



**PROJECT MANUAL
INVITATION TO BID
ITB-SWE-23-43
London Waterway Expansion**

**ISSUED: May 17, 2023
NON-MANDATORY PRE-BID MEETING: May 30, 2023 at 10:00 AM
QUESTION DEADLINE: June 15, 2023 at 2:00 PM
QUALIFICATIONS AND BID DUE DATE/TIME: June 22, 2023 at 2:00 PM**

PURCHASING COORDINATOR
Shannon Keough-Nolan
SKNolan@palmcoastgov.com

PROJECT MANAGER
Carmelo Morales

Bidders are responsible for determining whether any addenda have been issued. All Addenda will be posted on the City’s Procurement Portal Web Page (<https://palmcoastgov.bonfirehub.com/portal>).

Bidders must sign, date, and return all Addenda with their bid submittal. Addenda information will be posted on the City’s Procurement Portal Web Page. It is the sole responsibility of the Bidders to ensure that they obtain information related to Addenda.

Trade Secrets: Any Bidder responsive materials that qualify as “trade secrets” must be segregated and clearly labeled in order not to be considered Public Record.

It is vital that Bidders adhere to the City’s bidding procedures as outlined in these bid documents.

If you have any questions, please contact the Purchasing Coordinator listed above.

City of Palm Coast
Budget and Procurement Office
160 Lake Avenue, Palm Coast, FL 32164
palmcoastgov.com/government/purchasing



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**CITY OF PALM COAST
INVITATION TO BID
ITB-SWE-23-43**

LONDON WATERWAY EXPANSION

SCOPE OF SERVICES: The City of Palm Coast is seeking qualified Contractors to expand the Stormwater attenuation and treatment capacity of the London Waterway by construction of a lake on City-owned property that is adjacent to the London Canal, in accordance with the attached set of construction plans. The stormwater storage capacity "lake" to be created is located in the Matanzas Woods Neighborhood on the northern part of Palm Coast City Limits (see location maps) and is surrounded by residential homes. Access to this site will be through easements and indicated on construction plans. The Contractor shall provide all work required for a completed project including, but not limited to labor, supervision, traffic control, materials, equipment, installation, and incidentals required for a complete project. CONTRACTOR shall also provide material samples, as necessary, to ensure compliance with manufacturer's recommendations. Installation of all materials shall be in accordance with all applicable CITY standards and requirements, applicable Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction (latest edition), manufacturer and industry preferred standards. Work assigned to this contract may include but is not limited to the following:

- Easement access
- Temporary Traffic Control (TTC)
- Isolation and by-pass pumping
- Erosion and sediment control
- Site restoration
- Stormwater pre-and post-work inspections
- Demolition and replacement of existing culverts
- Construction of headwalls
- Earthwork
- Landscaping
- Swale Regrading
- Construction of Boardwalks

CONTRACT TIME: Total construction time to achieve Substantial Completion is **Three Hundred and Sixty (360)** consecutive calendar days from the date of the "Notice to Proceed," with an additional forty-five (45) consecutive calendar days to achieve Final Completion.

DOCUMENT, AVAILABILITY, SUBMISSION, OTHER INFORMATION: Bid documents are available at no-cost through the City's Procurement Portal at (<https://palmcoastgov.bonfirehub.com/portal>). Bid submittals shall be received electronically through the City's Procurement Portal by the specified time and date. No other method of submission will be allowed or considered (i.e. mailed, emailed, or hand delivered).

CONTACT: All prospective Bidders are hereby instructed not to contact any member of the City of Palm Coast City Council, City Manager, or City of Palm Coast staff members other than the noted contact person(s) regarding this bid/request at any time prior to the bid/request having been formally presented to, and voted on by, the City Council. Any such contact shall be cause for rejection of your bid/request submittal.

QUESTIONS: Any questions concerning the intent, meaning and interpretations of the bid documents including the draft agreement, shall be requested in writing through the City's Procurement Portal Web Page (<https://palmcoastgov.bonfirehub.com/portal>) at least seven (7) calendar days prior to the due date.

ADDENDA: Should revisions to the bid documents become necessary; the City shall post addenda information on the City's Procurement Portal Web Page (<https://palmcoastgov.bonfirehub.com/portal>). All Bidders should check the City's Procurement Portal Web Page at least three (3) calendar days before the date fixed to verify information regarding Addenda. Bidder shall sign, date, and return all addenda with their bid submittal. **Failure to do so shall result in rejection of the bid submittal as unresponsive.**

BID SECURITY/BID BOND: A Bid Bond shall accompany each Bid if the Bid amount is one-hundred thousand dollars (\$100,000) or greater. The Bid Bond shall be for an amount not less than five percent (5%) of the Bid price and shall be made payable to the City as a guarantee that the Bidder will not withdraw his/her Bid for a period of one hundred twenty (120) days after the Bid closing time.

PERFORMANCE, PAYMENT, & MATERIAL AND WORKMANSHIP BONDS: In the event the Contract is awarded to the Successful Bidder and will enter into a written Agreement with the City and furnish a Payment Bond and Performance Bond in an amount equal to the Contract Price. The Material and Workmanship Bond shall be in an amount equal to ten percent (10%) of the Contract Price as adjusted on the Final Application for Payment. The Bidder will forfeit their Bid Security if they fail to do so. All Bonds shall be secured from or countersigned by an agency or surety company recognized in good standing and authorized to do business in the State of Florida.

AWARD OF CONTRACT: All submittals will be evaluated by City staff in accordance with the criteria set forth in the bid documents. The City reserves the right to reject all bids/submittals, and to solicit and re-advertise for new bids, or to abandon the project in its entirety at any time during the process including, but not limited to, after the Notice of Intent to Award.

NON-MANDATORY PRE-BID MEETING: May 30, 2023 at 10:00 AM

QUESTION DEADLINE: June 15, 2023 at 2:00 PM

QUALIFICATIONS AND BID DEADLINE: June 22, 2023 at 2:00 PM

PUBLIC OPENING: The public opening shall take place June 22, 2023 at 2:00 PM, or shortly thereafter, at the City of Palm Coast City Hall, located at 160 Lake Avenue, Palm Coast, FL 32164.

ADA INFORMATION: Persons with disabilities needing assistance to participate in any of the proceedings should contact the Human Resources Office ADA Coordinator at 386-986-3718 at least forty-eight (48) hours in advance of the public opening, pre-bid meeting, or any other proceeding related to this bid.

FOR PUBLICATION ON WEDNESDAY, May 17, 2023

**CITY OF PALM COAST
BUDGET AND PROCUREMENT OFFICE
160 LAKE AVENUE, PALM COAST, FL 32164
www.palmcoastgov.com
(386) 986-3730**



**SECTION 00010
INSTRUCTIONS TO BIDDERS**

SECTION 1: DEFINED TERMS

1.1 Capitalized terms used herein and not otherwise defined herein shall have the meanings assigned to them in the General Conditions.

SECTION 2: COPIES OF BIDDING DOCUMENTS

2.1 Complete sets of the Bid Documents may be obtained from the City's procurement portal at <https://palmcoastgov.bonfirehub.com/portal>.

SECTION 3: REQUIRED LICENSSES/PRE-QUALIFICATION OF BIDDERS

3.1 The following licenses/pre-qualifications shall be valid throughout the duration of the contract.

Florida's General Contractor's License (Required)

Florida's Underground Utility License (Required)

SECTION 4: EXAMINATION OF CONTRACT DOCUMENTS AND SITE

4.1 Before submitting a Bid, each Bidder shall: (a) examine the Bid Documents; (b) visit the Site to become familiar with local conditions; (c) make written requests for interpretations promptly after discovering any conflicts, errors, ambiguities or inconsistencies; and if applicable, (d) contact all utilities and others who may be working at the Site, including City owned utilities, prior to submitting a Bid in order to determine the extent to which utility installations, utility relocations or adjustments (temporary and permanent) will impact the Bidder's responsibility to schedule, coordinate and sequence the Bidder's Work with the work of the City, utility work, and the work of others at the Site.

4.2 Before submitting a Bid, each Bidder shall, at Bidder's own expense, make or obtain any additional investigations, examinations, explorations and tests and obtain any additional information which pertain to the physical conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site or otherwise which may affect cost, progress or performance of the Work and which Bidder deems necessary to determine its Bid for performing the Work in accordance with the time, price and other terms and conditions of the Bid Documents. Bidder acknowledges that the Project and the Bidder's Work involves significant utility installations, and that utility relocation (temporary and permanent) may be significant and require time to accomplish. Some utility facilities may need to be relocated and adjusted concurrently with the Bidder's Work, while some Work may be required above, adjacent to, and around utility facilities that are in-use and will remain in place.

4.3 At all points where the Work to be constructed by Bidder may connect to existing utilities and services, the actual Work of making the necessary connection to the existing service or utility shall be arranged and paid for by the Bidder and should be included as part of the Bid. Services and utilities included within (but not limited to) this responsibility are roads, ditches, electrical, sewer, mechanical utilities, water, fencing, etc.

4.4 On request, City will attempt to provide each Bidder reasonable access to the Site to conduct such investigations and tests as each Bidder deems necessary for submission of his Bid. If access is provided, Bidder shall restore Site to condition existing prior to conducting the investigations and tests.

4.5 The lands upon which the Work is to be performed, Rights-of-Way for access thereto and other lands designated for use by Bidder in performing the Work are identified in the Bid Documents. All additional lands and access thereto required for temporary construction facilities or storage of Materials and Equipment shall be provided by Bidder at Bidder's expense.

SECTION 5: INTERPRETATIONS/ADDENDA

5.1 Any ambiguities or inconsistencies in the Bid Documents shall be brought to the attention of the City's Budget & Procurement Office prior to the due date through the City's Procurement Portal (<https://palmcoastgov.bonfirehub.com/portal>). Failure to do so, will constitute an acceptance by the Bidder of any subsequent award decision. Bidder shall submit any questions concerning the accuracy, completeness, intent, meaning and interpretations of the Bid Documents, including the sample Contract, or suggestions for Addenda to the Bid Documents, through the City's Procurement Portal (<https://palmcoastgov.bonfirehub.com/portal>) at least seven (7) calendar days prior to the Bid due date. Neither City nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of Bid Documents, whether complete or incomplete. Bidders should not rely on any oral statement or instructions made with regard to these Bid Documents. Any oral statements or instructions will not be binding on the City.

5.2 Should revisions to the Bid Documents become necessary, the City shall post Addenda information on the City's Procurement Portal (<https://palmcoastgov.bonfirehub.com/portal>). Bidders are advised to check the City's Procurement Portal at least three (3) calendar days before both the Qualifications Due Date and the Bid Deadline as outlined in the Invitation to Bid or as dates are otherwise modified, to verify information regarding Addenda. The City reserves the option to extend the due date (Qualifications and Bid Deadline) at any time. It is the sole responsibility of

the Bidder to obtain information related to Addenda and to insure that the Bid considers all changes to the Bid Documents. The Bidder shall sign, date, and return all Addenda with the Bid prior to the Qualifications and Bid Deadline. Failure to do so shall result in immediate rejection and disqualification of the Bid.

SECTION 6: VALUE ENGINEERING INCENTIVE

6.1 No value engineering will be considered until after award of Contract.

SECTION 7: PREPARATION COSTS AND SUBMISSION OF BIDS (ONE-STEP PROCESS)

7.1 Expenses. The City shall not be liable for any expenses incurred in connection with preparation of a Bid. Bidders should prepare their Bids simply and economically, providing a straightforward and concise description of the Bidder's ability to meet the requirements of these Bid Documents.

7.2 Permits. Unless expressly stated in the Bid Documents, all permits and fees required shall be the responsibility of the Bidder. No separate or additional payment will be made for these costs. Adherence to all applicable federal, state and local laws, ordinance, rules, regulations and policies are the responsibility of the Bidder.

7.3 Taxes. The City is not subject to Florida Sales and Use Tax; the City's exemption does not extend to any Bidder as a result of construction of any City owned facility. The Bidder is cautioned to include costs related to Florida Sales and Use Tax in the Bid. The Bidder agrees to participate in any program of the City that will result in savings to the City.

7.4 Warranty Against Fraud and Collusion By submitting a Bid in response to this Invitation to Bid, each Bidder warrants that they have not employed or retained any company or person, other than a bona fide employee working solely for the Bidder, to solicit or secure this business and the resulting Contract, and that the Bidder has not paid, or agreed to pay, any person, company, corporation, individual or firm, other than a bona fide employee working solely for the Bidder, any fee, commission, percentage, gift, or other consideration contingent upon, or resulting from, the award or the resulting Contract. For the breach or violation of this provision, the City shall have the right to disqualify the Bid and terminate the Contract at its sole discretion, without liability, and to deduct from the contract price, or otherwise recover, the full amount of such fee, commission, percentage, gift or consideration. Further, by submission of a Bid, Bidder affirms that its Bid is made without prior understanding, agreement or connection with any corporation, firm, or person submitting a Bid for the same materials, supplies, equipment or services, and is in all respects fair and without collusion or fraud. Bidder agrees to abide by all conditions of these Bid Documents and the resulting contract.

7.5 One-Step Submission. Qualification Forms, Bid Security, Bid Forms, and Addenda must be submitted at one time.

STEP 1: Section 00100 "Qualification Forms Package"

- **Section 00100 – Qualification Forms**
 - Bidder Profile Sheet
 - Qualification Form A Certificate of Authorized Signatory
 - Qualification Form B Questionnaire
 - Qualification Form C Financial Statements
 - Qualification Form D Experience of Bidder
 - Qualification Form E Equipment List
 - Qualification Form F List of Proposed Subcontractors/Shop Fabricators
 - Qualification Form G Certification of Non-Segregated Facilities
 - Qualification Form H Qualification Forms Package Compliance Certification
 - Qualification Form I – E-Verify Registration and Use Affidavit

Bid Security, Section 00200 "Bid Forms Package", and Addenda

- **Bid Security-** A Bond shall accompany each Bid if the Bid amount is one-hundred thousand dollars (\$100,000) or greater. The Bond shall be for an amount not less than five percent (5%) of the bid price/cost and shall be made payable to the City as a guarantee that the Bid will not be withdrawn and will remain firm for a period of one hundred twenty (120) calendar days after the day of the Bid opening and that the Bidder will execute the Contract with the City.
- **Addenda** - All Addenda.
- **Section 00200 – Bid Forms**
 - Bidder Bid Form
 - Bid Form A Bid Schedule
 - Bid Form B Direct Purchase of Materials
 - Bid Form C Certification Regarding Debarment
 - Bid Form D Trench Safety Act
 - Bid Form E Non-Collusion Affidavit of Bidder
 - Bid Form F Bid Forms Package Compliance Certification

7.6 All Addenda, proof of Bid Security and Required Forms shall be completed, signed, dated, and returned to be considered responsive and shall be received electronically through the City's Procurement Portal by the specified time and date. No other method of submission will be allowed or considered (i.e. mailed, emailed, or hand delivered).

