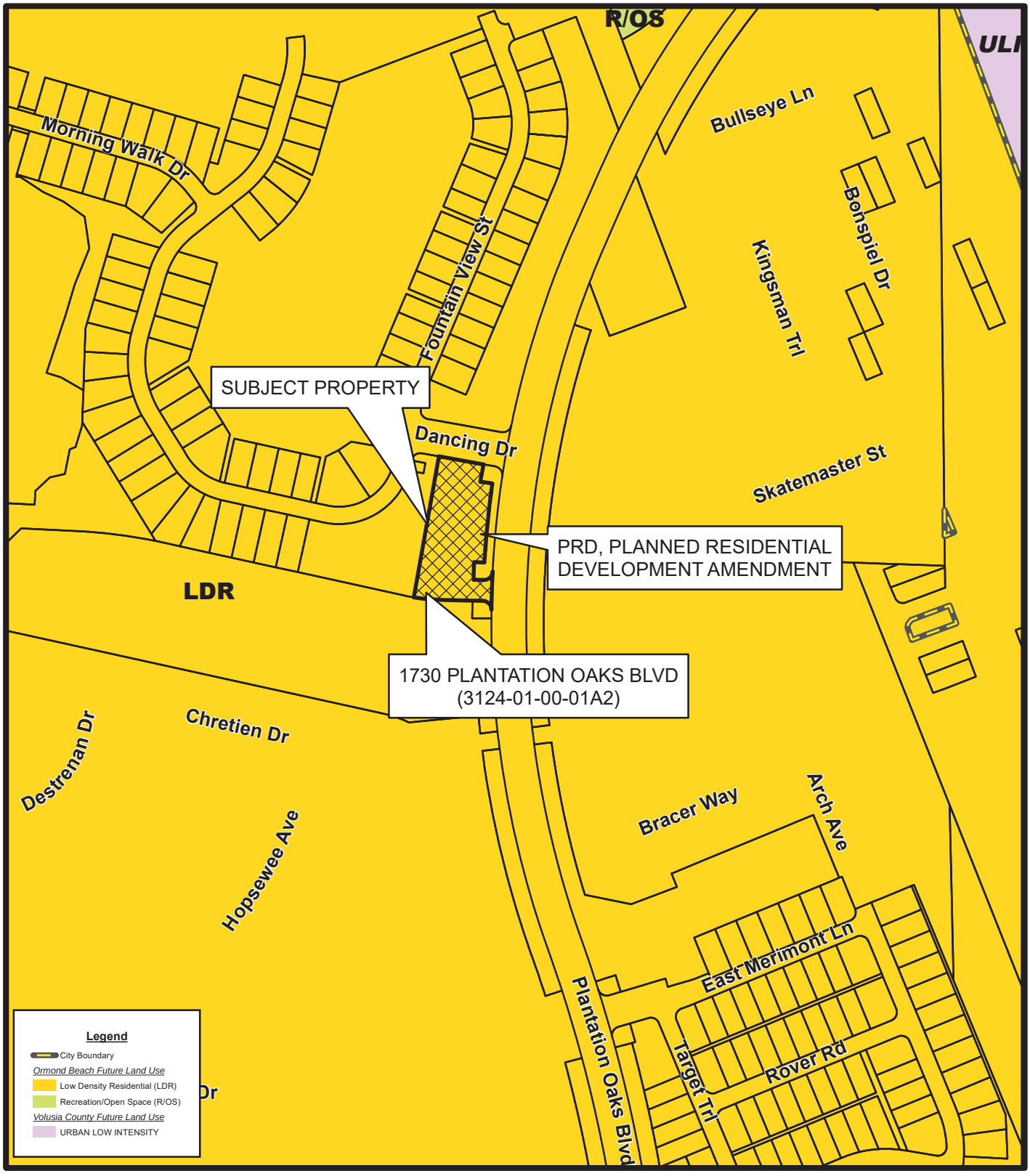
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ZONING MAP
1730 PLANTATION OAKS BLVD
(3124-01-00-01A2)

Prepared By: The City of Ormond Beach
G.I.S. Department - May 24, 2024

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FUTURE LAND USE MAP
1730 PLANTATION OAKS BLVD
(3124-01-00-01A2)

Prepared By: The City of Ormond Beach
G.I.S. Department - May 24, 2024

N
W E
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N.T.S.

Attachment 2: Development Order excerpt for Neighborhood Commercial

section 72-287 of the zoning code, as amended.

(4) Special Parking Areas - Mobile Recreational Shelters - Special Parking Areas shall be governed by Section 72-287(b) of the zoning code, as amended.

(5) Residential Parking - Residential Parking shall be governed by Section 72-287(e) of the zoning code, as amended.

(e) Landscape Buffer - The lot perimeter buffer shall be a minimum of twenty feet (20 ft.) and include: four (4) Group A trees per 100 L.F., four (4) Group B and eighteen (18) Group C or D plants per 100 L.F. No additional landscape buffer is required where (R) zoning abuts (OS) zoning.

6. NC - NEIGHBORHOOD COMMERCIAL

(a) Purpose and Intent - The NC classification provides initially, a site for sales and administrative offices for Plantation Oaks of Ormond L.L.C. After development, the site may be used for limited commercial convenience shopping, retail, service and medical facilities and customary accessory uses and structures serving residential neighborhoods.

(b) Permitted Principal Uses and Structures

(1) Retail bakeries and confectionery (including preparation of products for sale on the premises).

(2) Barber shops, beauty shops, shoe repair shops, and similar personal service stores.

(3) Book, stationery, newsstands, pharmacies, hardware and similar retail convenience stores.

(4) Convenience or General Stores, offering a full range of grocery, delicatessen, and house wares, with or without gasoline pumps, (excluding the sale of distilled spirits with a higher alcoholic content than malt beverages or fermented wines).

(5) Type A and B restaurants.

(6) Professional, financial, administrative, and medical offices.

(7) Laundry and dry cleaning pickup stations and self-service establishments.

(8) Child care centers, private schools, and Houses of Worship.

(9) Essential utility service uses and facilities.

(10) Excavation for lakes and stormwater management facilities serving the golf course or NC area.

(11) Customary accessory uses and structures to the permitted uses.

(c) Dimensional Requirements

(1) Maximum Parcel Size: 1.3 acres

(2) Minimum Building Setback:

Front Yard	25 feet
Rear Yard	20 feet

Instrument# 2012-015056 # 27
Book: 6674
Page: 2051

Side Yard	Abutting any lot: 10 feet Abutting public street R/W 25 feet, private road R/W 20 feet.

(3) Maximum Building Height - The maximum building height, measured from finished grade at the building line to the eaves, shall be as follows:

i) The maximum building height of principal uses is 35 feet.

ii) The maximum building height of accessory uses is 15 feet.

iii) The maximum building height of Churches and Houses of Worship is 55 feet.

iv) Spires, belfries, cupolas, antennas, water tanks, ventilators, chimneys of other similar accessory structures customarily required to extend above the roof level, can extend for an additional 20 feet above the maximum building height prescribed for the classification in which they are located. Antennas subject to federal, state and other local ordinances shall be permitted up to 70 feet in height above ground level.

(4) Maximum Lot Coverage - The total lot area covered with principal and accessory buildings shall not exceed 45%.

Instrument# 2012-015056 # 28
Book: 6674
Page: 2052

(5) Maximum Impervious Surface - The total lot impervious surface shall not exceed 80%.

(d) Off-street Parking and Loading Requirements - Off-street parking and loading requirements shall be provided in accordance with section 72-286 of the zoning code, as amended.

(e) Landscape Buffer - The lot perimeter landscape buffer is to be a minimum of twenty (20 ft.) feet and include: four (4) Group A trees per 100 L.F., four (4) Group B and eighteen (18) Group C or D plants per 100 L.F. Palms may be substituted for twenty-five (25%) percent of the required four (4) Group A trees per 100 L.F. Additional perimeter landscape buffer is not required where (NC) site abuts (OS) zoning category.

(f) Final Site Plan - A Final Site Plan approval procedure per the land development code, as amended, shall be required for each lot to be developed.

(g) Types of Signs Permitted - The following signs shall be permitted and shall comply with section 72-298 of the zoning code, as amended, regarding of size and location:

(1) Ground Signs

(2) Project Signs

(3) Temporary Signs

(4) Marquee Signs

(5) Wall Signs

Attachment 3: Applicant provided information

PARKER MYNCHENBERG & ASSOCIATES, INC.

1729 Ridgewood Avenue
Holly Hill, Florida 32117
(386) 677-6891
FAX (386) 677-2114
E-Mail: info@parkermynchenberg.com

Mr. Steven Spraker, AICP
Planning Director
The City of Ormond Beach
22 South Beach Street, Room 104
Ormond Beach, Florida 32175

Submitted Via: Tyler Civic Access

March 12, 2024

Re: PLANTATION OAKS OF ORMOND BEACH – NEIGHBORHOOD COMMERCIAL
FOUNTAIN VIEW – PHASE 1A – TRACT 1A-2
BPUD Rezoning/Major Amendment

Dear Steven:

Please find enclosed the following in reference with the above-referenced project:

1. One (1) PDF file of the signed and sealed Site Plan, including Survey.
2. One (1) PDF of the Proposed Architectural Building Floor Plans, Elevations, Color Rendering and Color Material Charts.
3. One (1) PDF file of the BPUD Rezoning/Major Amendment Application.
4. One (1) PDF file of the Revised/Redlined Resolution #2012-24, Page 26 of 45 to Add to Section (6) NC - Neighborhood Commercial (b) (12) "Warehouse Indoor Mini Rental" and 1.58 Acre Lot Size.
5. One (1) PDF file of the Certified List of Property Owners within 600 ft. of Project.
6. One (1) PDF file of the Draft Neighborhood Meeting Notice.
7. One (1) check in the amount of $3,400.00 to Cover the BPUD Rezoning/Major Amendment Application Fee. (Previously Mailed)

Project Description: Revise/modify Plantation Oaks of Ormond Beach RPUD Neighborhood Commercial (Fountain View - 1A, Tract 1A-2, 1.58 ac.) permitted uses to allow "Warehouse Indoor Mini Rental" on 1.58 acre Neighborhood Commercial Parcel.

Should you have any questions or need additional information, please contact me at (386)677-6891.

Your truly,

Parker Mynchenberg, P.E., R.L.A.

PM/af

Enclosures

PLANTATION OAKS OF ORMOND BEACH

NEIGHBORHOOD COMMERCIAL
PHASE 1A

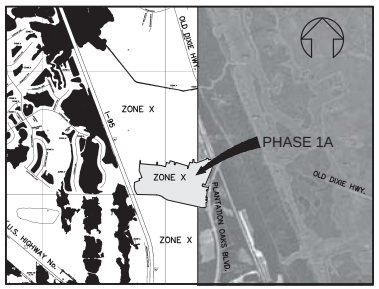
ORMOND BEACH, FLORIDA

GENERAL NOTES

1.) ALL WATER MAINS TO BE P.V.C. DR-18, C-900.
2.) ALL SANITARY SEWER MAINS SHOWN ARE PVC SDR 26 @ 0.40% FOR 8", 0.30% FOR 10" UNLESS OTHERWISE NOTED. SANITARY SERVICES TO NEIGHBORHOOD COMMERCIAL ARE 6" SDR 26 @ MINIMUM 1.0%
3.) CABLE T.V., TELEPHONE AND ELECTRIC SERVICES TO BE UNDERGROUND.
4.) CONTRACTOR TO VERIFY EXISTING UTILITIES PRIOR TO CONSTRUCTION AND TO REPORT ANY DISCREPANCIES TO DESIGN ENGINEER.
5.) WATER AND SEWER IMPROVEMENTS TO MEET CITY OF ORMOND BEACH STANDARDS.
6.) DOWNLIGHTS (STREET LIGHTS) TO BE FP&L STANDARD & CONTEMPORARY LIGHTS TO BE FP&L STANDARD LED 39 WATT. (CONTEMPORARY LIGHT) AND BLACK FIBERGLASS POLES, STREET LIGHTS AND POLES TO BE PROVIDED BY FPL. MAXIMUM HEIGHT 20 FT.
7.) MINIMUM FINISH FLOOR GRADE PER CITY OF ORMOND BEACH REQUIREMENTS.
8.) SHOP DRAWINGS FOR POTABLE WATER AND SEWER TO BE SUBMITTED TO AND APPROVED BY CITY OF ORMOND BEACH AND DESIGN ENGINEER PRIOR TO CONSTRUCTION.
9.) POTABLE WATER SERVICE TO BE SUPPLIED BY CITY OF ORMOND BEACH.
10.) SANITARY SEWER SERVICE TO BE PROVIDED BY CITY OF ORMOND BEACH.
11.) ALL DISTURBED AREAS TO BE SODDED.
12.) WHERE SANITARY FORCE MAINS CROSS POTABLE WATER LINES, THE FORCE MAIN IS TO BE CONSTRUCTED OF PVC SDR-18 FOR 20 FEET CENTERED ON THE POTABLE WATER MAIN.
13.) OFFSITE UTILITIES WILL BE CONSTRUCTED UNDER THE APPROPRIATE PHASE AND MUST BE COMPLETE PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY.
14.) ONSITE SEWER AND POTABLE WATER INFRASTRUCTURE TO BE OWNED AND MAINTAINED BY THE NEIGHBORHOOD COMMERCIAL OWNER. OFFSITE SYSTEM WILL BE OWNED AND MAINTAINED BY THE CITY OF ORMOND BEACH (UNLESS OTHERWISE NOTED).
15.) ALL STOP SIGNS, SPEED LIMIT AND STREET SIGNS REQUIRED TO BE PROVIDED BY DEVELOPER TO CITY OF ORMOND BEACH SPECIFICATIONS. ALL TRAFFIC CONTROL SIGNS SHALL BE FABRICATED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES USING 3M BRAND "SCOTCHLITE" SHEETING (ENGINEER GRADE) ON MINIMUM 0.080 GAUGE 5052-H38 ALUMINUM BLANKS. ALL STOP SIGNS SHALL BE HIGH INTENSITY 30" OR 36" OCTAGON INSTALLED ON 3"x 12' ROUND ALUMINUM POSTS. "U" CHANNEL POSTS MAY BE USED FOR ALL SIGNS SMALLER THAN 36" x 48". ALL WARNING SIGNS SHALL BE 30" X 30". ALL STREET NAME SIGNS SHALL BE 9" IN HEIGHT WITH 5" HIGH UPPER & LOWER CASE WHITE LETTERS ON A GREEN BACKGROUND WITH A MIN. 30" LENGTH. PROVIDE 24" WIDE WHITE THERMOPLASTIC STOP BARS ADJACENT TO ALL LOCAL STREET 30" STOP SIGNS. WHERE 12" WIDE WHITE CROSSWALK STRIPING IS PROVIDED, THE STOP BAR AND 30" STOP SIGN MUST BE 4' IN ADVANCE OF THE CROSSWALK IN ACCORDANCE WITH FDOT STANDARD INDEX #17346. IN ALL LOCATIONS, THE 30" STOP SIGN AND 24" WIDE WHITE STOP BARS SHOULD BE LOCATED 10' IN ADVANCE OF THE EDGE OF THE TRAVELED WAY AT THE STREET INTERSECTION.
16.) ALL MAINTENANCE OF ALL PRIVATE STREETS, LAKES, AMENITY AREAS, LANDSCAPE AND IRRIGATION TO BE THE SOLE RESPONSIBILITY OF PLANTATION OAKS OF HOME OWNERS ASSOCIATION OR PROPERTY OWNER.
17.) ALL CONSTRUCTION TRAFFIC IS REQUIRED TO USE U.S. HIGHWAY #1 ONLY. NO CONSTRUCTION TRAFFIC IS PERMITTED TO USE OLD DIXIE HIGHWAY FOR INGRESS OR EGRESS.
18.) EXCEPT WITHIN THE EXISTING FPL EASEMENT, ALL UTILITIES ARE TO BE INSTALLED UNDERGROUND, INCLUDING THE SERVICE DROPS TO INDIVIDUAL BUILDINGS OUTSIDE OF ALL REQUIRED LANDSCAPE BUFFERS, WETLANDS AND WETLAND BUFFER AREAS.
19.) ELEVATIONS REFER TO 1929 DATUM
20.) DRIVING AND/OR STAGING OF CONSTRUCTION VEHICLES IS NOT PERMITTED ON ANY SIDEWALKS IN THE RIGHT-OF-WAY. ANY DAMAGE TO SIDEWALKS WILL BE REPAIRED AND/OR REPLACED IN THE LIKE KIND BY THE CONTRACTOR.
21.) REUSE LINE, BOTH EXISTING AND PROPOSED, WILL BE OWNED AND OPERATED BY THE OWNER, HOA, POA OR DEVELOPER.
22.) ALL WATER SERVICE LINES SHALL BE INSTALLED WITH BACKFLOW PREVENTION DEVICES.

LEGAL DESCRIPTION:

TRACT 1A-2 FOUNTAIN VIEW PHASE 1A
MAP BOOK 65, PG 59



FLOOD MAP

F.I.R.M. #12127C0201J ORMOND BEACH
F.I.R.M. #12127C0182J VOLUSIA COUNTY
PHASE 1A IS LOCATED IN ZONE X IN IT'S ENTIRETY

LAND USE TABULATION:

EXISTING ZONING = PUD (PLANNED UNIT DEVELOPMENT)
SITE AREA = 69,028 SF = 1.58 AC
BUILDING COVERAGE = 12,750 SF
12,750 SF / 69,028 SF = 18.47%
F.A.R. = 25,500 SF / 69,028 SF = 0.369

IMPERVIOUS AREA CALCULATION:

PROPOSED BUILDING = 12,750 SF (FIRST FLOOR)
EXISTING PAVEMENT = 7,562 SF
PROPOSED CONCRETE/PAVEMENT = 28,921 SF
TOTAL IMPERVIOUS AREA = 36,483 SF = 52.9%
LANDSCAPE AREA = 32,545 SF = 47.1%

PARKING CALCULATION:

COMMERCIAL BUILDING PARKING REQUIREMENTS:
OFFICE/RETAIL/RESTAURANT-1 PARKING SPACE FOR EACH 200 S.F. OF GROSS FLOOR AREA (1ST FLOOR)
12,750/200 = 63.75 (64 SPACES)
MINI-WAREHOUSE-
0.18 SPACES/1,000 SF OF GROSS FLOOR AREA
12,750 SF X 0.18 SPACES/1,000 SF = 2.3
TOTAL PARKING REQUIRED
63.75 + 2.3 = 66 SPACES

PARKING PROVIDED:
STANDARD= 70
HANDICAP= 3
TOTAL= 73

SETBACKS:

FRONT.....25 FT
REAR YARD.....20 FT
SIDE YARD
ABUTTING ANY LOT.....10 FT
ABUTTING PUBLIC STREET R/W.....25 FT
ABUTTING PRIVATE STREET R/W.....20 FT

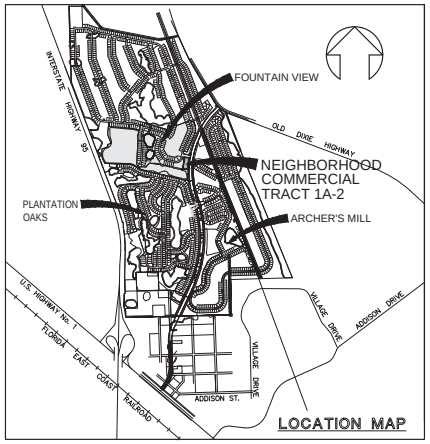


TABLE OF CONTENTS

SHEET NO.	DESCRIPTION
1	COVER SHEET
S1	BOUNDARY SURVEY
2	DEMOLITION/EROSION CONTROL PLAN
3	SITE PLAN
4	CIVIL PLAN
5	UTILITY PLAN
6	LANDSCAPE PLAN
7	LANDSCAPE DETAILS
8	IRRIGATION PLAN
9	IRRIGATION DETAILS
10-12	PAVING AND DRAINAGE DETAILS
13	WATER STANDARD DETAILS
14	SANITARY SEWER STANDARD DETAILS
15	RECLAIMED WATER STANDARD DETAILS
A210	OVERALL FIRST FLOOR PLAN
A220	OVERALL SECOND FLOOR PLAN
A300	PROPOSED ELEVATIONS
A301	COLOR/MATERIAL CHART SF-1
A302	COLOR RENDERING



Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
6	Basinger fine sand, frequently ponded, 0 to 1 percent slopes	0.0	0.0%
13	Cassia fine sand, 0 to 2 percent slopes	25.3	25.0%
17	Daytona sand, 0 to 5 percent slopes	25.6	25.4%
29	Immokalee sand	0.1	0.1%
32	Myakka-Myakka, wet, fine sands, 0 to 2 percent slopes	27.3	27.1%
42	Pacia fine sand, 0 to 8 percent slopes	2.6	2.6%
56	Samsula muck, frequently ponded, 0 to 1 percent slopes	2.9	2.9%
99	Water	17.1	16.9%
Totals for Area of Interest		100.9	100.0%

SOILS MAP

PROJECT NAME

PLANTATION OAKS OF ORMOND BEACH
NEIGHBORHOOD COMMERCIAL – TRACT 1A-2
1730 PLANTATION OAKS BLVD.
ORMOND BEACH, FLORIDA

PROJECT DESCRIPTION

CONSTRUCTION OF 2 STORY 25,500 SF BUILDING (FIRST FLOOR IS 12,750 SF OFFICE/RETAIL/RESTAURANT, SECOND FLOOR IS 12,750 SF AIR CONDITIONED STORAGE MINI-WAREHOUSE 109 UNITS) AS WELL AS PARKING, LIGHTING, LANDSCAPE, IRRIGATION AND SIGNAGE IMPROVEMENTS.

DEVELOPER

PLANTATION OAKS OF ORMOND BEACH, LLC.
PARKER MYNCHENBERG, MANAGER
1729 RIDGEWOOD AVENUE
HOLLY HILL, FLORIDA 32117
(386) 677-6891
E:MAIL: Info@parkermynchenberg.com

SUBDIVISION DESIGNER ENGINEER & LANDSCAPE ARCHITECT

PARKER MYNCHENBERG & ASSOC., INC.
PARKER MYNCHENBERG, P.E. #32645, L.A.#1553
1729 RIDGEWOOD AVENUE
HOLLY HILL, FLORIDA 32117
(386) 677-6891
CERTIFICATE OF AUTHORIZATION #00003910
EMAIL: Info@parkermynchenberg.com

SURVEYOR

JEFF BARNES, P.S.M.
SLIGER & ASSOCIATES, INC.
3921 NOVA ROAD
PORT ORANGE, FLORIDA 32127
(386) 761-5385
EMAIL: jbarnes@sligerassociates.com

TRAFFIC CONSULTANT

TURGUT DERVISH, P.E.
TRAFFIC PLANNING & DESIGN, INC.
535 VERSAILLES DRIVE-SUITE 200
MAITLAND, FLORIDA 32715-7305
(407) 628-9955

PROJECT ATTORNEY

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SMITH BIGMAN BROCK
444 SEABREEZE BLVD. SUITE 900
DAYTONA BEACH, FLORIDA 32118
(386) 254-6875
EMAIL: jbrock@daytonalaw.com

PARKER MYNCHENBERG & ASSOCIATES, INC.
PROFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS
1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
(386)677-6891 FAX (386)677-2114 E-MAIL: info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATION NO. 00003910

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

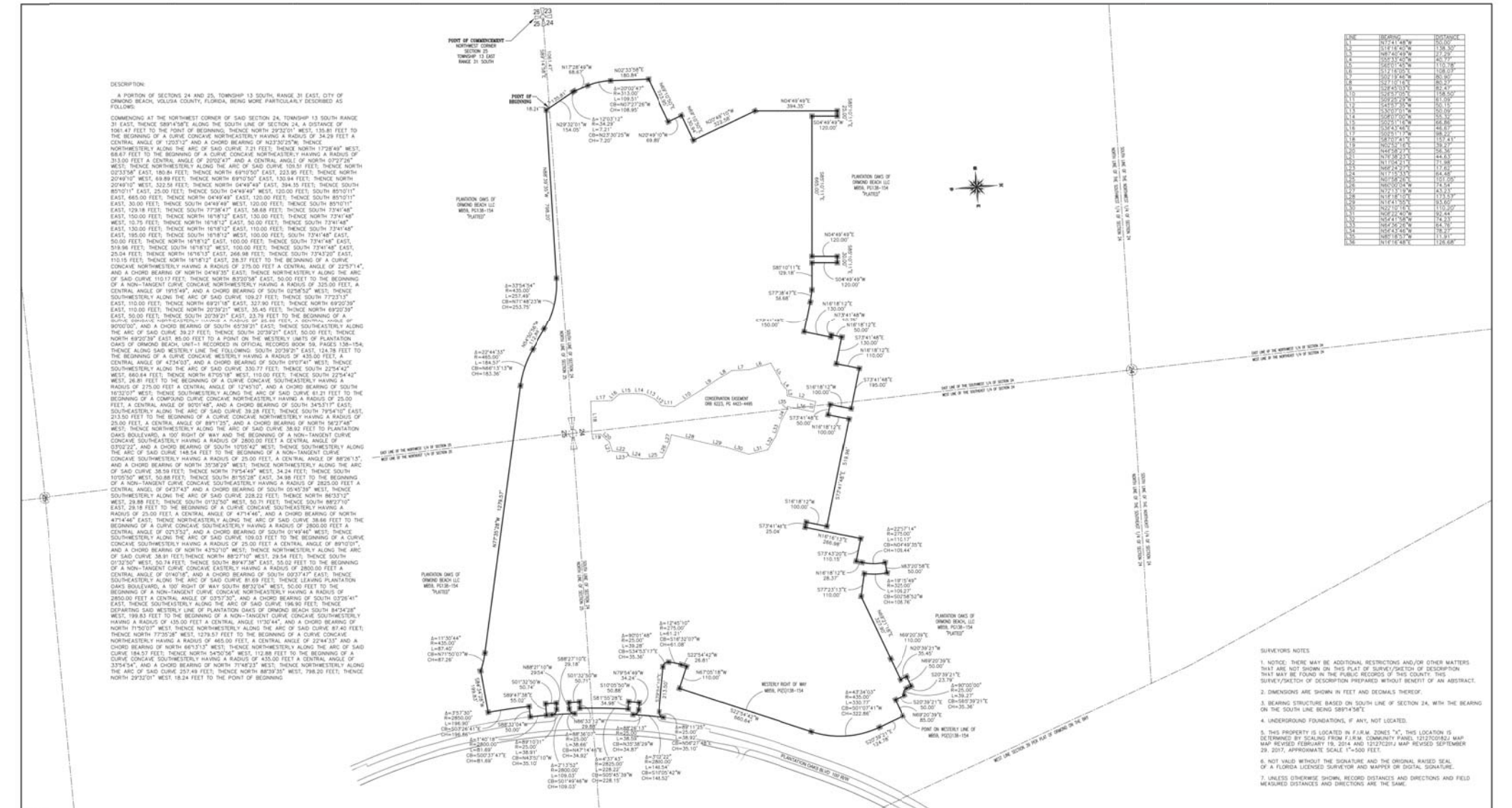
COVER SHEET

PLANTATION OAKS OF ORMOND BEACH
NEIGHBORHOOD COMMERCIAL
PHASE 1A
ORMOND BEACH * FLORIDA

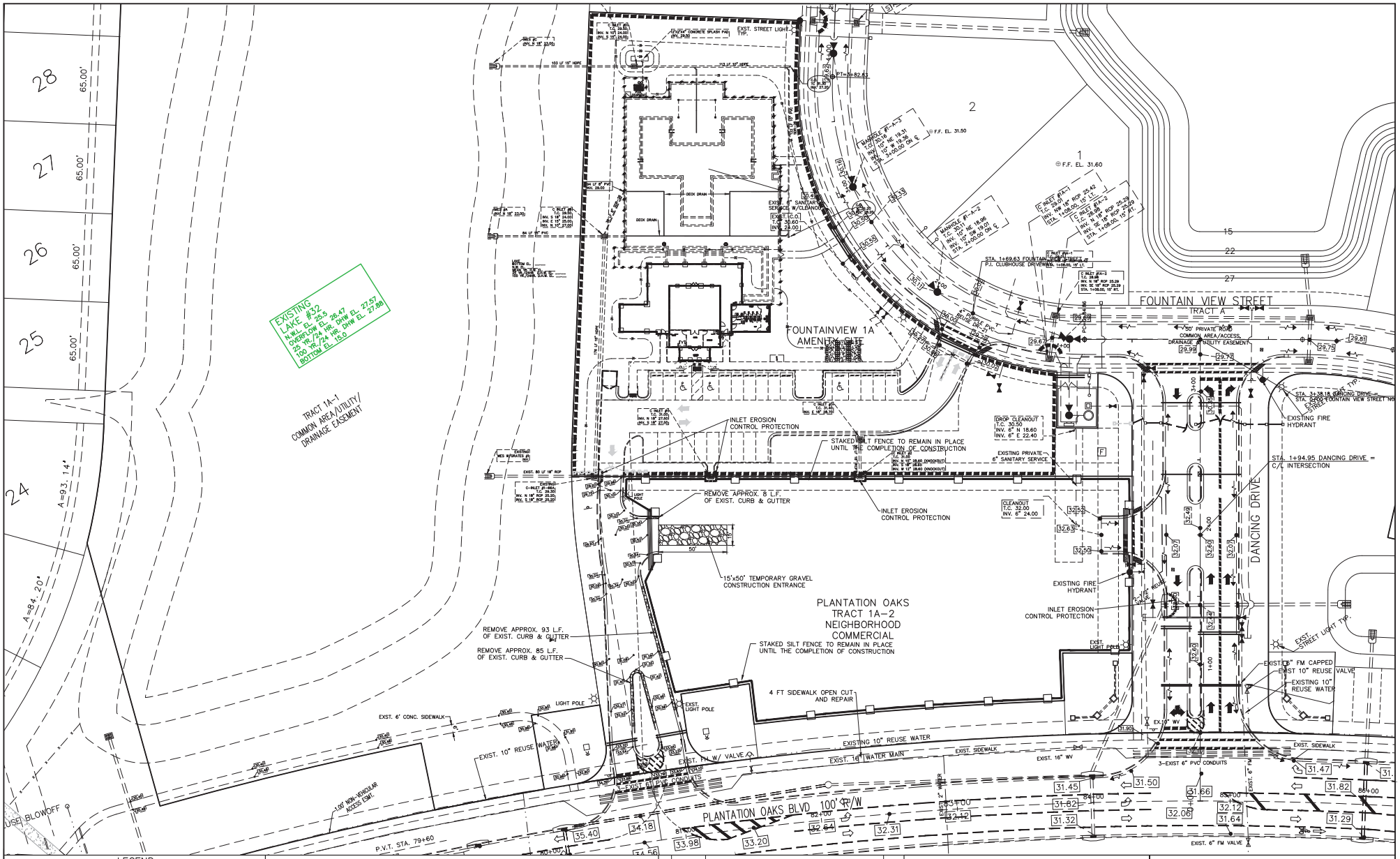
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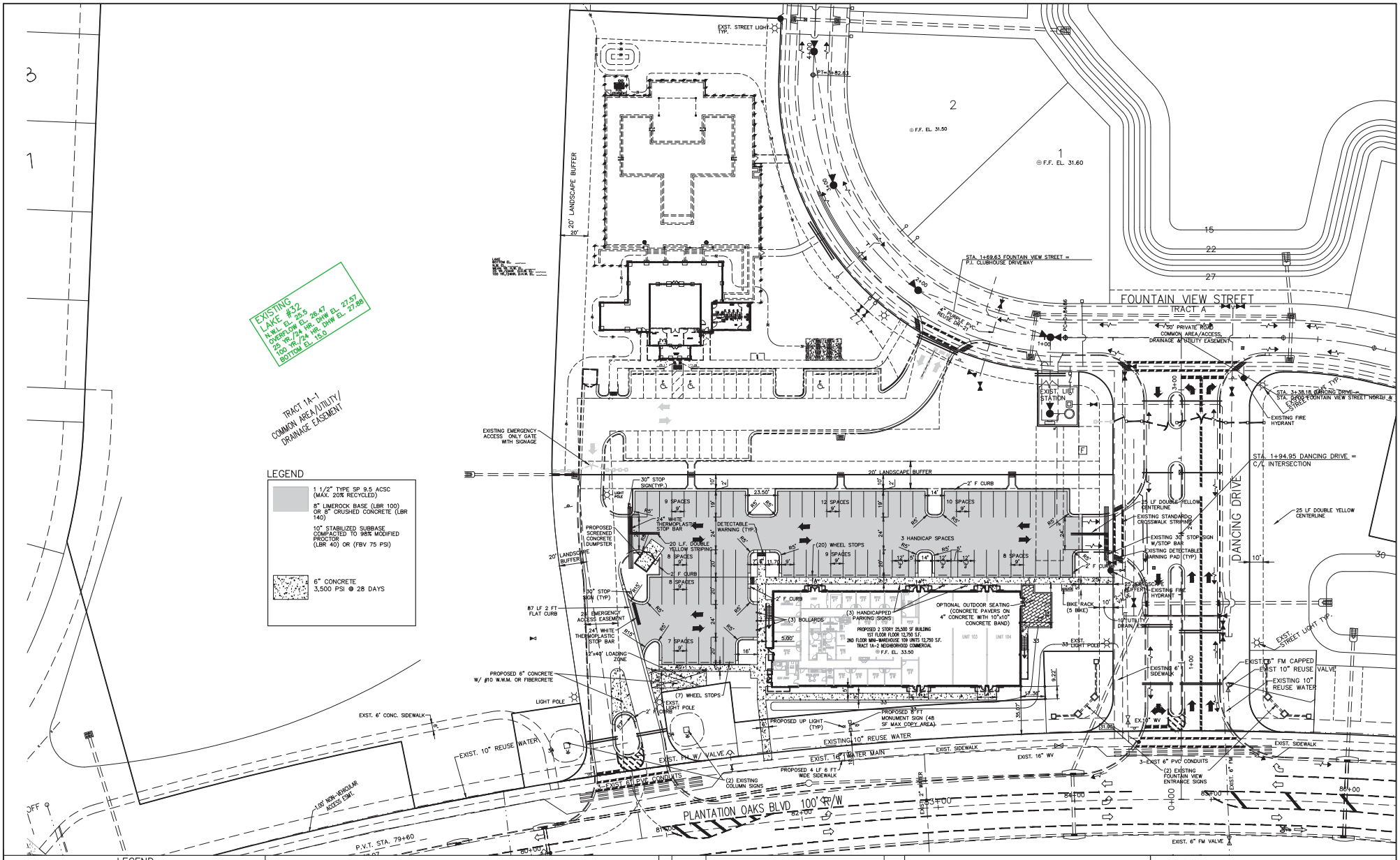
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DATE:	02-21-24	CADD TECH: MRB	
SCALE:	NONE	SHEET 1	