7.7 Use of City's Procurement Portal. Upload all submissions to <https://palmcoastgov.bonfirehub.com/opportunities/95087>

Important Notes:

- Please note the type and number of files allowed. The maximum allowed file size is 1000MB.
- Do not embed any documents within the uploaded files, as they will not be accessible for evaluation.
- Each item of Requested Information will only be visible after the Closing Time.
- Uploading large documents may take significant time, depending on the size of the file(s) and your Internet connection speed.
- You will receive an email confirmation receipt with a unique confirmation number once you finalize your submission.
- Minimum system requirements: Internet Explorer 11, Microsoft Edge, Google Chrome, or Mozilla Firefox. Javascript must be enabled. Browser cookies must be enabled.

SECTION 8: QUALIFICATION

8.1 Bidder shall sign, date and return all Addenda. Failure to do so will result in immediate rejection and disqualification of the Bid.

8.2 Bidder shall complete the Qualification Form Package. Failure to provide complete responses to the Qualification Forms Package will result in disqualification of the Bidder. Notwithstanding, if any Qualification Form is missing or determined by City to be incomplete, the City has the option, at City's sole discretion, to immediately reject the Bid, or to request the missing or incomplete form. Upon such request by City, Bidder shall have one (1) business day to respond with the completed form. Failure to do so within the time frame provided shall result in rejection and disqualification of the Bid. Compliance with all requirements will be solely the responsibility of the Bidder. By submitting a response, the Bidder warrants that its responses to the Qualification Forms Package are correct.

8.3 Qualification Forms responses shall be reviewed by a City Staff Evaluation Committee to determine which Bidders are Pre-Qualified.

8.4 For the duration of the Work, Bidder's, both corporate and individual, and all subcontractors, must be fully licensed and certified for the type of work performed.

8.5 City may consider the qualifications and experience of Subcontractors and other persons and organizations (including, but not limited to, those who are to furnish the principal items of Material or Equipment) proposed for those portions of the Work. Operating costs, maintenance, considerations, performance data and guarantees of Materials and Equipment may also be considered by City.

8.6 City may conduct such investigations and require supplemental information as it deems necessary to assist in the Pre-Qualification evaluation and to establish the responsibility, qualifications and financial ability of the Bidders, proposed Subcontractors, proposed Equipment and Material suppliers, and other persons and organizations to do the Work in accordance with the Bid Documents to City's satisfaction.

8.7 The City reserves the right to reject any Bidder who is behind, as determined by the City, on the completion schedule for any existing Contracts with the City, in litigation with the City, involved in any dispute resolution procedure with the City, has previously defaulted on a contract with the City or has previously failed to satisfy all City requirements related to life safety, including, but not limited to, the maintenance of traffic provisions on existing or previous contracts with the City.

8.8 Any of the following causes may also be considered sufficient grounds for disqualification of a Bidder as Non-Responsible:

- (1) Information which is determined to be substantially inaccurate, misleading, exaggerated, or incorrect
- (2) Bidders, both corporate and individual, who are not fully licensed and certified in the State of Florida for the type of services to be provided.
- (3) Evidence establishing that Bidder may hinder or otherwise delay from timely completion of the Project.
- (4) Lack of demonstrated ability, resources, and skill of the Bidder.
- (5) Lack of demonstrated experience working in a similar capacity to that required by the scope of work in these Bid Documents on projects of similar scope, complexity, nature and size.
- (6) Lack of quality performance under previous projects for the City of Palm Coast or for any other customer of Bidder.
- (7) Previous and existing non-compliance by the Bidder with City's policies and procedures, or the life safety requirements and other laws, ordinances and regulations.
- (8) Lack of demonstrated Quality Control Program.
- (9) Contract disputes, claims and litigation filed by or against Bidder in the past five (5) years that are related to the services Bidder provides in the regular course of business.
- (10) Reprimand of any nature or suspension by the Department of Business and Professional Regulation (DBPR) or any other regulatory agency or professional association within the last five (5) years.
- (11) Non-compliance with the requirements of these "Instructions to Bidders" including, but not limited to, failure to sign, date and return all Addenda.

SECTION 9: BID FORMS

9.1 Bidder shall sign, date and return all remaining Addenda before the Bid Deadline. Failure to do so will result in immediate rejection and disqualification of the Bid.

9.2 Bidder shall complete all Bid Forms Package. Failure to provide complete responses will result in disqualification of the Bid. Failure to provide a complete response to the Bidder Bid Form, Bid Form A (Bid Schedule), and Bid Form F (Compliance Certification) shall result in immediate disqualification of the Bid. Notwithstanding, if any other Bid Form Package form is missing or determined by City to be incomplete, the City has the option, at City's sole discretion, to immediately reject the Bid, or to request the missing or incomplete form. Upon such request by City, Bidder shall have one (1) business day to respond with the completed form. Failure to do so within the time frame provided shall result in rejection and disqualification of the Bid. Compliance with all requirements will be solely the responsibility of the Bidder. By submitting a response, the Bidder warrants that its Bid is correct.

9.3 Bidders may withdraw their Bid through the City's Procurement Portal prior to the time and date set for the Bid due date. Once opened, Bids become the property of the City. Bidders may not assign or otherwise transfer their Bids prior to or after the bid opening time.

SECTION 10: BID OPENING AND EVALUATION OF BIDS

10.1 At the specified time and place as indicated in the "Invitation to Bid," Bids shall be opened publicly and read aloud. Persons with disabilities needing assistance to participate in the public opening should contact the City Human Resource Office ADA Coordinator at 386-986-3718 at least two business days in advance of the public opening.

10.2 All Bids shall remain firm for a minimum of one hundred and twenty (120) calendar days after the day of the Bid opening to allow for the evaluation, selection process and execution of the Contract. If need be, the Bidder and the City may mutually agree to extend that time up to an additional ninety (90) calendar days.

10.3 The City reserves the right to reject any or all Bids, or any part of a Bid for any reason and without penalty at any time during the process, including prior to or after the rankings are made by the City, and to terminate any contract negotiations commenced with any Bidder. The City reserves the right to inspect all facilities of Bidders in order to make a determination as to the foregoing. The City reserves the right to waive or enforce any irregularities, informalities, and technicalities. This section shall be construed liberally to benefit the public and not the Bidder.

10.4 If during the evaluation process, should City require additional information, data, forms, and attachments to assist with clarification on any proposal, upon City request, the Bidder shall have one (1) day to supply the additional information. If the additional information is not provided within the time frame provided herein, the bid will be disqualified. In the event of extension or addition error(s), the unit price and extension will prevail, and the Bidder's total offer will be corrected accordingly. Written amounts take precedence over numerical amounts. Bids having edits must be initialed by the Bidder.

10.5 If within one (1) business day after Bids are opened, any Bidder files a duly signed written notice with City, and within two (2) business days thereafter demonstrates to the reasonable satisfaction of the City that: a) there has been a material and substantial mistake in the preparation of the Bid; b) the mistake is of such great consequence that to enforce the Contract would be unconscionable; and c) the mistake occurred notwithstanding the exercise of reasonable care in the preparation of the Bid; the Bidder may withdraw its Bid, and the Bid Security will be returned provided that the City is not seriously prejudiced, except for the loss of its bargain. Bidders shall not be allowed to correct a Bid with a material and substantial mistake. A Bidder withdrawing its Bid under this subsection shall be disqualified from further bidding on the Work.

10.6 Any of the following criteria may also be considered as sufficient grounds for deeming the Bidder non-responsive and rejecting the Bid:

- (1) Submission of more than one (1) Bid for the same work by any entity under the same or different names.
- (2) Work by any entity under the same or different names.
- (3) Evidence of collusion among Bidders.
- (4) Submission of an unbalanced Bid in which prices quoted for some items are out of proportion to the prices quoted for other or similar items in the same Bid.
- (5) Bidder's failure to submit missing Required Forms within one (1) business day following the date of the City's request.
- (6) Falsification of any entry made on the Bid shall be deemed a material irregularity.
- (7) Non-compliance with the requirements of these "Instructions to Bidders".

10.7 The City has a Local Business Preference Policy, see Section 2-30 of the City of Palm Coast Code of Ordinance, designed to aid Local Vendors. The Policy allows Local Vendors (defined below) to be awarded a solicitation if their cost to the City is within 3% - 5% (depending on amount) up to

total of \$20,000 (see calculation below). The City's Local Business Preference is not applicable to any "Invitations to Bid" where funding will be in whole or part from any federal or state agency; or a local agency with differing or no local preference.

- (1) Local Vendor – For purposes of application of the Local Business Preference, a Local Vendor is a business that has its headquarters, manufacturing facility, or locally-owned franchise located in, or having a street address within, the legal boundaries of the City of Palm Coast for at least one (1) year immediately prior to this ITB. If the local business preference does not result in the Palm Coast business being awarded the ITB, then the local business preference shall be given to businesses have its headquarters, manufacturing facility, or locally-owned franchise located in, or having a street address within, the legal boundaries of Flagler County for at least one (1) year immediately prior to the ITB. Post office boxes do not qualify as a verifiable business address.
- (2) Calculation of Amount of Preference - Five percent (5%) of the total quoted price up to \$200,000.00 as referenced on the price schedule. Three percent (3%) of the total quoted price above \$200,000.00 as referenced on the price schedule. Total local business preference shall be limited to \$20,000.00 for each project.

10.8 Notice of Intent to Award will be posted on the City's Procurement Portal (<https://palmcoastgov.bonfirehub.com/portal>) prior to City's final approval process.

SECTION 11: BID PROTESTS

11.1 Protests hereunder shall be in accordance with City Code of Ordinances Chapter 2, Article 1, Division 3, Section 2-29 Bid Protest Procedures which can be found at the City's website Under Government, City Codes and Ordinances, or by clicking on this [Bid Protest Procedures Link](#).

SECTION 12: AWARD OF CONTRACT

12.1 Contract Award shall be based on the lowest responsive and responsible bid.

12.2 The Contract will be awarded as soon as possible or within one hundred twenty (120) calendar days from the Bid opening date in accordance with award criteria. If the Bid Form indicates a base bid and additive or deductive alternates, the low combination of base bid and City determined accepted alternates shall be considered for the basis of award. The City reserves the right to accept or reject the base bid, any alternate bids, or any combination thereof at any time in the process.

12.3 If not already registered as a vendor with the City of Palm Coast, Bidder shall, within three (3) business days of receipt of Contract, register online at: <https://www.palmcoastgov.com/vendor-registration>.

SECTION 13: SIGNING OF CONTRACT/BONDS AND INSURANCE

13.1 Within fifteen (15) calendar days of receipt of Contract, the successful Bidder shall electronically execute the Contract.

13.2 The Bid Documents set forth City's requirements as to Bonds and Insurance. When the successful Bidder submits the executed Contract, it shall be accompanied by copies of the required Bonds and insurance certificates. Attorneys-in-fact who sign Bid Bonds, Performance Bonds, Payment Bonds and Material and Workmanship Bonds must file with such Bonds a certified copy of their power-of-attorney to sign the Bonds.

13.3 The successful Bidder shall record the Performance Bond and Payment Bond with the Clerk of Flagler County and shall submit the original recorded Bonds to City within fifteen (15) calendar days after Bidder receives a copy of the fully executed Contract. In no event shall Work commence before City is in receipt of the original recorded Bonds.

13.4 Failure by a successful Bidder to execute the Contract or to furnish the required Bonds or insurance certificates shall be just cause for the annulment of the award and the forfeiture of the Bid Security.

END OF SECTION



**SECTION 00100
QUALIFICATION FORMS PACKAGE**

Project Name: **LONDON WATERWAY EXPANSION**

City Project No.: **ITB-SWE-23-43**

BIDDER PROFILE SHEET

Full Legal Name of Bidder Organization: _____

DBA (if any): _____

Contact Name _____

E-mail Address: _____ Phone Number _____

Mailing Address: _____

Physical Address (if different): _____

Florida Contractor License Number: _____

Florida License Expiration Date: _____

Florida Dept of State, Division of Corp (SunBiz) Document Number: _____

List of Attachments to be completed and returned with the Bidder Profile Sheet:

- ATTACHMENT A: CERTIFICATION OF AUTHORIZED SIGNATORY
- ATTACHMENT B: QUESTIONNAIRE
- ATTACHMENT C: FINANCIAL STATEMENTS
- ATTACHMENT D: EXPERIENCE OF BIDDER
- ATTACHMENT E: EQUIPMENT LIST
- ATTACHMENT F: LIST OF PROPOSED SUBCONTRACTORS/SHOP FABRICATORS
- ATTACHMENT G: CERTIFICATE OF NON-SEGREGATED FACILITIES
- ATTACHMENT H: QUALIFICATION FORMS PACKAGE COMPLIANCE CERTIFICATION
- ATTACHMENT I – E-VERIFY REGISTRATION AND USE AFFIDAVIT

Addenda Reminder

Addenda will be posted on the City's Procurement Portal at: <https://palmcoastgov.bonfirehub.com/portal>. Bidders MUST sign, date, and return all Addenda in accordance with the Instructions to Bidders. It is Bidder's sole responsibility to obtain information related to Addenda.

**QUALIFICATION FORM A
CERTIFICATION OF AUTHORIZED SIGNATORY**

Print/Type Legal Business Name (same as name on W-9 form)

Print/Type FEIN #

Check the legal entity type that is applicable to the above named business:

- Sole Proprietorship – Complete Section A
- General or Limited Partnership – Complete Section B
- Corporation (Inc. , LLC) Complete Section C

SECTION A: SOLE PROPRIETORSHIP

I HEREBY CERTIFY that I am the sole owner of the business identified above and am authorized to sign legal documents on behalf of said business.

Signature: _____

Print name: _____

SECTION B: PARTNERSHIP

I HEREBY CERTIFY that I am a General Partner of the business identified above and am authorized to sign legal documents on behalf of said business.

Signature: _____

Print name: _____

SECTION C – CORPORATION

I HEREBY CERTIFY that a meeting of the Board of Directors of _____
Legal business name

a corporation /LLC under the laws of the State of _____, was held on _____ 20___. The following resolution was duly passed and adopted:

“RESOLVED, that _____ is an officer and director of the corporation (or the managing member of the LLC) and is hereby authorized to execute contracts between the City of Palm Coast, a municipal corporation and this corporation/LLC, and that execution thereof by said officer and director, attested by the Secretary of the corporation/LLC, shall be the official act and deed of this corporation/LLC.”

I FURTHER CERTIFY that said resolution is now in full force and effect.

IN WITNESS THEREOF, I have hereunto set my hand this ____ day of _____, 20__.

Provide copy of Resolution

Corporate Secretary/Managing Member

**QUALIFICATION FORM B
QUESTIONNAIRE**

Instructions: Complete each question below. Include additional sheets if necessary.

1. Full Legal Name of Bidder Organization: _____
2. How many years has your organization been in business as a General Contractor? _____
3. How many years has your organization been in business as a Subcontractor? _____
4. What is your organization's current Experience Modification # _____
5. How many full time permanent employees does your company have? _____
6. Name of Superintendent and length of time with your company? _____
7. Have you ever failed, or been alleged to have failed, to complete work awarded to you? If so, where and why?

8. Have you ever failed, or been alleged to have failed, to complete work within the Contract Time? If so, where and why?

9. Have you ever been assessed liquidated damages, or had liquidated damages assessed against you? If so, where and why?

10. Have you ever had your bonding restricted or limited? If yes, provide explanation. _____

11. Have you ever had a Bond or letter of credit called by the owner of a project? If so, when?

12. Have you inspected the site of the proposed Work? Describe, in full, any anticipated problems with the Site and your proposed solutions? _____

13. Has Bidder been involved in litigation, claim(s), or contract dispute(s) filed by or against the Bidder in the past five (5) years that are related to the services the Bidder provides in the regular course of business? If yes, provide a summary of the litigation, claim(s), or contract dispute(s) filed by or against the Bidder in the past five (5) years that are related to the services the Bidder provides in the regular course of business. The summary shall state the nature of the litigation, claim or contract dispute, a brief description of the case, the outcome or projected outcome, and monetary amounts involved.

14. Has Bidder been sanctioned by any regulatory or licensing agency with the past five (5) years. If yes, provide a list the regulatory and licensing agency sanctions.

15. Please provide all material facts pertaining to any felony conviction or any pending felony charges in the last three (3) years in this State or any other state of the United States against (i) the Bidder, (ii) any business entity related to or affiliated with the Bidder or (iii) any present or former owner of the Bidder or of any such related or affiliated entity. *(This disclosure shall not apply to any person or entity which is only a stockholder, which person or entity owns twenty percent (20%) or less of the outstanding shares of the Bidder whose stock is publicly owned and traded.)* If none, indicate "NONE".

**QUALIFICATION FORM C
FINANCIAL STATEMENTS**

This information will be kept confidential and will NOT be made available to the public.

NAME OF BIDDER: _____

Please attach a copy of your most recent financial statements. Financial statements "audited" by an independent certified public accountant are preferred over documents that are "reviewed" by an independent certified public accountant. Documents "reviewed" by an independent certified public accountant are preferred over "compilations". **Internal financial statements are not acceptable.** The financial information will be reviewed by a member(s) of the City's finance department.

QUALIFICATION FORM D EXPERIENCE OF BIDDER

NAME OF BIDDER _____

1. How many active projects are you working on? _____ Approximate dollar value total \$ _____
2. In order of most recent/current to oldest, please provide the following information regarding experience within the **past five (5) years** in this particular scope of work. **List ONLY projects of similar scope, complexity, nature and size.** Please attach any pictures or other documentation supporting the project description. Use additional sheets if necessary.

Project Name:			
Date of Contract	Client's Name		Contract Amount \$
Notice to Proceed Date	End Date/Current	Client's Phone	Client's Email
Project Location:			
SHORT DESCRIPTION OF PROJECT:			
Describe any challenges meeting project schedule:			

Project Name:			
Date of Contract	Client's Name		Contract Amount \$
Notice to Proceed Date	End Date/Current	Client's Phone	Client's Email
Project Location:			
SHORT DESCRIPTION OF PROJECT:			
Describe any challenges meeting project schedule:			

Project Name:			
Date of Contract	Client's Name		Contract Amount \$
Notice to Proceed Date	End Date/Current	Client's Phone	Client's Email
Project Location:			
SHORT DESCRIPTION OF PROJECT:			
Describe any challenges meeting project schedule:			

Project Name:			
Date of Contract	Client's Name		Contract Amount \$
Notice to Proceed Date	End Date/Current	Client's Phone	Client's Email
Project Location:			
SHORT DESCRIPTION OF PROJECT:			
Describe any challenges meeting project schedule:			

Project Name:			
Date of Contract	Client's Name		Contract Amount \$
Notice to Proceed Date	End Date/Current	Client's Phone	Client's Email
Project Location:			
SHORT DESCRIPTION OF PROJECT:			
Describe any challenges meeting project schedule:			

**QUALIFICATION FORM G
CERTIFICATE OF NON-SEGREGATED FACILITIES**

We, _____ (Bidder Company Name) certify that we do not and will not maintain or provide for our employees any segregated facilities at any of our establishments, and that we do not and will not permit our employees to perform their services at any location, under our control, where segregated facilities are maintained. We understand and agree that breach of this certification is a violation of Equal Opportunity clause required by Executive Order 11246, amended.

As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, creed, color, or national origin, because of habit, local custom or otherwise.

We further agree that (except where we have obtained identical certifications from proposed Subcontractors for specific time periods) we will obtain identical certifications from proposed Subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity clause; that we will retain such certification in our files; and that we will forward the following notice to such proposed Subcontractors (except where the proposed Subcontractors have submitted identical certifications for specific time periods).

NOTICE TO PROSPECTIVE SUBBUILDERS OF REQUIREMENT FOR CERTIFICATION OF NON-SEGREGATED FACILITIES. A certification of Non-segregated facilities as required by the 9 May 1967 order on Elimination of Segregated Facilities, by the Secretary of Labor (32 Fed. Reg. 7439, 19 May 1967), must be submitted from the provisions either for each subcontract or for all subcontracts during a period (i.e. quarterly, semi-annually, or annually).

NOTE: Whoever knowingly and willfully makes any false, fictitious or fraudulent representation may be liable to criminal prosecution under 18 U.S.C. 1001.

(Bidder Company Name)

By: _____
Signature

Print: _____
Print Name

Date: _____

Title: _____

QUALIFICATION FORM H
QUALIFICATION FORMS PACKAGE
COMPLIANCE CERTIFICATION

Please check the appropriate box where indicated and initial where indicated for each of the listed requirements for certification. This Form must also be signed, notarized, and dated by the same signatory.

NAME OF BIDDER _____

- 1. Scrutinized Companies** - Section 287.135, Florida Statutes, prohibits companies from bidding, submitting proposals, entering into or renewing contracts with local governments for goods or services of one million dollars (\$1,000,000) or more that are on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List or are engaged in business operations in Cuba or Syria. Both Lists are created pursuant to section 215.473, Florida Statutes. In addition, regardless of contract value, the companies shall not be listed on the Scrutinized Companies that Boycott Israel List, created pursuant to Section 215.4725, Florida Statutes, or be engaged in a boycott of Israel if bidding, submitting bids, entering into or renewing contracts with a local government for goods and services. As the person authorized to sign on behalf of Bidder, I hereby certify that Bidder is not listed on the Scrutinized Companies with Activities in Sudan List, is not listed on the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List or is engaged in business operations in Cuba or Syria. In addition, Bidder is not listed on the Scrutinized Companies that Boycott Israel List, or is engaged in any boycott of Israel. I understand that pursuant to section 287.135, Florida Statutes, the submission of a false certification, being placed on any of the Lists as indicated herein, conducting business operations with Cuba or Syria, or boycotting Israel may subject the Bidder to civil penalties, attorney's fees, and/or costs. **Initials** _____
- 2. Public Entity Crime** - Any person or affiliate who has been placed on the convicted vendor list following a conviction of a public entity crime 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 a 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 thirty-six (36) months from the date of being placed on the convicted vendor list. As the person authorized to sign on behalf of Bidder, I hereby certify that Bidder is qualified to submit a bid under Fla. Stat. §287.133(2) (a). Further, I hereby certify that neither Bidder's affiliates, nor anyone associated with Bidder, is presently suspended or otherwise ineligible from participating in contract lettings by any local, state, or federal agency. **Initials** _____
- 3. Americans with Disabilities Act** - Bidder shall not discriminate against any employee or applicant for employment because of physical or mental handicap in regard to any position for which the employee or applicant for employment is qualified. Bidder agrees to comply with the rules, regulations and relevant orders issued pursuant to the Americans with Disabilities Act (ADA), 42 USC s. 12101 et seq. It is understood that in no event shall the City be held liable for the actions or omissions of the Bidder or any other party or parties to the Contract for failure to comply with the ADA. Bidder agrees to hold harmless and indemnify the City, its agents, officers or employees from any and all claims, demands, debts, liabilities or causes of action of every kind or character, whether in law or equity, resulting from Bidder's acts or omissions in connection with the ADA. **Initials** _____
- 4. Drug-Free Work Place** - As the person authorized to sign on behalf of Bidder, I hereby certify that Bidder is in compliance with Florida Statue 287.087, providing a Drug-Free Workplace. **Initials** _____
- 5. Compliance With Public Records** - Upon award, recommendation, or thirty (30) days after receipt, bids become "public records" and shall be subject to public disclosure consistent with Chapter 119, Florida Statutes. The submission of a bid authorizes release of Bidder's credit data to City of Palm Coast. If the Bidder submits information exempt from public disclosure, Bidder must identify with specificity which pages/paragraphs of its bid package are exempt from the Public Records Act, identifying the specific exemption section that applies to each. The protected information must be submitted to the City in a separate electronic file marked accordingly. By submitting a response to this solicitation, Bidder agrees to defend the City in the event City is forced to litigate the public records status of Bidder's documents. **Initials** _____
- 6. Vendor Registration** - All Bidders awarded contracts, purchase orders, or work orders must register as a vendor with the City of Palm Coast. Please indicate if your company has registered as a vendor with the City of Palm Coast. I have already registered as a vendor with the City. I have not registered as a vendor with the City, but plan to do so if awarded a contract, purchase order, or work order through this solicitation. **Initials** _____
- 7. Conflict of Interest Statement** - As the person authorized to sign on behalf of Bidder, I hereby certify that Bidder, nor its affiliates, nor anyone associated with Bidder has any potential conflicts of interest due to any other clients, contracts, or property interests. I certify that no member of the Bidder's ownership, management, or staff has a vested interest in any aspect of or department of City of Palm Coast. I certify that no member of

the Bidder's ownership or management is presently applying for an employee position or actively seeking an elected position with City of Palm Coast. In the event that a conflict of interest is identified in the provision of services, I, on behalf of the above named entity, will immediately notify City of Palm Coast in writing. **Initials** _____

8. Qualifications Forms Package Submission Acknowledgement - The Bidder has carefully examined the Bid Documents, including the Instructions to Bidders, Contract Template, Addenda, and any other accompanying documents for this project. The Bidder has completely analyzed the information contained in the Bid Documents as guidance for the preparation its submittal. The Bidder has competed all the Bidder's submittal is sufficiently specific, detailed and complete to clearly and fully demonstrate the Bidder's understanding of the proposed work and/or product requirements. The Bidder agrees and understands that, if awarded, all portions of the Bid shall become an integral part of the Contract. Should there be a conflict between the Bid and the Bid Documents, the Bid Documents shall prevail. **Initials** _____

I certify that all information contained in this Qualifications Forms Package is complete, truthful and correct at the time of submission. I further certify that I am duly authorized to submit this information on behalf of the Bidder and that the Bidder is ready, willing and able to perform if awarded the Contract. I further certify, under oath, that this information is provided without prior understanding, agreement, connection, discussion, or collusion with any other person, firm or corporation submitting a response to this Invitation to Bid; no officer, employee or agent of the City of Palm Coast or of any other interested Bidder; and that the undersigned executes this Certification with full knowledge and understanding of the matters herein contained and is duly authorized to do so. The signatory for the Bidder swears that none of the information supplied was for the purpose of misleading or defrauding the City.

STATE OF _____
COUNTY OF _____

Signed: _____
Printed Name: _____
Title: _____

The foregoing instrument was acknowledged before me, by means of physical presence or online notarization, this ____ day of _____, 20____, by _____.

Print Name _____
Notary Public in and for the County and State Aforementioned
My commission expires: _____
Personally Known _____ OR Produced Identification _____
Type of Identification Produced _____

QUALIFICATION FORM I
QUALIFICATION FORMS PACKAGE
E-VERIFY REGISTRATION AND USE AFFIDAVIT

A. Pursuant to section 448.095, Florida Statutes, beginning January 1, 2021, all Contractors (as defined by the statute) shall register with and use the U.S. Department of Homeland Security's E-Verify system, <https://e-verify.uscis.gov/emp>, to verify the work authorization status of all its employees hired on and after January 1, 2021.

B. Also, pursuant to section 448.095, Florida Statutes, Contractors shall also require all subcontractors performing work under to use the E-Verify system for any employees the subcontractors may hire.

C. Instructions - Provide evidence of compliance with section 448.095, Florida Statutes including an Affidavit stating all employees hired on and after January 1, 2021 have had their work authorization status verified through the E-Verify system and a copy of their proof of registration in the E-Verify system.

1. Please create an Affidavit on your company's letter head in a similar form to that attached below.
2. Have it signed and notarized.
3. Then attach the notarized affidavit and the proof of registration where indicated.

D. The successful bidder awarded the contract hereunder must obtain from all subcontractors providing goods or services under the awarded contract, an affidavit stating the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, as defined in section 448.095, Florida Statutes along with a copy of the subcontractor's proof of registration. The successful bidder must maintain a copy of each subcontractor affidavit and proof of registration during the duration of the contract awarded and provide to City upon request.

E. Failure to comply with this provision is a material breach of the awarded contract, and shall result in the immediate termination without penalty to the City. Bidder shall be liable for all costs incurred by the City to secure a replacement contract, including but not limited to, any increased costs for the same services, any costs due to delay, and rebidding costs, if applicable.