Z:\Plantation Oaks Unit 1A-UNIT 1\PDWMWKG\01-Commercial\Commercial\ CS and Details\dwg, 3/8/2024 2:42:15 PM, DWG To PDF.pc3



LINE	BEARING	DISTANCE
L1	S73°41'48"E	130.00'
L2	S16°18'12"W	110.00'
L3	N73°41'48"W	130.00'
L4	N16°18'12"E	50.00'
L5	S73°41'48"E	130.00'
L6	S16°18'12"W	110.00'
L7	S73°41'48"E	195.00'
L8	S16°18'12"W	100.00'
L9	S73°41'48"E	50.00'
L10	N16°18'12"E	100.00'
L11	S73°41'48"E	318.60'
L12	S16°18'12"W	100.00'
L13	S73°41'48"E	25.04'
L14	S16°18'12"W	28.37'
L15	S73°25'13"E	110.00'
L16	S16°18'12"W	28.37'
L17	S73°41'48"E	25.04'
L18	S16°18'12"W	100.00'
L19	S73°41'48"E	50.00'
L20	N16°18'12"E	100.00'
L21	S73°41'48"E	318.60'
L22	S16°18'12"W	100.00'
L23	S73°41'48"E	25.04'
L24	S16°18'12"W	28.37'
L25	S73°25'13"E	110.00'
L26	S16°18'12"W	28.37'
L27	S73°41'48"E	25.04'
L28	N16°18'12"E	100.00'
L29	S73°41'48"E	318.60'
L30	S16°18'12"W	100.00'
L31	S73°41'48"E	25.04'
L32	S16°18'12"W	28.37'
L33	S73°25'13"E	110.00'
L34	S16°18'12"W	28.37'
L35	S73°41'48"E	25.04'
L36	S16°18'12"W	100.00'
L37	S73°41'48"E	318.60'
L38	S16°18'12"W	100.00'
L39	S73°41'48"E	25.04'
L40	N16°18'12"E	100.00'
L41	S73°41'48"E	318.60'
L42	S16°18'12"W	100.00'
L43	S73°41'48"E	25.04'
L44	N16°18'12"E	100.00'
L45	S73°41'48"E	318.60'
L46	S16°18'12"W	100.00'
L47	S73°41'48"E	25.04'
L48	N16°18'12"E	100.00'


FOUNTAIN VIEW STREET
TRACT A
50' PRIVATE ROAD
COMMON AREA/ACCESS, DRAINAGE & UTILITY EASEMENT
DANCING DRIVE
FOUNTAINVIEW 1A AMENITY SITE
EXISTING LAKE #32
TRACT 1A-1 COMMON AREA/UTILITY/ DRAINAGE EASEMENT
PLANTATION OAKS TRACT 1A-2 NEIGHBORHOOD COMMERCIAL
PLANTATION OAKS BLVD 100' R/W
INLET EROSION CONTROL PROTECTION
STAKED SILT FENCE TO REMAIN IN PLACE UNTIL THE COMPLETION OF CONSTRUCTION
REMOVE APPROX. 8 L.F. OF EXIST. CURB & GUTTER
REMOVE APPROX. 93 L.F. OF EXIST. CURB & GUTTER
REMOVE APPROX. 85 L.F. OF EXIST. CURB & GUTTER
15'x50' TEMPORARY GRAVEL CONSTRUCTION ENTRANCE
4 FT SIDEWALK OPEN CUT AND REPAIR
EXISTING FIRE HYDRANT
EXISTING 10" REUSE WATER
EXIST. 16" WATER MAIN
EXIST. 6" FM W/ VALVE
EXIST. 6" FM CAPPED
EXIST 10" REUSE VALVE
EXISTING 10" REUSE WATER
3-EXIST 6" PVC CONDUITS
EXIST. 6" FM VALVE
EXIST. 16" WV
EXIST. 10" WV
EXIST. 6" CONC. SIDEWALK
EXIST. SIDEWALK
EXIST. STREET LIGHT TYP.
EXISTING PRIVATE 6" SANITARY SERVICE
DROP CLEANOUT T.C. 30.50 INV. 6" N 18.60 INV. 6" E 22.40
CLEANOUT T.C. 32.00 INV. 6" 24.00
STA. 1+94.95 DANCING DRIVE = C/L INTERSECTION
STA. 3+38.18 DANCING DRIVE = STA. 0+00 FOUNTAIN VIEW STREET NS
P.V.T. STA. 79+60
USE BLOWOFF
1.00' NON-VEHICULAR ACCESS ESMT.
LIGHT POLE
EXIST. LIGHT POLE
F.F. EL. 31.60
F.F. EL. 31.50
EXIST. STREET LIGHT TYP.
EXIST. 6" SANITARY SEWER W/CLEANOUT
EXIST. C.O. 30.60 INV. 24.00
DECK DRAIN
POOL DECK EL. 32.00
84 LF 8" PVC
103 LF 15" HDPE
50 LF 18" RCP
80 LF 18" RCP
113 LF 12" HDPE
EXIST. 80 LF 18" RCP
EXIST. 50 LF 18" RCP
EXISTING MES W/GRATES (E)
EXISTING C-INLET W/GRATES (E)
EXISTING C-INLET
MANHOLE #1-A-1
MANHOLE #1-A-2
MANHOLE #1-A-3
C INLET #1A-1
C INLET #1A-2
C INLET #1A-3
C INLET #1A-4
C INLET #1A-5
C INLET #1A-6
C INLET #1A-7
C INLET #1A-8
C INLET #1A-9
C INLET #1A-10
C INLET #1A-11
C INLET #1A-12
C INLET #1A-13
C INLET



LEGEND

- EXISTING GRADE (35.5)
- EXISTING CONTOUR (30)
- PROPOSED GRADE (30.10)
- PROPOSED CONTOUR (28)
- PROPOSED DRAINAGE FLOW PATTERN
- (S) PROPOSED NATURAL CONSERVATION EASEMENT AREA SIGN
- PROPOSED STREET LIGHT

GRAPHIC SCALE

0 15 30 60 90

SCALE: 1" = 30'

NO.	DATE	DESCRIPTION	BY

REVISIONS

PARKER MYNCHENBERG & ASSOCIATES, INC.

PROFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS

1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117

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CERTIFICATE OF AUTHORIZATION NO. 00003910

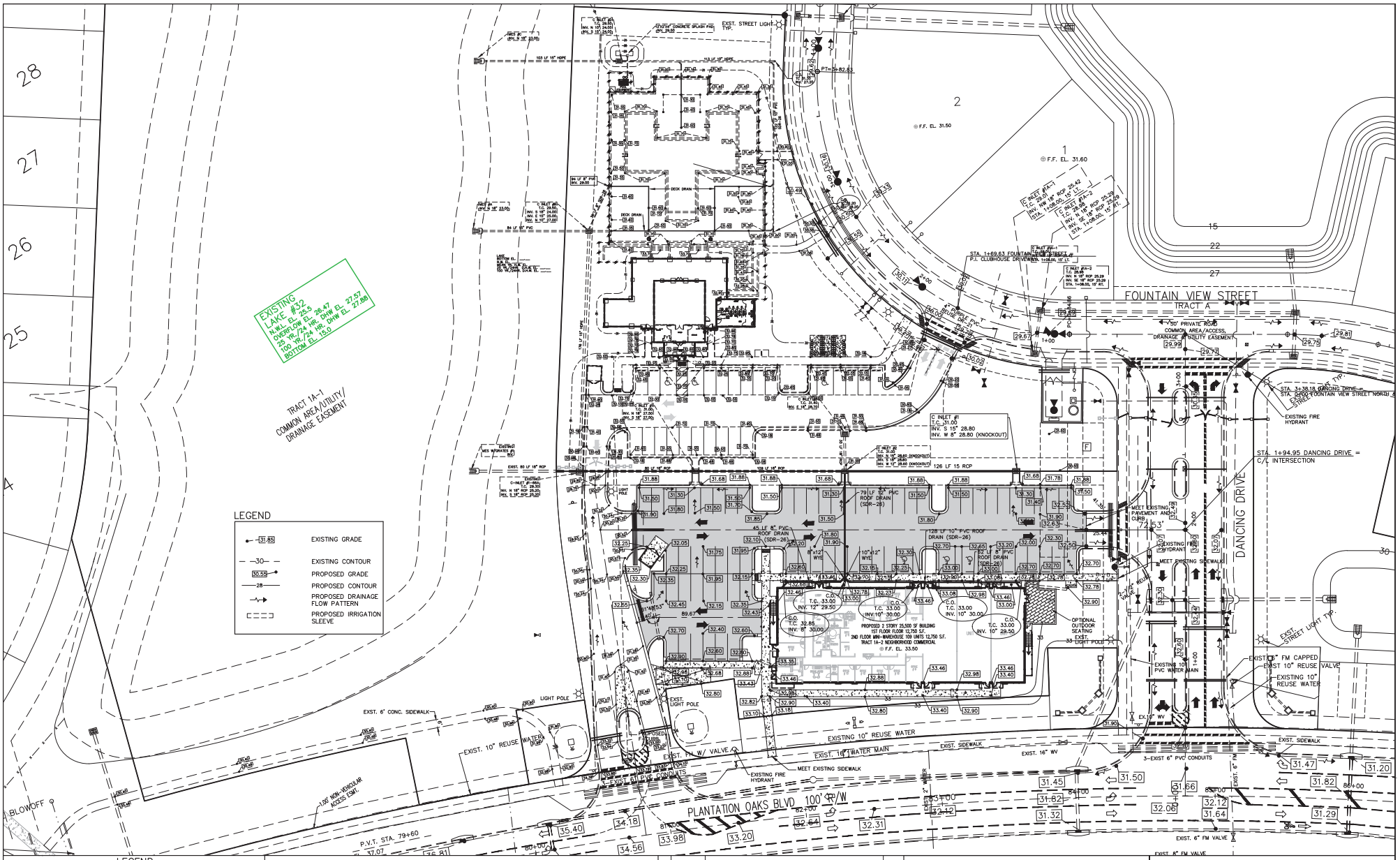
NEIGHBORHOOD COMMERCIAL – SITE PLAN

PLANTATION OAKS OF ORMOND BEACH – PH.-1A

ORMOND BEACH * FLORIDA

FILE: 15-09.1A SP.dwg	DESIGNER: P.MYNCHENBERG
DATE: 02-21-24	CADD TECH: MRB
SCALE: 1" = 30'	SHEET 3

SEAL



LEGEND

31.85	EXISTING GRADE
30	EXISTING CONTOUR
30.10	PROPOSED GRADE
28	PROPOSED CONTOUR
	PROPOSED DRAINAGE FLOW PATTERN
S	PROPOSED NATURAL CONSERVATION EASEMENT AREA SIGN
	PROPOSED STREET LIGHT

GRAPHIC SCALE
0 15 30 60 90
SCALE: 1" = 30'

NO.	DATE	DESCRIPTION	BY
REVISIONS			

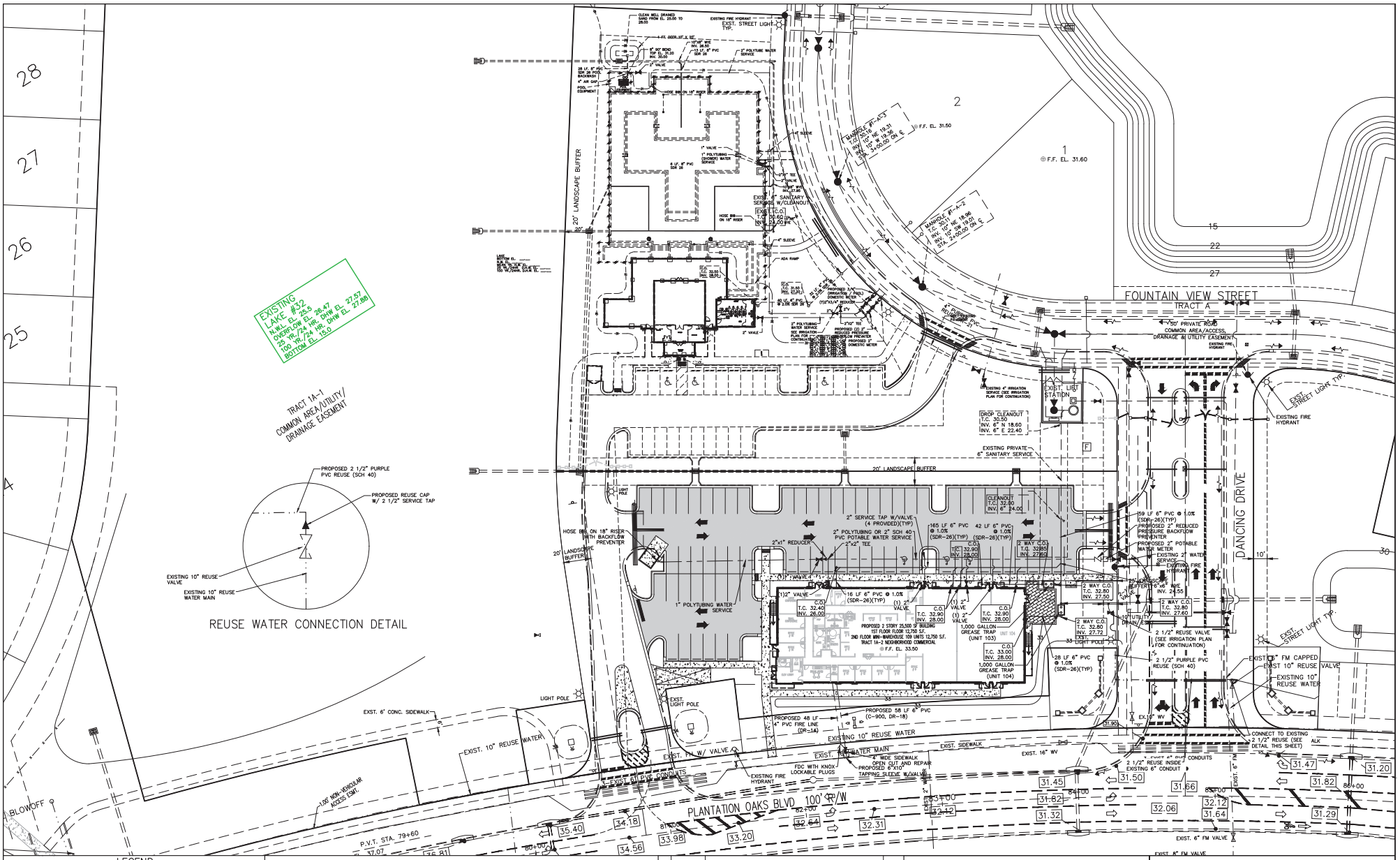
PARKER MYNCHENBERG & ASSOCIATES, INC.
PROFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS
1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
(386) 677-6891 FAX (386) 677-2114 E-MAIL: info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATION NO. 00003910

NEIGHBORHOOD COMMERCIAL – CIVIL PLAN

PLANTATION OAKS OF ORMOND BEACH – PH.-1A
ORMOND BEACH * FLORIDA

FILE: 15-09.1A SP.dwg	DESIGNER: P.MYNCHENBERG
DATE: 02-21-24	CADD TECH: MRB
SCALE: 1" = 30'	SHEET 4

SEAL



PARKER MYNCHENBERG & ASSOCIATES, INC.
PROFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS
1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
(386) 677-6891 FAX (386) 677-2114 E-MAIL: info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATION NO. 00003910

NO.	DATE	DESCRIPTION	BY

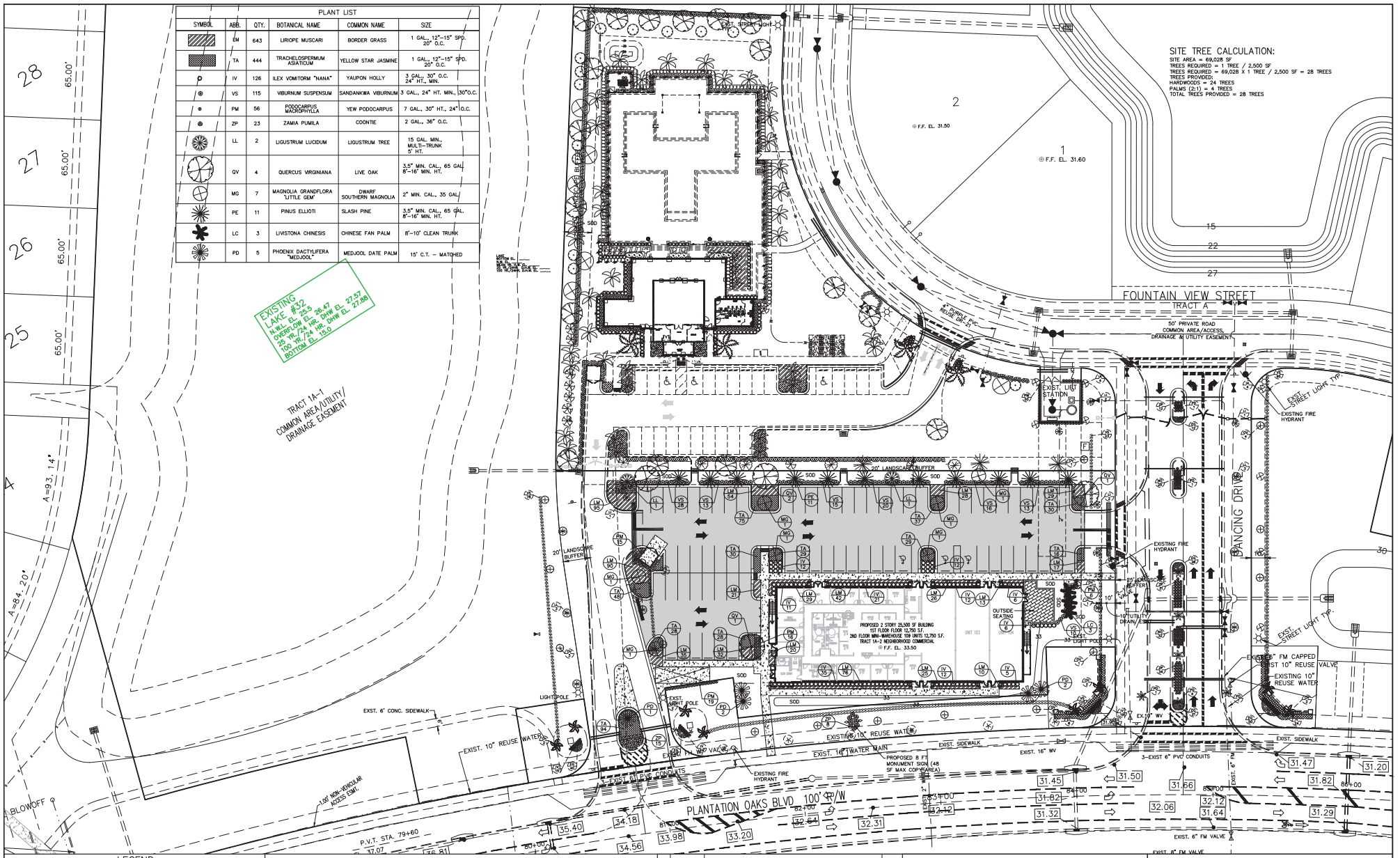
REVISIONS

NEIGHBORHOOD COMMERCIAL – UTILITY PLAN

PLANTATION OAKS OF ORMOND BEACH – PH.-1A
ORMOND BEACH * FLORIDA

FILE: 15-09.1A SP.dwg	DESIGNER: P.MYNCHENBERG
DATE: 02-21-24	CADD TECH: MRB
SCALE: 1" = 30'	SHEET 5

SEAL



LEGEND

- EXISTING GRADE
- EXISTING CONTOUR
- PROPOSED GRADE
- PROPOSED CONTOUR
- PROPOSED DRAINAGE FLOW PATTERN
- PROPOSED NATURAL CONSERVATION EASEMENT AREA SIGN
- PROPOSED STREET LIGHT

GRAPHIC SCALE
0 15 30 60 90
SCALE: 1" = 30'

NO.	DATE	DESCRIPTION	BY

REVISIONS

PARKER MYNCHENBERG & ASSOCIATES, INC.
PROFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS
1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
(386) 677-6891 FAX (386) 677-2114 E-MAIL: info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATION NO. 00003910

NEIGHBORHOOD COMMERCIAL - LANDSCAPE PLAN

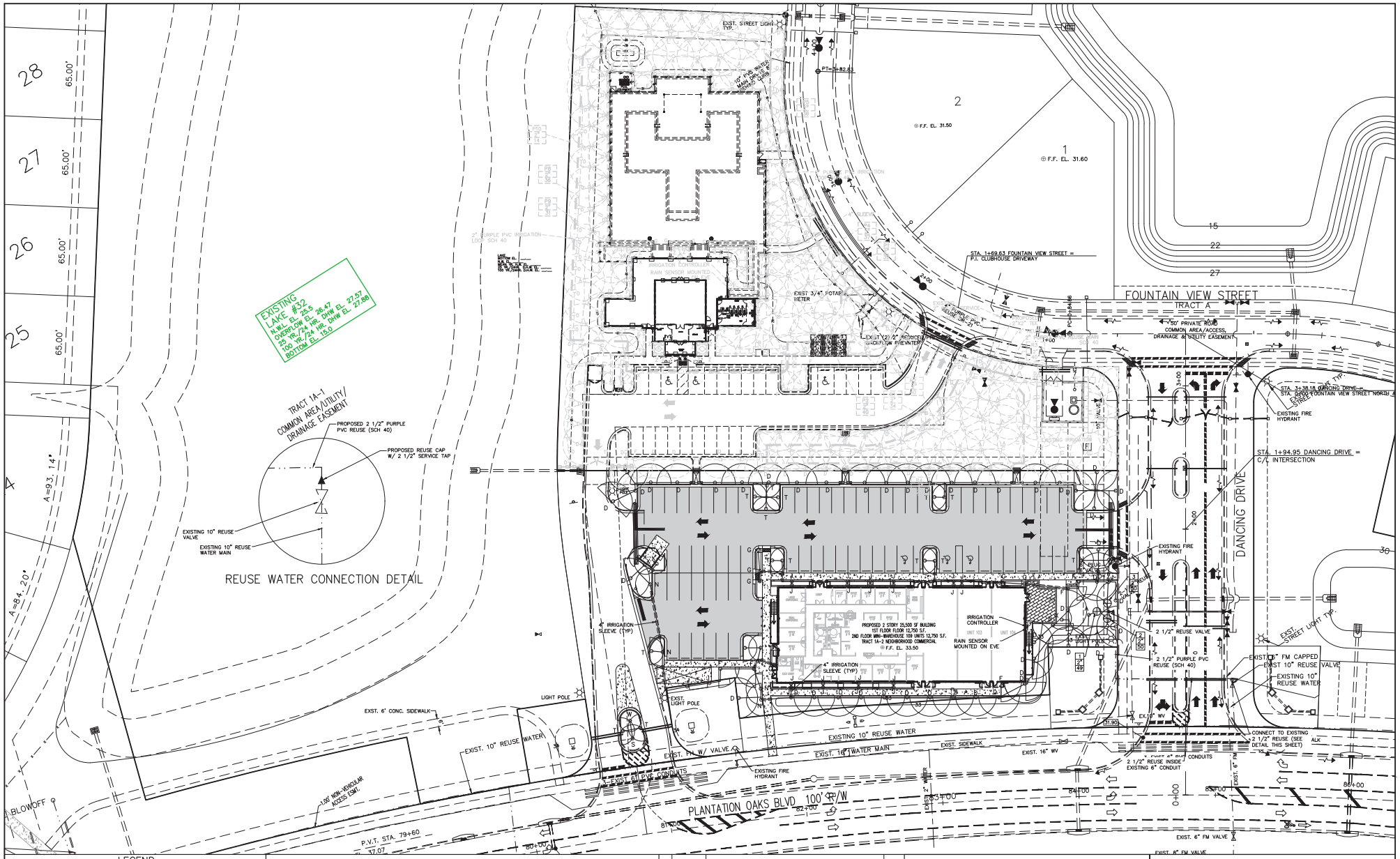
PLANTATION OAKS OF ORMOND BEACH - PH.-1A
ORMOND BEACH * FLORIDA

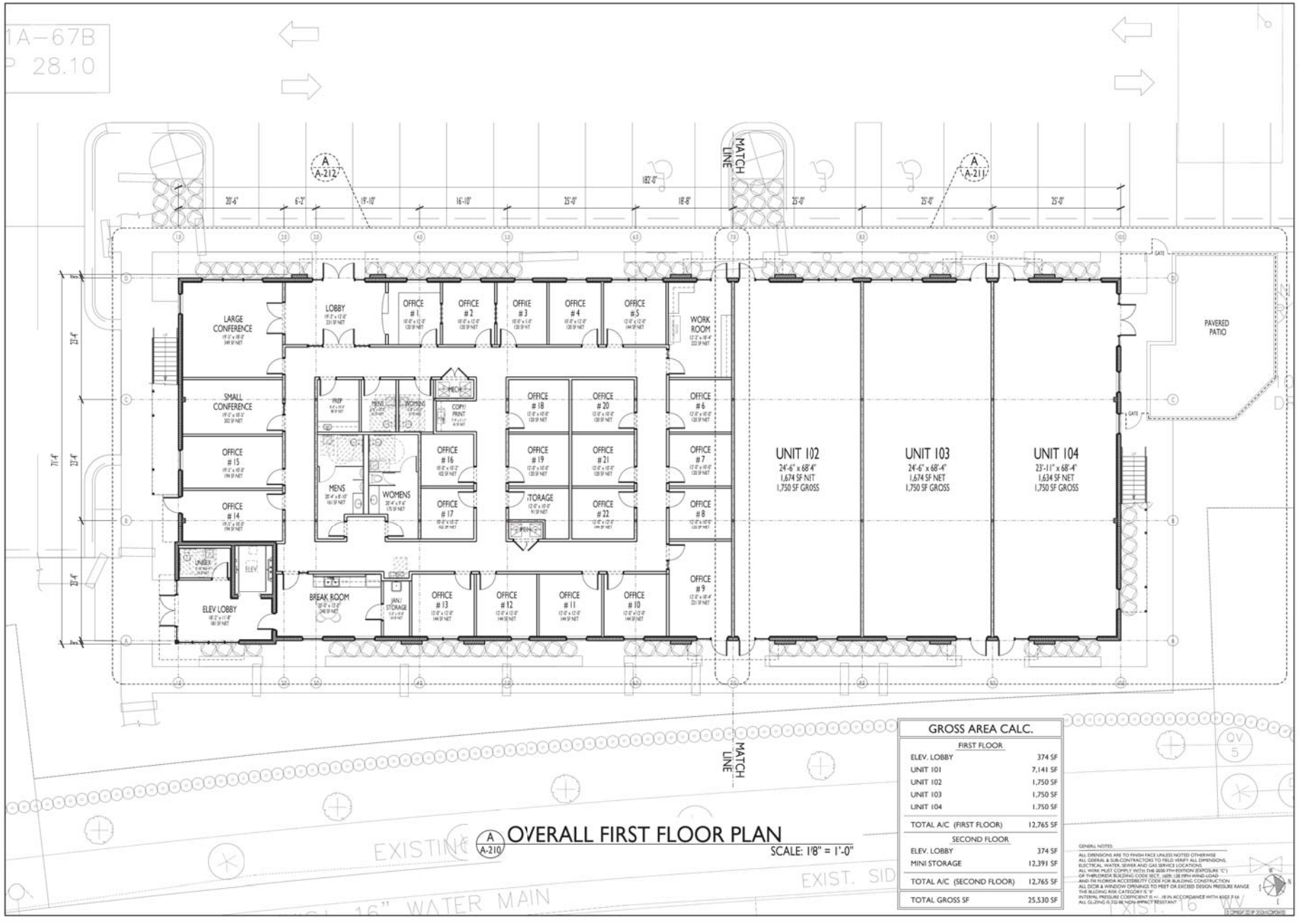
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DATE: 02-21-24	CADD TECH: MRB
SCALE: 1" = 30'	SHEET 6

Parker Mynchenberg, R.L.A. LA000155 — Digitally signed by Parker Mynchenberg, R.L.A. LA000155 Date: 2024.03.12 08:29:30 -04'00'

SEAL

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EXISTING LAKE #32
N.W.L. EL. 25.5
OVERFLOW EL. 28.47
25 YR./24 HR. DHW EL. 27.57
100 YR./24 HR. DHW EL. 27.88
BOTTOM EL. 15.0
TRACT 1A-1
COMMON AREA/UTILITY/
DRAINAGE EASEMENT
PROPOSED 2 1/2" PURPLE PVC REUSE (SCH 40)
PROPOSED REUSE CAP W/ 2 1/2" SERVICE TAP
EXISTING 10" REUSE VALVE
EXISTING 10" REUSE WATER MAIN
REUSE WATER CONNECTION DETAIL
FOUNTAIN VIEW STREET
TRACT A
50' PRIVATE ROAD
COMMON AREA/ACCESS, DRAINAGE & UTILITY EASEMENT
DANCING DRIVE
PROPOSED 2 STORY 25,500 SF BUILDING
1ST FLOOR FLOOR 12,750 S.F.
2ND FLOOR MINI-WAREHOUSE 109 UNITS 12,750 S.F.
TRACT 1A-2 NEIGHBORHOOD COMMERCIAL
F.F. EL. 33.50
IRRIGATION CONTROLLER
RAIN SENSOR MOUNTED ON EVE
EXISTING FIRE HYDRANT
2 1/2" REUSE VALVE
2 1/2" PURPLE PVC REUSE (SCH 40)
EXISTING 10" REUSE WATER
CONNECT TO EXISTING 2 1/2" REUSE (SEE DETAIL THIS SHEET)
2 1/2" REUSE INSIDE EXISTING 6" CONDUIT
EXIST. 6" FM VALVE
EXIST. 8" FM VALVE
EXISTING 10" REUSE WATER
EXIST. 16" WATER MAIN
EXIST. SIDEWALK
EXIST. 10" REUSE WATER
EXIST. 6" CONC. SIDEWALK
LIGHT POLE
EXIST. LIGHT POLE
EXIST. STREET LIGHT TYP.
4" IRRIGATION SLEEVE (TYP)
EXISTING FIRE HYDRANT
100' NON-VEHICULAR ACCESS CONT.
BLOWOFF
PLANTATION OAKS BLVD 100' R/W
P.V.T. STA. 79+60
STA. 1+69.63 FOUNTAIN VIEW STREET = P.I. CLUBHOUSE DRIVEWAY
STA. 1+94.95 DANCING DRIVE = C/L INTERSECTION
EXIST. 2" WATER
EXIST. 6" FM CAPPED
EXIST 10" REUSE VALVE
EXISTING 10" REUSE WATER
EXIST. 6" FM VALVE
EXIST. 8" FM VALVE
F.F. EL. 31.50
F.F. EL. 31.60
EXIST. STREET LIGHT TYP.
EXISTING FIRE HYDRANT
STA. 3+38.18 DANCING DRIVE = STA. 0+00.0 FOUNTAIN VIEW STREET N58°41' E
EXIST. 3/4" POTABLE METER
EXIST (2) 2" POTABLE WATER SERVICES
EXIST 2" REUSE SERVICE
EXIST. 6" FM VALVE
EXIST. 6" FM VALVE
EXIST. 6" FM VALV