(Bidder Company Name)

By: _____
Signature

Print: _____
Print Name

Date: _____

Title: _____

[Company Letter Head]
CONTRACTOR E-VERIFY AFFIDAVIT

I hereby certify that _____ [insert contractor company name] does not employ, contract with, or subcontract with an unauthorized alien, and is otherwise in full compliance with Section 448.095, Florida Statutes.

All employees hired on or after January 1, 2021 have had their work authorization status verified through the E-Verify system.

A true and correct copy of _____ [insert contractor company name] proof of registration in the E-Verify system is attached to this Affidavit.

Print Name: _____
Title: _____
Date: _____

STATE OF FLORIDA

COUNTY OF _____

The foregoing instrument was acknowledged before me by means of physical presence or online notarization this _____ day of _____, 20____ by _____ [name of officer or agent, title of officer or agent] of _____ [name of contractor company acknowledging], a _____ [state or place of incorporation] corporation, on behalf of the corporation. He/she is personally known to me or has produced _____ [type of identification] as identification.

Notary Public

[NOTARY SEAL]

Name typed, printed or stamped

My Commission Expires: _____

END OF SECTION



**SECTION 00200
BID FORMS PACKAGE**

NAME OF BIDDER _____

Bidder Bid Form

1. Pursuant to and in compliance with the Bid Documents, Bidder hereby agrees to complete the Work set forth in the Bid Documents and all Addenda for the following: (check what applies)

Total Sum Line Items/ Grand Total Bid Amount: \$ _____

Amount Spelled Out: _____ **Initials** _____

In the event there is a discrepancy between the written total and the sum of the figures in Attachment A, the figures in Attachment A shall be recalculated and the correct total shall be used. _____ **Initials**

2. Bidder acknowledges that the Total Bid Amount stated above includes the sum of \$250.00 or 1% of the Bid whichever is greater, specific consideration for indemnification. _____ **Initials**
3. Bidder acknowledges in submitting its Bid, it has familiarized itself with the Bid Documents including all Addenda issued prior to the date, including **Addenda #** _____ through _____, as well as the local conditions affecting the performance of the Work, and the cost of the Work at the place where the Work is to be done. _____ **Initials**
4. Bidder hereby agrees to perform the Work, including all of its component parts and everything required to be performed, and to provide and furnish any and all of the labor, material, tools, and equipment, permits, Bonds, warranties, all utility and transportation services necessary to perform the Work, and all incidental costs necessary for the proper execution of the required Work, as set forth in the Bid Documents including all Addenda. _____ **Initials**
5. Bidder hereby agrees to complete all Work required in the Bid Documents in a workmanlike manner, and in strict conformance with the Bid Documents, including the Plans and Specifications. _____ **Initials**
6. Bidder hereby agrees that **time is of the essence** and that the Work, including all of its component parts and everything required to be performed, shall be completed within the time frame set forth in the Bid Documents. _____ **Initials**
7. Bidder acknowledges that the Contract Time required in the Bid Documents includes consideration of adverse weather conditions common to Central Florida including the possibility of hurricanes and tropical storms. _____ **Initials**
8. Bidder acknowledges that the Contract Time required in the Bid Documents includes float time allocated for Bidder's coordination of utility relocations. _____ **Initials**
9. Bidder hereby agrees to be responsible for Liquidated Damages as described in the Bid Documents. _____ **Initials**
10. Bid Security: A copy of the Bidder's Bond in an amount equal to at least five percent (5%) of the Total Bid, payable to the CITY OF PALM COAST, FLORIDA is attached to this Bid. _____ **Initials**

11. Bidder hereby agrees that if its Bid is accepted, Bidder will execute a Contract in the form set forth in the Bid Documents; and further agrees to furnish the required Payment and Performance Bonds and proof of insurance establishing that the insurance complies with the insurance requirements set forth in the Bid Documents. _____ **Initials**
12. Bidder agrees that the Bid Security shall be forfeited as Liquidated Damages (*and not as a penalty in recognition of the complexity and lack of precision in calculating damages*) in case its Bid is accepted by the City and the Bidder fails to i) execute the Contract, ii) provide the required Payment and Performance Bonds with Sureties satisfactory to the City, iii) provide proof of insurance that complies with the insurance requirements set forth in the Bid Documents or iv) otherwise comply with the requirements set forth in the Bid Documents. _____ **Initials**
13. Should City be required to engage the services of an attorney in connection with the enforcement of this Bid, Bidder hereby agrees to pay all of City's reasonable attorney's fees and costs incurred including appeal costs. _____ **Initials**

List of Attachments to be completed and returned with this Bidder Bid Form:

- BID FORM A: TOTAL SUM LINE-ITEM BID SCHEDULE
- BID FORM B: DIRECT PURCHASE OF MATERIALS
- BID FORM C: DEBARMENT CERTIFICATION
- BID FORM D: TRENCH SAFETY ACT
- BID FORM E: NONCOLLUSION AFFIDAVIT OF BIDDER
- BID FORM F: BID FORMS PACKAGE COMPLIANCE CERTIFICATION FORM

ADDENDA REMINDER

Addenda will be posted on the City's Procurement Portal at: <https://palmcoastgov.bonfirehub.com/portal>. Bidders MUST sign, date, and return all Addenda in accordance with the Instructions to Bidders. It is Bidder's sole responsibility to obtain information related to Addenda.

**BID FORM A
BID SCHEDULE**

(Unit Prices for Adjustment)

The following unit prices, if approved by the City, shall be used for adjusting the Contract price/Total Sum line-item Bid Amount for changes in the Work (additions or deletions) in accordance with the provisions of an approved Change Order and any other modifications of the Contract. Bidder is required to fill in the prices listed below. **FAILURE TO COMPLETELY FILL IN THE LIST SHALL CONSTITUTE A NON-RESPONSIVE BID AND SHALL BE A CAUSE FOR REJECTION.** Unit prices shall include all labor, materials, equipment, transportation, and supervision representing an in-place price for each item. Scope or size of each item not otherwise indicated is as described in the construction specifications and drawings. **The CITY reserves the right to approve or reject the below list on a line-item basis:**

**LONDON WATERWAY UNIT COST
Next Page**

London Waterway Expansion						
FDOT Pay Item		Description	Quantity	Units	Unit Cost	Total Cost
NS	1	EROSION CONTROL	1	LS		
104	10	3 SEDIMENT BARRIER	8,504	LF		
104	11	FLOATING TURBIDITY BARRIER	313	LF		
104	12	STAKED TURBIDITY BARRIER	262	LF		
104	15	SOIL TRACKING PREVENTION DEVICE	4	E A		
110	1	1 CLEARING & GRUBBING	15.8	A C		
120	1	REGULAR EXCAVATION - Primary Site	267,211	C Y		
160	4	TYPE B STABILIZATION, LBR 40	276	SY		
285	711	OPTIONAL BASE, BASE GROUP 11 (12" LIMEROCK)	147	SY		
334	1	12 SUPERPAVE ASPHALTIC CONC., TRAFFIC B (1.5")	12.1	T N		
339	1	MISCELLANEOUS ASPHALT PAVEMENT, 1" (TRAIL)	7.7	T N		
425	1	521 INLETS, DITCH BOTTOM, TYPE C, <10'	3	E A		
425	1	551 INLETS, DITCH BOTTOM, TYPE E, <10'	3	E A		
425	1	554 INLETS, DITCH BOTTOM, TYPE E, J-BOTTOM, >10'	1	E A		
425	1	583 INLETS, DITCH BOTTOM, TYPE H, J-BOTTOM, <10'	1	E A		
425	1	589 INLETS, DITCH BOTTOM, TYPE H, MODIFY	2	E A		
425	2	71 MANHOLES, J-7, <10'	1	E A		
425	2	91 MANHOLES, J-8, <10'	1	E A		
430	175	118 PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 18" S/CD	302	LF		
430	175	148 PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 48" S/CD	684	LF		
430	175	160 PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 60" S/CD	374	LF		
430	560	100 STRAIGHT CONCRETE ENDWALLS	1	E A		
430	982	125 MITERED END SECTION, OPTIONAL ROUND, 18" CD	5	E A		
430	982	141 MITERED END SECTION, OPTIONAL ROUND, 48" CD	2	E A		
530	4	6 ARTICULATING CONCRETE BLOCK REVETMENT SYSTEM, THICKNESS 6"	54	SY		
570	1	2 PERFORMANCE TURF, SOD	3904	SY		
1050	31	211 UTILITY PIPE, PVC, FURNISH & INSTALL, WATER/SEWER, 1"	331	LF		
1080	24	102 UTILITY FIXTURE, VALVE ASSEMBLY, FURNISH & INSTALL, AIR RELEASE VALVE, 2"	4	E A		
1080	24	103 UTILITY FIXTURE, VALVE ASSEMBLY, FURNISH & INSTALL, PLUG VALVE, 3"	4	E A		
1080	24	106 UTILITY FIXTURE, VALVE ASSEMBLY, FURNISH & INSTALL, GATE VALVE, 6"	2	E		

					A		
1080	24	108	UTILITY FIXTURE, VALVE ASSEMBLY, FURNISH & INSTALL, GATE VALVE, 8"	2	E A		
NS	2		BOARDWALK (WITH RAILINGS, BENCHES)	980	SF		
NS	3		PLANTINGS	1	LS		
NS	4		DIRECIONAL DRILL, UTILITY PIPE, HDPE, DR11, 4"	400	LF		
NS	5		DIRECIONAL DRILL, UTILITY PIPE, HDPE, DR11, 8"	273	LF		
NS	6		DIRECIONAL DRILL, UTILITY PIPE, HDPE, DR11, 10"	240	LF		
NA	1		AS-BUILT DRAWINGS	1	LS		
			MOBILIZATION / DEMOBILIZATION	1	LS		
			MAINTENANCE OF TRAFFIC	1	LS		
TOTAL CONSTRUCTION COSTS:							\$

London Waterway Expansion -Bid Alternate / Deduct						
FDOT Pay Item		Description	Quantity	Estimated CY	Unit Cost	Total Cost
NS	1	REGULAR EXCAVATION - To be Retained by Contractor	Up to 100,000			

London Waterway Expansion -Bid Alternate / Deduct						
FDOT Pay Item		Description	Quantity	Estimated Sq Yd	Unit Cost	Total Cost
N S	1	HARDENING ACCESS ROAD IN TCE - RESTORE TO ORIGINAL CONDITION	1700 x 16 LF	3022.22		

_____ (spelled out)

In the event there is a discrepancy between the written total and the sum of the figures, the figures shall be recalculated, and the correct total shall be used.

BID FORM B
DIRECT PURCHASE OF MATERIALS

NAME OF BIDDER _____

PART 1 – GENERAL

- 1.01** It is the intent of City, being a tax exempt governmental entity, to save the sales tax on the Materials of significant value supplied for this Project.
- 1.02** For bidding purposes and contract award, Bidder shall bid the job as they normally would with sales tax included as part of their Bid.
- 1.03** Bidder shall act as City's purchasing agent for the purchase of various items enumerated below and thus, City shall be the buyer in such transactions and, being a tax-exempt governmental entity, the purchase transaction shall be tax exempt. However, should the Florida Department of Revenue ultimately conclude that sales tax should have been paid; City agrees to pay the sales taxes and ensure that Bidder is not required to pay such taxes. Bidder will not be obligated to defend City against the Florida Department of Revenue for any actions by the Department claiming that sales taxes are due.
- 1.04** Shop drawings shall be sent to Bidder from the Material Supplier for review, checking and coordination. After checking, Bidder shall be responsible to forward the shop drawings to the Engineer for review. After review with City, the Engineer shall return the shop drawings to Bidder to be returned to the Material Supplier.
- 1.05** Bidder shall obtain a tax exempt quote for the Direct Purchase in the City's name.
- Bidder shall ensure that the Material Supplier is registered as a vendor with the City.
 - City shall purchase all Materials from an original supplier and shall not purchase Material's from a non-supplier sub-contractor.
 - Bidder shall verify correct specifications and quantities, then initial and date the quote and forward to the Engineer.
 - The Engineer shall review the quote to verify accuracy of the Materials. The Engineer shall initial and date the quote and shall forward to the City.
- 1.06** Bidder shall be responsible to schedule the order upon receipt of copy of the Purchase Order. The Purchase Order shall be issued by the City with the City's terms and conditions. Bidder shall be responsible to schedule the order upon receipt of copy of the Purchase Order. Orders shall not be subject to trade discounts.
- 1.07** Bidder shall be responsible to:
- Schedule the delivery time for the material.
 - Unload and to store the Material until it is installed.
 - Provide and maintain Builders Risk Insurance on the Material until the project is completed and accepted by the City.
- 1.08** Upon receipt of the quote, a Change Order shall be submitted that reduces the Contract Price by the amount of the Direct Purchase cost PLUS state sales tax credit (6%) and the local sales tax credit (one percent (1%) up to the first five thousand (\$5,000). Bidder shall include in its Bid the handling costs, markup and profit that are associated with the installation/handling of the Direct Purchase.
- 1.09** Direct Purchase Invoices are to be made out to the City. Invoices for the Direct Purchases shall be first sent to the Bidder.
- Bidder shall confirm delivery, verify correct quantities and confirm that Materials have been received in acceptable condition, Bidder shall initial and date invoice and forward the invoice to the Engineer.
 - The Engineer shall review the invoice to verify accuracy of the Materials. The Engineer shall initial and date the invoice and shall forward to AP@palmcoastgov.com for payment.
- 1.10** Bidder agrees that the items listed in Part 2 shall be added to or deleted from at City's choosing. The Bid shall include all costs of administering Direct Purchases.
- 1.11** Bidder shall complete all activities and assume all liabilities that are normally involved in Materials purchases and installation. The only intent of this Section is for City to purchase the Material directly in order to save the sales tax monies.

PART 2 – DIRECT PURCHASE MATERIALS

2.01 Table of Potential Items to be Direct Purchased by the City:

The table in Part 2 must be filled out in its entirety upon request by City following execution of Notice of Award.

Column A	Column B	Column C	Column D
Materials For Potential Direct Purchase	*Material Invoice Amount	Sales Tax on Material Amount	Contract Reduction Amount (B + C)

* Invoices for the Material shall be provided to the City.

BID FORM C
CERTIFICATION REGARDING DEBARMENT, SUSPENSION INELIGIBILITY AND
VOLUNTARY EXCLUSION – LOWER TIER COVERED TRANSACTIONS
(Compliance with 2 CFR Part 180)
Instructions for Certification

- a. By signing and submitting this form, the prospective lower tier participant is providing the certification set out herein in accordance with these instructions.
- b. The certification in this clause is material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department of agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.
- c. The prospective lower tier participant shall provide immediate written notice to the person to whom this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
- d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Part 180. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of these regulations.
- e. The prospective lower tier participant agrees by submitting this form that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
- f. The prospective lower tier participant further agrees by submitting this form that it will include this clause
- g. titles "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – Lower Tier Covered Transactions", without modification in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
- g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.
- h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith and certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, and 2 CFR 180.300, 180.355, Participants' responsibilities. The regulations were amended and published on August 31, 2005, in 70 Fed. Reg. 51865-51880.

1. The prospective lower tier participant certifies, by submission of this Bid, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by and Federal department of agency.
2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this Bid.

Bidder Legal Name: _____

By: _____
Authorized Representative

Date: _____

Print Name: _____

Title: _____

**ATTACHMENT E
NON-COLLUSION AFFIDAVIT OF BIDDER**

STATE OF _____)

) ss

CITY OF _____)

I, _____, being first duly sworn, depose and say that:

- (1) I am _____, of _____, the Bidder that has submitted the attached Bid;
(title) (Bidder Legal Name)
- (2) I am fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;
- (3) Such Bid is genuine and is not a collusive or sham Bid;
- (4) Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly, with any other bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other bidder, firm or person, to fix the price or prices in the attached Bid or of any other bidder, or to fix any overhead, profit or cost element of the Bid price or the Bid price of any other bidder, or to secure through collusion, conspiracy, connivance or unlawful agreement any advantage against the City of Palm Coast City Council, Flagler County, Florida, or any person interested in the proposed Contract; and
- (5) The prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

Signed: _____

Printed Name: _____

Title: _____

The foregoing instrument was acknowledged before me, by means of physical presence or online notarization, this ____ day of _____, 20____, by _____ who is personally known to me or who has produced _____ identification.

Print Name _____

Notary Public in and for the County and State Aforementioned

My commission expires: _____

**ATTACHMENT F
BID FORMS PACKAGE
COMPLIANCE CERTIFICATION**

1. Bidder has carefully examined the Bid Documents, including the Instructions to Bidders, Contract template, Addenda, and any other accompanying documents for this Project and has analyzed the information as guidance for the preparation of its Bid. **Initials** _____
2. Bidder has complied with every Bid requirement and asserts that the Bid Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance of the Work. **Initials** _____
3. Bidder shall make no claim relating to insufficiency inaccuracy or misinterpretation of the Bid Documents. **Initials** _____
4. Bidder has signed, dated and returned all Addenda and has completed all Bid Form Package Forms. **Initials** _____
5. Bidder's submittal is sufficiently specific, detailed and complete to clearly and fully demonstrate the Bidder's understanding of the proposed work and/or product requirements. **Initials** _____
6. Bidder understands, acknowledges and agrees that, if awarded, all portions of the Bid shall become an integral part of the Contract. Further, Bidder understands, acknowledges and agrees that should there be a conflict between the Bid and the Bid Documents, the Bid Documents shall prevail. **Initials** _____

I certify that all information contained in the Bid Forms Package is truthful and correct at the time of submission. I further certify that I am duly authorized to submit this Bid on behalf of Bidder and that Bidder is ready, willing and able to perform if awarded the contract. I further certify, under oath, that this information is made without prior understanding, agreement, connection, discussion, or collusion with any other person, firm or corporation submitting a response to this Invitation to Bid; no officer, employee or agent of the City of Palm Coast or of any other interested bidder; and that the undersigned executes this Compliance Certification with full knowledge and understanding of the matters herein contained and is duly authorized to do so. The signatory for Bidder swears that none of the information supplied was for the purpose of misleading or defrauding the City.

STATE OF _____

COUNTY OF _____

Signed: _____

Printed Name: _____

Title: _____

The foregoing instrument was acknowledged before me, by means of physical presence or online notarization, this ____ day of _____, 20____, by _____.

Print Name _____

Notary Public in and for the County and State Aforementioned

My commission expires: _____

Personally Known _____ OR Produced Identification _____

Type of Identification Produced _____

END OF SECTION



**SECTION 00300
NOTICE OF NO BID**

IF YOU DO NOT INTEND TO BID ON THIS REQUIREMENT, PLEASE COMPLETE AND RETURN THIS FORM PRIOR TO DATE SHOWN FOR RECEIPT OF BIDS TO: CITY OF PALM COAST, BUDGET & PROCUREMENT OFFICE, 160 LAKE AVENUE, PALM COAST, FL 32164. WE, THE UNDERSIGNED, HAVE DECLINED TO BID ON YOUR BID, _____ FOR THE FOLLOWING REASON(S):

- _____ Specifications are too "restrictive", i.e., geared toward one brand or manufacturer (please explain below).
- _____ Insufficient time to respond to invitation to bid.
- _____ We do not offer this type of service.
- _____ Our schedule would not permit us to perform.
- _____ Unable to meet specifications.
- _____ Unable to meet Bond requirements.
- _____ Specifications unclear (please explain below).
- _____ Other (please specify below).

Remarks: _____

WE UNDERSTAND THAT IF THE "NO BID" LETTER IS NOT EXECUTED AND RETURNED, OUR NAME MAY BE DELETED FROM THE LIST OF QUALIFIED BIDDERS FOR CITY OF PALM COAST FOR FUTURE PROJECTS.

Signature

Typed Name and Title

Company Name

Address

Telephone Number Date Email Address

END OF SECTION



**SECTION 00410
NON-COLLUSION AFFIDAVIT OF SUBCONTRACTOR**

SUBCONTRACTS: The CONTRACTOR shall not execute an agreement with any subcontractor or permit any subcontractor to perform any work included in this Agreement until they have submitted a non-collusion affidavit from the subcontractor in substantially the form shown below and has received written approval of such subcontractor from the CITY. (TO BE SUBMITTED UPON NOTICE OF AWARD)

NON-COLLUSION AFFIDAVIT OF SUBCONTRACTOR

State of _____)

)ss

County of _____)

_____, being first duly sworn, deposes and says that:

- (1) He/She is _____ of _____, hereinafter referred to as the "subcontractor";
- (2) He/She is fully informed respecting the preparation and contents of the subcontractor's proposal submitted by the subcontractor to: _____, the CONTRACTOR for certain Work in connection with the _____ Agreement pertaining to the Project in _____ (City of County and State);
- (3) Such subcontractor's proposal is genuine and is not a collusive or sham proposal;
- (4) Neither the subcontractor nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly, with any other , firm or person to submit a collusive or sham proposal in connection with such Contract, or has in any manner, directly or indirectly, sought by unlawful agreement or connivance with any other Bidder, firm or person to fix the price or prices in said subcontractor's proposal, or to secure through collusion, conspiracy, connivance or unlawful agreement any advantage against the City of Palm Coast or any person interested in the proposed Contract; and
- (5) The price or prices quoted in the subcontractor's proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees or parties in interest, including this affiant.

(Signed) _____

(Title) _____

(Print Name) _____

STATE OF _____)

) ss

COUNTY OF _____)

The foregoing instrument was acknowledged before me, by means of physical presence or online notarization this _____ day of _____, 20____, by _____, who is personally known to me or who has produced _____ as identification.

Affiant Signature

Print Name

Notary Public in and for the County and State Aforementioned

My commission expires: _____

END OF SECTION



**SECTION 00500
DRAFT CONTRACT**

The Draft Contract is representative of the contract the successful bidder shall be required to execute. Any requests for changes to the Contract verbiage must be made prior to bid closing as no changes will be allowed after that date.

CONTRACT

THIS CONTRACT is dated as of the _____ day of _____, 20____, by and between _____, duly authorized to conduct business in the State of Florida, whose address is _____, hereinafter called the "CONTRACTOR", and THE CITY OF PALM COAST, a political subdivision of the State of Florida, whose address is 160 Lake Avenue, Palm Coast, Florida 32164, hereinafter called the "CITY". CITY and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

WITNESSETH:

Section 1. Work.

CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows: *is seeking qualified Contractors to expand the Stormwater attenuation and treatment capacity of the London Waterway by construction of a lake on City-owned property that is adjacent to the London Canal, in accordance with the attached set of construction plans. The stormwater storage capacity "lake" to be created is located in the Matanzas Woods Neighborhood on the northern part of Palm Coast City Limits (see location maps) and is surrounded by residential homes. Access to this site will be through easements and indicated on construction plans. The Contractor shall provide all work required for a completed project including, but not limited to labor, supervision, traffic control, materials, equipment, installation, and incidentals required for a complete project. CONTRACTOR shall also provide material samples, as necessary, to ensure compliance with manufacturer's recommendations. Installation of all materials shall be in accordance with all applicable CITY standards and requirements, applicable Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction (latest edition), manufacturer and industry preferred standards. Work assigned to this contract may include but is not limited to the following:*

The contractor shall furnish all labor, materials, equipment, tools, supervision, and any other items required for: **London Waterway Expansion**

Section 2. Engineer.

(a) ENGINEER OF RECORD as named in the Contract Documents shall mean _____, whose address is _____.

(b) Construction Engineering "CE" (post design services) is the CITY's Engineer or the CITY's contracted consultant for construction engineering services. According to the Contract Documents, "CE" shall mean _____ whose address is _____.

Section 3. Contract Time.

(a) All provisions regarding Contract Time are essential to the performance of this CONTRACT.

(b) The Work shall be substantially completed as described in subsection 14.13 of the General Conditions, within _____ () calendar days after the date when the Contract Time begins to run as provided in subsection 2.2 of the General Conditions. The Work shall be finally completed, ready for Final Payment in accordance with subsection 14.9 of the General Conditions, within _____ () calendar days after the actual date of Substantial Completion.

(c) The parties acknowledge that the Contract Time provided in this Section includes consideration of adverse weather conditions common to Central Florida including the possibility of hurricanes and tropical storms.

(d) Float time is allocated specifically to the CONTRACTOR's responsibility for coordination of utility relocations by subsection 12.1.1.1.3 of the General Conditions is included in the Contract Time provided by this Section. The CITY will not consider any Contract Time extensions related to utility coordination matters including, but not limited to, utility relocations and conflicts, unless the utility relocation delays exceed the float time allowed by subsection 12.1.1.1.3 and also extend the Project Schedule's Critical Path.

(e) In the event that the Work requires phased construction, then multiple points of Substantial Completion may be established in the Supplementary Conditions.

Section 4. Contract Price.

(a) CITY shall pay CONTRACTOR for performance of the Work in accordance with the Contract Documents on the basis of the Total Bid (original Contract Price). The CONTRACTOR's total compensation is _____ DOLLARS (\$_____)

subject only to increases or decreases made in strict conformance with the Contract Documents.

(b) CONTRACTOR agrees to accept the Contract Price as full compensation for doing all Work, furnishing all Materials, and performing all Work embraced in the Contract Documents; for all loss or damage arising out of performance of the Work and from the action of the elements or from any unforeseen or unknown difficulties or obstructions which may arise or be encountered in the prosecution of the Work until the Final Acceptance; and for all risks of every description connected with the Work.

(c) The CONTRACTOR acknowledges that CONTRACTOR studied, considered, and included in CONTRACTOR's Total Bid (original Contract Price) all costs of any nature relating to: (1) performance of the Work under Central Florida weather conditions; (2) applicable law, licensing, and permitting requirements; (3) the Project site conditions, including but not limited to, subsurface site conditions; (4) the terms and conditions of the Contract Documents, including, but not limited to, the indemnification and no damage for delay provisions of the Contract Documents.

(d) The CONTRACTOR acknowledges that performance of the Work will involve significant Work adjacent to, above, and in close proximity to Underground Facilities including utilities which will require the support of active utilities, as well as, the scheduling and sequencing of utility installations, and relocations (temporary and permanent) by CONTRACTOR.

(1) In addition to the acknowledgments previously made, the CONTRACTOR acknowledges that the CONTRACTOR's Total Bid (original Contract Price) specifically considered and relied upon CONTRACTOR's own study of Underground Facilities, utilities in their present, relocated (temporary and permanent) and proposed locations, and conflicts relating to utilities and Underground Facilities.

(2) The CONTRACTOR acknowledges that CONTRACTOR's Total Bid (original Contract Price) considered and included all of CONTRACTOR's costs relating to CONTRACTOR's responsibilities to coordinate and sequence the Work of the CONTRACTOR with the work of the CITY with its own forces, the work of other utility contractors and the work of others at the Project site.

Section 5. Payment Procedures.

(a) CONTRACTOR shall submit Applications for Payment in accordance with Section 14 of the General Conditions. Applications for Payment will be processed by ENGINEER as provided in the General Conditions. In the event an ENGINEER is not being utilized, Applications for Payment shall be forwarded to the City's Finance Accounts Payable Department.

(b) Progress Payments. CITY shall make progress payments on the basis of CONTRACTOR's Applications for Payment as recommended by ENGINEER, in accordance with Section 14 of the General Conditions.

(c) Final Payment. Upon Final Completion and acceptance of the Work in accordance with subsection 14.9.1 of the General Conditions, CITY shall pay the remainder of the Contract Price as provided in subsection 14.9.1

Section 6. Retainage and Withholding Payment for Breach.

(a) Retainage under the Contract Documents is held as collateral security to secure completion of the Work.

(b) CITY may withhold payment equal to the product of the number of Days after Substantial Completion and the amount of liquidated damages set forth in Section 9 of this Contract for CONTRACTOR's material breach of contract where CONTRACTOR is behind schedule for Substantial Completion, and it is anticipated by CITY that the Work will not be completed within the Contract Time for Substantial Completion. The City may, at the CITY'S discretion, withhold the liquidated damage amount from subsequent Progress Payments. Any withheld payments held under this subsection shall be released to CONTRACTOR in the next Progress Payment following the ENGINEER's approval of a supplemental Progress Schedule demonstrating that the requisite progress will be regained and maintained as required by subsection 6.19.2 of the General Conditions.

Section 7. Contractor's Representations. In order to induce CITY to enter into this CONTRACT, CONTRACTOR makes the following representations:

(a) CONTRACTOR has familiarized themselves with the nature and extent of the Contract Documents, Work, locality, weather, Budget & Procurement Office Procedures, and with all local conditions and federal, state and local laws, utility locations, ordinances, rules, policies and regulations that in any manner may affect cost, progress or performance of the Work.

(b) CONTRACTOR has studied carefully and considered in its Bid all reports of investigations and tests of subsurface and physical conditions of the site affecting cost, progress, scheduling, or performance of the Work.