A A-210 OVERALL FIRST FLOOR PLAN

SCALE: 1/8" = 1'-0"

GROSS AREA CALC.	
FIRST FLOOR	
ELEV. LOBBY	374 SF
UNIT 101	7,141 SF
UNIT 102	1,750 SF
UNIT 103	1,750 SF
UNIT 104	1,750 SF
TOTAL A/C (FIRST FLOOR)	12,765 SF
SECOND FLOOR	
ELEV. LOBBY	374 SF
MINI STORAGE	12,391 SF
TOTAL A/C (SECOND FLOOR)	12,765 SF
TOTAL GROSS SF	25,530 SF

GENERAL NOTES:

ALL DIMENSIONS ARE TO FINISH FACE UNLESS NOTED OTHERWISE
ALL GENERAL & SUB-CONTRACTORS TO FIELD VERIFY ALL DIMENSIONS.
ELECTRICAL, WATER, SEWER AND GAS SERVICE LOCATIONS
ALL WORK MUST COMPLY WITH THE 2020 FIFTH EDITION (EXPOSURE "C")
OF THE FLORIDA BUILDING CODE SECT. 1609C (130 MPH WIND LOAD)
AND FIX FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION
ALL DOR & WINDOW OPENINGS TO MEET OR EXCEED DESIGN PRESSURE RANGE
THE BUILDING RISK CATEGORY IS "II"
INTERNAL PRESSURE COEFFICIENT IS +/- .18 IN ACCORDANCE WITH ASCE 7-16
ALL GLAZING IS TO BE NON-IMPACT RESISTANT

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REVISIONS

PLANTATION OAKS - NEIGHBORHOOD COMMERCIAL

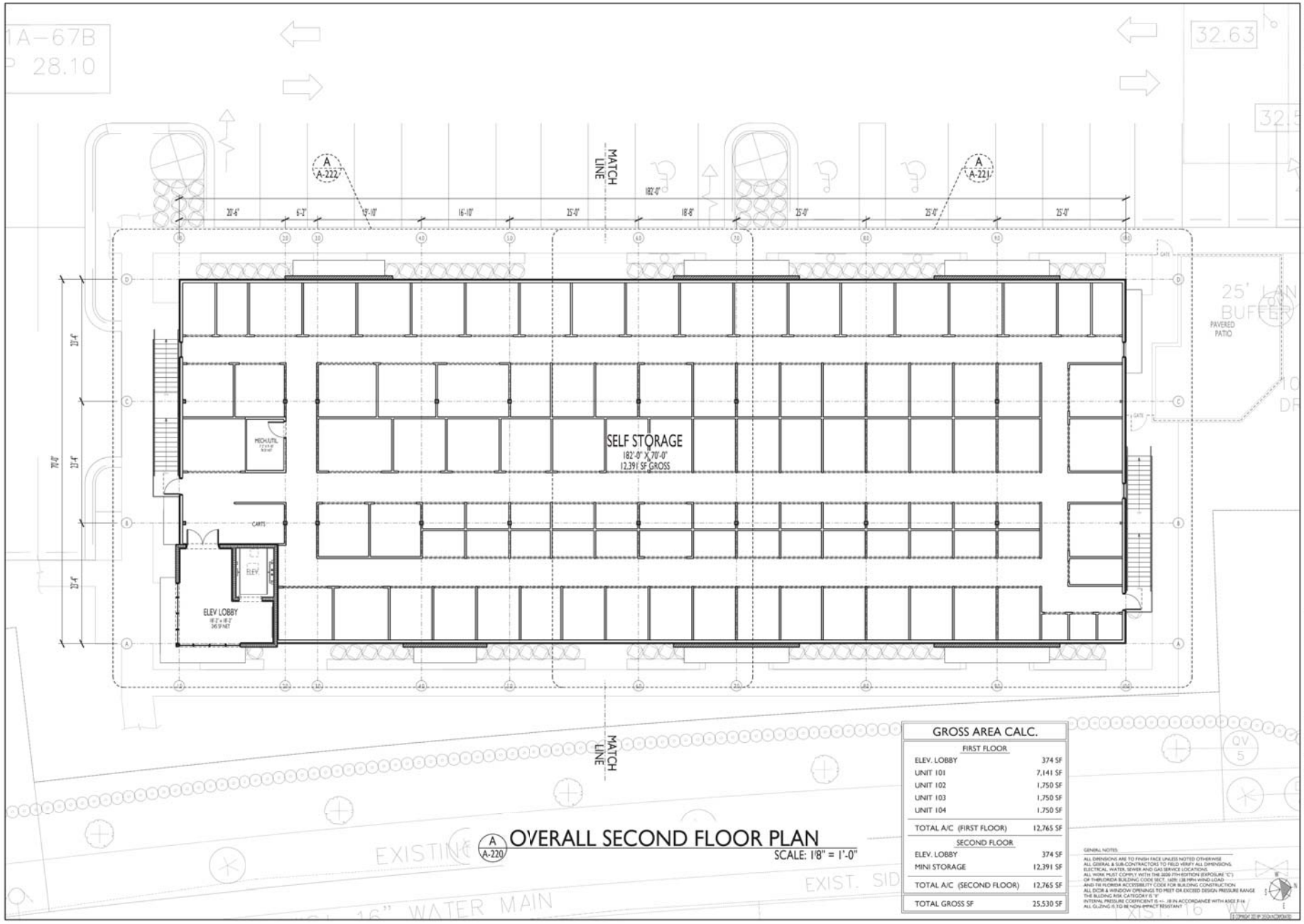
OWNER/REP:
PROJECT LOCATION: ORMOND BEACH, FL. 32174
GENERAL CONTRACTOR:

BPF DESIGN INCORPORATED
Building Design and Architecture
BRIAN P. FRIDLEY, ASSOCIATE AIA, PROJECT MANAGER
DALLAS B. PEACOCK, ARCHITECT
FAR 0009706
207 FAIRVIEW AVENUE
DAYTONA BEACH, FL 32114 PH: (386) 257-0102 FX: (386) 257-1030
EMAIL: bfridley@bpfdesign.com WEBSITE: bpfdesign.com

OVERALL FIRST FLOOR PLAN

DRAWN BY: TEM | CHECKED BY: DBP & BPF
DATE: DECEMBER 8, 2021 | SHT NO. A-210
SCALE: 1/8"=1'-0"

ARCHITECT'S / ENGINEER'S SEAL



A A-220 OVERALL SECOND FLOOR PLAN

SCALE: 1/8" = 1'-0"

GROSS AREA CALC.	
FIRST FLOOR	
ELEV. LOBBY	374 SF
UNIT 101	7,141 SF
UNIT 102	1,750 SF
UNIT 103	1,750 SF
UNIT 104	1,750 SF
TOTAL A/C (FIRST FLOOR)	12,765 SF
SECOND FLOOR	
ELEV. LOBBY	374 SF
MINI STORAGE	12,391 SF
TOTAL A/C (SECOND FLOOR)	12,765 SF
TOTAL GROSS SF	25,530 SF

GENERAL NOTES:

ALL DIMENSIONS ARE TO FINISH FACE UNLESS NOTED OTHERWISE
ALL GENERAL & SUB-CONTRACTORS TO FIELD VERIFY ALL DIMENSIONS, ELECTRICAL, WATER, SEWER AND GAS SERVICE LOCATIONS
ALL WORK MUST COMPLY WITH THE 2020 FIFTH EDITION (EXPOSURE "C") OF THEFLORIDA BUILDING CODE SECT. 1609 -138 MPH WIND LOAD AND FIX FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION
ALL DOR & WINDOW OPENINGS TO MEET OR EXCEED DESIGN PRESSURE RANGE
THE BUILDING RISK CATEGORY IS "II"
INTERNAL PRESSURE COEFFICIENT IS +/- .18 IN ACCORDANCE WITH ASCE 7-16
ALL GLAZING IS TO BE NON-IMPACT RESISTANT

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REVISIONS

PLANTATION OAKS - NEIGHBORHOOD COMMERCIAL

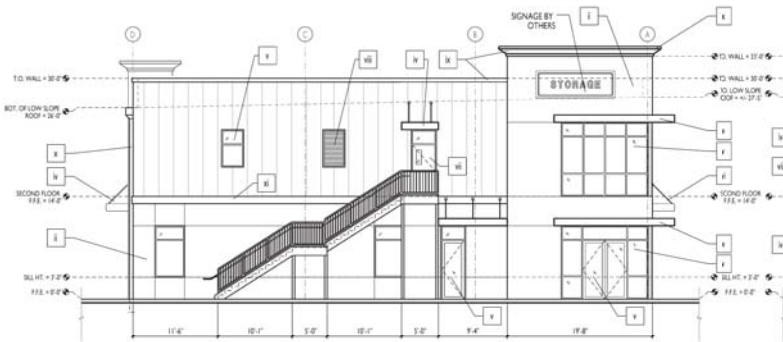
OWNER/REP:
PROJECT LOCATION: ORMOND BEACH, FL. 32174
GENERAL CONTRACTOR:

BPI DESIGN INCORPORATED
Building Design and Architecture
BRIAN P. FRIDLEY, ASSOCIATE AIA, PROJECT MANAGER
DALLAS B. PEACOCK, ARCHITECT
FAR 0009726
207 FAIRVIEW AVENUE
DAYTONA BEACH, FL 32114 PH. (386) 257-0102 FX: (386) 257-1030
EMAIL: bfridley@bpidesign.com WEBSITE: bpidesign.com

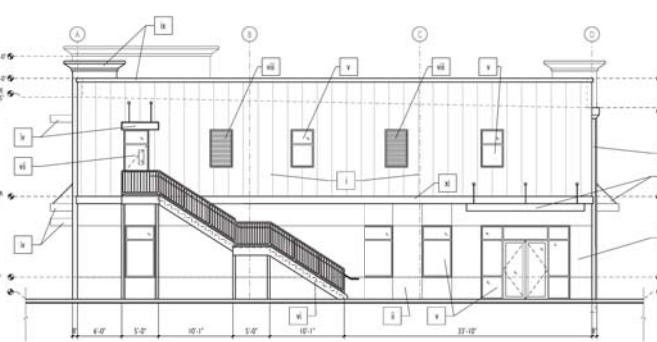
OVERALL SECOND FLOOR PLAN

DRAWN BY: TEM	CHECKED BY: DBP & BPF
DATE: DECEMBER 8, 2021	SHT NO. A-220
SCALE: 1/8"=1'-0"	

ARCHITECT'S / ENGINEER'S SEAL



D A-300 SOUTH ELEVATION
SIDE FACADE
SCALE: 1/8" = 1'-0"



C A-300 NORTH ELEVATION
SIDE FACADE
SCALE: 1/8" = 1'-0"

MATERIAL & COLOR SCHEDULE					
NO.	BLDG ELEMENT	MATERIAL	MANUF.	MODEL	COLOR
i	EXTERIOR WALL(1)	INSULATED MTL. BLDG PANEL	NUCOR	CF SIMILITE PI 24" WIDTH	DESERT SAND
ii	EXTERIOR WALL(1)	SCOTAT STUCCO FINISH	T.B.D.	T.B.D.	SW 7568 NEUTRAL GROUND
iii	COLUMN ACCENTS	STONE VENEER	CORONADO	ASHLAR & RUBBLE SERIES	CARIBBEAN CORAL
iv	PRE-ENG. AWNINGS	METAL	T.B.D.	T.B.D.	MANUF. DARK BRONZE
v	STOREFRONT DOORS & WINDOWS	ALUMINUM FRAME NON-IMPACT	PGT	TS3000	LOW-E, TINTED BRONZE FRAME
vi	EXTERIOR STAIRS	STEEL	T.B.D.	T.B.D.	MATCH TO SW 7568
vii	MAIN DOOR	MTL. FRAME W/ VIEW WINDOW	T.B.D.	T.B.D.	MATCH TO DESERT SAND
viii	FAUX SHUTTERS	METAL	T.B.D.	T.B.D.	MATCH TO SW7568
ix	CORNICES & PARAPET CAPS	METAL & EXTRUDED FOAM	T.B.D.	T.B.D.	BRONZE
x	DOWNSPOUTS	ALUMINUM	T.B.D.	T.B.D.	MATCH TO SW7568
xi	FOAMBANDING	PRE-FAB EIFS BAND	T.B.D.	3" X 12"	MATCH TO BRONZE

ARCHITECTURAL STYLE NOTES

BUILDINGS IN THE NEO-ECLECTIC STYLE IN ACCORDANCE WITH ORMOND BEACH LDC SECTION 3.69

1) GENERAL DESIGN GUIDELINES

a) PRISPNA) BUILDING UTILIZES STEPPED TOWER FEATURES THAT PROTRUDE BEYOND THE PRIMARY BUILDING PLANE AND ABOVE THE T.O. PARAPET PROVIDING VARIATION TO THE BUILDING MASSING IN BOTH THE HORIZONTAL & VERTICAL PLANES OF THE BUILDING.

b) (EXTERIOR) BUILDING UTILIZES ACCEPTED MATERIALS WITH STUCCO ON THE LOWER LEVEL & TOWER ELEMENTS AND PRENGINEERED EIFS WALL PANELS ON THE SECOND FLOOR THAT MATCH A STUCCO APPEARANCE.

C) (DOOR/DOWNSPOUT) ENTRANCES ARE RECESSED INTO TOWER ELEMENTS BETWEEN A STONE MATERIAL DIFFERENT FROM THE PRIMARY FACADES AND HIGHLIGHTED W/ CABLE PRE-ENGINEERED CANOPIES TO CLEARLY DIFFERENTIATE IT FROM THE REST OF THE BUILDING.

D) (ROOF/ROOF) THE PRIMARY LOW SLOPE ROOF IS HIDDEN BEHIND PARAPETS ON ALL SIDES. THESE PARAPET WALLS ARE CAPPED WITH A SIMPLE CORNICE AND BROKEN UP BY THE TOWER ELEMENTS W/ MORE DECORATIVE CORNICES & CHANGE OF MATERIAL.

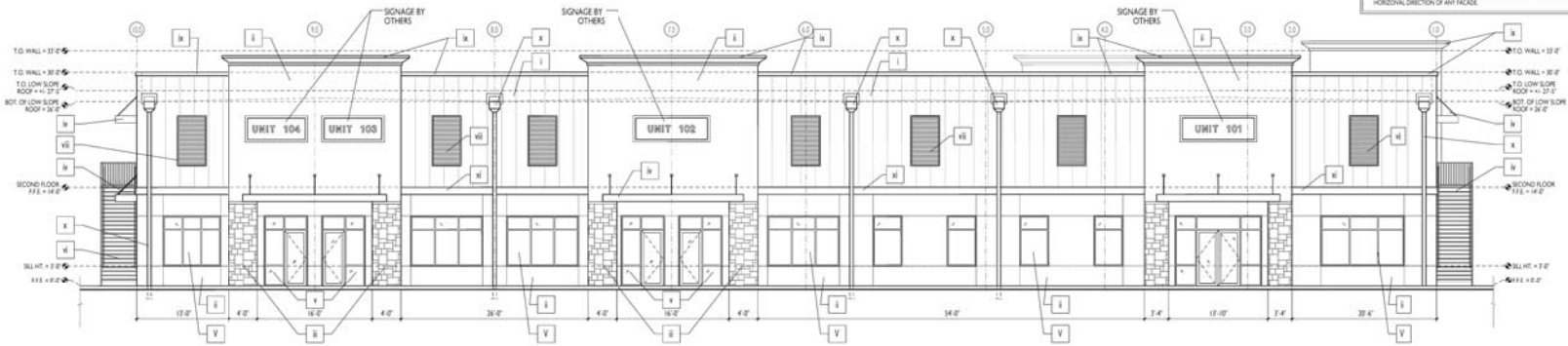
E) (WINDOWS) WINDOWS & SHUTTERS (FAUX WINDOWS) MAKE UP LESS THAN 10% OF ANY FACADE DUE TO THE FUNCTION OF THE BUILDING, HOWEVER THE WINDOWS & SHUTTERS ARE DISTRIBUTED IN SUCH A WAY TO ADD INTEREST AND RHYTHM TO EACH FACADE.

F) (COLOR) COLORS ARE ALL EARTH TONES REFER TO MATERIAL & COLOR SCHEDULE ABOVE

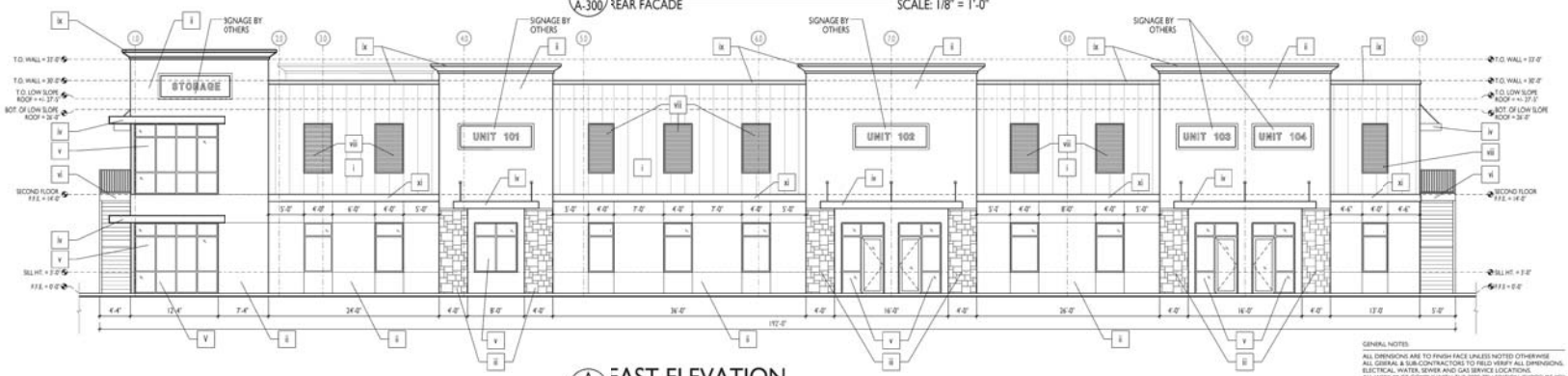
G) (ARTICLE) BUILDING PROVIDES ARCHITECTURAL FEATURES SUCH AS STEPPED TOWERS, PROTRUDING CABLE AWNINGS, AND MATERIAL CHANGE AT GROUND LEVEL TO PROVIDE VISUAL INTEREST FROM A PEDESTRIAN POINT OF VIEW.

2) BUILDING FACADES & SI BLANK WALLS

BUILDING ROVIDES COLOR CHANGE, BANDING, CHANGES IN PLANE & TEXTURE/MATERIAL CHANGE ON ALL FACADES.
IN NO INSTANCE IS THERE A BLANK WALL AREA EXCEEDING TEN FEET (10') IN VERTICAL DIRECTION OR 30' IN HORIZONTAL DIRECTION OF ANY FACADE.



B A-300 WEST ELEVATION
REAR FACADE
SCALE: 1/8" = 1'-0"



A A-300 EAST ELEVATION
FRONT FACADE
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

ALL DIMENSIONS ARE TO FINISH FACE UNLESS NOTED OTHERWISE
ALL GENERAL & SUB-CONTRACTORS TO FIELD VERIFY ALL DIMENSIONS, ELECTRICAL, WATER, SEWER AND GAS SERVICE LOCATIONS.
ALL WORK MUST COMPLY WITH THE 2020 7TH EDITION (EXPOSURE "C") OF THEFLORIDA BUILDING CODE SECT. 1609 -130 MPH WIND LOAD AND 7TE FLORIDA ASSESSIBILITY CODE FOR BUILDING CONSTRUCTION.
ALL DOOR & WINDOW OPENINGS TO MEET OR EXCEED DESIGN PRESSURE RANGE
THE BUILDING RISK CATEGORY IS "II"
INTERNAL PRESSURE COEFFICIENT IS +/- .18 IN ACCORDANCE WITH ASCE 7-16
ALL GLAZING IS TO BE NON-IMPACT RESISTANT

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REVISIONS

PLANTATION OAKS - NEIGHBORHOOD COMMERCIAL

OWNER/REP.:
PROJECT LOCATION: ORMOND BEACH, FL. 32174
GENERAL CONTRACTOR:

BPI DESIGN INCORPORATED
Building Design and Architecture
BRIAN P. FRIDLEY, ASSOCIATE AIA, PROJECT MANAGER
DALLAS B. PEACOCK, ARCHITECT
FAR 0009726
207 FAIRVIEW AVENUE
DAYTONA BEACH, FL 32114 PH: (386) 257-0102 FX: (386) 257-1030
EMAIL: bfridley@bpidesign.com WEBSITE: bpidesign.com

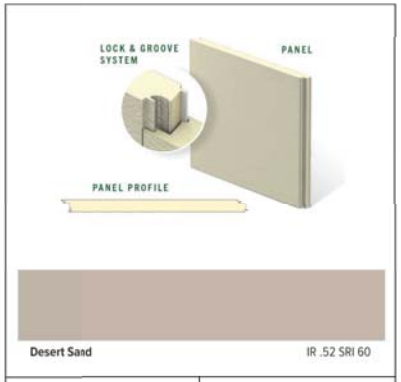
PROPOSED ELEVATIONS

DRAWN BY: TEM	CHECKED BY: DBP & BPF
DATE: DECEMBER 8, 2021	SHT NO. A-300
SCALE: 1/8"=1'-0"	

ARCHITECT'S / ENGINEER'S SEAL



COLOR NAME	LRV
STOREFRONT BRONZE	NA



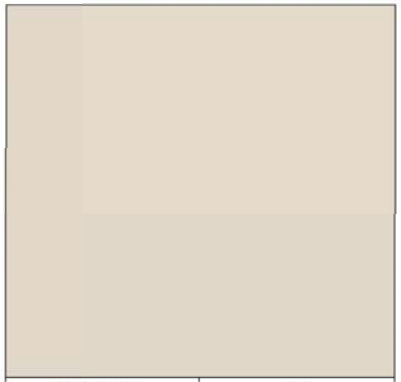
COLOR NAME	LRV
NUCOR- DESERT SAND	NA



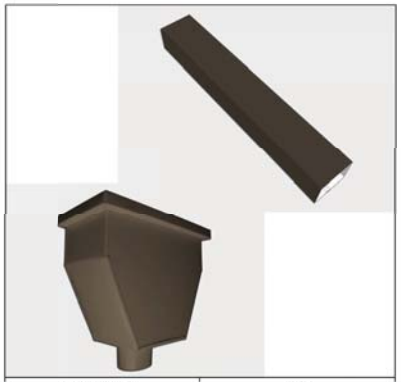
COLOR NAME	LRV
NUCOR - DESERT SAND	NA



COLOR NAME	LRV
CORONADO STONE- CARRIBEAN CORAL -SANTORINI BLEND	84%



COLOR NAME	LRV
SW 7568 - NEUTRAL GROUND	70%



COLOR NAME	LRV
DARK BRONZE CONDUCTOR HEAD & DOWNSPOUTS	NA

MATERIAL & COLOR SCHEDULE

NO.	BLDG ELEMENT	MATERIAL	MANUF.	MODEL	COLOR	NO.	BLDG ELEMENT	MATERIAL	MANUF.	MODEL	COLOR
i	EXTERIOR WALL (1)	INSULATED MTL PANEL	NUCOR	SANTE FE PANEL 24"	DESERT SAND	vii	MAN DOOR	MTL. FRAME W/ VIEW WINDOW	T.B.D.	T.B.D.	MATCH TO DESERT SAND
ii	EXTERIOR WALL (1)	3-COAT STUCCO FINISH	T.B.D.	T.B.D.	SW 7568 NEUTRAL GROUND	viii	FAUX SHUTTERS	METAL	T.B.D.	T.B.D.	MATCH TO SW7568
iii	COLUMN ACCENTS	STONE VENEER	CORONADO	ASHLAR & RUBBLE SERIES	CARIBBEAN CORAL	ix	CORNICES & PARAPET CAPS	METAL & EXTRUDED FOAM	T.B.D.	T.B.D.	BRONZE
iv	PRE-ENG. AWNINGS	METAL	T.B.D.	T.B.D.	MANUF. DARK BRONZE	x	DOWNSPOUTS	ALUMINUM	T.B.D.	T.B.D.	MATCH TO SW7568
v	STOREFRONT DOORS & WINDOWS	ALUMINUM FRAME NON-IMPACT	PGT	SS3500	LOW-E, TINTED BRONZE FRAME	xi	FOAM BANDING	PRE-FAB EIFS BAND	T.B.D.	2" X 12"	MATCH TO BRONZE
vi	EXTERIOR STAIRS	STEEL	T.B.D.	T.B.D.	MATCH TO SW 7568						

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ALL DOR & WINDOW OPENINGS TO MEET OR EXCEED DESIGN PRESSURE RANGE
THE BUILDING RISK CATEGORY IS "II"
INTERNAL PRESSURE COEFFICIENT IS +/- .18 IN ACCORDANCE WITH ASCE 7-16
ALL GLZING IS TO BE NON-IMPACT RESISTANT

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REVISIONS

1

PLANTATION OAKS - NEIGHBORHOOD COMMERCIAL

OWNER/REP.:
PROJECT LOCATION: ORMOND BEACH, FL. 32174
GENERAL CONTRACTOR:

BPF DESIGN INCORPORATED
Building Design and Architecture
BRIAN P. FRIDLEY, ASSOCIATE AIA, PROJECT MANAGER
DALLAS B. PEACOCK, ARCHITECT
FAR 0009726
207 FAIRVIEW AVENUE
DAYTONA BEACH, FL 32114 PH: (386) 257-1102 FX: (386) 257-1103
EMAIL: bfridley@bpfdesign.com WEBSITE: bpfdesign.com

COLOR/MATERIAL CHARTS SF-1

DRAWN BY: TEM
CHECKED BY: DBP & BPF
DATE: DECEMBER 8, 2021
SCALE:
SHT NO. ******

ARCHITECT'S / ENGINEER'S SEAL

GENERAL NOTES:

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REVISIONS

△

PLANTATION OAKS - NEIGHBORHOOD COMMERCIAL

OWNER/REP.: _____
PROJECT LOCATION: _____, ORMOND BEACH, FL. 32174
GENERAL CONTRACTOR: _____

BPI DESIGN INCORPORATED
Building Design and Architecture
BRIAN P. FREDLEY, ASSOCIATE AIA, PROJECT MANAGER
DALLAS B. PEACOCK, ARCHITECT
BAR 0009706
337 FAIRVIEW AVENUE
DAYTONA BEACH, FL 32114 PH: (386) 257-0512 FX: (386) 257-1558
EMAIL: bfredley@bpidesign.com WEBSITE: bpidesign.com

3D RENDERING

DRAWN BY: TEM	CHECKED BY: DBP & BPF
DATE: DECEMBER 8, 2021	SHT NO. #####
SCALE:	

ARCHITECT'S / ENGINEER'S SEAL

(3) Book, stationery, newsstands, pharmacies, hardware and similar retail convenience stores.

(4) Convenience or General Stores, offering a full range of grocery, delicatessen, and house wares, with or without gasoline pumps, (excluding the sale of distilled spirits with a higher alcoholic content than malt beverages or fermented wines).

(5) Type A and B restaurants.

(6) Professional, financial, administrative, and medical offices.

(7) Laundry and dry cleaning pickup stations and self-service establishments.

(8) Child care centers, private schools, and Houses of Worship.

(9) Essential utility service uses and facilities.

(10) Excavation for lakes and stormwater management facilities serving the golf course or NC area.

(11) Customary accessory uses and structures to the permitted uses.

(12) Warehouse indoor mini rental.

(c) Dimensional Requirements

(1) Maximum Parcel Size: ~~1.3~~ 1.58 acres

(2) Minimum Building Setback:

Front Yard	25 feet
Rear Yard	20 feet

PARKER MYNCHENBERG & ASSOCIATES, INC.

1729 Ridgewood Avenue
Holly Hill, Florida 32117
(386) 677-6891
FAX (386) 677-2114
E-Mail: info@parkermynchenberg.com

Mr. Steven Spraker, AICP
Planning Director
The City of Ormond Beach
22 South Beach Street, Room 104
Ormond Beach, Florida 32175

June 21, 2024

Re: PLANTATION OAKS OF ORMOND BEACH – NEIGHBORHOOD COMMERCIAL
Neighborhood Meeting Summary

Dear Steven:

A neighborhood meeting was held Monday, June 10, 2024, at 6:00 pm at Plantation Oaks of Ormond Beach Clubhouse. Attached is a copy of the sign in sheet.

There were twenty-six people in attendance.

Parker Mynchenberg presented the project to the neighbors and answered questions related to the proposed 1.58-acre site, traffic concerns, and parking requirements. An explanation/description of the current permitted uses allowed in the Neighborhood Commercial current zoning was presented and the request to allow (indoor mini rental) inside air-conditioned storage as a permitted use in the 1.58-acre Neighborhood Commercial site.

Questions were raised about adjacent subdivisions under construction and timing of approvals. Parker answered various questions from interested parties.

If any additional information is required, please contact me at (386) 677-6891.

Yours truly,



Parker Mynchenberg, P.E., R.L.A.

PM/af

Enclosures

cc: Ms. Noel Eaton

DRAFT

Planning Board minutes from

July 11, 2024

ITEM:

PZ-2024-037

PRD AMENDMENT

Plantation Oaks Neighborhood Commercial Parcel to allow Warehouse Indoor Mini-Rental as a permitted use on 1.58 acres.

1730 Plantation Oaks Blvd.

Action: Recommended Approval (6-0)

Ms. Shull stated that a correction is needed on page 7, 4th paragraph, first sentence, where it says that Ms. Shull added to the Light Industrial definition. The Recording Technician will note the error and revise this to reflect that Ms. Eaton made the statement.

Mr. Galloway moved to approve the June 13, 2024 Minutes with the noted revision. Mr. Jorczak seconded the motion. Vote was called, and the motion was approved (6-0).

VI. PLANNING DIRECTOR'S REPORT

No report.

VII. PUBLIC HEARINGS

A. PZ 2024-000037: Plantation Oaks, Neighborhood Commercial Amendment, Planned Residential Development Amendment, 1730 Plantation Oaks Boulevard

Ms. Noel Eaton, Senior Planner, stated that this is a Planned Residential Development (PRD) amendment submitted by Plantation Oaks of Ormond Beach, LLC. The PRD allowed a neighborhood commercial parcel with certain uses permitted and the amendment seeks to allow Warehouse Indoor Mini-Rental as a permitted use on the second floor of the structure. The 1.58-acre Neighborhood Commercial property is located at 1730 Plantation Oaks Boulevard.

Ms. Eaton displayed the current uses overhead, pointing out the proposed new use of the Warehouse, Indoor Mini-Rental use, specific to the second floor only. She added that there is an amendment to allow the maximum parcel size of 1.58 acres versus 1.3 acres for the neighborhood commercial parcel in the original development order. Ms. Eaton continued that the front setback shall be measured from Plantation Oaks Boulevard and is allowed to include Tract Y as an existing landscape buffer, as shown in Map Book 59, Page 143.