(c) CONTRACTOR has studied carefully and considered in its Bid the Plans and Specifications, performed necessary observations, examinations, and studied the physical conditions at the site related to Underground Facilities, utility installations, conflicts, re-locations (temporary and permanent) and all other Underground Facilities and utility related conditions of the Work and site that may affect cost, progress, scheduling, or any aspect of performance of the Work and that its Bid reflects all such conditions. CONTRACTOR, by submitting its Bid and executing this CONTRACT acknowledges the constructability of the Work under the Plans and Specifications. CONTRACTOR by its study, excludes and releases the CITY from any implied warranties including but not limited to, those arising under the "Spearin Doctrine", that the

Plans and Specifications are adequate to perform the Work.

(d) CONTRACTOR has made or caused to be made examinations, investigations and tests and studies 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.

(e) CONTRACTOR has correlated the results of all such observations, examinations, investigations, tests, reports and data with the terms and conditions of the Contract Documents.

(f) 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.

(g) The CONTRACTOR declares and agrees that the approval or acceptance of any part of the Work or Material by the CITY, ENGINEER or any agent relating to compliance with the Contract Documents shall not operate as a waiver by the CITY of strict compliance with the terms and conditions of the Contract Documents.

(h) The CONTRACTOR declares and agrees that the CITY may require them to repair, replace, restore or make all things comply with the Contract Documents including all Work or Materials which within a period of two (2) years from Acceptance by CITY are found to be Defective or fail in any way to comply with the Contract Documents. The CONTRACTOR acknowledges that the above two (2) years repair, replace and restoration period is separate from and additional to CONTRACTOR's warranty that the Work has been completed in compliance with the Contract Documents. The two (2) years repair, replace and restoration period is not a limitation upon CONTRACTOR's other warranties or Material and Workmanship Bond.

(i) The CONTRACTOR's resident Superintendent at the Work site shall be: _____ and this Superintendent only shall be utilized by the CONTRACTOR unless otherwise approved by the CITY Project Manager and following the procedure indicated in the General Conditions.

(j) CONTRACTOR has studied carefully and considered all permit requirements related to performance of the Work. CONTRACTOR declares and agrees that all costs related to performing the Work in compliance with the requirements of all permits at the Contract Price are included in the Contract Price. CONTRACTOR agrees that CONTRACTOR shall be solely responsible for payment of all fines and penalties of any nature assessed to the CONTRACTOR or CITY or both by any governmental entity, district, authority, or other jurisdictional entity relating to all permits required for performance of the Work.

(k) CONTRACTOR acknowledges that the performance of the Work under the Contract Documents fulfills a CITY, CONTRACTOR, and public purpose. To that end, CONTRACTOR agrees to respond to citizen complaints related to alleged damage caused by CONTRACTOR's performance of the Work within two (2) days of receipt of the complaint from citizens, ENGINEER, or the CITY. The CONTRACTOR shall utilize the "Report of Unsatisfactory Materials and/or Service" form to respond separately to each complaint. When a complaint is brought to the CONTRACTOR by a citizen, the CONTRACTOR shall identify the citizen and street address in the "Statement of Problem". Responses and action taken by the CONTRACTOR shall specifically identify the problem specific actions taken. Generic statements such as "addressed the problem" are unacceptable. If the CONTRACTOR fails to respond within two (2) days, then the CITY may take corrective action and deduct the actual costs of corrective action from subsequent Progress Payments or the retainage.

(l) CONTRACTOR acknowledges that the CITY owned property obtained for performance of the Work within the project limits includes temporary construction easements. In the event that the CONTRACTOR fails to perform the Work within the Contract Time, then CONTRACTOR shall be solely responsible for payment of all costs for additional or extended temporary construction easements. The CONTRACTOR authorizes the CITY to deduct the actual costs of additional or extended temporary construction easements from subsequent Progress Payments or the retainage.

Section 8. Contract Documents. The Contract Documents which comprise the entire Contract between CITY and CONTRACTOR are made a part hereof and consist of the following:

- (a) This CONTRACT.
- (b) Addenda.
- (c) Bid.
- (d) American With Disabilities Act Affidavit.
- (e) Performance Bond.
- (f) Payment Bond.
- (g) Material and Workmanship Bond.
- (h) Specifications.
- (i) Technical Specifications Provided in these Contract Documents
- (j) General Conditions.
- (k) Supplementary Conditions including utility specific forms provided by the CITY Utility Dept.
- (l) Notice To Proceed.
- (m) Change Orders.
- (n) Certificate of Substantial Completion.
- (o) Certificate of Final Inspection.
- (p) Certificate of Engineer.
- (q) Certificate of Final Completion
- (r) CONTRACTOR's Release.
- (s) Drawings and Plans.
- (t) Supplemental CONTRACTs.
- (u) CONTRACTOR's Waiver of Lien (Partial)
- (v) CONTRACTOR's Waiver of Lien (Final and Complete)
- (w) Subcontractor/Vendor's Waiver of Lien (Final and Complete)
- (x) Consent of Surety to Final Payment
- (y) Instructions to Bidders
- (z) CONTRACTOR's Insurance Requirements, Certificate and Insurance Policies

There are no Contract Documents other than those listed above in this Section 8. The Contract Documents may only be altered, amended or repealed by a modification as provided in the General Conditions.

Section 9. Liquidated Damages.

(a) The CITY and CONTRACTOR recognize that time is essential to the performance of this CONTRACT and CONTRACTOR recognizes that the CITY and its traveling public will suffer financial loss if the Work is not substantially completed as described in subsection 14.13 of the General Conditions within the time specified below, plus any extensions thereof allowed in accordance with Section 12 of the General Conditions. The parties also recognize the delays, expense and difficulties involved in proving in a legal or alternative dispute resolution proceeding the damages resulting from inconvenience to the traveling public including traffic loading, intersection operations, costs for time, costs of fuel and costs for some environmental impacts (excluding actual delay damages which may include, but are not limited to, engineering fees and inspection costs) suffered by the CITY if the Work is not completed on time. Accordingly, CONTRACTOR and CONTRACTOR's Surety agree to pay CITY as liquidated damages, and not as a penalty, One Thousand and No/100 DOLLARS (\$1000.00) per Day for each Day CONTRACTOR exceeds the Contract Time for Substantial Completion until the Work is Substantially Complete. It is agreed that if this Work is not Finally Completed in accordance with the Contract Documents, the CONTRACTOR shall pay the CITY as liquidated damages for delay, and not as a penalty, one-fourth (1/4) of the rate set forth above.

(b) The CONTRACTOR shall pay or reimburse, in addition to the liquidated damages specified herein, the CITY's actual damages which may include but are not limited to expenses for engineering fees and inspection costs arising from CONTRACTOR's failure in meeting either or both the Substantial Completion and Final Completion dates.

(c) The liquidated damages provided in this Section are intended to apply even if CONTRACTOR is terminated, in default, or if the CONTRACTOR has abandoned the Work.

Section 10. Miscellaneous.

(a) Terms used in this CONTRACT which are defined in Section 1 of the General Conditions shall have the meanings indicated in the General Conditions.

(b) No assignments 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 any such assignment shall be void and of no effect; and specifically, but without limitation, monies that may become due and monies 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.

(c) CITY and CONTRACTOR each binds themselves, their partners, successors, assigns and legal representatives to the other party hereto, his partners, successors, assigns and legal representatives in respect to all covenants, Contracts and obligations contained in the Contract Documents.

Section 11. Contractor's Specific Consideration. In consideration of the CONTRACTOR's indemnity CONTRACTs as set out in the Contract Documents, CITY specifically agrees to pay the CONTRACTOR the sum of TWO HUNDRED FIFTY AND NO/100 DOLLARS (\$250.00) or ONE PERCENT (1%) OF THE CONTRACT SUM WHICHEVER IS GREATER. The CONTRACTOR acknowledges receipt of the specific consideration for CONTRACTOR's

indemnification of CITY and that the specific consideration is included in the original Contract Price allocated by CONTRACTOR among all pay items - receipt of which is acknowledged.

Section 12. Notices. Whenever either party desires to give notice unto the other including, but not limited to, Contract Claims, it must be given by written notice, hand delivered, signed and dated for receipt or sent by certified United States mail, with return receipt requested, addressed to the party for whom it is intended at the place last specified and the place for giving of notice shall remain such until it shall have been changed by written notice in compliance with the provisions of this Section. For the present, the parties designate the following as the respective places for giving of notice, to wit:

FOR CITY OF PALM COAST:

City Manager
160 Lake Avenue
Palm Coast, Florida 32164

FOR CONTRACTOR:

CONTRACTOR's Superintendent

Section 13. Conflict of Interest.

(a) The CONTRACTOR agrees that it will not engage in any action that would create a conflict of interest in the performance of its obligations pursuant to this Contract with the CITY or which would violate or cause others to violate the provisions of Part III, Chapter 112, Florida Statutes, relating to ethics in government and the CITY's Personnel Policies.

(b) The CONTRACTOR hereby certifies that no officer, agent or employee of the CITY has any material interest (as defined in Section 112.312 (15), Florida Statutes, as over five percent (5%) either directly or indirectly, in the business of the CONTRACTOR to be conducted here, and that no such person shall have any such interest at any time during the term of this CONTRACT.

(c) Pursuant to Section 216.347, Florida Statutes, the CONTRACTOR hereby agrees that monies received from the CITY pursuant to this CONTRACT will not be used for the purpose of lobbying the Legislature or any other State or Federal Agency.

Section 14. Material Breaches of CONTRACT.

(a) The parties recognize that breaches of the Contract Documents may occur and that remedies for those breaches may be pursued under the Contract Documents. The parties further recognize that the safety of the traveling public is of paramount concern. Therefore, the parties agree that any breach of the Contract Documents related to life safety, including but not limited to, the maintenance of traffic requirements of the Contract Documents, shall be considered a material breach of the Contract Documents.

(b) Upon a material breach of the Contract Documents related to life safety, as determined by ENGINEER, the ENGINEER shall issue a stop work order suspending the Work or any specific portion of the Work until the conditions are corrected. If the life safety conditions giving rise to the stop work order are not corrected within a reasonable time, as determined by ENGINEER, then the material breach shall entitle CITY to

terminate this CONTRACT. The recognition of breaches of the provisions of the Contract Documents related to life safety as material breaches shall not be construed as a limitation on other remedies for breaches or material breaches of the Contract Documents.

Section 15. E-Verify Registration and Use

(a) Pursuant to section 448.095, Florida Statutes, beginning January 1, 2021, CONTRACTOR shall register with and use the U.S. Department of Homeland Security's E-Verify system, <https://e-verify.uscis.gov/emp>, to verify the work authorization status of all CONTRACTOR employees hired on and after January 1, 2021.

(b) Subcontractors

(i) CONTRACTOR shall also require all subcontractors performing work under this Contract to use the E-Verify system for any employees it may hire during the term of this Contract.

(ii) CONTRACTOR shall obtain from all such subcontractors an affidavit stating the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, as defined in section 448.095, Florida Statutes.

(iii) CONTRACTOR shall maintain a copy of all subcontractor affidavits for the duration of this Contract and provide it to CITY upon request.

(c) CONTRACTOR must provide evidence of compliance with section 448.095, Florida Statutes. Evidence shall consist of an affidavit from CONTRACTOR stating all employees hired on and after January 1, 2021 have had their work authorization status verified through the E-Verify system and a copy of their proof of registration in the E-Verify system.

(d) Failure to comply with this provision is a material breach of this Contract, and shall result in the immediate termination of this Contract without penalty to CITY. CONTRACTOR shall be liable for all costs incurred by CITY to secure a replacement contract, including but not limited to, any increased costs for the same services, any costs due to delay, and rebidding costs, if applicable.

IN WITNESS WHEREOF, the parties hereto have signed this CONTRACT. All portions of the Contract Documents have been signed or identified by the CITY and the CONTRACTOR.

THE CITY OF PALM COAST, FLORIDA

CONTRACTOR

BY: _____

BY: _____
Authorized Signatory

NAME: _____

NAME: _____

TITLE: _____

TITLE: _____

DATE: _____

DATE: _____

END OF SECTION



SECTION 00600
PERFORMANCE BOND FORM REQUIREMENTS
City of Palm Coast Contract No. ITB-SWE-23-43

REQUIREMENTS:

- 100% OF CONTRACT PRICE
- Date of the Bond must not be prior to date of Contract. If CONTRACTOR is a joint venture, all venturers shall execute the Bond. If CONTRACTOR is Partnership, all partners shall execute the Bond.
- 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 of Florida, unless otherwise specifically approved in writing by CITY.
- All Bonds shall be originals and issued or countersigned by a local producing agent who is a resident of the State of Florida.
- Attorneys-in-fact who sign Bonds must file with such Bond a certified copy of their power of attorney to sign such Bond.
- Agents of Surety companies must list their name, address and telephone number on all Bonds.
- THE FOLLOWING FORM MUST BE UTILIZED – NO OTHER FORM WILL BE ACCEPTED.



Bond Number _____

PERFORMANCE BOND

City of Palm Coast Contract No. ITB-SWE-23-43

KNOW ALL MEN BY THESE PRESENTS: that

(Name of CONTRACTOR)

(Address of CONTRACTOR)

Contractor's Telephone Number: _____

a _____, hereinafter called Principal, and
(Corporation, Partnership or Individual)

(Name of Surety)

(Address of Surety)

Surety's Telephone Number: _____

hereinafter called Surety, are held and firmly bound unto THE CITY OF PALM COAST, 160 LAKE AVENUE, PALM COAST, FL 32164, hereinafter called CITY, in the sum of _____ DOLLARS, (\$ _____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents. The sum shall not be less than one hundred percent (100%) of the Contract Price.

City of Palm Coast Telephone Number: (386) 986-3730

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain Contract with the CITY, dated the _____ day of _____, 20____, a copy of which is hereto attached and made a part hereof for the construction of LONDON WATERWAY EXPANSION (the "Contact").