Ms. Eaton concluded that staff recommends that the Planning Board approve the development order amendment with the following conditions:

1. The Neighborhood Commercial setback measurement shall be measured from Plantation Oaks Boulevard and allowed to include Tract Y as shown in Map Book 59, Page 143, as an existing landscape buffer.

2. The warehouse, indoor mini-rental use is allowed and shall only be permitted on the second-floor of the neighborhood commercial structure. The entire structure (first-floor) is not permitted to allow a warehouse, indoor mini-rental use.

3. Hours of outside construction shall be Monday through Saturday from 7:00 a.m. to 7:00 p.m.

Ms. Shull inquired about the setback measurement change. Ms. Eaton responded that it is based upon the Site Plan submittal. The structure proposed does not meet the 25'

front yard setback from the property line. The setback from Plantation Oaks Blvd is 35.07' and includes Tract Y.

Applicant's Presentation

Mr. Parker Mynchenberg, Parker Mynchenberg & Associates, 1729 Ridgewood Avenue, explained that when they built Plantation Oaks Boulevard and then built Fountain View, it was the desire to get the landscape buffer planted, therefore built Tract Y, which was always meant to be the landscape buffer for the neighborhood, commercial property. He concluded that it is landscaped nicely with trees.

Mr. du Moulin asked for details on the neighborhood meeting. Mr. Mynchenberg stated that there was a neighborhood meeting and a lot of the Plantation Oaks residents, including Fountain View and city staff attended. He added that nobody objected to it.

Board Discussion and Questions

Chairman Thomas opened it up to the Board for discussion and questions.

Mr. Railsback asked how many units were planned on. Mr. Mynchenberg replied that there is an engineer's office on the first floor and four other units that could house restaurants, a veterinary office, or card shop. On the second air-conditioned floor, there are approximately 111 cubicles that would open to anybody.

Audience Comments

Ms. Allisa Antolos, 1430 Fountain View Street, stated that she is a homeowner in Fountain View and asked when and where the neighborhood meeting was held. Mr. Mynchenberg replied that it was held Monday, June 10, 2024 at 6:00 p.m. He added that there were yellow placards on Plantation Oaks Boulevard and the entrance to Dancing Drive.

Ms. Antolos commented that she was under the impression that the subject address was going to be a clubhouse, amenity area. She asked where they would be now. Mr. Mynchberg pointed the Fountain View amenity area out on the screen overhead, located west of the subject property. He added that they received approval of the site plan this week and DR Horton will be able to begin now. Mr. Mynchenberg described the location of the neighborhood commercial parcel as the first left off of Dancing Drive, further on Dancing drive is a gate to the subdivision and the amenity center is to the next left. There are buffers on both sides with continuous hedges and shade trees.

Ms. Antolos remarked that the information was not provided to her by DR Horton prior to purchasing her home and feels that it should have been provided to the homeowners prior. She added that the retail space provided by DR Horton was on some of the maps but not all, and on the recent maps the retail space was removed. Ms. Antolos explained that she is trying to understand what is going into the community as it is very family-oriented and family-friendly with a lot of kids and a handful of houses. She commented that she does not want this to affect the

neighborhood or conservation area and sandhill cranes that are in the space of the project.

Mr. Jorczak stated that he thinks it is a good idea with the size of the units and amount of houses going in. He commented that they have to have some place to store the things that will not fit in their new homes. He remarked that it will be local for them and likes that the storage is on the second story with an elevator and it all being indoor.

Board Recommendation

Chairman Thomas entertained a motion.

Mr. Jorczak motioned to approve PZ 2024-000037: Plantation Oaks, Neighborhood Commercial Amendment, Planned Residential Development Amendment, 1730 Plantation Oaks Boulevard. Mr. Galloway seconded it. Vote was called, and the motion was approved (6-0).

B. PZ 2024-000060: Lowe's Home Improvement Store, Special Exception for Outdoor Activity, 1340 West Granada Boulevard

Ms. Eaton stated that this is a request submitted by Mr. Joseph Posey, Esquire, Storch Law Firm, on behalf of the property owner, Lowe's Home Centers, LLC., f/k/a Lowe's Home Improvement Centers, Inc. for a Special Exception to authorize an outdoor activity use. The application seeks to expand the previously approved permanent outdoor storage, display, and sales of merchandise areas approved by Special Exception, Resolution 2021-71, under certain conditions, at the Lowe's Home Improvement store. The subject property is located at 1340 West Granada Boulevard and is zoned B-8 (Commercial) and SE (Special Environmental).

Ms. Eaton explained that the property is approximately 31 acres and is split zoning. Along Granada Boulevard it is B-8, Commercial zoning and towards the south is a SE, Special Environmental zoning with the stormwater for the site. Ms. Eaton delivered the background on the process, adding that in 2006 the property received a resolution to allow 18 temporary storage containers for a three month period, in 2012 the property received approval for permanent outdoor storage and display of merchandise under certain conditions and in conformance with the approved site plan, the approval was limited to the areas along the front of the store.

Ms. Eaton stated that the city received a complaint which resulted in a Neighborhood Improvement case and city staff visited the site and determined that the violation of the approved site plan existed and the materials shall be removed from the Granada Boulevard frontage. She continued that in March, the Special Magistrate and the property owner, through a stipulated agreement, acknowledged that a violation occurred and existed on the property and directed that compliance be achieved by September 27, 2024 by either complying with the 2012 Special Exception or by amending the Special Exception. Ms. Eaton elaborated that yesterday, city staff did observe two to three sheds visibly stored along the Granada Boulevard frontage and building material stacked higher than 8' along the southeast building frontage. Since then it has been changed. The applicant has placed pictures of the change on the board dais for each board member showing there was nothing stored along the W. Granada Blvd frontage, or stacked higher than 8'.

Ordinance Adoption
Business Impact Estimate

Proposed ordinance's number and legal title:

2024-24

AN ORDINANCE AUTHORIZING THE EXECUTION AND ISSUANCE OF THE SECOND AMENDED DEVELOPMENT ORDER FOR A PLANNED RESIDENTIAL DEVELOPMENT KNOWN AS "PLANTATION OAKS"; AUTHORIZING AN AMENDMENT TO THE NEIGHBORHOOD COMMERCIAL LIST OF USES TO ALLOW WAREHOUSE, INDOOR MINI-RENTAL AS A PERMITTED USE UNDER CERTAIN CONDITIONS; AUTHORIZING A SITE DEVELOPMENT PLAN FOR THE NEIGHBORHOOD COMMERCIAL PARCEL LOCATED AT 1730 PLANTATION OAKS BOULEVARD; AND SETTING FORTH AN EFFECTIVE DATE.

This Business Impact Estimate is provided in accordance with section 166.041(4), Florida Statutes. If one or more boxes are checked below, this means the City is of the view that a business impact estimate is not required by state law for the proposed ordinance, but the City is, nevertheless, providing this Business Impact Estimate as a courtesy and to avoid any procedural issues that could impact the enactment of the proposed ordinance. This Business Impact Estimate may be revised following its initial posting.

☐ The proposed ordinance is required for compliance with Federal or State law or regulation;
☐ The proposed ordinance relates to the issuance or refinancing of debt;
☐ The proposed ordinance relates to the adoption of budgets or budget amendments, including revenue sources necessary to fund the budget;
☐ The proposed ordinance is required to implement a contract or an agreement, including, but not limited to, any Federal, State, local, or private grant or other financial assistance accepted by the municipal government;
☐ The proposed ordinance is an emergency ordinance;
☐ The ordinance relates to procurement; or
☒ The proposed ordinance is enacted to implement the following:
  a. Part II of Chapter 163, Florida Statutes, relating to growth policy, county and municipal planning, and land development regulation, including zoning, development orders, development agreements and development permits;
  b. Sections 190.005 and 190.046, Florida Statutes, regarding community development districts;
  c. Section 553.73, Florida Statutes, relating to the Florida Building Code; or
  d. Section 633.202, Florida Statutes, relating to the Florida Fire Prevention Code.

In accordance with the provisions of controlling law, even notwithstanding the fact that an exemption noted above may apply, the City hereby publishes the following information:

1. A summary of the proposed ordinance, including a statement of the public purpose to be served by the proposed ordinance, such as serving the public health, safety, morals, and welfare of the City.

   This is a Planned Residential Development (PRD) amendment submitted by Plantation Oaks of Ormond Beach LLC. The PRD allowed a neighborhood commercial parcel (Tract 1A-2) with certain uses permitted and the amendment seeks to allow Warehouse Indoor Mini Rental as a permitted use. The 1.58-acre Neighborhood Commercial property is located at 1730 Plantation Oaks Boulevard.

2. An estimate of the direct economic impact of the proposed ordinance on private, for-profit businesses in the City, including the following, if any:

   a. An estimate of direct compliance costs that businesses may reasonably incur if the ordinance is enacted;

      None. This is a request for applicant initiated amendment to modify an existing development order to allow Warehouse Indoor Mini Rental as a permitted use. No compliance costs are anticipated.

   b. Identification of any new charge or fee on businesses subject to the proposed ordinance, or for which businesses will be financially responsible; and

      None. This is a request for applicant initiated amendment to modify an existing development order to allow Warehouse Indoor Mini Rental as a permitted use. There are no charges or fees proposed.

   c. An estimate of the City's regulatory costs, including an estimate of revenues from any new charges or fees that will be imposed on businesses to cover such costs.

      None. This is a request for applicant initiated amendment to allow Warehouse Indoor Mini Rental as a permitted use.

3. A good faith estimate of the number of businesses likely to be impacted by the ordinance.

   None. This is a request for applicant initiated amendment to allow Warehouse Indoor Mini Rental as a permitted use.

4. Any additional information the City determines may be useful.

   (This section may include: methodology or data used to prepare the Business Impact Estimate, e.g., City staff solicited comments from businesses as to the potential impact of the proposed ordinance by contacting the chamber of commerce, social media posting, direct mail/email, posting on the City's website, public workshop, etc.; efforts made to reduce the potential fiscal impact on businesses; and state the proposed ordinance is a generally applicable ordinance that applies to all persons similarly situated (individuals or businesses) and, therefore, the proposed ordinance does not affect only businesses.)

   No business impacts proposed. The item was advertised by U.S. mail to abutting property owners and newspaper advertisements. Information on the application is also on the city's website.

City of Ormond Beach
AGENDA ITEM

August 20, 2024 - City Commission

Number: 8.D

Section:	PUBLIC HEARINGS		
Item Category:	Public Hearing - Resolution	**Res./Ord. No:**	2024-133
Strategic Goal:	Economic Development - OtherTransportation & Community Development - Other		
Department:	Planning & Building		
Subject:	1340 West Granada Blvd, Lowe's Special Exception for Outdoor Activity		
Summary:	This is a request submitted by Lowe's Home Centers, LLC for a Special Exception to authorize outdoor activity use. The application seeks to expand the previously approved permanent outdoor storage, display, and sales of merchandise areas approved by Special Exception, Resolution 2012-73, under certain conditions, at the store. The subject property is located at 1340 West Granada Boulevard and is zoned B-8 (Commercial) and SE (Special Environmental). In 2012, Resolution 2012-73 was approved for the permanent outdoor storage, display, and sales of merchandise under certain conditions and in conformance with the approved site plan. The outdoor display was limited to areas along the front of the store façade. In January 2024, City staff received a complaint that the business had gone beyond the development order, which resulted in a neighborhood improvement case. The Planning Board recommend approval of the Special Exception per the site plan exhibit and under certain conditions with a 5-1 vote at the July 11, 2024, meeting. The Planning Board added the condition: no product shall be visible from the West Granada Blvd right of way.		
Financial Impact:	None		
Citizen Impact:	The Special Exception for permanent outdoor activity and storage of merchandise is not expected to have any negative citizen impacts.		

Recommended Action (Staff, Advisory Board and/or Other):	The Planning Board recommended approval of the Special Exception application for the permanent outdoor storage, display, and sales of merchandise per the site plan exhibit and conditions for the Lowe's Home Improvement Store at 1340 West Granada Blvd.
Staff Contact:	Steven Spraker, Planning Director, (386) 676-3341
Attachments:	1. 24-133 Lowes SE (P24-0134G) 2. SE DO, Lowes, 1340 West Granada Blvd 3. EXHIBIT A-Legal Description 4. Exhibit B, SPRC Comments 5. Exhibit C- Site Plan 6. Exhibit D, Conditions 7. 07.11.2024 Lowe's Outdoor Activity Special Exception-PB Staff Report (8.5x11) 8. 07.11.2024, DRAFT Planning Board minutes, 1340 WGB-Lowes SE
Approval:	Kelly McGuire, Finance Director 8/6/2024 Shawn Finley, Assistant City Manager 8/9/2024 Joyce Shanahan, City Manager 8/14/2024

RESOLUTION NO. 2024-133

A RESOLUTION AUTHORIZING THE EXECUTION AND ISSUANCE OF A DEVELOPMENT ORDER FOR A SPECIAL EXCEPTION TO ALLOW OUTDOOR ACTIVITY TO INCLUDE THE PERMANENT OUTDOOR STORAGE, DISPLAY, AND SALES OF MERCHANDISE AT THE LOWES HOME IMPROVEMENT STORE LOCATED AT 1340 WEST GRANADA BOULEVARD; ESTABLISHING CONDITIONS AND EXPIRATION DATE OF APPROVAL; AND SETTING FORTH AN EFFECTIVE DATE.

WHEREAS, Lowe's Home Centers, LLC, a foreign corporation (f/k/a Lowe's Home Centers, Inc.) (the "Applicant") has applied for the issuance of a Special Exception to allow outdoor activity to include the permanent outdoor storage, display, and sales of merchandise in front of the existing Lowes Home Improvement Store and to the west of the existing garden center, located at 1340 West Granada Boulevard, within the B-8 (Commercial) and SE (Special Environmental) zoning districts (Volusia County Property Appraiser Parcel Number: 4230-00-00-0311), and

WHEREAS, by Resolution 2012-73, the City Commission approved a Special Exception to allow permanent outdoor storage, display, and sales of merchandise in front of the existing store, which Resolution and Development Order are recorded in Official Records Book 6717, Pages 430 through 442, inclusive, of the Public Records of Volusia County, Florida, and

WHEREAS, the applicant's outdoor storage, display, and sales of merchandise exceeded the limits established in Resolution 2012-73, which resulted in Neighborhood Improvement Case #NID-2024-000079. On March 25, 2024 the Special Magistrate and Applicant,

by means of a stipulated agreement, acknowledged a violation of the approved Special Exception Developer Order that existed on the property, and the Applicant agreed to bring the property into compliance by September 27, 2024, and

WHEREAS, the intent of this application is to replace the Special Exception Development Order approved by Resolution 2012-73 in its entirety, and

WHEREAS, the application does not propose any new construction or additional building square footage, and

WHEREAS, the said application complies with the provisions of the City of Ormond Beach *Land Development Code* ("the *Land Development Code*") and the general laws of Florida, and

WHEREAS, the Planning Board held a public hearing on July 11, 2024, regarding this matter as required by Chapter 1, Article II, Section 1-15(d)(2), of the *Land Development Code,* and

WHEREAS, the Planning Board found in their recommendations, the following:

(1) The application has no impacts to residential uses;

(2) The site layout plan for permanent outdoor storage, display, and sales of merchandise does not impact pedestrian or traffic safety;

(3) The location of the permanent outdoor storage, display, and sales of merchandise is unique to this site and shall not be visible from the public roadway; and

(4) There is a need for an enforcement provision to ensure that limits established by the site plan are adhered with; and

WHEREAS, the City Commission has duly held a public hearing on the application and has considered the testimony and evidence presented, and

WHEREAS, the City Commission has considered the following:

(1) The report and recommendations of the Planning Board;

(2) The report and recommendations of the Site Plan Review Committee;

(3) The comments of governmental agencies, utility corporations and individuals, as received, and

WHEREAS, based upon all of the foregoing and in consideration thereof, the City Commission finds that:

(1) The proposed use conforms to the standards and requirements of the Land Development Code and will not create undue crowding beyond the conditions normally permitted in the B-8 (Commercial) zoning district, or adversely affect the public health, safety, welfare or quality of life;

(2) The proposed use is consistent with the *Comprehensive Plan*;

(3) The proposed use will not adversely impact environmentally sensitive lands or natural resources, including but not limited to waterbodies, wetlands, xeric communities, wildlife habitats, endangered or threatened plants and animal species or species of special concern, wellfields, and individual wells;

(4) The proposed use will not substantially or permanently depreciate the value of surrounding property; create a nuisance; or deprive adjoining properties of adequate light

and air; create excessive noise, odor, glare, or visual impacts on the neighborhood and adjoining properties;

(5) There are adequate public facilities to serve the development, including but not limited to, roads, sidewalks, bike paths, potable water, wastewater treatment, drainage, fire and police safety, parks and recreation facilities, schools, and playgrounds;

(6) Ingress and egress to the property and traffic patterns are designed to protect and promote motorized vehicle and pedestrian/bicycle safety and convenience, allow for desirable traffic flow and control, and provide adequate access in case of fire or catastrophe. This finding shall be based on a traffic report where available, prepared by a qualified traffic consultant, engineer or planner which details the anticipated or projected effect of the project on adjacent roads and the impact on public safety;

(7) The proposed use is functional in the use of space and aesthetically acceptable;

(8) The proposed use provides for the safety of occupants and visitors; and

(9) The proposed use of materials and architectural features will not adversely impact the neighborhood and aesthetics of the area;

now therefore,

BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF ORMOND BEACH, FLORIDA, THAT:

SECTION ONE. The above recitals are true and correct and are incorporated herein by reference.

SECTION TWO. The Mayor and the City Manager are hereby authorized and directed to execute and issue a Development Order for a Special Exception to allow outdoor activity to include the permanent outdoor storage, display, and sales of merchandise in front of the existing Lowes Home Improvement Store and to the west of the existing garden center, located at 1340 West Granada Boulevard, within the B-8 (Commercial) and SE (Special Environmental) zoning districts, in accordance with the site plan and conditions described in the Special Exception Development Order, a copy of which is attached hereto and incorporated herein by reference.

SECTION THREE. This Resolution and Special Exception Development Order shall replace the Special Exception Development Order approved by Resolution 2012-73 in its entirety.

SECTION FOUR. A certified copy of this Resolution and the executed original Special Exception Development Order shall be recorded in the public records of Volusia County, Florida.

SECTION FIVE. This Resolution shall take effect immediately upon its adoption.

APPROVED AND AUTHENTICATED this 20th day of August, 2024.

_____

BILL PARTINGTON
Mayor

ATTEST:

_____

SUSAN CARROLL DAUDERIS
City Clerk

BEFORE THE
CITY COMMISSION
OF THE
CITY OF ORMOND BEACH

IN RE:	**Application of:**	Lowe's Home Centers, LLC
	Application No.	PZ-2024-060
	Project Name:	Lowes Special Exception for Outdoor Activity
	Property Address:	1340 West Granada Boulevard
	Parcel ID No.:	4230-00-00-0311

SPECIAL EXCEPTION
DEVELOPMENT ORDER

This matter having come on for public hearing before the City Commission of the City of Ormond Beach, Florida, on August 20, 2024, and the City Commission having considered those items as required by Section 1-18 of the *Land Development Code*, and having heard testimony and evidence from all affected persons, the City Commission hereby finds that:

1. The proposed use conforms to the standards and requirements of the *Land Development Code* and will not create undue crowding beyond the conditions normally permitted in the B-8 (Commercial) zoning district, or adversely affect the public health, safety, welfare or quality of life;

2. The proposed use is consistent with the *Comprehensive Plan*;

3. The proposed use will not adversely impact environmentally sensitive lands or natural resources, including but not limited to waterbodies, wetlands, xeric communities, wildlife habitats, endangered or threatened plants and animal species or species of special concern, wellfields, and individual wells;

4. The proposed use will not substantially or permanently depreciate the value of surrounding property; create a nuisance; or deprive adjoining properties of adequate light and air; create excessive noise, odor, glare, or visual impacts on the neighborhood and adjoining properties;

5. There are adequate public facilities to serve the development, including but not limited to roads, sidewalks, bike paths, potable water, wastewater treatment, drainage, fire and police safety, parks and recreation facilities, schools, and playgrounds;

6. Ingress and egress to the property and traffic patterns are designed to protect and promote motorized vehicle and pedestrian/bicycle safety and convenience, allow for desirable traffic flow and control, and provide adequate access in case of fire or catastrophe. This finding shall be based on a traffic report where available, prepared by a qualified traffic consultant, engineer or planner which details the anticipated or projected effect of the project on adjacent roads and the impact on public safety;

7. The proposed use is functional in the use of space and aesthetically acceptable;

8. The proposed use provides for the safety of occupants and visitors; and

9. The proposed use of materials and architectural features will not adversely impact the neighborhood and aesthetics of the area;

Thereupon and in consideration thereof, the City Commission hereby orders that:

A. The application of Lowe's Home Centers, LLC, a North Carolina corporation, (f/k/a Lowe's Home Centers, Inc.) (the "Applicant"), for a Special Exception to allow outdoor activity to include the permanent outdoor storage, display, and sales of merchandise in front of the existing Lowes Home Improvement Store and to the west of the garden center, located at 1340 West Granada Boulevard, within the B-8 (Commercial) and SE (Special Environmental) zoning districts, on that real property described in Exhibit "A" attached hereto and incorporated by reference, is hereby granted, subject to the following conditions:

1. All applicable provisions of the *Land Development Code* shall be complied with at all times, such provisions being incorporated herein by reference and hereby specifically made a part of this Special Exception;

2. The outstanding Site Plan Review Committee comments described in Exhibit "B" shall be satisfied; and

3. Full and complete compliance with the Special Conditions described in Exhibit "D".

B. The final plans for the location of the permanent outdoor storage, display, and sales of merchandise, shall be consistent with the plans displayed in Exhibit "C" and all of the conditions listed in Exhibit "D", said exhibits being attached hereto and incorporated herein by reference.

C. No material change shall be made to the final plans for this Special Exception without further review by the Planning Board and approval by the City Commission in accordance with the procedures for the approval of this Special Exception Development Order.

D. In the event a Neighborhood Improvement Officer subsequently determines there to be any violation of this Special Exception, such Officer shall promptly present such determination to Special Magistrate for hearing.

E. If this Special Exception is abandoned for a period of six (6) months, a zoning approval for a new use, subject to Special Exception requirements, shall not be issued until the Site Plan review Committee determines that all of the conditions of Chapter I, Article II, Section 1-14(3)(c) of the *Land Development Code* have been met.

F. Because there is no site or building improvements proposed, this Special Exception shall become effective at the time of City Commission approval and shall remain in full force and effect unless and until subsequently amended by the City Commission.

G. This Special Exception Development Order shall be recorded in the public records of Volusia County, Florida, at the expense of Lowe's Home Centers, LLC, and its successors and assigns, and shall run with the real property described in Exhibit "A" attached hereto and incorporated herein by reference. (Parcel ID No.: 4230-00-00-0311)

ORDERED this 20th day of August, 2024.

By: _____
BILL PARTINGTON
Mayor

(CITY SEAL)

Attest: _____
JOYCE A. SHANAHAN
City Manager

EXHIBIT "A"

LEGAL DESCRIPTION

30 14 32 W 953.98 FT OF NE 1/4 S OF ST RD 40 EXC IRREG PARCEL IN E 244.23 FT OF W 973.39 FT MEAS ON S R/W OF ST RD 40 & EXC NEW R/W FOR ST RD 40 & INC IRREG PARCEL IN SE 1/4 MEAS 706.45 FT ON W/L & 186.21 FT ON N/L PER OR 4427 PG 2519

OWNER:	LOWE'S HOME CENTERS, INC, A NORTH CAROLINA CORPORATION
LOCATION:	1340 WEST GRANADA BOULEVARD
PARCEL ID#:	4230-00-00-0311

LOCATION MAP

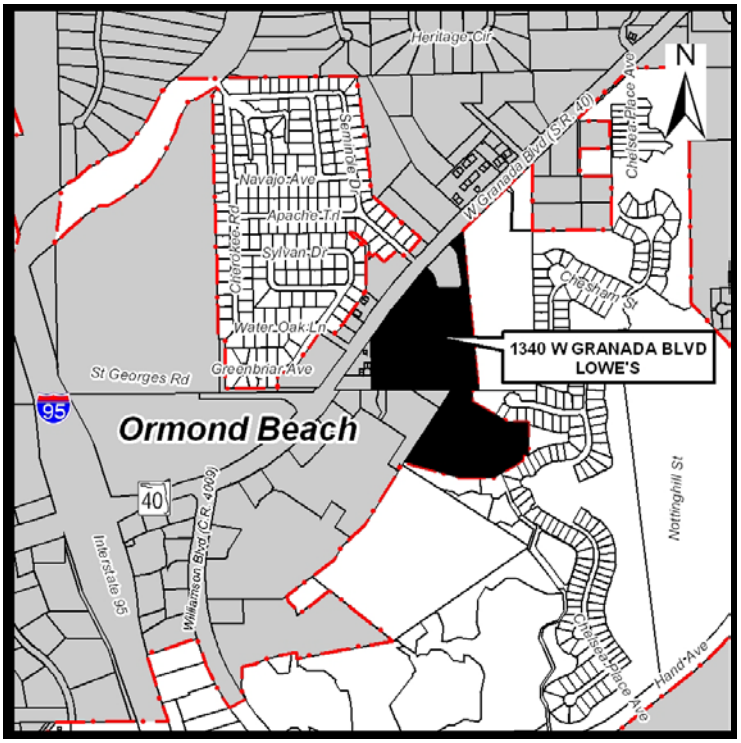


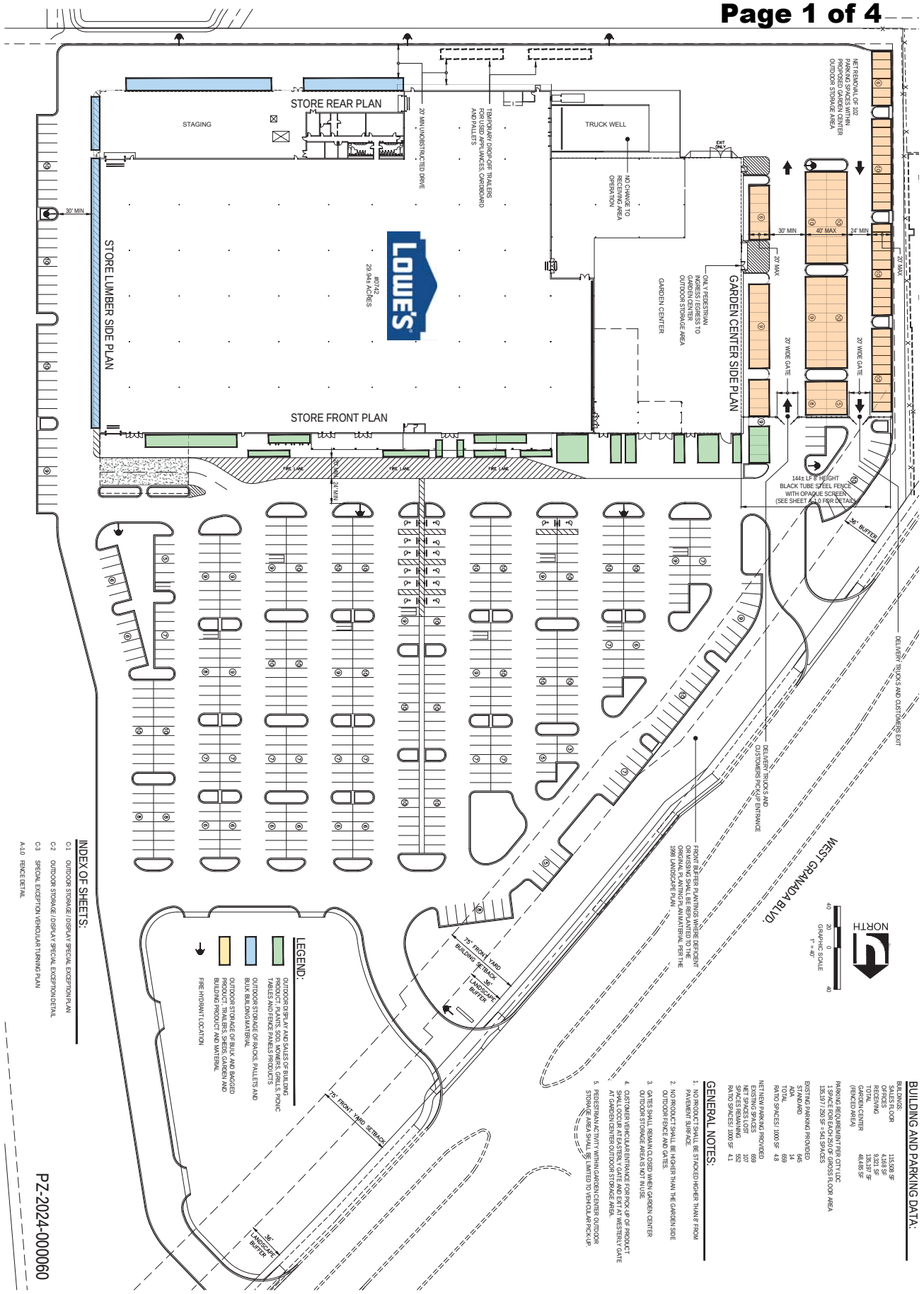
EXHIBIT “B”

SITE PLAN REVIEW COMMITTEE OUTSTANDING COMMENTS

eReview Session for SPRC Review v.2

FILES: Lowe's Ormond Beach #0742 Special Exception Site Plan 05.09.24.pdf

REVIEWER	MARKUP	DATE/TIME	FILE NAME	PG #
Cara Culliver	- This note needs to state the entire site will be brought up to the approved landscape plan if available or meet with City Landscape Architect to determine landscape betterment plan.	07/10/2024 8:40 pm	Lowe's Ormond Beach #0742 Special Exception Site Plan 05.09.24.pdf	1
Steven Spraker	Please remove this picture as it does not match the detail or the existing garden center screening. Please leave off the picture or provide a picture that matches the existing garden center fencing.	07/12/2024 5:18 pm	Lowe's Ormond Beach #0742 Special Exception Site Plan 05.09.24.pdf	4
Steven Spraker	Project requires City Commission approval prior to any site plan review committee action.	07/12/2024 5:20 pm	Lowe's Ormond Beach #0742 Special Exception Site Plan 05.09.24.pdf	1
Noel Eaton	Recommendation: include Planning Board added condition. No product shall be visible from the West Granada Boulevard right of way.	07/23/2024 12:14 pm	Lowe's Ormond Beach #0742 Special Exception Site Plan 05.09.24.pdf	1
Sarah Cushing	Is there still going to be screening material across the fence as identified in note A.3.? Please add a note addressing the maintenance schedule for replacing the material as it gets worn.	07/23/2024 12:37 pm	Lowe's Ormond Beach #0742 Special Exception Site Plan 05.09.24.pdf	4



INDEX OF SHEETS:

C-1 OUTDOOR STORAGE / DISPLAY SPECIAL EXCEPTION PLAN
C-2 OUTDOOR STORAGE / DISPLAY SPECIAL EXCEPTION DETAIL
C-3 SPECIAL EXCEPTION VEHICULAR TURNING PLAN
A-1.0 FENCE DETAIL

LEGEND:

- OUTDOOR DISPLAY AREA FOR SALES OF BUILDING PRODUCT, PLANTS, SOD, MOWERS, GRILLS, PICNIC TABLES AND FENCE PANELS PRODUCTS
- OUTDOOR STORAGE OF RACKS, PALLETS AND BULK BUILDING MATERIAL
- OUTDOOR STORAGE OF BULK AND BAGGED PRODUCT, TRAILERS, SHEDS, GARDEN AND BUILDING PRODUCT AND MATERIAL
- FIRE HYDRANT LOCATION

GENERAL NOTES:

1. NO PRODUCT SHALL BE STACKED HIGHER THAN 8' FROM PAVEMENT SURFACE.
2. NO PRODUCT SHALL BE HIGHER THAN THE GARDEN SIDE OUTDOOR FENCE AND GATES.
3. GATES SHALL REMAIN CLOSED WHEN GARDEN CENTER OUTDOOR STORAGE AREAS NOT IN USE.
4. CUSTOMER VEHICULAR ENTRANCE FOR PICK-UP OF PRODUCT SHALL OCCUR AT EASTERLY GATE AND EXIT AT WESTERLY GATE AT GARDEN CENTER OUTDOOR STORAGE AREA.
5. PEDESTRIAN ACTIVITY WITHIN GARDEN CENTER OUTDOOR STORAGE AREA SHALL BE LIMITED TO VEHICULAR PICK-UP.