General description of the Work: is seeking qualified Contractors to expand the Stormwater attenuation and treatment capacity of the London Waterway by construction of a lake on City-owned property that is adjacent to the London Canal, in accordance with the attached set of construction plans. The stormwater storage capacity "lake" to be created is located in the Matanzas Woods Neighborhood on the northern part of Palm Coast City Limits (see location maps) and is surrounded by residential homes. Access to this site will be through easements and indicated on construction plans. The Contractor shall provide all work required for a completed project including, but not limited to labor, supervision, traffic control, materials, equipment, installation, and incidentals required for a complete project. CONTRACTOR shall also provide material samples, as necessary, to ensure compliance with manufacturer's recommendations. Installation of all materials shall be in accordance with all applicable CITY standards and requirements, applicable Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction (latest edition), manufacturer and industry preferred standards. Work assigned to this contract may include but is not limited to the following:

- Easement access
- Temporary Traffic Control (TTC)
- Isolation and by-pass pumping
- Erosion and sediment control
- Site restoration
- Stormwater pre-and post-work inspections
- Demolition and replacement of existing culverts

- Construction of headwalls

- Earthwork
- Landscaping
- Swale Regrading
- Construction of Boardwalks

This Bond is being entered into to satisfy the requirements of Section 255.05, Florida Statutes and the Contract referenced above, as the same may be amended.

NOW, THEREFORE, the condition of this obligation is such that if Principal:

1. Promptly and faithfully performs its duties, all the covenants, terms, conditions, and contracts of said Contract including, but not limited to the insurance provisions, guaranty period and the warranty provisions, in the time and manner prescribed in the Contract, and
2. Pays CITY all liquidated damages, losses, damages, delay damages, expenses, costs and attorneys' fees, including costs and attorney's fees on appeal that CITY sustains resulting directly or indirectly from any breach or default by Principal under the Contract, and
3. Satisfies all claims and demands incurred under the Contract, and fully indemnifies and holds harmless the CITY from all costs and damages which it may suffer by reason or failure to do so, then this Bond is void; otherwise it shall remain in full force and effect.

The coverage of this Performance Bond is co-equal with each and every obligation of the Principal under the above referenced Contract and the Contract Documents of which the Contract is a part.

In the event that the Principal shall fail to perform any of the terms, covenants and conditions of the Contract Documents of which the Contract is a part during the period in which this Performance Bond is in effect, the Surety shall remain liable to the CITY for all such loss or damage (including reasonable attorneys' fees and costs and attorneys' fees and costs on appeal) resulting from any failure to perform.

In the event that the Surety fails to fulfill its obligations under this Performance Bond, then the Surety shall also indemnify and hold the CITY harmless from any and all loss, damage, cost and expense, including reasonable attorneys' fees and costs for all trial and appellate proceedings, resulting from the Surety's failure to fulfill its obligations hereunder. This subsection shall survive the termination or cancellation of this Performance Bond.

The Surety stipulates and agrees that its obligation is to perform the Principal's Work under the Contract under the Bond. The following preventative options by the Surety are encouraged; however, preventative options shall not be considered performance under the Bond: (i) Surety's financing of the Principal to keep Principal from defaulting under the Contract Documents, and (ii) Surety's offers to CITY to buy back the Bond. The Surety agrees that its obligation under the Bond is to: (i) take over performance of the Principal's Work and be the completing Surety even if performance of the Principal's Work exceeds the Principal's Contract Price or (ii) re-bid and re-let the Principal's Work to a completing contractor with Surety remaining liable for the completing contractor's performance of the Principal's Work and furnishing adequate funds to complete the Work. The Surety acknowledges that its cost of completion upon default by the Principal may exceed the Contract Price. In any event, the Principal's Contract Time is of the essence and applicable delay damages are not waived by CITY.

The Surety, for value received, hereby stipulates and agrees that its obligations hereunder shall be direct and immediate and not conditional or contingent upon CITY's pursuit of its remedies against Principal, shall remain in full force and effect notwithstanding (i) amendments or modifications to the Contract entered into by CITY and Principal without the Surety's knowledge or consent (ii) the discharge of Principal as a result of any proceeding initiated under the Bankruptcy Code of 1978, as the same may be amended, or any similar state or federal law, or any limitation of the liability of Principal or its estate as a result of any such proceeding. The filing of bankruptcy by the Principal shall be an automatic default under the Contract.

Any changes in or under the Contract Documents and compliance or noncompliance with any formalities connected with the Contract or the changes therein shall not affect Surety's obligations under this Bond and Surety hereby waives notice of any such changes. Further, Principal and Surety acknowledge that the Sum of this Bond shall increase or decrease in accordance with Change Orders (unilateral or directive change orders and bilateral change orders) or other modifications to the Contract Documents.

The Performance Bond and the Payment Bond and the covered amounts of each are separate and distinct from each other.

For all contracts entered into on or after October 1, 2012, the contractor is now required to provide the public entity with a certified copy of the recorded Bond prior to commencing the work or recommencing the work after a default.

This Performance Bond is intended to comply with the requirements of Section 255.05, Florida Statutes, as amended, and additionally, to provide contract rights more expansive than as required by statute.

Any action instituted by a claimant under this Bond must be in accordance with the notice and time limitation provisions in Section 255.05(2), Florida Statutes.

Any changes in or under the contract documents and compliance or non-compliance with any formalities connected with the contract or the changes does not affect Surety's obligation under this Bond.

IN WITNESS WHEREOF, this instrument is executed this the ____ day of _____, 20____.

ATTEST:

By _____
(Principal) Secretary

By _____
Principal (Contractor)

Name _____
(Type)

Name _____
(Type)

Title _____

Address _____

City/State/Zip _____

Witness to Principal

Name _____
(Type)

Witness to Principal

Name _____
(Type)

ATTEST:

By _____
(Surety) Secretary

Surety

Name _____
(Type)

Phone No. _____ Email: _____

Witness as to Surety

By _____
Attorney-in-fact

Name _____
(Type)

Name _____
(Type)

Witness as to Surety

Name _____
(Type)

Address _____

City/State/Zip _____

Phone No. _____

Email: _____

END OF SECTION



SECTION 00610

PAYMENT BOND FORM REQUIREMENTS

City of Palm Coast Contract Number: ITB-SWE-23-43

REQUIREMENTS:

- 100% OF CONTRACT PRICE
- Date of the Bond must not be prior to date of Contract. If CONTRACTOR is a joint venture, all venturers shall execute the Bond. If CONTRACTOR is a Partnership, all partners shall execute Bond.
- 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 of Florida, unless otherwise specifically approved in writing by CITY.
- All Bonds shall be originals and issued or countersigned by a local producing agent who is a resident of the State of Florida.
- Attorneys-in-fact who sign Bonds must file with such Bond a certified copy of their power of attorney to sign such Bond.
- Agents of Surety companies must list their name, address and telephone number on all Bonds.
- THE FOLLOWING FORM MUST BE UTILIZED – NO OTHER FORM WILL BE ACCEPTED.



Bond Number _____

PAYMENT BOND

City of Palm Coast Contract Number: ITB-SWE-23-43

KNOW ALL MEN BY THESE PRESENTS: that

(Name of CONTRACTOR)

(Address of CONTRACTOR)

Contractor's Telephone Number: _____

a _____, hereinafter after called Principal, and
(Corporation, Partnership, or Individual)

(Name of Surety)

(Address of Surety)

Surety's Telephone Number: _____

herein called Surety, are held and firmly bound unto THE CITY OF PALM COAST, 160 LAKE AVENUE, PALM COAST, FL 32164, hereinafter called "CITY", in the sum of _____ DOLLARS, (\$ _____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

City of Palm Coast Telephone Number: _____ (386) 986-3730

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain Contract with the CITY, dated the _____ day of _____, 20____, and made a part hereof LONDON WATERWAY EXPANSION (the "Contract").

General description of the Work: is seeking qualified Contractors to expand the Stormwater attenuation and treatment capacity of the London Waterway by construction of a lake on City-owned property that is adjacent to the London Canal, in accordance with the attached set of construction plans. The stormwater storage capacity "lake" to be created is located in the Matanzas Woods Neighborhood on the northern part of Palm Coast City Limits (see location maps) and is surrounded by residential homes. Access to this site will be through easements and indicated on construction plans. The Contractor shall provide all work required for a completed project including, but not limited to labor, supervision, traffic control, materials, equipment, installation, and incidentals required for a complete project. CONTRACTOR shall also provide material samples, as necessary, to ensure compliance with manufacturer's recommendations. Installation of all materials shall be in accordance with all applicable CITY standards and requirements, applicable Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction (latest edition), manufacturer and industry preferred standards. Work assigned to this contract may include but is not limited to the following:

- Easement access
- Temporary Traffic Control (TTC)
- Isolation and by-pass pumping
- Erosion and sediment control
- Site restoration
- Stormwater pre-and post-work inspections
- Demolition and replacement of existing culverts
- Construction of headwalls
- Earthwork
- Landscaping

- Swale Regrading
- Construction of Boardwalks

NOW, THEREFORE, the condition of this obligation is such that if Principal shall promptly make payments to all claimants as defined in Section 255.05(1), Florida Statutes, supplying Principal with labor, materials, or supplies, used directly or indirectly by Principal in the prosecution of the Work provided for in the Contract, then this obligation shall be void; otherwise, it shall remain in full force and effect subject, however, to the following conditions:

1. This Bond is furnished for the purpose of complying with the requirements of Section 255.05, Florida Statutes, as the same may be amended.
2. It is a specific condition of this Bond that a claimant's right of action on the Bond is limited to the provisions of Section 255.05, Florida Statutes, including, but not limited to, the notice and time limitations within which suits may be brought.
3. This Bond is conditioned on the CONTRACTOR promptly making payments to all persons defined in Section 713.01, Florida Statutes, whose claims derive directly or indirectly from the prosecution of the Work provided for in the Contract.

Therefore, a claimant, except a laborer, who is not in privity with the CONTRACTOR and who has not received payment for his labor, materials or supplies shall, within forty-five (45) days after beginning to furnish labor, materials or supplies for the prosecution of the Work, furnish the CONTRACTOR with a notice that he intends to look to the Bond for protection. A claimant who is not in privity with the CONTRACTOR and who has not received payment for his labor, materials or supplies shall within ninety (90) days after performance of the labor or completion of delivery of the materials or supplies, or, with respect to rental equipment, within ninety (90) days after the date that the rental equipment was last on the job site available for use, deliver to the CONTRACTOR and to the Surety written notice of the performance of the labor or delivery of the materials or supplies and of the nonpayment. Any action on this Bond for payment must be in accordance with the notice and time limitations in Florida Statute 255.05.

4. Any changes in or under the Contract Documents and compliance or noncompliance with any formalities connected with the Contract or the changes therein shall not affect Surety's obligations under this Bond and Surety hereby waives notice of any such changes. Further, Principal and Surety acknowledge that the Sum of this Bond shall increase or decrease in accordance with the Change Orders (unilateral or directive change orders and bilateral change orders) or other modifications to the Contract Documents.
5. For all contracts entered into on or after October 1, 2012, the CONTRACTOR is now required to provide the public entity with a certified copy of the recorded Bond prior to commencing the work or recommencing the work after a default.
6. The Performance Bond and the Payment Bond and the covered amounts of each are separate and distinct from each other. This Payment Bond shall be construed as a statutory Payment Bond under Section 255.05, Florida Statutes and not as a common law bond.

IN WITNESS WHEREOF, this instrument is executed this the ____ day of _____, 20____.

ATTEST:

By _____
(Principal) Secretary

By _____
Principal (Contractor)

Name _____
(Type)

Name _____
(Type)

Title _____

Address _____

Witness to Principal

Name _____
(Type)

City/State/Zip _____

Witness to Principal

Name _____
(Type)

ATTEST:

By _____
(Surety) Secretary

_____ Surety

Name _____ Phone No. _____ Email: _____

(Type)

_____ By _____

Witness as to Surety

Attorney-in-fact

Name _____ Name _____

(Type)

(Type)

Witness as to Surety

Name _____ Address _____ City/State/Zip _____

(Type)

Phone No. _____

Email: _____

END OF SECTION



SECTION 00620

MATERIAL AND WORKMANSHIP BOND FORM REQUIREMENTS

City of Palm Coast Contract No. ITB-SWE-23-43

REQUIREMENTS:

- 10% OF FINAL CONTRACT PRICE
- Date of the Bond must not be prior to date of Final Completion. If CONTRACTOR is a joint venture, all venturers shall execute the Bond. If CONTRACTOR is a Partnership, all partners shall execute Bond.
- 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 of Florida, unless otherwise specifically approved in writing by CITY.
- All Bonds shall be originals and issued or countersigned by a local producing agent who is a resident of the State of Florida.
- Attorneys-in-fact who sign Bonds must file with such Bond a certified copy of their power of attorney to sign such Bond.
- Agents of Surety companies must list their name, address and telephone number on all Bonds.
- THE FOLLOWING FORM MUST BE UTILIZED – NO OTHER FORM WILL BE ACCEPTED.



Bond Number _____

MATERIAL AND WORKMANSHIP BOND
City of Palm Coast Contract No. ITB-SWE-23-43

KNOW ALL MEN BY THESE PRESENTS:

THAT WE _____, hereinafter referred to a "Principal" and _____, hereinafter referred to as "Surety" are held and firmly bound unto the City of Palm Coast, a political subdivision of the State of Florida, hereinafter referred to as the CITY in the **sum of ten percent (10%)** of the Contract Price as adjusted under the Contract Documents \$_____ for the payment of which we bind ourselves, heirs, executors, successors and assigns, jointly and severally, firmly by these presents:

WHEREAS, Principal has constructed certain improvements and other appurtenances in that certain Project described as LONDON WATERWAY EXPANSION ; and

WHEREAS, the aforesaid improvements were made pursuant to the Contract dated _____, 20____, and filed with the Budget & Procurement Office; and

WHEREAS, Principal is obligated to protect the CITY against any defects resulting from faulty Materials or Workmanship of said improvements for a period of **two (2) years** from the date of Final Completion under the Contract Documents.

NOW THEREFORE, the conditions of this obligation is such that if Principal shall promptly and faithfully protect the CITY against any Defects resulting from faulty Materials and Workmanship of the aforesaid improvements for a period of two (2) years from the date of Final Completion, then this obligation shall be null and void, otherwise it shall remain in full force and effect.

The CITY shall notify the Principal in writing of any Defect for which the Principal is responsible and shall specify in said notice a reasonable period of time within which Principal shall have to correct said Defect.

The Surety unconditionally covenants and agrees that if the Principal fails to perform, within the time specified, the Surety, upon thirty (30) days written notice from CITY, or its authorized agent or officer, of the failure to perform will correct such Defect or Defects and pay the cost thereof, including, but not limited to engineering, legal and contingent cost. Should the Surety fail or refuse to correct said Defects, the CITY, in view of the public interest, health, safety, welfare and factors involved, shall have the right to resort to any and all legal remedies against the Principal and Surety and either, both at law and in equity, including specifically, specific performance to which the Principal and Surety unconditionally agree.