BUILDING AND PARKING DATA:

BUILDING AREA:	
SALES FLOOR	115,508 SF
OFFICES	4,189 SF
RECEIVING	9,321 SF
TOTAL	130,197 SF
GARDEN CENTER (FENCED AREA)	46,465 SF
PARKING REQUIREMENT PER CITY LDC 130,197 / 200 SF GROSS FLOOR AREA	
130,197 / 200 SF = 651 SPACES	
EXISTING PARKING PROVIDED	
STANDARD	645
VAN	14
TOTAL	659
RATIO SPACES/ 1000 SF	4.8
NET NEW PARKING PROVIDED	
EXISTING SPACES	659
NET SPACES LOST	107
SPACES REMAINING	552
RATIO SPACES/ 1000 SF	4.1

ORMOND BEACH, FLORIDA

OUTDOOR STORAGE / DISPLAY SPECIAL EXCEPTION PLAN
LOWE'S OF
ORMOND BEACH #0742
1340 WEST GRANADA BLVD.
PROJECT No: 240212 | DRAWN BY: HMT | CHECKED BY: RWS

ORIGINAL ISSUE DATE:
PERMIT SET ISSUE DATE: MAY 9, 2024
CONSTRUCTION SET ISSUE DATE:
DRAWING NUMBER: C-1

THESE PLANS AND SPECIFICATIONS, AS INSTRUMENTS OF SERVICE, ARE AND SHALL REMAIN THE PROPERTY OF LOWE'S HOME CENTERS, INC. WHETHER THE PROJECT FOR WHICH THEY ARE MADE IS EXECUTED OR NOT. THE REUSE OF THESE PLANS AND SPECIFICATIONS ON ANY EXTENSION OF THIS PROJECT OR ON ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN PERMISSION OF LOWE'S HOME CENTERS, INC. IS PROHIBITED. ALL COPYRIGHTS ARE ALL RIGHTS RESERVED.

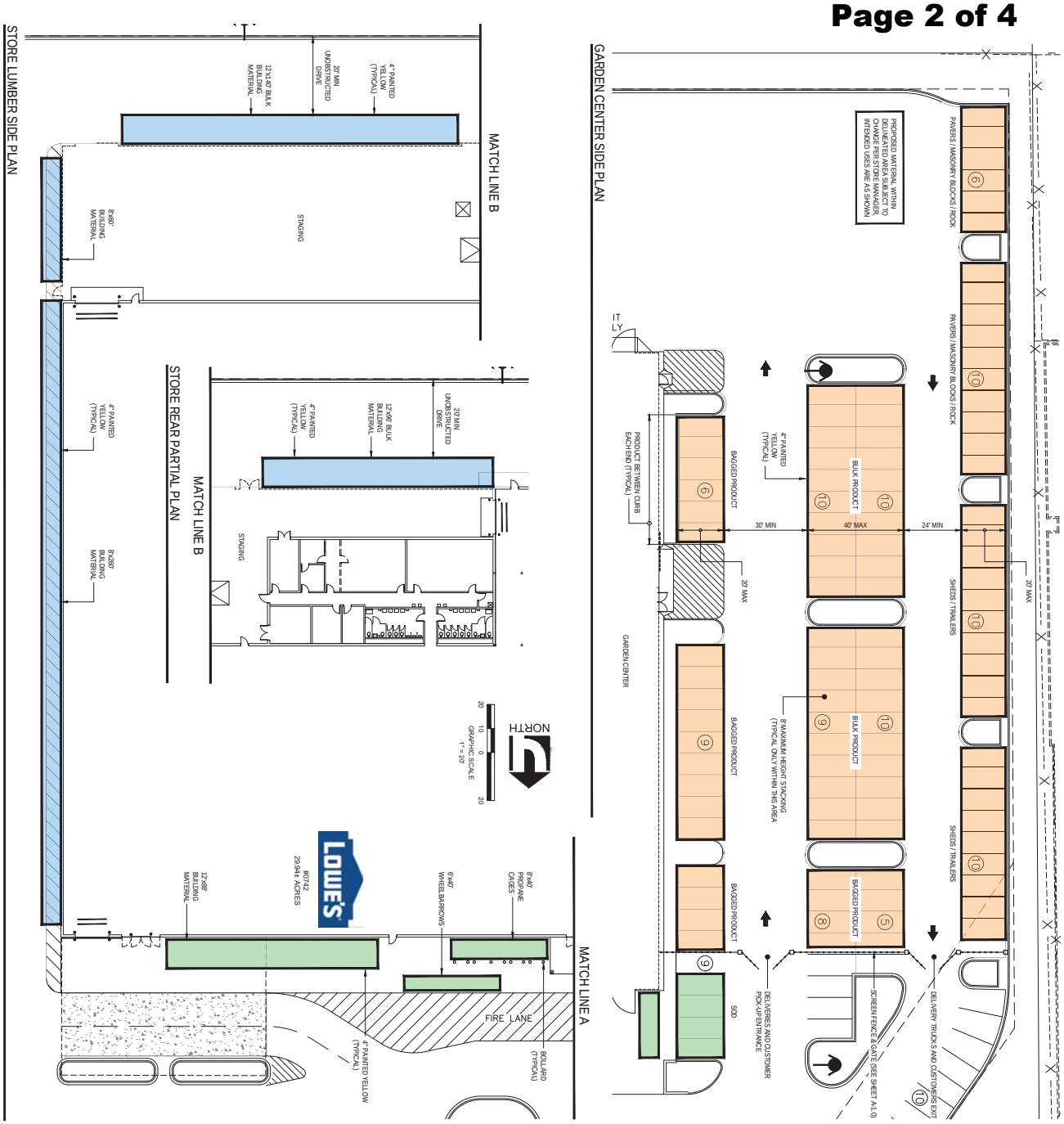
LOWE'S HOME CENTERS, INC.
1000 LOWE'S BOULEVARD
MOORESVILLE NC 28117
704.758.1000

UPHAM INC
CIVIL ENGINEERING • SURVEYING • LANDSCAPE ARCHITECTURE
265 Kenilworth Avenue • Ormond Beach • Florida 32174
Voice: 386.672.9515 • Fax: 386.673.6554 • uphaminc.com
LB # 0003612 LC # 0000357

ROGER N. STECHLA LICENSED NO. 52784 STATE OF FLORIDA PROFESSIONAL ENGINEER

REVISIONS
◇ RELEASE △ ISSUE DATE

DATE	DESCRIPTION
7/2/24	PER COMMENTS



OUTDOOR STORAGE / DISPLAY
SPECIAL EXCEPTION DETAIL
LOWE'S OF
ORMOND BEACH #0742
1340 WEST GRANADA BLVD.

PROJECT No: 240212 | DRAWN BY: HMT | CHECKED BY: RWS

C-2

ORIGINAL ISSUE DATE: MAY 9, 2024
CONSTRUCTION SET ISSUE DATE:
DRAWING NUMBER:

LOWE'S HOME CENTERS, INC.
1000 LOWES BOULEVARD
MOORESVILLE NC 28117
704.758.1000

UPHAM INC
CIVIL ENGINEERING • SURVEYING • LANDSCAPE ARCHITECTURE
265 Kenilworth Avenue • Ormond Beach • Florida 32174
Voice: 386.672.9515 • Fax: 386.673.6554 • uphaminc.com
LB # 0003612 LC # 0000357

ROGER N. STACHLA LICENSE NO. 52784 STATE OF FLORIDA PROFESSIONAL ENGINEER

REVISIONS
◇ REV # 1 DATE 10/24 DESCRIPTION COMMENTS
△ ISSUE DATE



C-3

SPECIAL EXCEPTION PLAN
VEHICLE TURNING PLAN

LOWE'S OF
ORMOND BEACH #0742
1340 WEST GRANADA BLVD.

PROJECT No: 240212 | DRAWN BY: HMT | CHECKED BY: RWS

ORIGINAL ISSUE DATE:
PRELIMINARY ISSUE DATE:
CONSTRUCTION SET ISSUE DATE: MAY 9, 2024
DRAWING NUMBER:

LOWE'S HOME CENTERS, INC.
1000 LOWE'S BOULEVARD
MOORESVILLE NC 28117
704.758.1000

UPHAM INC
CIVIL ENGINEERING • SURVEYING • LANDSCAPE ARCHITECTURE
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LB # 0003612 LC # 0000357

ROGER N. STRICKLAND LICENSED PROFESSIONAL ENGINEER NO. 52784 STATE OF FLORIDA

REVISIONS
NO. | DESCRIPTION | DATE
1 | CITY COMMENTS | 7/2/24

2.02 MATERIAL

A. Fencing System: Subject to the performance and design requirement specified herein, fence and gates shall be manufactured from the following materials:

1. Pickets shall be square tubing, minimum 1" x 1" x 16 ga. Tubing for pickets shall be formed per ASTM F2408 from coil steel with minimum yield of 50,000 psi. Galvanization per Section 5.1.1 for material galvanized after forming, except the O.D. is to receive a conversion coating and a clear inorganic coating for better adhesion of final color coating, and Section 5.1.2 for material that is galvanized prior to forming.
2. Rails shall be roll formed channel 1 ¾" x 1 ½" x 14 ga. Or 2" x 2" x 16 ga. minimum square tubing. Galvanization per Section 5.1.1 for material galvanized after forming, except the O.D. is to receive a conversion coating and a clear inorganic coating for better adhesion of final color coating, and Section 5.1.2 for material that is galvanized prior to forming.
3. Chain link (as indicated on drawings) per specification section 02822. Expanded metal security mesh (as indicated on drawings) shall meet the requirements of ASTM F2548.
4. Posts shall have press-on type steel caps zinc plated to ASTM D633, Service Class II. Tubing for posts to be formed per ASTM F2408 from coil steel with minimum yield of 50,000 psi. Galvanization per Section 5.1.1 for material galvanized after forming, except the O.D. is to receive a conversion coating and a clear inorganic coating for better adhesion of final color coating, and Section 5.1.2 for material that is galvanized prior to forming. Posts with greater than 11ga wall thickness shall be formed per ASTM A53, A500 or A501, grade B, with a minimum yield of 46,000 psi, and shall be hot dip galvanized in accordance with ASTM A123. Size and spacing of posts as determined by Engineer.
5. Pickets, rails and posts to be cut, sized, and located as indicated in the certified and approved shop drawings.
6. Panel attachment brackets shall be stainless steel or galvanized steel, with stainless, galvanized or zinc plated fasteners. All brackets and fasteners shall be finished to match fence color.
7. Fence panel sections shall be capable of meeting the performance criteria of ASTM F2408 except that vertical concentrated load testing shall demonstrate capability of supporting a 600 lb. load applied mid-span with minimal deflection, and no permanent deformation.

B. Size: Panel sizes shall be as shown on approved shop drawings. Maximum width is 8'-0".

C. Swing Gates:

1. Design of gates shall be as shown on the Drawings.
2. Gate frames and infill panels: Materials as described above in 2.02, A. Frame members shall be MIG welded. Truss rods or cables to be used to prevent gate sag and allow for future adjustment.
3. Gate posts, header beams, foundation and transom frame: Size as determined by Engineer, based on gate size, local wind loading requirements, and installation type.
4. Hinges: Manufacturer's standard hinges, structurally capable of supporting gate leaf and allow opening and closing without binding. Non-lift-off type hinge design shall permit gate to swing 180 deg. Hinge pins shall be non-removable. Hinges shall be welded or attached to face of post that is perpendicular to fence line and not be welded or attached to exposed face of posts which is parallel to fence line.
5. Latch: Capable of retaining gate in closed position and have provision for padlock.
6. Keeper: Provide keeper for each gate leaf over 5 feet wide. Gate keeper shall consist of mechanical device for securing free end of gate when in full open position and closed position with in-ground sleeves.

GATE SCHEDULE

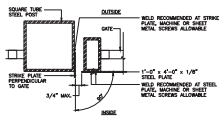
GATE NO.	LOCATION	WIDTH/HEIGHT	HARDWARE	REMARKS
①	OUTDOOR STORAGE	PAIR 10'-0" x 8'-0"	"BEST" 21B772T	HOLD OPEN DROP BARS AND SLEEVES AT 135° OPEN AND CLOSED POSITIONS
②	OUTDOOR STORAGE	PAIR 10'-0" x 8'-0"	"BEST" 21B772T	HOLD OPEN DROP BARS AND SLEEVES AT 135° OPEN AND CLOSED POSITIONS

NOTE

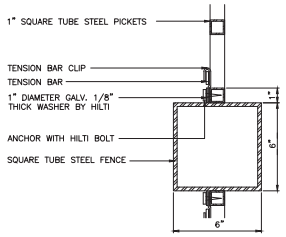
THESE CONTRACT DOCUMENTS HAVE BEEN DESIGNED AND DRAWN ASSUMING EXISTING BUILDING CONDITIONS MATCH THE ORIGINAL DRAWINGS. IT HOWEVER, REMAINS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS PRIOR TO THE SUBMISSION OF A BID & COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES FOUND BETWEEN FIELD CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE GENERAL CONTRACTOR OR THE LOWE'S PROJECT MANAGER IMMEDIATELY TO DETERMINE WHAT ACTION SHOULD BE TAKEN.



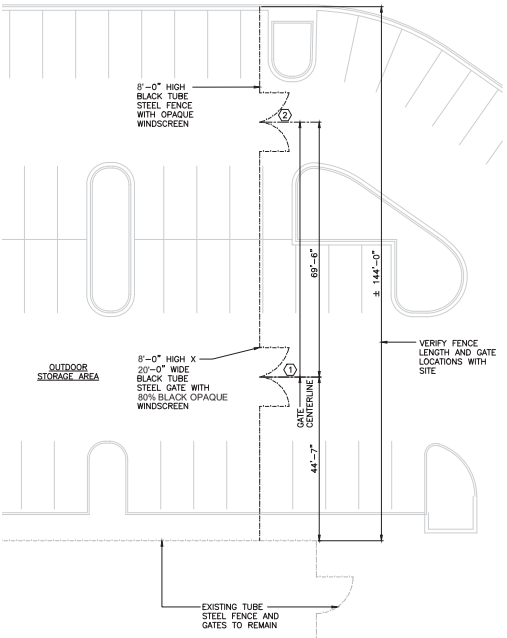
ILLUSTRATION OF BLACK 80% OPACITY SCREEN FABRIC



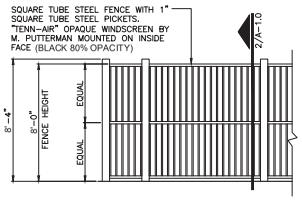
5 TUBE STEEL STRIKE PLATE DETAIL
SCALE: 3"=1'-0" REFER: A-1.0



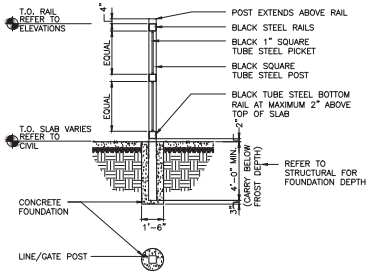
4 TUBE STEEL FENCE DETAIL
SCALE: 3"=1'-0" REFER: A-1.0



1 OUTDOOR STORGE PLAN
SCALE: 1/16"=1'-0"



3 TUBE STEEL FENCE POST DETAILS
SCALE: 1/4"=1'-0" REFER: A-1.0



2 TUBE STEEL FENCE POST DETAILS
SCALE: 1/4"=1'-0" REFER: A-1.0

REVISIONS
◇ PRE-BID SET ISSUE DATE △ POST BID SET ISSUE DATE

DATE	DESCRIPTION
7/3/24	REVIPER 6/19
	SPRC COMMENTS

TRENT FERRELL ARCHITECT
1313 KALMIA ROAD
KNOXVILLE, TENNESSEE
865.670.9298 (V)

LOWE'S HOME CENTERS, LLC
1000 LOWE'S BOULEVARD
MOORESVILLE, NC 28117
704.758.1000 (PH.)

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OUTDOOR STORAGE FENCE PLAN AND DETAILS

LOWE'S OF ORMOND BEACH #0742
ORMOND BEACH, FLORIDA

PROJECT No: XXXXXXX | DRAWN BY: | CHECKED BY:

CRITERIA ISSUE DATE: 2024
PERMIT SET ISSUE DATE:
CONSTRUCTION SET ISSUE DATE:
DRAWING NUMBER
A-1.0

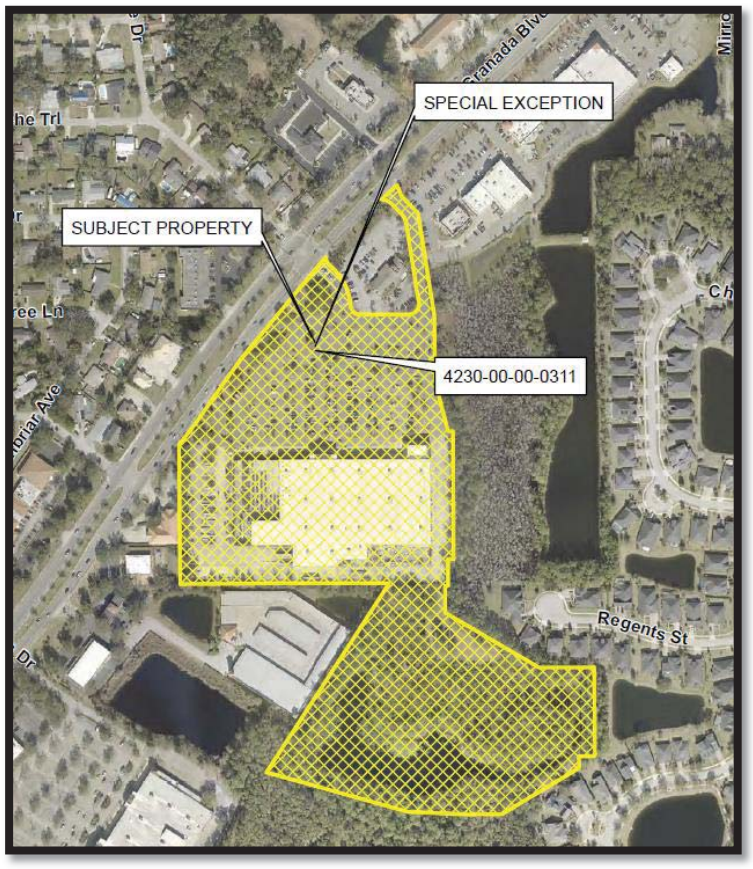
DRAWING RECORD SET FINAL

EXHIBIT "D"

Special Exception Outdoor Activity Conditions for the Permanent Outdoor Storage, Display, and Sales of Merchandise

1. No product shall be stacked greater than eight feet (8') in height;
2. Outdoor product can only be stored, displayed, or sold within the delineated areas show on the site plan exhibit (Exhibit "C");
3. The outdoor product display is year round. The merchandise within the designated allowed storage areas may be changed by the store manager, but shall not exceed the designated areas allowed;
4. Delineated areas shall be indicated by a four inch (4") wide yellow painted rectangular outline;
5. Product cannot encroach outside the painted delineated line;
6. If within any one (1) year period, there are two (2) demonstrated code violations of the permanent outdoor storage, display, and sales of merchandise per the site plan attached, as proven through the Special Master code enforcement system, the right to permanent outdoor storage, display, and sales of merchandise under the Special Exception development order shall be automatically revoked without further action of the City Commission. Upon the issuance of a second notice of code enforcement violation by either a Neighborhood Improvement Officer or Police Officer, the ability to have the permanent outdoor storage, display, and sales of merchandise shall be suspended until the finding of the Special Master hearings are complete. If the Special Master determines that a second violation has occurred, the ability to have the permanent outdoor storage, display, and sales of merchandise shall thereafter be deemed to have been revoked. If the Special Master determines that no violation occurred, the applicant shall be permitted to resume the permanent outdoor storage, display, and sales of merchandise; and
7. The product cannot be visible from the Granada Boulevard right-of-way (ROW), or be above the height of the eight foot (8') fence.

PLANNING BOARD
STAFF REPORT
Lowes Special Exception for Outdoor Activity
Project Number: PZ-2024-060

PLANNING BOARD DATE:	July 11, 2024
TENTATIVE CITY COMMISSION DATE:	August 20, 2024 (one hearing)
APPLICANT:	A. Joseph Posey, Esquire-Storch Law Firm, on behalf of the property owner, Lowe's Home Centers, LLC
LOCATION:	1340 W. Granada Boulevard
REQUEST:	Lowe's Home Improvement Store: Special Exception for Outdoor Activity
SITE PLAN REVIEW COMMITTEE RECOMMENDATION:	Approval
STAFF CONTACT:	Noel Eaton
MAP OF PROJECT AREA:	

INTRODUCTION: This is a request submitted by Joseph Posey, Esquire-Storch Law Firm, on behalf of the property owner, Lowe's Home Centers, LLC, f/k/a Lowe's Home Centers, Inc. for a Special Exception to authorize an outdoor activity use. The application seeks to expand the previously approved permanent outdoor storage, display, and sales of merchandise areas approved by Special Exception, Resolution 2021-73, under certain conditions, at the Lowe's home improvement store. The subject property is located at 1340 West Granada Boulevard and is zoned B-8 (Commercial) and SE (Special Environmental).

BACKGROUND: The Lowe's home improvement store has a business tax receipt for retail sales and was originally approved by Volusia County as a Business Planned Unit Development (BPUD) with Volusia County Resolution 98-194. The property was annexed into Ormond Beach with Ordinance 99-12. In 2000, the property was designated with the Future Land Use Map designation of "Commercial" and "Special Environmental" and the corresponding zoning designations of B-8 (Commercial) and SE (Special Environmental).

The Lowe's property is ±31.43 acres. The portion of the property zoned B-8 is ±18 acres and fronts onto Granada Boulevard, including the structure, parking and landscaping improvements. The portion of the property zoned SE is the stormwater management portion of the property and is located behind the structure. According to the Volusia County Property Appraiser, the building size as 136,542-square-feet with a loading platform of 11,690-square-feet. Within the Lowe's development area along Granada Boulevard there is an outparcel, owned and operated by Dustin's BBQ.

Exhibit 1: Site Aerial - Surrounding Uses:



Table 1: Surrounding Uses with Land Use and Zoning Designations:

Direction	#	Use	Future Land Use Designation	Zoning
North	1	Office & Specialty Retail	"Office/Professional"	B-1 (Professional Office/Hospital) and B-10 (Suburban Boulevard)
South	2	Stor-It, Conservation Land	Volusia County UMI, City "General Commercial"	Volusia County R-4, City PBD (Stor-It)
East	3	Vacant Land Chelsea Place	Volusia County UMI and ULI	Volusia County R-4
West	4	Offices, Stor-It	"Office/Professional" and "General Commercial"	B-10 (Suburban Boulevard) and PBD (Stor-It)

In 2006, the property was granted a Special Exception, Resolution 2006-244, for the allowance of 18 temporary storage containers for a three-month period.

Special Exception, Resolution 2012-73 was approved for the permanent outdoor storage, display, and sales of merchandise under certain conditions and in conformance with the approved site plan (Exhibit 2) The outdoor display was limited to areas along the front of the store façade.

The application was reviewed by the Planning Board in April 2012 and was recommended for approval by a 5 to 2 vote. Planning Board members discussed the concern that past violations did not provide faith that the proposed limits shown on the site plan would be adhered with. The Board also discussed that granting the Special Exception for Lowe's would encourage additional applications for outdoor activity. During this discussion, it was stated by Planning Board members that Lowe's has several unique characteristics. The first characteristic is that the area for outdoor activity is setback well off the right-of-way and is not visible from the roadway. The second characteristic is that the site layout for Lowe's allows the outdoor activity without impacting parking areas, sidewalks, fire lanes, or pedestrian access. The final unique characteristic is that the proposed activity would not impact residential areas.

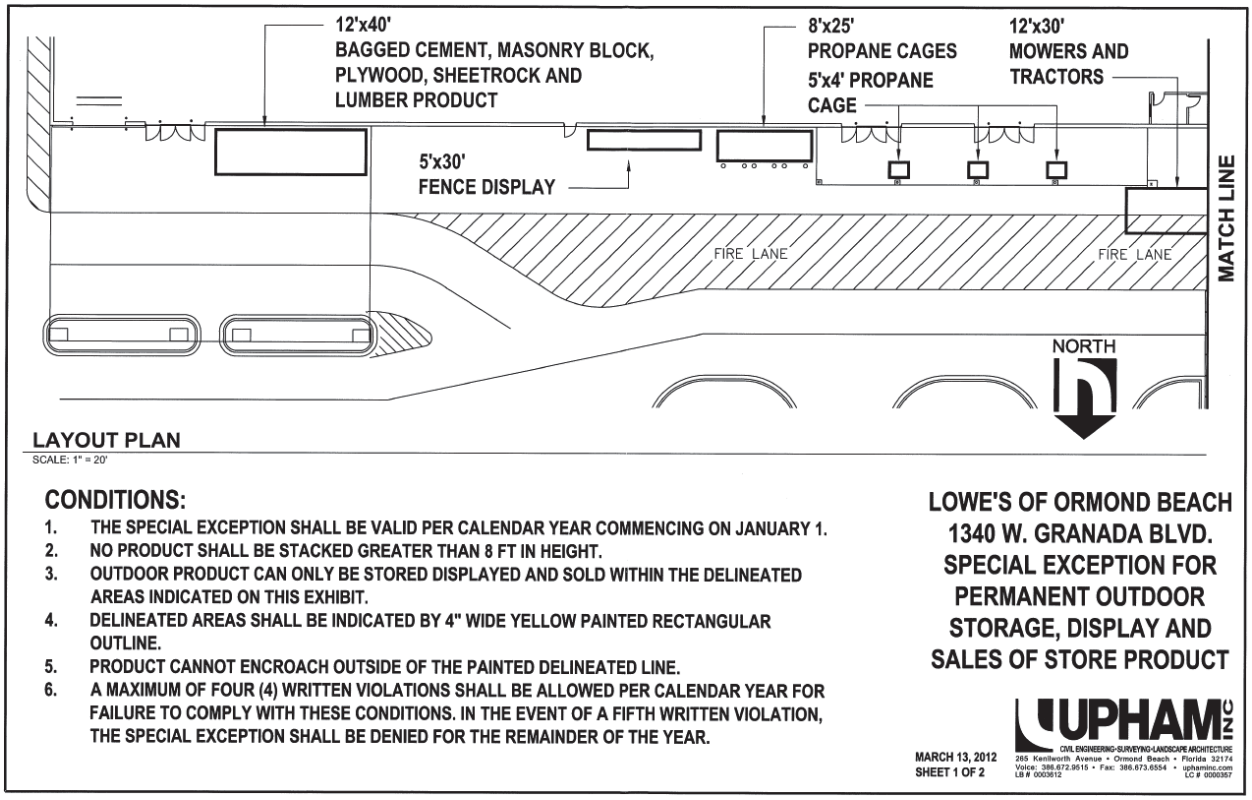
In the approving motion, the Planning Board recommended adding in a provision similar to the RiverGrille project, where if there are two violations, as determined by the Special Master, over a one-year period, then the applicant would automatically lose the Special Exception for outdoor activity.

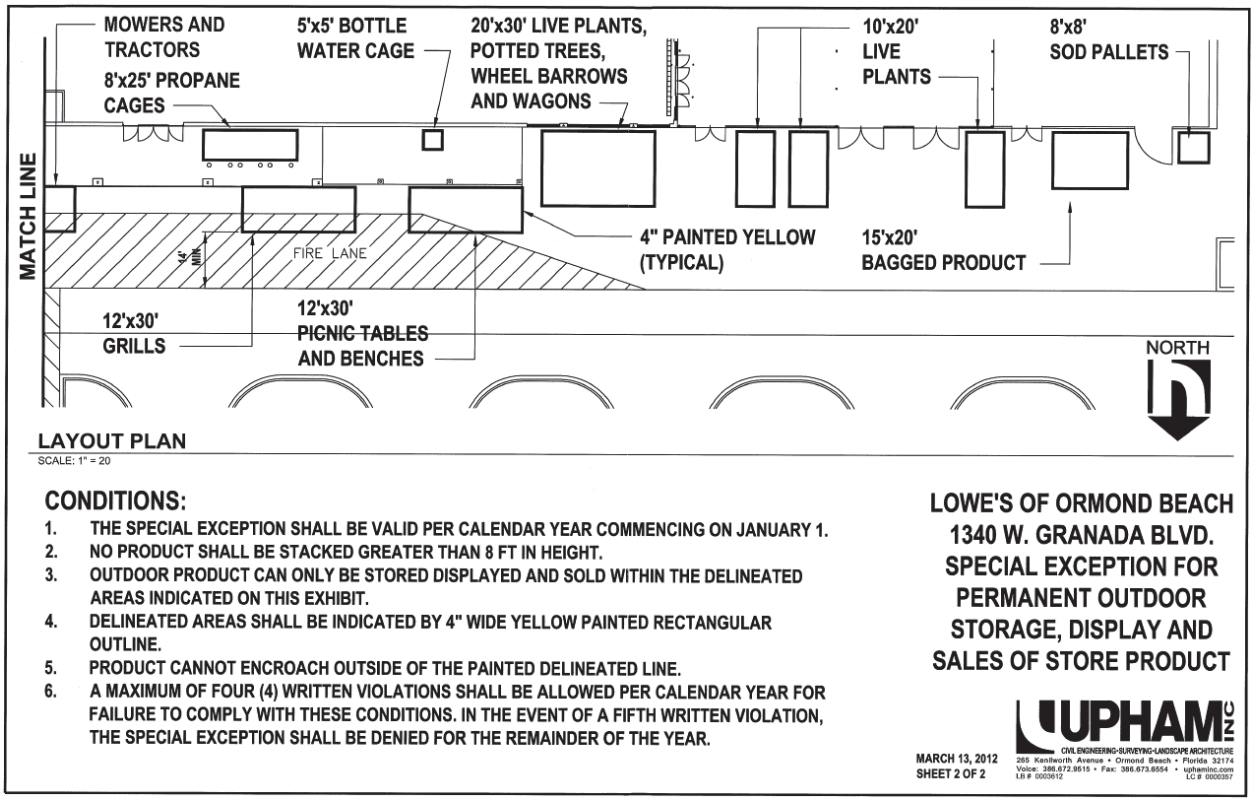
The City Commission approved Resolution 2012-73 on May 15, 2012 with a unanimous (5-0) vote.

In January 2024, City Hall received a complaint that the business had gone beyond the development order which resulted in neighborhood improvement case #NID-2024-000079. City staff visited the site on March 21, 2024 and determined the property was in violation of the approved site plan. On March 25, 2024 the Special Magistrate and Property owner, by means of a stipulated agreement, acknowledged a violation of the approved development order existed on the property, and the property owner agreed to bring property into compliance by September 27, 2024 by either the originally approved Special Exception or by amending the Special Exception.

The operations of the Lowe's Home Improvement store have been successful and have grown in the last 12 years since the prior approval in 2012. The application seeks to expand the areas of outdoor storage, display, and sales of merchandise to other areas of the site. It can be noted that Planning Staff and Planning Board members raised concern of the materials expanding beyond the approved limits in the 2012 application. The current application seeks to permit the expanded areas, historically used, through the Special Exception process.

Exhibit 2: Approved Site Plan from Resolution 2012-73:





PROJECT DESCRIPTION: The applicant requests permanent outdoor storage, display, and sales of merchandise. The site plan exhibit shows a variety of merchandise including building materials, sheds, trailers, landscaping material, bulk storage, propane gas, mowers, stacked chairs, grills, plants, sod pallets, and bagged landscaping products such as mulch. The site plan includes the following proposed conditions:

1. No product shall be stacked greater than 8' in height;
2. Outdoor product can only be stored, displayed, or sold within the delineated areas show on the site plan exhibit;
3. Delineated areas shall be indicated by 4"-wide yellow painted rectangular outline; and
4. Product cannot encroach outside the painted delineated line.

Through SPRC review, planning staff has recommended continuing the Neighborhood Improvement condition within the development order as follows:

5. If within any one (1) year period, there are two (2) demonstrated code violations of the permanent outdoor storage, display, and sales of merchandise per the site plan attached, as proven through the Special Master code enforcement system, the right to permanent outdoor storage, display, and sales of merchandise under the Special Exception development order shall be automatically revoked without further action of the City Commission. Upon the issuance of a second notice of code enforcement violation by either a Neighborhood Improvement Officer or Police Officer, the ability to have the permanent outdoor storage, display, and sales of merchandise shall be suspended until the finding of the Special Master hearings

are complete. If the Special Master determines that a second violation has occurred, the ability to have outdoor music shall thereafter be deemed to have been revoked. If the Special Master determines that no violation occurred, the applicant shall be permitted to resume the permanent outdoor storage, display, and sales of merchandise.

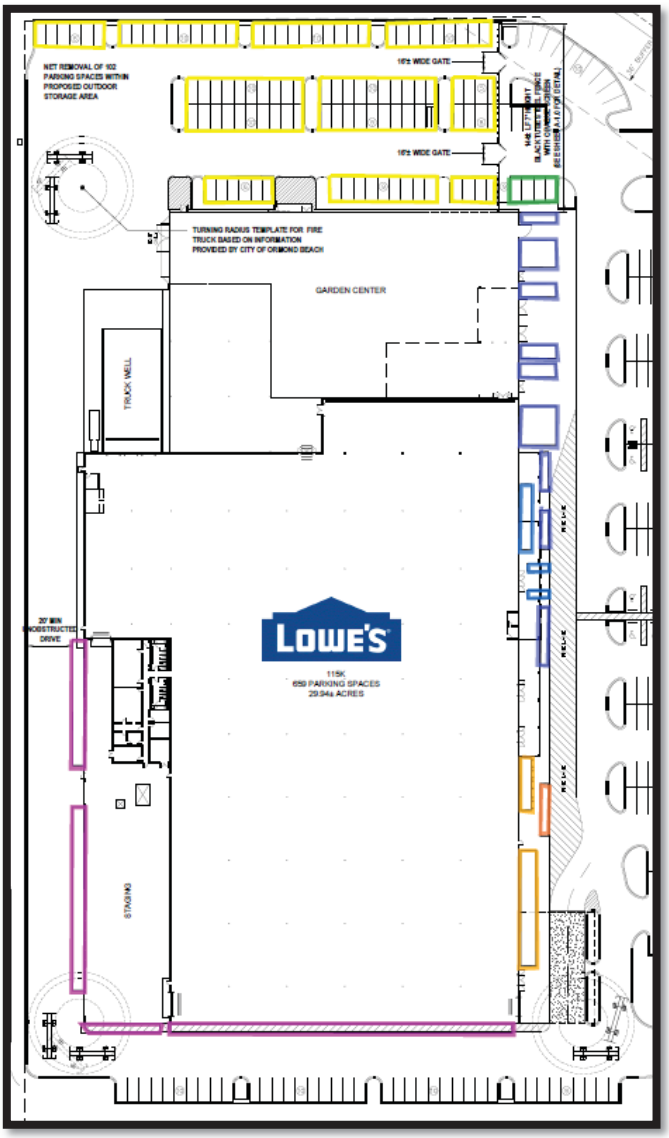
The outdoor activity area shown in yellow on Exhibit 3 is proposing to eliminate approximately 107 parking spaces on the west side of the property. This area appears to be underutilized based on historic aerial photos. Table 2 below demonstrates the parking requirements of the Land Development Code (LDC) are being met.

The applicant is proposing a 7'-tube steel fence with opaque windscreen with two 16'-wide gates to provide vehicular access to and also screen the expanded display/storage area on the west side of the building from the W. Granada Boulevard view. This material is consistent with the material used around the garden center. The sheds/trailers, pavers/rock and bulk storage will be behind this screening. The application does not propose any new construction or additional building square footage. Exhibit 3 below shows the proposed limits of outdoor activity by location. Colors have been added to help reference specific areas of activity in the analysis below.

Table 2: Summary of parking spaces:

	Required	Existing	Proposed
Total Parking	**541**	**659**	**552**
1 space per 250 square feet of gross floor area. 135,197 / 250SF = 541 spaces			

Exhibit 3: Proposed areas of outdoor activity (colored):



ANALYSIS: There are multiple Land Development Code sections related to the outdoor storage, display and sales of merchandise. Section 1-22 of the Land Development Code defines outdoor activity as "the display of merchandise offered for sale or any activity, such as live entertainment, outside the building walls of a completely enclosed building." Within the B-8 zoning district outdoor activity is regulated as a Special Exception with review/recommendation by the Planning Board and a final decision by the City Commission. The Special Exception requires review of the criteria of the following Land Development Code Sections:

1. Section 2-57.(53), Outdoor Activity (applies to specific use);
2. Section 2-56: General criteria and Special Exception review criteria (applies to all Special Exception requests);

3. Section 1-15.E: Planned Developments and Special Exceptions (Planning Board criteria for all Special Exceptions); and
4. Section 1-18.E: Criteria for Issuance of Development Order (City Commission criteria for all Special Exceptions).

The following other sections of the Land Development Code are applicable to permanent outdoor storage, display, and sales of merchandise.

Section 2-50.(w), Outdoor Activities, of the Land Development Code, allows the outdoor sale of merchandise through a Special Event Permit four times per year for fourteen days (56 days) with certain conditions. The conditions include that the outdoor sale of merchandise is limited to what is sold inside the business. If the Special Exception is approved, the property would still be eligible for the outdoor activity events of the accessory use section of the Land Development Code for 56 days per year.

Section 2-57.(53), Outdoor Activity Criteria:

Section 2-57.(53) of the Land Development Code outlines the criteria for outdoor activity:

(53) Outdoor activity

a. **If located adjacent to a residential use, appropriate screening and buffering shall be provided to minimize noise and glare impact to the maximum extent feasible.**

   As stated in the background section of this report, the Lowe's property has two distinct zonings. The front half of the property is zoned B-8, Commercial where the commercial activity occurs. The B-8, Commercial portion of the property is not adjacent to residential uses and is not expected to have noise or glare impacts. The applicant is proposing a 7'-tube steel fence with opaque windscreen with two 16'-wide gates to screen the expanded display/storage area on the west side of the building from the W. Granada Boulevard view. The rear portion of the site is zoned SE and abuts the Chelsea Place Subdivision. In addition to the west expansion area, the applicant proposes to expand the outdoor areas along the east and south sides of building facades. The east boundary of the subject property where the expanded outdoor activity is proposed, highlighted in pink in Exhibit 3, abuts approximately 500' of heavily vegetated open space associated with the two properties at 1310 and 1298 W. Granada Blvd. It is believed that with the existing vegetative buffer abutting the residential use, and the maximum stacking height of 8', the additional activities behind the building would not impact residential uses.

2. **A site plan displaying the area for activity and pedestrian movement shall be required.**

   The applicant has provided a site plan that delineates the area for permanent outdoor storage, display, and sales of merchandise.

3. **Outdoor music shall provide a sound study demonstrating compliance with the adopted maximum decibel levels.**

   There is no outdoor music proposed and this criterion is not applicable.

Section 2-56: Special Exception Criteria

Section 2-56 of the Land Development Code outlines the general criteria for all Special Exception approvals:

A. ***Off-street parking loading and service areas shall be provided and located such that there is no adverse impact on adjoining properties, beyond that generally experienced in the district.***

The off-street parking, loading, and services were approved by Volusia County in the 1998 BPUD application. The expanded area of storage on the west side of the building (yellow section Exhibit 3) proposes to eliminate 107 parking spaces. Table 2 demonstrates that the site still maintains required parking minimums for a retail sales use. As part of the review, the Site Plan Review Committee has reviewed the locations of the proposed permanent outdoor storage, display, and sales of merchandise and there are no impacts to loading or fire lanes for the subject property. Staff does not believe the expanded areas of storage will impact abutting properties.

B. ***Required yards, screening or buffering, and landscaping shall be consistent with the district in general, the specific needs of the abutting land uses, Chapter 3, Article 1, and other applicable provisions of this Code.***

The project was approved in 1998 by Volusia County. The front landscape buffer was reviewed and approved by the City of Ormond Beach as part of the 1998 approval. As part of the SPRC review, the City's Landscape Architect requested the landscaping be brought to the standards of the approved site plan. The landscape betterment plan would be separate of the requested Special Exception. The requested outdoor activity is not impacting any landscaping or buffers on the property.

C. ***Size, location, or number of conditional or Special Exceptions in an area shall be limited so as to maintain the overall character of the district in which said conditional or Special Exceptions are located.***

There have been no other applications for outdoor activity in this corridor of Granada Boulevard. Since the prior approval in 2012 multiple outdoor activity Special Exceptions have been granted for outdoor display of merchandise at 661 S. Nova (Curb Appeal), 200 Highland Avenue (A1A Landscaping), 344 S. Yonge Street (Woodstock), 248 N. Yonge Street (Southern Mower Sales)

D. ***Hours of operation may be limited and the City may require additional information on structural design and site arrangement, to assure the compatibility of the development with existing and proposed uses in the surrounding area.***

The hours of the permanent outdoor storage, display, and sales of merchandise are consistent with the hours of operation with the store. The merchandise would be permanently stored outside even when the store is not open. The property

owner is also proposing a new fence to screen the additional outdoor storage area on the west side of the building (yellow area Exhibit 3) from view of the W. Granada Boulevard right-of-way. The fence material is consistent with the material used around the garden center and is compatible with existing material. Additionally, there are security cameras for the hours where the store is not open and merchandise is located outside.

E. ***The Special Exception shall not generate hazardous waste or require use of hazardous materials in its operation without use of City-approved mitigative techniques.***

This Special Exception request will not generate hazardous waste.

F. ***All development proposed as a Special Exception within or adjacent to a historic district shall be reviewed based on applicable criteria stated herein for residential, commercial or mixed-use development and shall also comply with appearance and design guidelines for historic structures.***

The project is not located within, or adjacent to, a historic district and this criteria does not apply to the project development.

G. ***Outdoor lighting shall have no spillover onto adjacent property or rights-of-way beyond the building site property line and the lumens shall not exceed two (2) foot-candles at the property line.***

The site lighting plan is not proposed for amendment and the application is solely for the permanent outdoor storage, display, and sales of merchandise.

Section 1-15.E: Planning Board Criteria and Section 1-18.E: City Commission Criteria

Sections 1-15.E. and 1-18.E of the Land Development Code establish the Planning Board and City Commission Development Order criteria. The Land Development Code states that the following criteria shall be considered:

1. **The proposed development conforms to the standards and requirements of this Code and will not create undue crowding beyond the conditions normally permitted in the zoning district, or adversely affect the public health, safety, welfare or quality of life.**

   The Land Development Code does not prohibit outdoor activity. Section 2-50.(w) allows retailers temporary outdoor activity four times per year for 14 days for each event. Within the B-8 zoning district, the outdoor activity use is allowed through a Special Exception with the criteria focusing on impacts to residential uses and the provision of an exhibit demonstrating the limits of the activity. Approving this request is not expected to create negative impacts to residential uses. The request will not adversely affect the public health, safety, welfare or quality of life.

2. **The proposed development is consistent with the Comprehensive Plan.**

   The site has a Future Land Use designation of "General Commercial", which is consistent with the proposed use. The Future Land Use Element states that the "Commercial" land use category is designed, "To provide for the sales of retail goods and services, high density multi-family, professional offices and services, and restaurants, depending on the range of population to be served and the availability of transit." The retail sales of merchandise, either inside or outside of the building, is consistent with the "General Commercial" land use category.

3. **The proposed development will not adversely impact environmentally sensitive lands or natural resources, including but not limited to waterbodies, wetlands, xeric communities, wildlife habitats, endangered or threatened plants and animal species or species of special concern, wellfields, and individual wells.**

   The proposed application for permanent outdoor storage, display, and sales of merchandise will not adversely impact environmentally sensitive lands or natural resources and is an existing developed site. The outdoor storage is limited to existing paved areas of the property.

4. **The proposed use will not substantially or permanently depreciate the value of surrounding property; create a nuisance; or deprive adjoining properties of adequate light and air; create excessive noise, odor, glare, or visual impacts on the neighborhood and adjoining properties.**

   The proposed application for permanent outdoor storage, display, and sales of merchandise will not depreciate the value of surrounding property if the merchandise is displayed per the proposed plan. In reviewing of the prior approval, staff had concern that merchandise would expand beyond the limits of the site plan, generating additional code enforcement issues for City staff. Key characteristics of the application are to provide the storage on exiting paved surfaces and provide screening of the storage on the former parking area to the west of the store.

5. **There are adequate public facilities to serve the development, including but not limited to roads, sidewalks, bike paths, potable water, wastewater treatment, drainage, fire and police safety, parks and recreation facilities, schools, and playgrounds.**

   Public facilities currently serve the site and there would be no impact to the existing infrastructure.

6. **Ingress and egress to the property and traffic patterns are designed to protect and promote motorized vehicle and pedestrian/bicycle safety and convenience, allow for desirable traffic flow and control, and provide adequate access in case of fire or catastrophe. This finding shall be based on a traffic report where available, prepared by a qualified traffic consultant, engineer or planner which details the anticipated or projected effect of the project on adjacent roads and the impact on public safety.**

The site plan exhibit has been reviewed and determined acceptable for traffic movement, including fire trucks.

7. **The proposed development is functional in the use of space and aesthetically acceptable.**

   There is no development proposed with the outdoor activity application. The site plan exhibit is functional. It could be argued that the permanent outdoor storage, display, and sales of merchandise would diminish the aesthetics of the site. The screening material helps reduce diminishing views of stored merchandise from view of W. Granada Boulevard.

8. **The proposed development provides for the safety of occupants and visitors.**

   The site plan exhibit indicates safe movement on the site for occupants and visitors.

9. **The proposed use of materials and architectural features will not adversely impact the neighborhood and aesthetics of the area.**

   There is no new building development for the outdoor activity and this criterion is not applicable. The screening material proposed in consistent with material already used on site.

10. **The testimony provided at public hearings.**

    This application has not been reviewed in a public forum and no testimony has been provided.

RECOMMENDATION: It is expected that the application will be reviewed by the City Commission on August 20, 2024. It is recommended that the Planning Board **APPROVE** the application for the permanent outdoor storage, display, and sales of merchandise per the attached site plan exhibit and conditions (including the code enforcement provision) for the Lowe's Home Improvement Store at 1340 West Granada Boulevard.

Attachments:

Attachment 1: Location map
Attachment 2: Proposed Site Plan of Outdoor Activity
Attachment 3: SPRC Review Comments
Attachment 4: Resolution 2012-73

Attachment 1: Location map

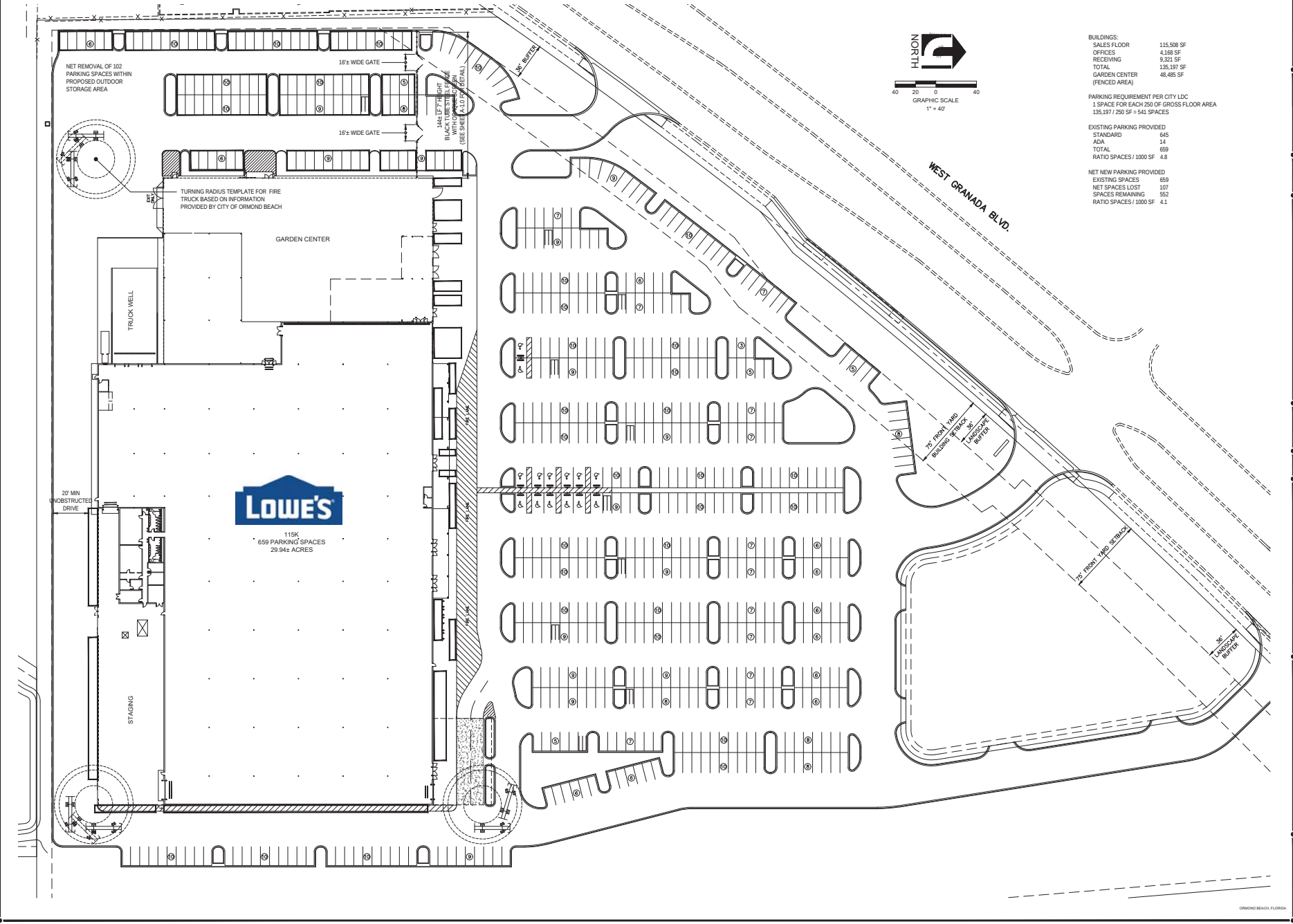


AERIAL MAP
1340 WEST GRANADA BLVD
(4230-00-00-0311)

Prepared By: The City of Ormond Beach
G.I.S. Department - June 10, 2024

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W E
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N.T.S.

Attachment 2: Proposed Site Plan of Outdoor Activity



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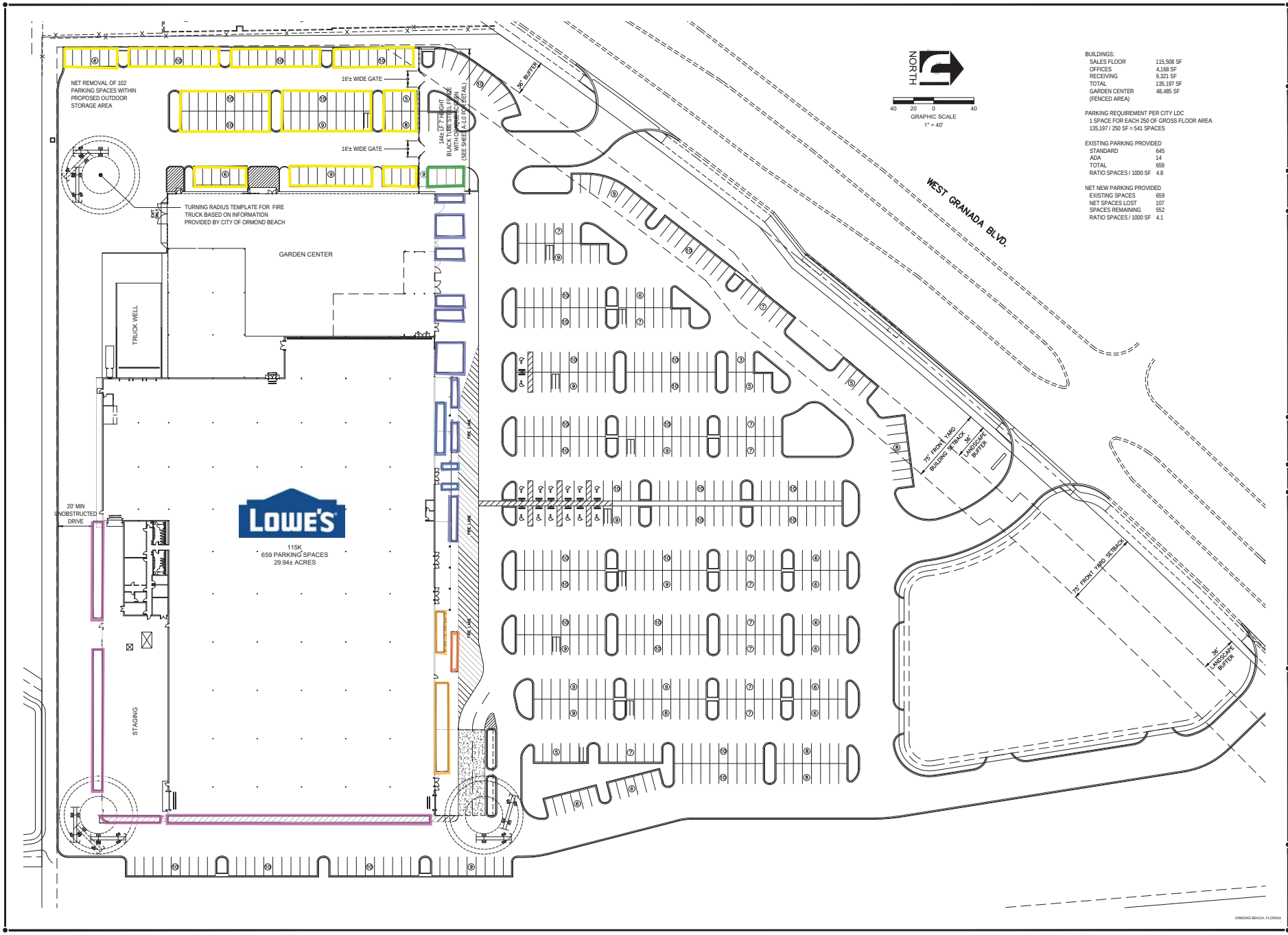
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LOWE'S

OUTDOOR STORAGE / DISPLAY
SPECIAL EXCEPTION
LOWE'S OF
ORMOND BEACH #0742
1340 WEST GRANADA BLVD.
PROJECT No: 24012 | DRAWN BY: HMT | CHECKED BY: RWS

ORIGINAL ISSUE DATE:
PERMIT SET ISSUE DATE: MAY 9, 2024
CONSTRUCTION SET ISSUE DATE:
DRAWING NUMBER:
C-1



BUILDINGS:

SALES FLOOR	115,508 SF
OFFICES	4,168 SF
RECEIVING	9,321 SF
TOTAL	135,197 SF
GARDEN CENTER (FENCED AREA)	48,485 SF

PARKING REQUIREMENT PER CITY LDC
1 SPACE FOR EACH 250 OF GROSS FLOOR AREA
135,197 / 250 SF = 541 SPACES

EXISTING PARKING PROVIDED

STANDARD	645
ADA	14
TOTAL	659
RATIO SPACES / 1000 SF	4.8

NET NEW PARKING PROVIDED

EXISTING SPACES	659
NET SPACES LOST	107
SPACES REMAINING	552
RATIO SPACES / 1000 SF	4.1

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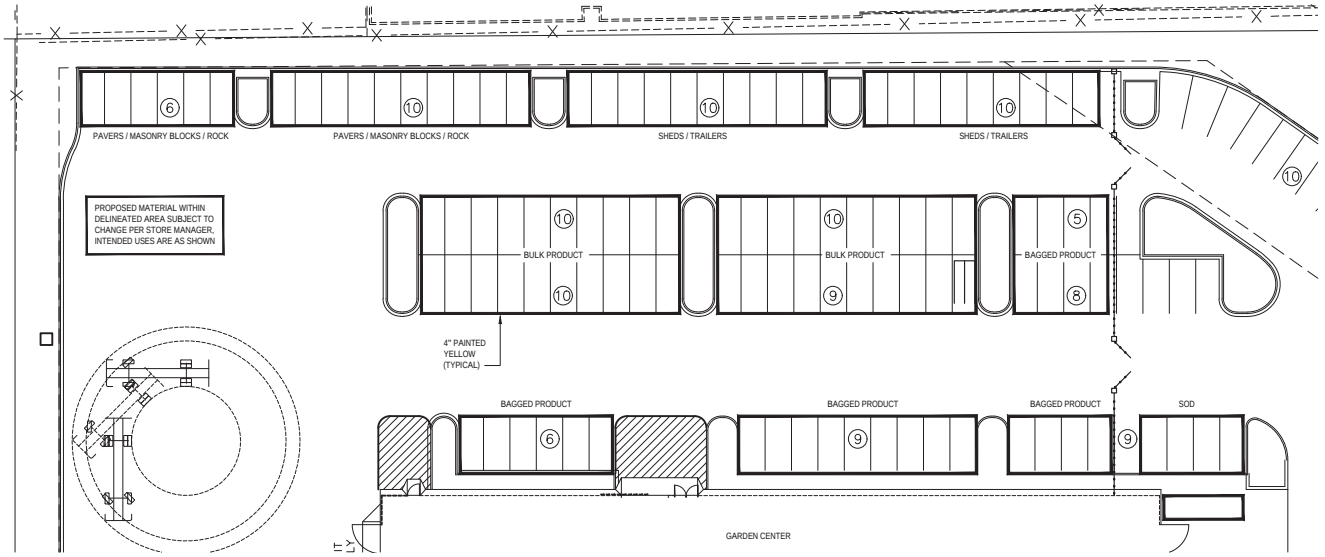
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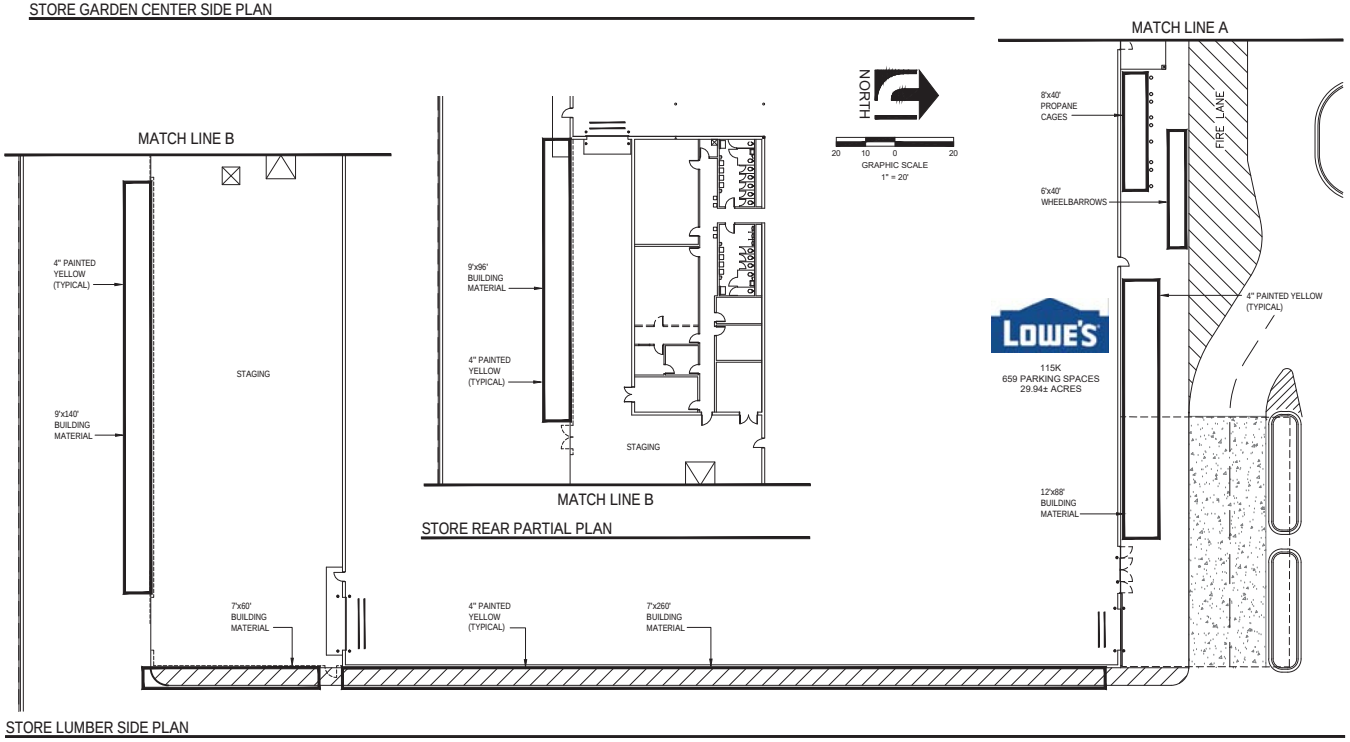
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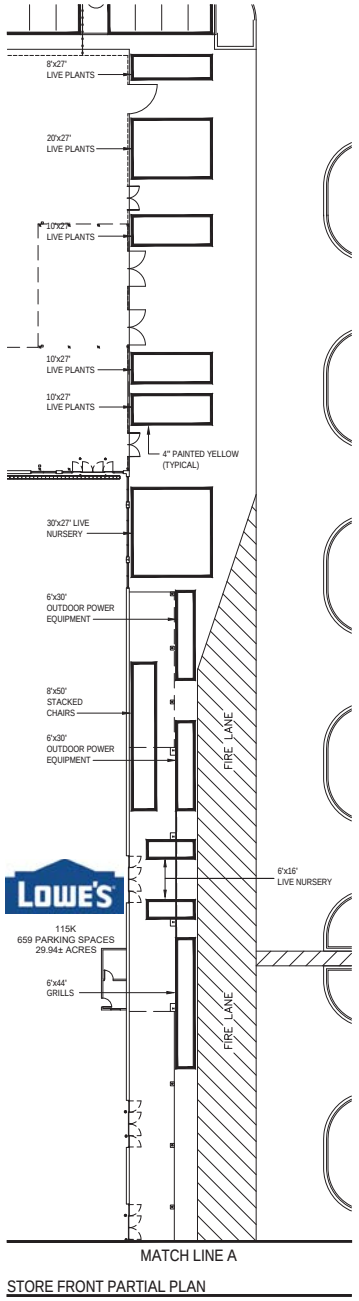


STORE GARDEN CENTER SIDE PLAN



STORE LUMBER SIDE PLAN

STORE REAR PARTIAL PLAN



STORE FRONT PARTIAL PLAN

ORMOND BEACH, FLORIDA

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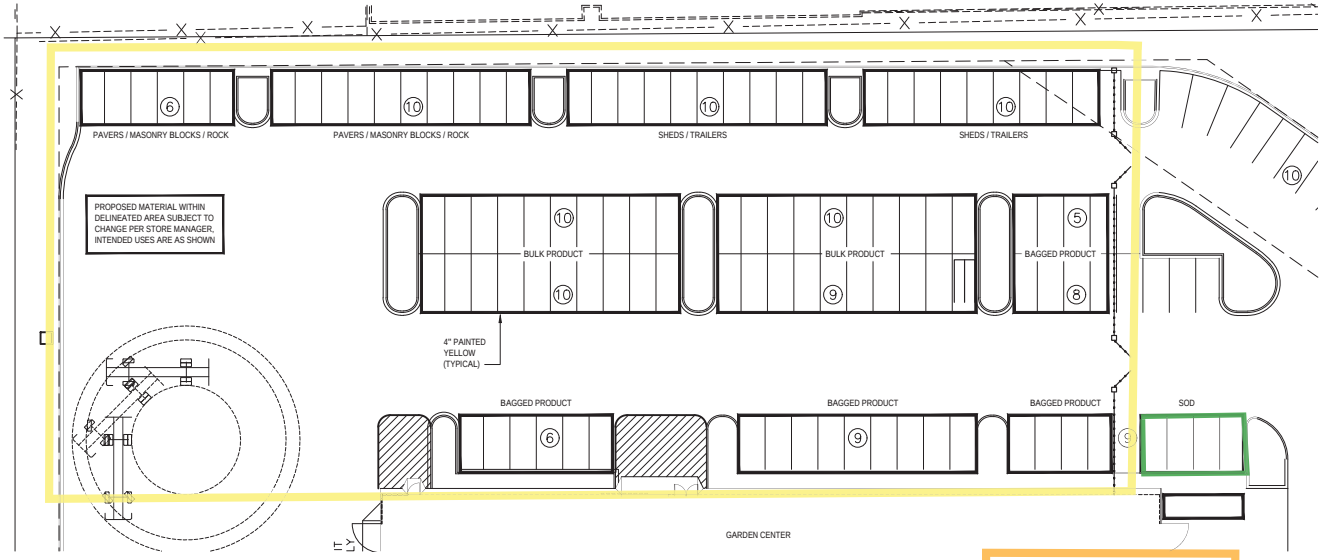
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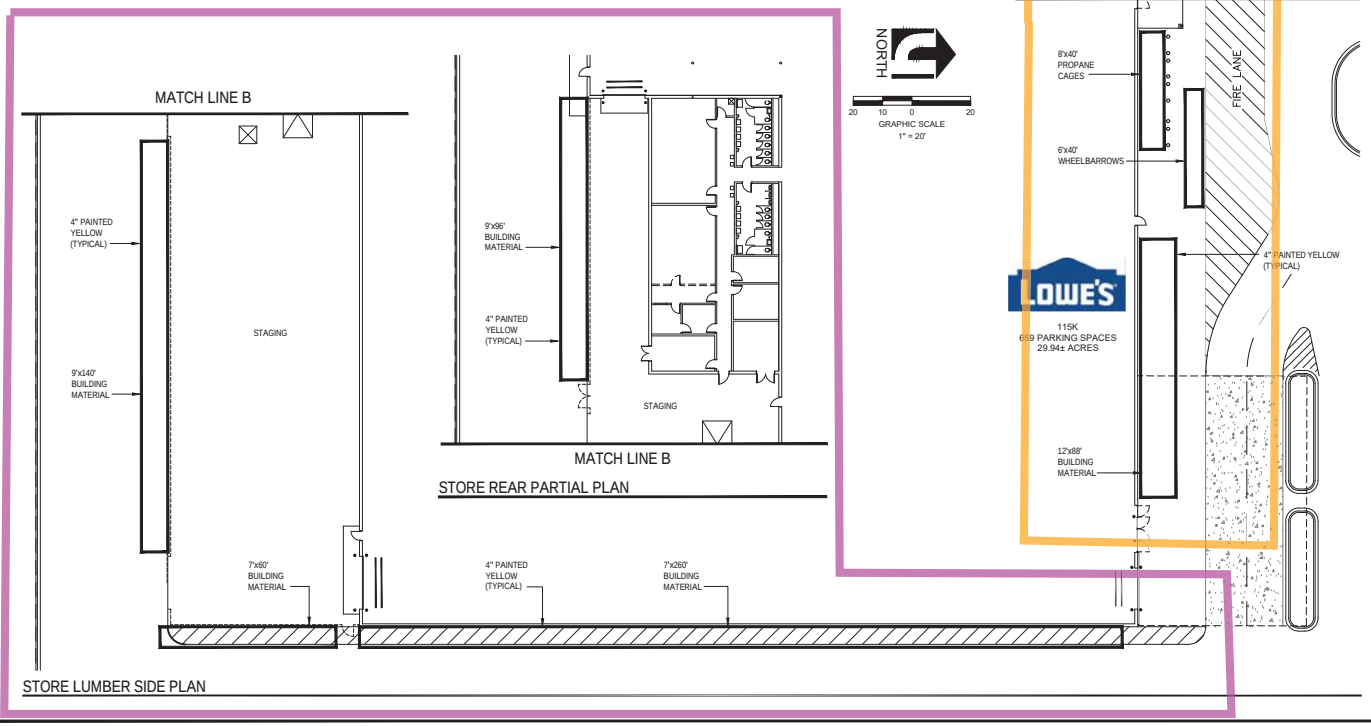
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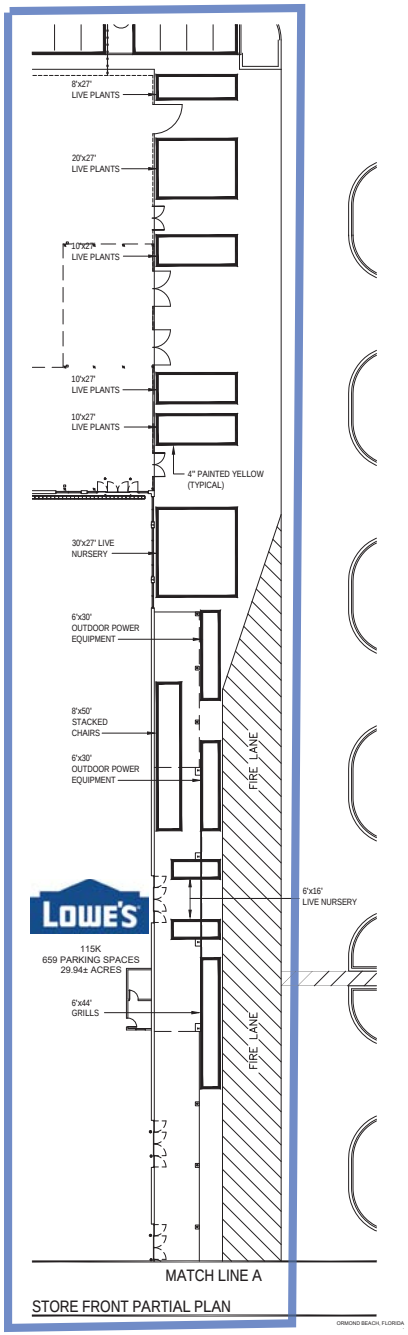


STORE GARDEN CENTER SIDE PLAN



STORE REAR PARTIAL PLAN

STORE LUMBER SIDE PLAN



STORE FRONT PARTIAL PLAN

ORMOND BEACH, FLORIDA

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MOORESVILLE, NC 28117
704.758.1000

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LOWE'S

OUTDOOR STORAGE / DISPLAY
SPECIAL EXCEPTION

LOWE'S OF
ORMOND BEACH #0742
1340 WEST GRANADA BLVD.

PROJECT No: 24012 | DRAWN BY: HMT | CHECKED BY: RWS

ORIGINAL ISSUE DATE:
PERMIT SET ISSUE DATE: MAY 9, 2024
CONSTRUCTION SET ISSUE DATE:

DRAWING NUMBER:
C-2

2.02 MATERIAL

A. Fencing System: Subject to the performance and design requirement specified herein, fence and gates shall be manufactured from the following materials:
1. Pickets shall be square tubing, minimum 1" x 1" x 16 ga. Tubing for pickets shall be formed per ASTM F2408 from coil steel with minimum yield of 50,000 psi. Galvanization per Section 5.1.1 for material galvanized after forming, except the O.D. is to receive a conversion coating and a clear inorganic coating for better adhesion of final color coating, and Section 5.1.2 for material that is galvanized prior to forming.
2. Rails shall be roll formed channel 1 ¾" x 1 ⅝" x 14 ga. Or 2" x 2" x 16 ga. minimum square tubing. Galvanization per Section 5.1.1 for material galvanized after forming, except the O.D. is to receive a conversion coating and a clear inorganic coating for better adhesion of final color coating, and Section 5.1.2 for material that is galvanized prior to forming.
3. Chain link (as indicated on drawings) per specification section 02822. Expanded metal security mesh (as indicated on drawings) shall meet the requirements of ASTM F2548.
4. Posts shall have press-on type steel caps zinc plated to ASTM D633, Service Class II. Tubing for posts to be formed per ASTM F2408 from coil steel with minimum yield of 50,000 psi. Galvanization per Section 5.1.1 for material galvanized after forming, except the O.D. is to receive a conversion coating and a clear inorganic coating for better adhesion of final color coating, and Section 5.1.2 for material that is galvanized prior to forming. Posts with greater than 11ga wall thickness shall be formed per ASTM A53, A500 or A501, grade B, with a minimum yield of 46,000 psi, and shall be hot dip galvanized in accordance with ASTM A123. Size and spacing of posts as determined by Engineer.
5. Pickets, rails and posts to be cut, sized, and located as indicated in the certified and approved shop drawings.
6. Panel attachment brackets shall be stainless steel or galvanized steel, with stainless, galvanized or zinc plated fasteners. All brackets and fasteners shall be finished to match fence color.
7. Fence panel sections shall be capable of meeting the performance criteria of ASTM F2408 except that vertical concentrated load testing shall demonstrate capability of supporting a 600 lb. load applied mid-span with minimal deflection, and no permanent deformation.

B. Size: Panel sizes shall be as shown on approved shop drawings. Maximum width is 8'-0".

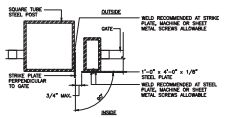
C. Swing Gates:
1. Design of gates shall be as shown on the Drawings.
2. Gate frames and infill panels: Materials as described above in 2.02, A. Frame members shall be MIG welded. Truss rods or cables to be used to prevent gate sag and allow for future adjustment.
3. Gate posts, header beams, foundation and transom frame: Size as determined by Engineer, based on gate size, local wind loading requirements, and installation type.
4. Hinges: Manufacturer's standard hinges, structurally capable of supporting gate leaf and allow opening and closing without binding. Non-lift-off type hinge design shall permit gate to swing 180 deg. Hinge pins shall be non-removable. Hinges shall be welded or attached to face of post that is perpendicular to fence line and not be welded or attached to exposed face of posts which is parallel to fence line.
5. Latch: Capable of retaining gate in closed position and have provision for padlock.
6. Keeper: Provide keeper for each gate leaf over 5 feet wide. Gate keeper shall consist of mechanical device for securing free end of gate when in full open position and closed position with in-ground sleeves.

GATE SCHEDULE

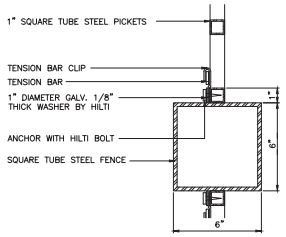
GATE NO.	LOCATION	WIDTH/HEIGHT	HARDWARE	REMARKS
1	OUTDOOR STORAGE	PAIR 8'-0" x 7'-0"	"BEST" 21B772T	HOLD OPEN DROP BARS AND SLEEVES AT 135° OPEN AND CLOSED POSITIONS
2	OUTDOOR STORAGE	PAIR 8'-0" x 7'-0"	"BEST" 21B772T	HOLD OPEN DROP BARS AND SLEEVES AT 135° OPEN AND CLOSED POSITIONS

NOTE

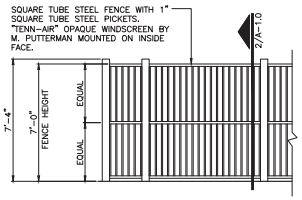
THESE CONTRACT DOCUMENTS HAVE BEEN DESIGNED AND DRAWN ASSUMING EXISTING BUILDING CONDITIONS MATCH THE ORIGINAL DRAWINGS. IT HOWEVER, REMAINS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS PRIOR TO THE SUBMISSION OF A BID & COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES FOUND BETWEEN FIELD CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE GENERAL CONTRACTOR OR THE LOWE'S PROJECT MANAGER IMMEDIATELY TO DETERMINE WHAT ACTION SHOULD BE TAKEN.



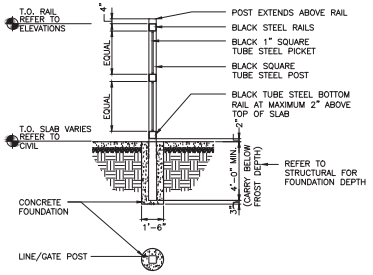
5 TUBE STEEL STRIKE PLATE DETAIL
SCALE: 3"=1'-0" REFER: A-1.0



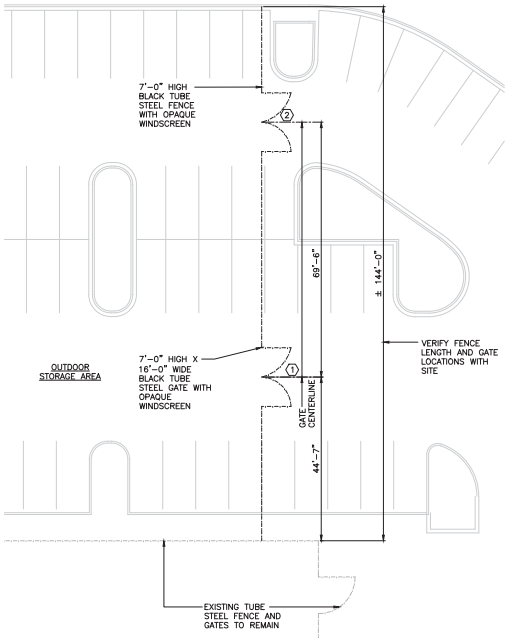
4 TUBE STEEL FENCE DETAIL
SCALE: 3"=1'-0" REFER: A-1.0



3 TUBE STEEL FENCE POST DETAILS
SCALE: 1/4"=1'-0" REFER: A-1.0



2 TUBE STEEL FENCE POST DETAILS
SCALE: 1/4"=1'-0" REFER: A-1.0



1 OUTDOOR STORGE PLAN
SCALE: 1/16"=1'-0"

REVISIONS
◇ PRE-BID SET ISSUE DATE △ POST BID SET ISSUE DATE

DATE	DESCRIPTION

TRENT FERRELL ARCHITECT
1313 KALMIA ROAD
KNOXVILLE, TENNESSEE
865.670.9298 (V)

LOWE'S HOME CENTERS, LLC
1000 LOWE'S BOULEVARD
MOORESVILLE, NC 28117
704.758.1000 (PH.)

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OUTDOOR STORAGE FENCE PLAN AND DETAILS

LOWE'S OF ORMOND BEACH #0742
ORMOND BEACH, FLORIDA

PROJECT No.: XXXXXXX | DRAWN BY: | CHECKED BY:

CRITERIA
ISSUE DATE: 2024
PERMIT SET
ISSUE DATE:
CONSTRUCTION SET
ISSUE DATE:

DRAWING NUMBER:
A-1.0

ORIGINAL ISSUE DATE

STORCH
LAW FIRM

GLENN D. STORCH, ESQUIRE
glenn@storchlawfirm.com

COREY D. BROWN, ESQUIRE
corey@storchlawfirm.com

A. JOSEPH POSEY, ESQUIRE
joey@storchlawfirm.com

May 28, 2024

Via Hand Delivery
Mr. Steven Spraker, AICP
Planning Director
City of Ormond Beach Planning Department
22 South Beach Street, Room 104
Ormond Beach, FL 32175

Re: Application for Special Exception for Outdoor Storage, Display and Sales of Merchandise at Lowe's Ormond Beach

Dear Steven:

Enclosed is an application to modify the existing special exception to reconfigure and permit additional outdoor storage, display, and sales of merchandise at the Ormond Beach Lowe's located at 1340 West Granada Blvd., Parcel ID Number 4230-00-00-0311. This property received a previous special exception in 2012 (Resolution No. 2012-73) to permit permanent outdoor storage, display, and sales of merchandise on the property consistent with an approved site plan depicting the location of the outdoor activities. As you know, Lowe's Ormond Beach has been a very successful business, which has created a need for more room for the storage and sale of merchandise. Accordingly, Lowe's is now seeking a special exception to permit these same outdoor activities in an expanded area, primarily on the west side of the building, as shown on the enclosed site plan.

The subject property has a Future Land Use designation of General Commercial, and the zoning classification is Commercial (B-8). "Outdoor Activity" is permitted as a special exception in the B-8 zoning classification provided those activities meet the requirements of LDC Section 2-57(53), including screening and buffering from residential uses, providing a site plan displaying the area of activity and pedestrian movement, and showing that outdoor music complies with maximum decibel levels.

The expanded, permanent outdoor storage, display, and sales area on the west side of the Lowe's building will be screened from view by a 7-foot-high fence with opaque screening material, as shown on the site plan, and there will be no outdoor entertainment/music. Overall, the change will make better use of an underutilized parking area. In addition, the owner is also proposing some limited expansion of storage and display areas on the other sides of the building, also as shown on the site plan. Otherwise, the new outdoor activities will be consistent with the existing special exception, and the owner has agreed to incorporate all of the same conditions as are required by the original special exception, including:

420 South Nova Road • Daytona Beach, Florida 32114
(386) 238-8383 • (386) 238-0988 (fax)
Website: www.storchlawfirm.com

1. No product shall be stacked greater than 8 feet in height.
2. Outdoor products can only be stored, displayed, or sold within the delineated areas shown on the site plan.
3. Delineated areas shall be indicated by 4" wide yellow painted rectangular outlines.
4. Products cannot encroach outside of the painted delineated lines.

When reviewing an application for special exception, the City's Land Development Code requires that the Planning Board and City Commission consider ten criteria in making their decision. The following is a list of those criteria and how the proposed special exception meets those criteria:

1. The proposed development conforms to the standards and requirements of this Land Development Code and will not create undue crowding beyond the conditions normally permitted in the zoning district, or adversely affect the public health, safety, welfare or quality of life.

   Response: The special exception provides for more than enough space for the proposed outdoor activities, with adequate room for inventory, pedestrian traffic and parking.

2. The proposed development is consistent with the comprehensive plan.

   Response: The special exception permits outdoor activities that are consistent with the General Commercial Future Land Use. Th proposed special exception is consistent with the underlying Future Land Use requirements.

3. The proposed development will not adversely impact environmentally sensitive lands or natural resources, including, but not limited to, waterbodies, wetlands, xeric communities, wildlife habitats, endangered or threatened plants and animal species or species of special concern, wellfields, and individual wells.

   Response: The special exception will have no impact on the environment, as it is located on existing paved surfaces.

4. The proposed use will not substantially or permanently depreciate the value of surrounding property; create a nuisance; or deprive adjoining properties of adequate light and air; create excessive noise, odor, glare or visual impacts on the neighborhood and adjoining properties.

   Response: The outdoor activities permitted by special exception are largely screened from view and will not create a nuisance for any surrounding areas.

5. There are adequate public facilities to serve the development, including, but not limited to, roads, sidewalks, bikepaths, potable water, wastewater treatment,

drainage, fire and police safety, parks and recreation facilities, schools, and playgrounds.

Response: Adequate public facilities are already in place for the Lowe's and the expanded outdoor activities.

6. Ingress and egress to the property and traffic patterns are designed to protect and promote motorized vehicle and pedestrian/bicycle safety and convenience, allow for desirable traffic flow and control, and provide adequate access in case of fire or catastrophe. This finding shall be based on a traffic report where available, prepared by a qualified traffic consultant, engineer or planner which details the anticipated or projected effect of the project on adjacent roads and the impact on public safety.

Response: Vehicular and pedestrian circulation are not negatively impacted by the special exception.

7. The proposed development is functional in the use of space and aesthetically acceptable.

Response: The outdoor storage, display, and sales activities have been designed in a way to make better use of the areas around Lowe's and are based on years of experience with the current business and similar businesses across the country. Additionally, a large portion of the outdoor area is screen from view.

8. The proposed development provides for the safety of occupants and visitors.

Response: The outdoor activities will be conducted in a safe and responsible manner. See response to number 7, above.

9. The proposed use of materials and architectural features will not adversely impact the neighborhood and aesthetics of the area.

Response: A significant portion of the outdoor activities will be screened from view by the surrounding area using an opaque screen material. No other materials are being utilized.

10. The testimony provided at public hearings.

Response: Not applicable for this letter.

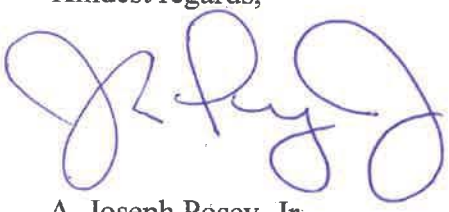
The special exception will allow for much-needed improvements at Lowe's, allowing the business to expand and provide better services to local residents. At the same time, there will be a number of conditions to the special exception to ensure that the expanded outdoor storage, display and sales activities at Lowe's occur in a safe and responsible manner.

Enclosed with this letter are the following application materials:

1. Signed application form;
2. Notarized authorization of owner;
3. Application/advertising fee in the amount of $1,700.00;
4. Property record card and deed;
5. Site plan showing locations for permanent outdoor storage, display and sales; and
6. Thumb drive with electronic copies of documents.

Please let me know if you have any questions or need anything further for this application.

Kindest regards,



A. Joseph Posey, Jr.

GDS/ajp

Attachment 3: SPRC Review Comments

PLAN CORRECTIONS REPORT PZ-2024-000060
FOR CITY OF ORMOND BEACH

PLAN ADDRESS: 1340 W Granada Blvd
Ormond Beach, FL 32174

PARCEL: 423000000311

APPLICATION DATE: 05/24/2024
SQUARE FEET: 0.00
DESCRIPTION:

EXPIRATION DATE: 11/20/2024
VALUATION: $0.00

CONTACTS	Name	Company	Address
Applicant	Adolph Posey, Jr.	Storch Law Firm	420 South Nova Road Daytona Beach, FL 32114

SPRC Review

REVIEW ITEM	STATUS	REVIEWER
Civil Engineer v.1 Review conducted by Civil Engineer	**Requires Re-submit**	**David Allen Ph: (386) 615-7047 email: David.Allen@ormondbeach.org**
Fire Plans Examiner v.1 Review conducted by the Fire Plans Examiner	**Requires Re-submit**	**Ken Gaines Ph: (386) 676-3333 email: Ken.Gaines@ormondbeach.org**
Landscape Architect v.1 Review conducted by the Landscape Architect	**Requires Re-submit**	**Cara Culliver Ph: (386) 676-3288 email: Cara.Culliver@ormondbeach.org**
Planner 1 v.1 Review conducted by Planner 1	**Approved**	**Robin Gawel Ph: (386) 676-3343 email: Robin.Gawel@ormondbeach.org**
Planner 2 v.1 Review conducted by Planner 2	**Requires Re-submit**	**Sarah Cushing Ph: (386) 676-3345 email: Sarah.Cushing@ormondbeach.org**
Planner 3 v.1 Review conducted by Planner 3	**Requires Re-submit**	**Noel Eaton Ph: (386) 676-3342 email: Noel.Eaton@ormondbeach.org**
Planning Director v.1 Review conducted by Planning Director	**Requires Re-submit**	**Steven Spraker email: Steven.Spraker@ormondbeach.org**
SPRC Final v.1 Final review conducted by the SPRC Coordinator	**Requires Re-submit**	**Steven Spraker email: Steven.Spraker@ormondbeach.org**
Utility 1 v.1 Review conducted by the Utility Department Reviewer 1	**Approved**	**Mike Stephenson Ph: (386) 676-3583 email: Mike.Stephenson@ormondbeach.org**

PLAN CORRECTIONS REPORT (PZ-2024-000060)

eReview Session for SPRC Review v.1

FILES: Application Summary Letter.pdf
Lowe's 1340 W Granada Spection Exception Application 05.24.24.pdf
Lowe's Ormond Beach #0742 Special Exception Site Plan 05.09.24.pdf
Proof of Ownership.pdf
VCPA.pdf

REVIEWER	MARKUP	DATE/TIME	FILE NAME	PG #
David	Civil-1. Provide a complete turning model for the fire vehicle and a second model for a tractor trailer using the truck well access point. 2. Will the new gates adversely affect the traffic of the vehicles used for delivery? 3. Show a plan with the existing fire hydrants. 4. Show width of travel lanes within the proposed storage area. 5. Will all of the parking spaces be used as storage in the proposed storage area?	06/04/2024 1:44 pm	Lowe's Ormond Beach #0742 Special Exception Site Plan 05.09.24.pdf	1
Sarah Cushing	Can you provide a detail of the proposed screening material? What is the maintenance schedule for replacing the material as it gets worn?	06/04/2024 3:59 pm	Lowe's Ormond Beach #0742 Special Exception Site Plan 05.09.24.pdf	3
Sarah Cushing	Section 2-50(n) requires gates to have a width of 20 feet. The Fire Official is able to reduce this width. Please provide verification that the Fire Chief will approve this width or modify to meet the minimum width requirement.	06/04/2024 4:02 pm	Lowe's Ormond Beach #0742 Special Exception Site Plan 05.09.24.pdf	1
Sarah Cushing	Are all of these parking spaces being converted to outdoor storage areas. Will customers be walking and driving in this area? How will pedestrian safety be taken into account? Please also clearly identify the dimensions of these areas.	06/04/2024 4:50 pm	Lowe's Ormond Beach #0742 Special Exception Site Plan 05.09.24.pdf	2
Sarah Cushing	Identify the unobstructed width of this drive lane.	06/04/2024 7:25 pm	Lowe's Ormond Beach #0742 Special Exception Site Plan 05.09.24.pdf	1
Sarah Cushing	Can you please modify the overall site plan to clearly identify the areas of outdoor storage and their dimensions? It would be recommended to use color or something to delineate the areas where outdoor storage is proposed. Sheet 2 is very busy and difficult to delineate the areas of outdoor storage.	06/04/2024 7:27 pm	Lowe's Ormond Beach #0742 Special Exception Site Plan 05.09.24.pdf	1
Sarah Cushing	Do you have details of the outdoor storage sheds, trailers, and other equipment proposed outside? This condition requires a maximum of 8 feet in height, but many sheds and utility structures are over this height. Provide clarification and justification as needed.	06/04/2024 7:37 pm	Application Summary Letter.pdf	2
Steven Spraker	Staff would recommend maintaining the existing code enforcement provision in the existing development order:	06/07/2024 1:21 pm	Application Summary Letter.pdf	4
Steven Spraker	Staff requested a detail of the proposed screening material - would there also be a picture of the proposed material to include in the public hearing packet?	06/07/2024 1:23 pm	Lowe's Ormond Beach #0742 Special Exception Site Plan 05.09.24.pdf	3
Noel Eaton	These turning radius are confusing. Please change them all to make the turn around the building (not a full circle)	06/11/2024 1:37 pm	Lowe's Ormond Beach #0742 Special Exception Site Plan 05.09.24.pdf	1
Noel Eaton	The conditions outlined in the letter indicate nothing can be stacked higher than 8' in height. SPRC has the ability to approve 8' high fencing for buffering. Should this be amended to 8' instead of 7'?	06/11/2024 1:39 pm	Lowe's Ormond Beach #0742 Special Exception Site Plan 05.09.24.pdf	1
Cara Culliver	- The landscaping/irrigation is very deficient and would like the landscaping to be brought up to meet the Ormond Beach landscape code standards, please contact City Landscape Architect, Cara Culliver at 386-676-3288. We would like this landscaping to be done with this special exception and not code enforcement.	06/13/2024 2:15 pm	Lowe's Ormond Beach #0742 Special Exception Site Plan 05.09.24.pdf	1

PLAN CORRECTIONS REPORT (PZ-2024-000060)

Ken Gaines	A single directional drive isle will need to be established. One way in and one way out. Gates will need to swing accordingly of direction of travel.	06/18/2024	1:00 pm	Lowe's Ormond Beach #0742 Special Exception Site Plan 05.09.24.pdf	3

Attachment 4: Resolution 2012-73

RESOLUTION NO. 2012-73

A RESOLUTION AUTHORIZING THE EXECUTION AND ISSUANCE OF A DEVELOPMENT ORDER FOR A SPECIAL EXCEPTION REGARDING "LOWE'S HOME CENTER" STORE LOCATED AT 1340 WEST GRANADA BOULEVARD, WITHIN THE B-8 (COMMERCIAL) AND SE (SPECIAL ENVIRONMENTAL) ZONING DISTRICTS, TO ALLOW OUTDOOR ACTIVITY TO INCLUDE THE PERMANENT OUTDOOR STORAGE, DISPLAY, AND SALES OF MERCHANDISE; ESTABLISHING CONDITIONS AND EXPIRATION DATE OF APPROVAL; AND SETTING FORTH AN EFFECTIVE DATE

WHEREAS, Lowe's Home Centers, Inc., a North Carolina corporation (the "Applicant"), has applied for the issuance of a Special Exception to allow outdoor activity to include the permanent outdoor storage, display, and sales of merchandise in front of the "Lowe's Home Center" store, located at 1340 West Granada Boulevard, within the B-8 (Commercial) and SE (Special Environmental) zoning districts, and

WHEREAS, the application does not propose any new construction or additional building square footage, and

WHEREAS, the said application is in compliance, with the provisions of the City of Ormond Beach *Land Development Code* ("the *Land Development Code*") and the general laws of Florida, and

WHEREAS, the Planning Board held a public hearing on April 12, 2012, regarding this matter as required by Chapter 1, Article II, Section 1-15D(2), of the *Land Development Code*, and

WHEREAS, the Planning Board found in their recommendations, the following:

(1) The application has no impacts to residential uses;

(2) The site layout plan for permanent outdoor storage, display, and sales of merchandise does not impact pedestrian or traffic safety; and

(3) The location of the permanent outdoor storage, display, and sales of merchandise is unique to this site and not visible from the public roadway; and

(4) There is a need for an enforcement provision to ensure that limits established by the site plan are adhered with; and

WHEREAS, the City Commission has duly held a public hearing on the application and has considered the testimony and evidence presented, and

WHEREAS, the City Commission has considered the following:

(1) The report and recommendations of the Planning Board;

(2) The report and recommendations of the Site Plan Review Committee; and

(3) The comments of governmental agencies, utility corporations and individuals, as received, and

WHEREAS, based upon all of the foregoing and in consideration thereof, the City Commission finds that:

(1) The proposed use conforms to the standards and requirements of this Code and will not create undue crowding beyond the conditions normally permitted in the B-8 (Commercial) zoning district, or adversely affect the public health, safety, welfare or quality of life;

(2) The proposed use is consistent with the *Comprehensive Plan*;

(3) The proposed use will not adversely impact environmentally sensitive lands or natural resources, including but not limited to waterbodies, wetlands, xeric communities, wildlife habitats, endangered or threatened plants and animal species or species of special concern, wellfields, and individual wells;

(4) The proposed use will not substantially or permanently depreciate the value of surrounding property; create a nuisance; or deprive adjoining properties of adequate light and air; create excessive noise, odor, glare, or visual impacts on the neighborhood and adjoining properties;

(5) There are adequate public facilities to serve the development, including but not limited to, roads, sidewalks, bike paths, potable water, wastewater treatment, drainage, fire and police safety, parks and recreation facilities, schools, and playgrounds;

(6) Ingress and egress to the property and traffic patterns are designed to protect and promote motorized vehicle and pedestrian/bicycle safety and convenience, allow for desirable traffic flow and control, and provide adequate access in case of fire or catastrophe. This finding shall be based on a traffic report where available, prepared by a qualified traffic consultant, engineer or planner which details the anticipated or projected effect of the project on adjacent roads and the impact on public safety;

(7) The proposed use is functional in the use of space and aesthetically acceptable;

(8) The proposed use provides for the safety of occupants and visitors;

(9) The proposed use of materials and architectural features will not adversely impact the neighborhood and aesthetics of the area; and

(10) The testimony provided at public hearings,

now therefore,

BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF ORMOND BEACH, FLORIDA, THAT:

SECTION ONE. The above recitals are true and correct and are incorporated herein by reference.

SECTION TWO. The Mayor and the City Manager are hereby authorized and directed to execute and issue a Development Order for a Special Exception to allow outdoor activity to include the permanent outdoor storage, display, and sales of merchandise in accordance with the site plan exhibit and conditions described in the Special Exception Development Order, for "Lowe's Home Center" store, located at 1340 West Granada Boulevard, within the B-8 (Commercial) and SE (Special Environmental) zoning districts, on that real property described in the Special Exception Development Order, a copy of which is attached hereto and incorporated herein by reference.

SECTION THREE. This Resolution shall take effect immediately upon its adoption.

APPROVED AND AUTHENTICATED this 15th day of May, 2012.

ED KELLEY
Mayor

ATTEST:

JOSHUA FRUECHT
City Clerk

BEFORE THE
CITY COMMISSION
OF THE
CITY OF ORMOND BEACH

IN RE: Lowe's Home Centers, Inc., a North Carolina corporation
SE 12-72
"Lowe's Home Center" - Outdoor Activity
1340 West Granada Boulevard
PARCEL ID NO: 4230-00-00-0311

SPECIAL EXCEPTION DEVELOPMENT ORDER

This matter having come on for public hearing before the City Commission of the City of Ormond Beach, Florida, on May 15, 2012, and the City Commission having considered those items as required by Section 1-18 of the *Land Development Code*, and having heard testimony and evidence from all affected persons, the City Commission hereby finds that:

1. The proposed use conforms to the standards and requirements of this Code and will not create undue crowding beyond the conditions normally permitted in the B-8 (Commercial) zoning district, or adversely affect the public health, safety, welfare or quality of life;

2. The proposed use is consistent with the *Comprehensive Plan*;

3. The proposed use will not adversely impact environmentally sensitive lands or natural resources, including but not limited to waterbodies, wetlands, xeric communities, wildlife habitats, endangered or threatened plants and animal species or species of special concern, wellfields, and individual wells;

4. The proposed use will not substantially or permanently depreciate the value of surrounding property; create a nuisance; or deprive adjoining properties of adequate light and air; create excessive noise, odor, glare, or visual impacts on the neighborhood and adjoining properties;

5. There are adequate public facilities to serve the development, including but not limited to, roads, sidewalks, bike paths, potable water, wastewater treatment, drainage, fire and police safety, parks and recreation facilities, schools, and playgrounds;

6. Ingress and egress to the property and traffic patterns are designed to protect and promote motorized vehicle and pedestrian/bicycle safety and convenience, allow for desirable traffic flow and control, and provide adequate access in case of fire or catastrophe. This finding shall be based on a traffic report where available, prepared by a qualified traffic consultant, engineer or planner which details the anticipated or projected effect of the project on adjacent roads and the impact on public safety;

7. The proposed use is functional in the use of space and aesthetically acceptable;

8. The proposed use provides for the safety of occupants and visitors;

9. The proposed use of materials and architectural features will not adversely impact the neighborhood and aesthetics of the area; and

10. The testimony provided at public hearings

Thereupon and in consideration thereof, the City Commission hereby orders that:

A. The application of Lowe's Home Centers, Inc., a North Carolina corporation, for a Special Exception to allow outdoor activity to include the permanent outdoor storage, display, and sales of merchandise, at the "Lowe's Home Center" store, located at 1340 West Granada Boulevard, within the B-8 (Commercial) and SE (Special Environmental) zoning districts, on that real property described on Exhibit "A" attached hereto and incorporated herein by reference, is hereby granted, subject to the following conditions:

1. All applicable provisions of the *Land Development Code* shall be complied with at all times, such provisions being incorporated herein by reference and hereby specifically made a part of this Special Exception;

2. There were no outstanding Site Plan Review Committee comments;

3. The product storage would be permanent and year round.

4. No product shall be stacked greater than 8 feet in height.

5. Outdoor product can only be stored, displayed, or sold within the delineated areas show on the site plan attached hereto as Exhibit "B".

6. Delineated areas shall be indicated by 4" wide yellow painted rectangular outline.

7. Product cannot encroach outside the painted delineated line.

8. The applicant can determine what products are sold outside of the store within the boundaries of the site plan attached hereto as "Exhibit "B".

9. If within any one (1) year period, there are two (2) demonstrated code violations of the permanent outdoor storage, display, and sales of merchandise per the site plan attached, as proven through the Special Magistrate code enforcement system, the right to permanent outdoor storage, display, and sales of merchandise under the Special Exception development order shall be automatically revoked without further action of the City Commission. Upon the issuance of a second notice of a code enforcement violation by either a Neighborhood Improvement Officer or Police Officer the ability to have the permanent outdoor storage, display, and sales of merchandise shall be suspended until the finding of the Special Magistrate hearings are complete. If the Special Magistrate determines that a second violation has occurred, the ability to have outdoor storage, display, and sales of merchandise shall thereafter be deemed to have been revoked. If the Special Magistrate determines that no violation occurred, the applicant shall be permitted to resume the permanent outdoor storage, display, and sales of merchandise.

B. The final plans for the location of the outdoor activity to include the permanent outdoor storage, display, and sales of merchandise shall be consistent with all of the conditions listed in Paragraph A hereof, and the plans depicted in Exhibit "B" attached hereto shall be amended as necessary in order to achieve such consistency.

C. No material change shall be made to the final plans attached as Exhibit "B" and incorporated herein by reference for this Special Exception without further review by the Planning Board and approval by the City Commission in accordance with the procedures for the approval of this Special Exception Development Order.

D. In the event a Neighborhood Improvement Officer subsequently determines there to be any violation of this Special Exception, such Officer shall promptly present such determination to Special Magistrate for hearing

E. If this Special Exception is abandoned for a period of six (6) months, a business tax receipt for a new use, subject to Special Exception requirements, shall not be issued until all of the conditions of Chapter 1, Article II, Section 1-14(C)(3) of the *Land Development Code* have been satisfied.

F. This Special Exception Development Order shall be recorded in the public records of Volusia County, Florida, at the expense of Lowe's Home Centers, Inc., a North Carolina corporation, and shall be binding upon, Lowe's Home Centers, Inc., and its successors and assigns, and shall run with the real property described in Exhibit "A" attached hereto and incorporated herein by reference. (Parcel ID No.: 4230-00-00-0311)

ORDERED this 15th day of May, 2012.

(CITY SEAL)

By: Ed Kelly
ED KELLY
Mayor

Attest:
JOYCE A. SHANAHAN
City Manager

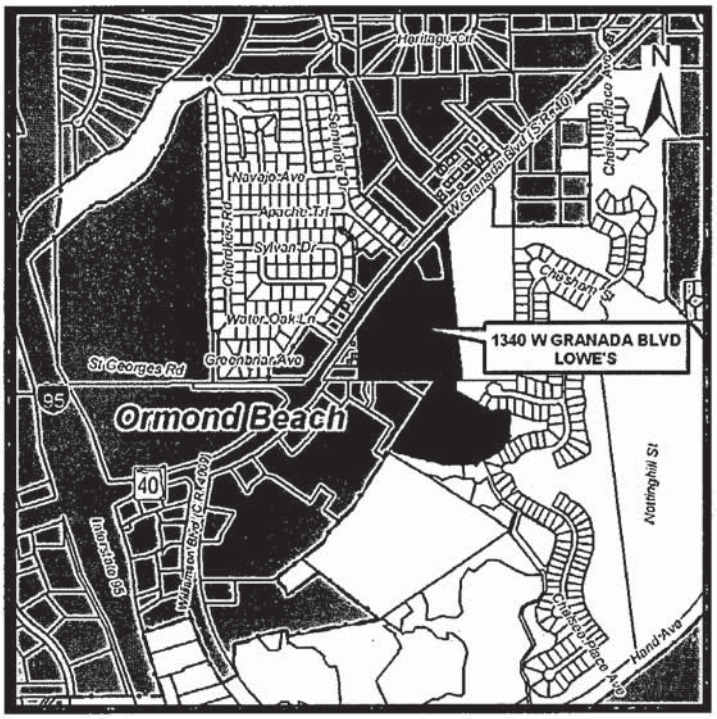
EXHIBIT "A"

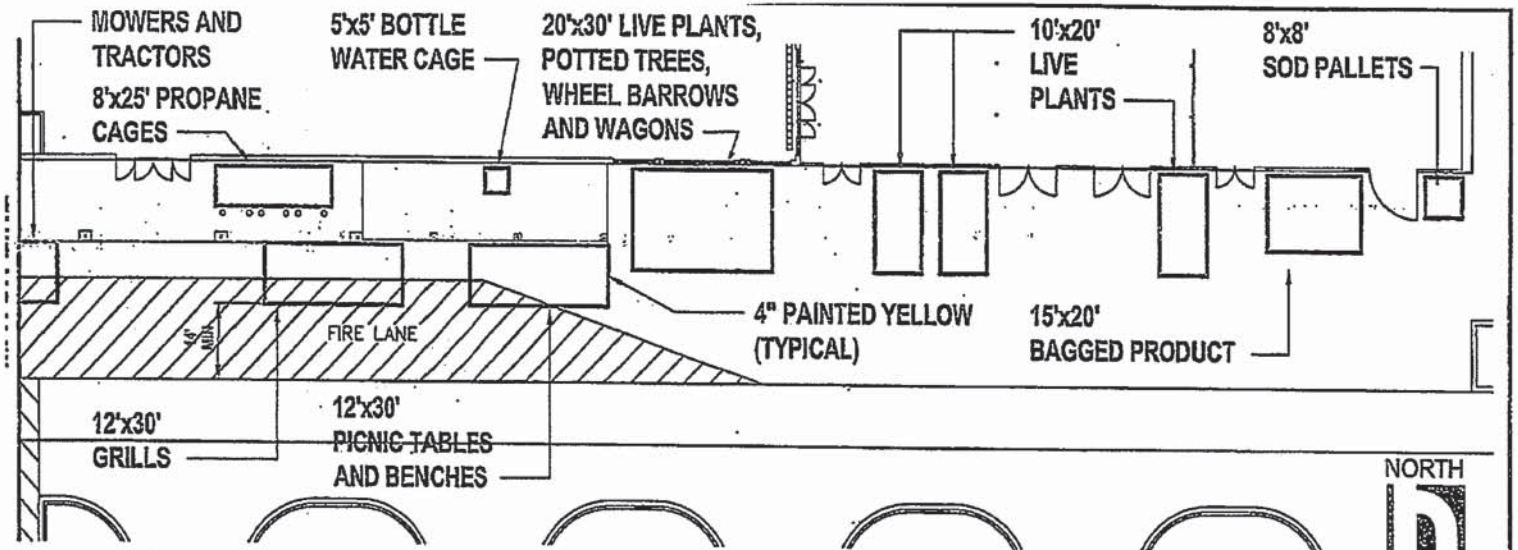
LEGAL DESCRIPTION

30 14 32 W 953.98 FT OF NE 1/4 S OF ST RD 40 EXC IRREG PARCEL IN E 244.23 FT OF W 973.39 FT MEAS ON S R/W OF ST RD 40 & EXC NEW R/W FOR ST RD 40 & INC IRREG PARCEL IN SE 1/4 MEAS 706.45 FT ON W/L & 186.21 FT ON N/L PER OR 4427 PG 2519

OWNER: LOWES HOME CENTERS INC., A NORTH CAROLINA CORPORATION
LOCATION: 1340 W GRANADA BOULEVARD
PARCEL ID #: 4230-00-00-0311

LOCATION MAP





LAYOUT PLAN

SCALE: 1" = 20

CONDITIONS:

1. THE SPECIAL EXCEPTION SHALL BE VALID PER CALENDAR YEAR COMMENCING ON JANUARY 1.
2. NO PRODUCT SHALL BE STACKED GREATER THAN 8 FT IN HEIGHT.
3. OUTDOOR PRODUCT CAN ONLY BE STORED DISPLAYED AND SOLD WITHIN THE DELINEATED AREAS INDICATED ON THIS EXHIBIT.
4. DELINEATED AREAS SHALL BE INDICATED BY 4" WIDE YELLOW PAINTED RECTANGULAR OUTLINE.
5. PRODUCT CANNOT ENCROACH OUTSIDE OF THE PAINTED DELINEATED LINE.

LOWE'S OF ORMOND BEACH
1340 W. GRANADA BLVD.
SPECIAL EXCEPTION FOR PERMANENT OUTDOOR STORAGE, DISPLAY AND SALES OF STORE PRODUCT

MARCH 13, 2012
SHEET 2 OF 2

UPHAM INC
CIVIL ENGINEERING • SURVEYING • LANDSCAPE ARCHITECTURE
285 Kentucky Avenue • Ormond Beach • Florida 32174
Voice: 386.672.0518 • Fax: 386.673.6534 • upham@inc.com
LB # 0003612 LC # 0000337

EXHIBIT "B"
PAGE 1 OF 2

EXHIBIT "B"
PAGE 2 OF 2

DRAFT

Planning Board minutes from

July 11, 2024

ITEM:

PZ-2024-060

Special Exception for Outdoor Activity

Permanent outdoor storage, display and sales of merchandise under certain conditions

1340 W. Granada Blvd. – Lowe's Home Centers LLC

Action: Recommended Approval (5-1)

neighborhood or conservation area and sandhill cranes that are in the space of the project.

Mr. Jorczak stated that he thinks it is a good idea with the size of the units and amount of houses going in. He commented that they have to have some place to store the things that will not fit in their new homes. He remarked that it will be local for them and likes that the storage is on the second story with an elevator and it all being indoor.

Board Recommendation

Chairman Thomas entertained a motion.

Mr. Jorczak motioned to approve PZ 2024-000037: Plantation Oaks, Neighborhood Commercial Amendment, Planned Residential Development Amendment, 1730 Plantation Oaks Boulevard. Mr. Galloway seconded it. Vote was called, and the motion was approved (6-0).

B. PZ 2024-000060: Lowe's Home Improvement Store, Special Exception for Outdoor Activity, 1340 West Granada Boulevard

Ms. Eaton stated that this is a request submitted by Mr. Joseph Posey, Esquire, Storch Law Firm, on behalf of the property owner, Lowe's Home Centers, LLC., f/k/a Lowe's Home Improvement Centers, Inc. for a Special Exception to authorize an outdoor activity use. The application seeks to expand the previously approved permanent outdoor storage, display, and sales of merchandise areas approved by Special Exception, Resolution 2021-71, under certain conditions, at the Lowe's Home Improvement store. The subject property is located at 1340 West Granada Boulevard and is zoned B-8 (Commercial) and SE (Special Environmental).

Ms. Eaton explained that the property is approximately 31 acres and is split zoning. Along Granada Boulevard it is B-8, Commercial zoning and towards the south is a SE, Special Environmental zoning with the stormwater for the site. Ms. Eaton delivered the background on the process, adding that in 2006 the property received a resolution to allow 18 temporary storage containers for a three month period, in 2012 the property received approval for permanent outdoor storage and display of merchandise under certain conditions and in conformance with the approved site plan, the approval was limited to the areas along the front of the store.

Ms. Eaton stated that the city received a complaint which resulted in a Neighborhood Improvement case and city staff visited the site and determined that the violation of the approved site plan existed and the materials shall be removed from the Granada Boulevard frontage. She continued that in March, the Special Magistrate and the property owner, through a stipulated agreement, acknowledged that a violation occurred and existed on the property and directed that compliance be achieved by September 27, 2024 by either complying with the 2012 Special Exception or by amending the Special Exception. Ms. Eaton elaborated that yesterday, city staff did observe two to three sheds visibly stored along the Granada Boulevard frontage and building material stacked higher than 8' along the southeast building frontage. Since then it has been changed. The applicant has placed pictures of the change on the board dais for each board member showing there was nothing stored along the W. Granada Blvd frontage, or stacked higher than 8'.

Ms. Eaton explained that the proposed site plan is the displayed with same orientation showcasing that most of the expansion occurring to the west of the garden center in the parking areas and an addition on the rear and eastside of the store along the façade with minor changes along the front, removing display areas from the fire lane. The application proposes screening in the front of the property along the westside to reduce the impacts and views from Granada Boulevard. Ms. Eaton stated that the fencing is a tube steel fence matching the existing material that is onsite today, extending from the garden center to the west property line.

Ms. Eaton reviewed the proposed conditions: (1) no product shall be stacked greater than 8' in height; (2) outdoor product can only be stored, displayed, or sold within the delineated areas shown on the site plan exhibit; (3) delineated areas shall be indicated by 4"-wide yellow painted rectangular outline; (4) product cannot encroach outside of the painted delineated line; and (5) if within any one (1) year period, there are two (2) demonstrated code violations of the permanent outdoor storage, display, and sales of merchandise per the site plan attached, as proven through the Special Master code enforcement system, the right to permanent outdoor storage, display, and sales of merchandise under the Special Exception development order shall be automatically revoked without further action of the City Commission. Upon the issuance of a second notice of code enforcement violation by either a Neighborhood Improvement Officer or Police Officer, the ability to have the permanent outdoor storage, display, and sales of merchandise shall be suspended until the finding of the Special Master hearings are complete. If the Special Master determines that a second violation has occurred, the ability to have outdoor music shall thereafter be deemed to have been revoked. If the Special Master determines that no violation occurred, the applicant shall be permitted to resume the permanent outdoor storage, display, and sales of merchandise. (the River Grille provision).

Ms. Eaton added that staff received one written letter of objection via e-mail and provided to the board and it is expected that the application will be reviewed by the City Commission on August 20, 2024. She concluded that it is recommended that the Planning Board approve the application for the permanent outdoor storage, display, and sales of merchandise per the site plan exhibit and conditions, including the code enforcement provision, for the Lowe's Home Improvement Store at 1340 West Granada Boulevard.

Mr. Railsback asked what would be stored on the east and south sides.

Applicant's Presentation

Mr. Roger Strcula, Upham Inc., 265 Kenilworth Avenue, Engineer Consultant, responded that it would be store products, including racks, and temporary pallets. He continued that he was part of the Special Exception back in 2012. Mr. Strcula explained that the existing garden center fence is 20' high, black tube steel fence and the proposed fence will be 8'-high tube steel with fabric matching the existing fabric.

Mr. Railsback asked if there are pallets outside of the specified section and if it is if it will be a code violation. Mr. Strcula replied that it is. He added that Lowe's in Ormond Beach is one of the top tier stores in Florida and performs high in the community. He explained that the store managers get promoted over time and that the current store manager is a newer store manager they will get educated on the history of the store and the requirements.

Mr. Railsback asked for clarification on the fencing and if it is only going to be across the frontage of the specified area or if it also will go down the side. Mr. Strcula confirmed that it will be across the frontage. The west side is heavily wooded. The back and side of the store is conservation area.

Ms. Shull asked why more products need to be stored now and what type of products require the additional storage. Mr. Strcula replied that this Lowe's location store has more volume of product. Ormond Beach is expanding with new residents and they need space for additional material. He added that it will be garden product, sheds and trailers on the west side of the parking lot, and interiorly pallet goods, garden center blocks and large bulk items.

Mr. Joey Posey, Esquire, 420 S. Nova Road, pointed out that a lot of big box retailers, as such with Lowe's Improvement stores, that have evolved over time, have a lot of major items that can be in the store but are difficult to get out of the store. They are making better use of space they do have outdoors with screening and buffers, to utilize it to help the customer, giving a better visual curb appeal. Mr. Posey stated that Lowe's wants to do the right thing, with the goal of making things better. A lot of outdoor equipment and bags are difficult to get out of the store and more accessible to get outside.

Mr. du Moulin inquired about the 8'-fence, commenting that a lot of sheds are mounted on cinderblocks which jack up the height of the fence, with the purpose of not seeing the inventory. He asked if it would be more advantageous to go 10'. Mr. Posey replied that the sheds on cinderblock are not greater than 8'. He added that the 8' that was identified as a compliance issue was a delivery for cinderblocks that will be going out tomorrow. The store manager was not aware that there was an 8'-high limitation. After staff made everyone aware, it was corrected.

Mr. Jorczak asked if it would create a problem if there was a restriction that the store could not have any visibility of any product higher than the fence. Mr. Posey replied that it will not be a problem with the correct training of store employees.

Mr. Jorczak inquired about temporary storage in the parking lot. Mr. Strcula responded that at times Lowe's will have temporary outdoor display and sales in the parking lot, such as Christmas trees and spring garden sales by special permits.

Mr. Galloway stated that the main issue is to get the eyesore off of being directly on Granada Boulevard and placing it back behind the fence, except for the peripheral plants when you walk up to the store. There was additional discussion about the height of fences at both commercial and residential.

Audience Comments

Mr. David Hilt, resident of Chelsea Place, inquired if any of the outdoor activity would affect a portion of land outside of his neighborhood, Chelsea Place, where there are turkeys, bobcats and deer. Mr. Posey responded that the conservation zoned rear parcel is not being touched. The changes are with the garden center and front of the Lowes store.

DRAFT

Board Discussion and Questions

Chairman Thomas opened it up to the Board for discussion and questions, and entertained a motion.

Mr. Jorczak commented that he would like to see signage specifying that no product can be visible above the height of the fence. Mr. Posey clarified that it was added to the plan as a condition.

Chairman Thomas asked how many times Lowes received violations. Mr. Spraker replied that there was one Special Magistrate hearing. The violation took place in March 2024.

Mr. Railsback inquired about the code enforcement process. Mr. Spraker replied that Code Enforcement is to initiate a case and then it goes to the Special Magistrate to find a violation.

Mr. du Moulin inquired if there were any mitigation plans to expand firefighting systems at the store with the enclosed area. Mr. Strcula explained that the Lowes store has an early suppression fire-resistant system. There are only exterior changes which does not call for additional fire protection. He continued that when the store was originally designed there were hydrants placed around the store for a loop fire main system. Mr. Strcula added that staff requested that the city's aerial fire truck drive around the site to show that it would work and reach it.

Board Recommendation

Mr. Galloway motioned to approve PZ 2024-000060: Lowe's Home Improvement Store, Special Exception for Outdoor Activity, 1340 West Granada Boulevard.

Mr. Jorczak suggested adding the condition that product cannot be visible from the right-of-way (ROW), Granada Boulevard or be above the height of the 8'-fence.

Mr. Galloway amended his motion to approve PZ 2024-000060: Lowe's Home Improvement Store, Special Exception for Outdoor Activity, with the condition that product cannot be visible from the right-of-way (ROW), Granada Boulevard or be above the height of the 8'-fence.

Ms. Shull seconded it. Vote was called, and the motion was approved (5-1), with Chairman Thomas in opposition.

Chairman Thomas expressed his concern with his thoughts of it going too far with allowing outdoor storage in the city. He further explained that he recalls Lowe's proposal in the beginning and does not feel that they have kept it up and how another small business local store shut down on U.S. Highway 1 because of outdoor storage.

VIII. PUBLIC COMMENTS

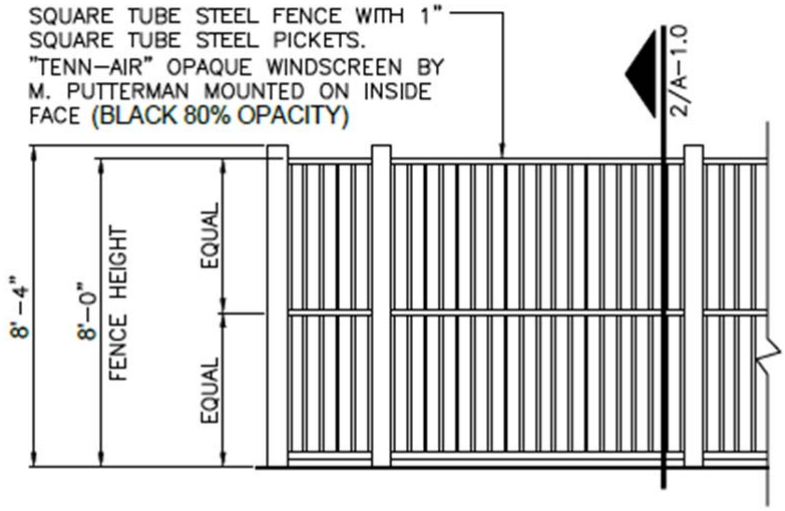
IX. OTHER BUSINESS

Spraker, Steven

From: Spraker, Steven
Sent: Monday, July 8, 2024 7:53 PM
To: 'Scott Vanacore'
Cc: Eaton, Noel; joey@storchlawfirm.com; rwstrcula@uphaminc.com
Subject: RE: Special Consideration Letter from Lowes
Attachments: Colored Site Plan.pdf

Good evening,

Thank you for the telephone conversation this afternoon. Staff can provide the correspondence provide to the Planning Board members. As we discussed, Lowe's became the subject of code enforcement action based on the sheds and other materials placed along their West Granada Boulevard frontage. The requested Special Exception would not allow any outdoor storage along the West Granada Boulevard parking spaces. The outdoor storage would be along the building frontage and to the side of the garden center. The area to the side of the garden center is planned to be screened with an 8' fence. The proposed detail is provided below.



3 TUBE STEEL FENCE POST DETAILS
SCALE: 1/4"=1'-0" REFER: A-1.0

The proposed site plan is attached. Also, as discussed the city Landscape Architect is requiring a betterment plan to replace any missing material from the approved Lowe's landscape plan. I have included the project representatives in case there are any additional concerns. City staff (and I believe the applicant) are available to walk the site with you if desired. Your input is sincerely appreciated.

Steven

Steven Spraker, AICP

Planning Director

Planning Department
22 South Beach Street, Room 104
Ormond Beach, FL 32174
Direct Line: 386.676.3341
Department: 386.676.3238
Cell: 386.366.1590
Fax: 386.676.3361
E-mail: Steven.Spraker@ormondbeach.org

From: Scott Vanacore <scott.vanacorehomes@gmail.com>
Sent: Monday, July 8, 2024 12:25 PM
To: Spraker, Steven <Steven.Spraker@ormondbeach.org>
Subject: Special Consideration Letter from Lowes

[External Email-Use Caution] - OB/IT Helpdesk

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Good afternoon, Steve.

Please find the attached letter regarding a special exception request from Lowes. We have been observing clutter in their parking lot for quite some time, such as lawn chairs, sheds, pallets of fertilizer, mulch, and other items. The clutter in the Lowes parking lot is situated on State Road 40, visible to all passersby. It is unsightly and detracts from the overall appearance of the area. I strongly urge you to strike down this request. Let's work together to keep Ormond Beach beautiful.

I appreciate your time and consideration of this matter.

Thank you,

Scott Vanacore
Vanacore Construction
386-547-4373

Voted "Best Builder"

READERS' CHOICE AWARDS 2011-2017
NEWS-JOURNAL

7 Years in a Row!

Spraker, Steven

From: Bill.Partington@ormondbeach.org
Sent: Wednesday, July 3, 2024 12:01 PM
To: Spraker, Steven; Shanahan, Joyce
Subject: Fwd: Lowes - Special Exception Letter
Attachments: City of Ormond Beach - Lowes 1340 W Granada.pdf

Just FYI…..Mr. Vanacore asked that these be shared with the planning board.
Bill Partington
Sent from my iPhone

Begin forwarded message:

From: Scott Vanacore <scott.vanacorehomes@gmail.com>
Date: June 28, 2024 at 9:23:40 AM EDT
To: "Partington, Bill" <Bill.Partington@ormondbeach.org>
Subject: Fw: Lowes - Special Exception Letter

[External Email-Use Caution] - OB/IT Helpdesk

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Dear Mayor Partington,

I wanted to add an important point in addition to my email yesterday. The clutter in the Lowes parking lot is situated on State Road 40, visible to all passersby. It is unsightly and detracts from the overall appearance of the area.

I appreciate your time and consideration of this matter.

Thank you,

Scott Vanacore
Vanacore Construction
386-547-4373

Voted "Best Builder"

READERS' CHOICE AWARDS 2011-2017 NEWS-JOURNAL

7 Years in a Row!

From: Scott Vanacore <scott.vanacorehomes@gmail.com>
Sent: Thursday, June 27, 2024 1:59 PM

To: Bill Partington <bill.partington@ormondbeach.org>
Subject: Lowes - Special Exception Letter

Dear Mayor Partington,

Please find the attached letter regarding a special exception request from Lowes. We have been observing clutter in their parking lot for quite some time, such as lawn chairs, sheds, pallets of fertilizer, mulch, and other items. I strongly urge you to strike down this request.

Let's work together to keep Ormond Beach beautiful.

Thank you,

Scott Vanacore
Vanacore Construction
386-547-4373

Voted "Best Builder"

READERS' CHOICE AWARDS 2011-2017
NEWS-JOURNAL

7 Years in a Row!

CITY OF ORMOND BEACH
Office of the City Attorney • P.O. Box 277 • 173 South Beach Street • Ormond Beach, FL 32175-0277 • (386) 676-3217 • Fax (386) 676-3321

CITY ATTORNEY
MEMORANDUM

To: The Honorable Mayor Partington and City Commissioners

From: Randal A. Hayes, City Attorney

Date: August 20, 2024

Subject: Rescission of Resolution 2023-193 (non-compliance determination for Hunter's Ridge Development of Regional Impact)

Introduction: A resolution has been prepared rescinding Resolution 2023-193 that determined U.S. Capital Alliance, LLC to be in non-compliance with the Ormond Beach Hunter's Ridge DRI ("non-compliance determination").

Background: On October 25, 2023, the City Commission adopted Resolution 2023-193 finding U.S. Capital Alliance, LLC, the successor in interest to the original Hunter's Ridge DRI developer, to be in non-compliance with the Ormond Beach DRI. The non-compliance determination resulted in three separate lawsuits: *City of Ormond Beach, Florida v. U.S. Capital Alliance, LLC, Hunter's Ridge Acquisition and Development, LLC, and Flagler County*, 2023 32697 CICI; *U.S. Capital Alliance, LLC v. City of Ormond Beach*, 2023 32862 CICI; and *U.S. Capital Alliance, LLC v. City of Ormond Beach*, 2023 32763 CICI.

The City, Flagler County, and U.S. Capital Alliance, LLC, mutually resolved the disputed issues in accordance with a Global Settlement and Mutual Release that was approved by the City Commission on August 6, 2024. All parties have performed their respective obligations in accordance with the Global Settlement and Mutual Release, and the non-compliance determination should now be rescinded in accordance with the Global Settlement and Mutual Release. The pending litigation matters will be dismissed following the approval of the attached resolution.

Budget Impact: There is no anticipated budget impact as the result of rescinding Resolution 2023-193.

Recommendation: It is recommended that the City Commission approve the attached resolution rescinding Resolution 2023-193 and the non-compliance determination therein.

RESOLUTION NO. 2024-134

A RESOLUTION RESCINDING RESOLUTION 2023-193 THAT FOUND U.S. CAPITAL ALLIANCE, LLC, TO BE IN NON-COMPLIANCE WITH THE AMENDED FINAL ORDER FOR THE ORMOND BEACH HUNTER'S RIDGE DEVELOPMENT OF REGIONAL IMPACT; FINDING U.S. CAPITAL ALLIANCE, LLC, TO BE IN COMPLIANCE WITH THE AMENDED FINAL ORDER; PROVIDING FOR THE CONTINUATION OF SERVICES; AND SETTING FORTH AN EFFECTIVE DATE.

WHEREAS, on May 28, 1991, the State of Florida Land and Water Adjudicatory Commission approved an Amended Final Order for the Ormond Beach Hunter's Ridge Development of Regional Impact ("Amended Final Order"), recorded in the Official Records of Volusia County, Florida in Book 3696, Page 1640, as subsequently amended (1st amendment recorded in Book 3754, Page 1692; 2nd amendment recorded in Book 4257, Page 2954; 3rd amendment recorded in Book 5212, Page 2589; and 4th amendment recorded in Book 7707, Page 16 of the Public Records of Volusia County, Florida), and

WHEREAS, on October 25, 2023, the City Commission of the City of Ormond Beach approved Resolution 2023-193 finding U.S. Capital Alliance, LLC, the master developer of the Hunter's Ridge Development of Regional Impact, to be in non-compliance with the Amended Final Order ("non-compliance determination"), and

WHEREAS, the non-compliance determination resulted in the following pending litigation matters: *City of Ormond Beach, Florida v. U.S. Capital Alliance, LLC, Hunter's Ridge Acquisition and Development, LLC, and Flagler County*, 2023 32697 CICI; *U.S. Capital Alliance, LLC v. City of Ormond Beach*, 2023 32862 CICI; and *U.S. Capital Alliance, LLC v. City of Ormond Beach*, 2023 32763 CICI, and

WHEREAS, the parties approved a Global Settlement and Mutual Release mutually resolving the issues that are the subject of the non-compliance determination and the pending litigation matters, and

WHEREAS, the parties have performed their respective obligations in accordance with the Global Settlement and Mutual Release; and U.S. Capital Alliance, LLC, is in-compliance with the Amended Final Order, and

WHEREAS, based on the forgoing, the City Commission desires to rescind Resolution 2023-193 and the non-compliance determination described therein, now therefore,

BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF ORMOND BEACH, FLORIDA, THAT:

SECTION ONE. The City Commission finds the issues that are the subject of Resolution 2023-193 and the non-compliance determination described therein have been mutually resolved in accordance with the Global Settlement and Mutual Release; that U.S. Capital Alliance, LLC, has fulfilled its obligations in accordance with the Global Settlement and Mutual Release; and that U.S. Capital Alliance, LLC, is in-compliance with the Amended Final Order for the Ormond Beach Hunter's Ridge Development of Regional Impact.

SECTION TWO. Resolution 2023-193 and the non-compliance determination therein is hereby rescinded and shall have no further legal force or effect. The City shall continue the provision of services, including the review of applications for water and sewer lines and related facilities; issuing permits; conducting inspections of water and sewer lines and related facilities that are constructed; and providing water and sewer services.

SECTION THREE. This Resolution shall take effect immediately upon its adoption.

APPROVED AND AUTHENTICATED this 20th day of August, 2024.

_____
BILL PARTINGTON
Mayor

ATTEST:

_____
SUSAN CARROLL DAUDERIS
City Clerk