The Principal and Surety further jointly and severally agree that the CITY at its option, shall have the right to correct said Defects resulting from faulty Materials or Workmanship, or, pursuant to public advertisement and receipt of Bids, cause to be corrected any Defects or said Defects in case the Principal shall fail or refuse to do so, and in the event the CITY should exercise and give effect to such right, the Principal and the Surety shall jointly and severally hereunder reimburse the CITY the total cost thereof, including, but not limited to, engineering, legal and contingent cost, together with any damages either direct or consequent which may be sustained on account of the failure of the Principal to correct said defects.

IN WITNESS WHEREOF, the Principal and the Surety have executed this Bond this ____ day of _____, 20____.

Address:

Address:

Principal

By: _____ Its: _____
(If a Corporation)

ATTEST: _____ Its: _____
(If a Corporation)

Surety

By: _____
It's Attorney-in-Fact

Phone No. _____

Email: _____

ATTEST: _____

END OF SECTION



SECTION 00700 CONTRACTOR'S INSURANCE REQUIREMENTS

SECTION 1: GENERAL

The CONTRACTOR shall not commence work until the CONTRACTOR has, at the CONTRACTOR's own cost, procured the insurance required under this Section and such insurance has been approved by the CITY's Budget and Procurement Office

1.1 Before commencing Work, the CONTRACTOR shall furnish the City's Budget & Procurement Office with current Certificate of Insurance signed by an authorized representative of the insurer evidencing the insurance required by Section 3 and including the following as Certificate Holder and Additional Insured as noted in Section 3:

City of Palm Coast
Attn: Budget & Procurement Office 160 Lake Avenue
Palm Coast, FL 32164

The Certificate of Insurance shall provide that the City's Budget & Procurement Office shall be given at least thirty (30) days written notice prior to the cancellation, non-renewal or restriction of coverage. Until such time as the insurance is no longer required to be maintained by the CONTRACTOR, the CONTRACTOR shall provide the City's Budget & Procurement Office with a renewal or replacement Certificate of Insurance at least thirty (30) days before the expiration or replacement of the insurance for which a previous certificate has been provided.

1.2 Notice of Cancellation and/or Restriction: A policy must be specifically endorsed to provide the CITY'S Budget & Procurement Office with thirty (30) days' notice of cancellation, non-renewal and/or restriction.

1.3 The Certificate shall contain a statement that it is being provided in accordance with the Contract Documents and that the insurance is in full compliance with the requirements of the Contract Documents. Provide further, that in lieu of the statement on the Certificate, the CONTRACTOR shall, at the option of the CITY's Budget & Procurement Office submit a sworn and notarized statement from an authorized representative of the insurer that the Certificate is being provided in accordance with the Contract Documents and that the insurance is in full compliance with the requirements of the Contract Documents.

1.4 In addition to providing the Certificate of Insurance pursuant to the above, if required by the CITY's Budget & Procurement Office, the CONTRACTOR shall, within thirty (30) days after receipt of the request, provide the CITY's Budget & Procurement Office with a certified copy of each of the policies of insurance providing the coverage required by Section 3. Certified copies of policies may only be provided by the Insurer, not the Agent/Broker.

1.5 Before commencing work the CONTRACTOR shall (except as permitted under Section 3.4.5) furnish the City's Budget & Procurement Office with the original of the policy or policies of insurance evidencing the insurance required by Section 3. The policy or policies of insurance shall be signed by the authorized representative of the insurer(s). Until such time as the insurance is no longer required to be maintained by the CONTRACTOR, the CONTRACTOR shall provide the CITY's Budget & Procurement Office renewal or replacement policies of insurance, as required by this Section not less than thirty (30) days before the expiration or replacement of the policies which have previously been provided.

1.6 Neither approval by the CITY's Budget & Procurement Office nor failure to disapprove the insurance furnished by CONTRACTOR shall relieve the CONTRACTOR of the CONTRACTOR's full responsibility for liability, damages and accidents.

1.7 Deductible/self-insured retention amounts must be declared and approved by CITY, and shall be reduced or eliminated upon written request from CITY. The risk of loss within the deductible amount, if any, in the insurance purchased and maintained pursuant to this Section will be borne by CONTRACTOR.

1.8 CITY. The insurer's cost of defense including attorney's fees (and attorney's fees on appeal) shall not be included within the policy limits but shall remain the responsibility of insurer. Any policy which includes defense costs within policy limits must specify same on the

certificate. Also, if defense is inside limits, the policy must specify whether defense costs erode any deductible/SIR.

1.9 All policies of insurance required to be purchased and maintained by CONTRACTOR shall provide for the insurer's consent by endorsement or otherwise permitting the CITY to occupy or use any completed or partially completed portion of the Work and providing that such use does not invalidate or void the insurance coverage.

1.10 If not covered under the "all risk" insurance, CONTRACTOR shall purchase and maintain similar property insurance on portions of the Work including all Materials stored on and off the site or in transit when such portions of the Work are to be included in an Application for Payment.

1.11 In the event of loss covered by Property Insurance, the proceeds of a claim shall be paid to CITY, and the CITY shall apportion the proceeds between the CITY and CONTRACTOR as their interests may appear.

1.12 Neither CITY's review of the coverage afforded by or the provisions of the policies of insurance purchased and maintained by CONTRACTOR in accordance with this Section, nor CITY's decisions to raise or not to raise any objections about either or both, shall in no way relieve or decrease the liability of CONTRACTOR. If the CITY elects to raise an objection to the coverage afforded by or the provisions of the insurance furnished, CONTRACTOR shall promptly provide to CITY such additional information as CITY may reasonably request, and CONTRACTOR shall remedy any deficiencies in the policies of insurance within 10 days.

1.13 CITY's authority to object to insurance shall not in any way whatsoever give rise to any duty on the part of CITY to exercise this authority for the benefit of CONTRACTOR or any other party.

1.14 Additional Insured: The City Council of the City of Palm Coast, Florida, its officials, officers and employees must be included as additional insured under liability policies requested, including under the Commercial General Liability policy and the business auto policy.

1.15 Coverage: The insurance provided by CONTRACTOR pursuant to the Contract Documents shall apply on a primary and non-contributory basis and any other insurance or self- insurance maintained by the City Council of the City of Palm Coast, Florida or the CITY's officials, officers or employees shall be excess of and not contributing with the insurance provided by the CONTRACTOR.

1.16 Provision: Commercial General Liability, and the OCP Policy required by the Contract Documents shall be provided on an occurrence rather than a claims-made basis.

SECTION 2: INSURANCE COMPANY REQUIREMENTS

Insurance companies providing the insurance under the Contract Documents must meet the following requirements.

2.1 Such companies must be either (a) authorized by maintaining Certificates of Authority issued to the companies by the Department of Insurance of the State of Florida to conduct business in the State of Florida or (b) with respect only to the coverage required by Section 3.1 (Workers' Compensation/Employers' Liability) authorized as a group self-insurer by Florida Statute 440.57.

2.2 In addition, such companies other than those authorized by Florida Statute 440.57 shall have and maintain a Best's Rating of "A" or better and a Financial Size Category of "VII" or better according to A.M. Best Company.

2.3 If, during the period which an insurance company is providing the insurance coverage required by the Contract Documents, an insurance company shall: 1) lose its Certificate of Authority, 2) no longer comply with Florida Statute 440.57, or 3) fail to maintain the Best's Rating and Financial Size Category, the CONTRACTOR shall, as soon as the CONTRACTOR has knowledge of any such circumstance, immediately notify the CITY's Budget & Procurement Office and immediately replace the insurance coverage provided by the insurance company with a different insurance company meeting the requirements of the Contract Documents. Until such time as the CONTRACTOR has replaced the unacceptable insurer with an insurer acceptable to the CITY's Budget & Procurement Office, the CONTRACTOR shall be deemed to be in default of the Contract Documents.

SECTION 3: SPECIFICATIONS

Without limiting any of the other obligations or liabilities of the CONTRACTOR, the CONTRACTOR shall, at the CONTRACTOR's sole expense, procure, maintain and keep in force amounts and types of insurance conforming to the minimum requirements set forth in this Section. Except as otherwise specified in the Contract Documents, the insurance shall become effective prior to the commencement of Work by the CONTRACTOR and shall be maintained in force until Final Completion or such other time as required by the Contract Documents. The amounts and types of insurance shall conform to the following minimum requirements.

3.1 WORKERS' COMPENSATION/EMPLOYERS' LIABILITY (MANDATORY - NO EXCEPTIONS)

3.1.1 The CONTRACTOR's insurance shall cover the CONTRACTOR and its subcontractors of every tier for those sources of liability which would be covered by the latest edition of the standard Workers' Compensation and Employers Liability Policy, (NCCI Form WC 00 00 00 A), as filed for use in Florida by the National Council on Compensation Insurance, without restrictive endorsements. In addition to coverage for the Florida Workers Compensation Act, where appropriate, coverage is to be included for the United States Longshoremens and Harbor Workers' Compensation Act, Federal Employers' Liability Act and any other applicable federal or state law.

3.1.2 Subject to the restrictions of coverage found in the standard Workers' Compensation and Employers' Liability Policy, there shall be no maximum limit on the amount of coverage for liability imposed by the Florida Workers' Compensation Act, the United States Longshoremens and Harbor Workers' Compensation Act, or any other coverage customarily insured under Part One of the standard Workers' Compensation and Employers' Liability Policy.

3.2 COMMERCIAL GENERAL LIABILITY

3.2.1 The CONTRACTOR's insurance shall cover the CONTRACTOR for those sources of liability which would be covered by the latest edition of the standard Commercial General Liability Coverage Form (ISO Form CG 00 01), as filed for use in the State of Florida by the Office of Insurance Regulation, without the attachment of restrictive endorsements other than the elimination of Coverage C. Medical Payment and the elimination of coverage for Fire Damage Legal Liability.

3.2.2 The CONTRACTOR shall maintain separate limits of coverage applicable only to the Work performed under the Contract Documents. The minimum limits to be maintained by the CONTRACTOR (inclusive of any amounts provided by an Umbrella or Excess policy) shall be those that would be provided with the attachment of the Amendment of Limits of Insurance (Designated Project or Premises) endorsement (ISO Form CG 25 03 or CG 25 04) to a Commercial General Liability Policy with amount specified in Section 8.2.

3.2.3 The CONTRACTOR (applicable to construction contracts only) shall continue to maintain Products/Completed Operations coverage for a period of three (3) years after Final Completion. The insurance shall cover those sources of liability which would be covered by the latest edition of Coverage A of the Commercial General Liability Form (ISO Form CG 00 01) or Coverage A of the Products/Completed Operations Liability Coverage Form (ISO Form CG 00 37), as filed for use in the State of Florida by the Office of Insurance Regulation without restrictive endorsements. The CONTRACTOR shall maintain separate limits of coverage applicable specifically to the Work performed under the Contract Documents. The minimum limits to be maintained by the CONTRACTOR (inclusive of any amounts provided by an Umbrella or Excess policy) shall be those that would be provided with the attachment of the Amendment of Limits of Insurance (Designated Project or Premises) endorsement (ISO Form CG 25 03 or CG 25 04) with amounts specified in Section 8.2.

Products-Completed Operations	\$	- PER REQUIRED LIMITS Aggregate
Each Occurrence Limit	\$	- PER REQUIRED LIMITS

3.3 BUSINESS AUTO POLICY

3.3.1 The CONTRACTOR's insurance shall cover the CONTRACTOR for those sources of liability which would be covered by Section II of the latest edition of the standard Business Auto Policy (ISO Form CA 00 01), as filed for use in the State of Florida by the Insurance Services Office, without the attachment of restrictive endorsements. Coverage shall include owned, non-owned and hired autos.

3.3.2 The minimum limits to be maintained by the CONTRACTOR (inclusive of any amounts provided by an umbrella or Excess policy) are specified in Section 4.3 shall be per accident combined single limit for bodily injury liability and property damage liability. If the coverage is subject to an aggregate, the CONTRACTOR shall maintain separate aggregate limits of coverage applicable to claims arising out of or in connection with the Work under the Contract Documents. The separate aggregate limits to be maintained by the CONTRACTOR shall be a minimum of three (3) times the per accident limit required and shall apply separately to each policy year or part thereof.

3.4 OWNER'S PROTECTIVE LIABILITY COVERAGE

3.4.1 If requested in writing the CONTRACTOR shall provide the CITY's Budget & Procurement Office with an Owners and Contractor's Protective Liability Policy (OCP Policy). The policy shall cover the City of Palm Coast for all sources of liability which would be covered by the latest edition of the standard Owners and Contractor's Protective Liability Coverage Form - Coverage for Operations of Designated CONTRACTOR (ISO Form CG 00 09), as filed for use in the State of Florida by the Office of Insurance Regulation, without the attachment of restrictive endorsements.

3.4.2 CITY OF PALM COAST, Florida shall be the named Insured on the OCP Policy. The policy shall be endorsed to include the CITY's officials, officers and employees as insureds. The OCP Policy shall include the CONTRACTOR and the CONTRACTOR's subcontractors of every tier as designated in the declarations.

3.4.3 The minimum OCP Policy limits to be provided by the CONTRACTOR (inclusive to any amounts provided by an Umbrella or Excess policy) are specified in Section 4.4 shall be per occurrence combined single limit for bodily injury liability and property damage liability. If

the OCP Policy limits are subject to an aggregate, the separate aggregate limits to be provided by the CONTRACTOR shall be a minimum of three times the per occurrence limit required and shall apply separately to each policy year or part thereof. The limits afforded by the OCP Policy (or Excess policy if any) shall apply only to the City of Palm Coast, Florida and the CITY 's officials, officers and employees and only to claims arising out of or in connection with the Work under the Contract Documents.

3.4.4 Notice of Cancellation and/or Restriction: A policy must be specifically endorsed to provide the CITY's Budget & Procurement Office within thirty (30) days' notice of cancellation and/or restriction.

3.4.5 As an alternative to providing the CITY with OCP Coverage, CONTRACTOR may satisfy the requirements of this Section by naming the Owner (and if required, the Engineer) as Additional Insured on the CONTRACTOR's Commercial General Liability policies (inclusive of any amounts provided by an Umbrella or Excess policy).

3.5 BUILDER'S RISK

When a Work includes construction of and/or additions to above ground buildings or structures, Builder's Risk coverage must be provided as follows:

3.5.1 Form: All Risk Coverage. Coverage is to be no more restrictive than that afforded by the latest editions of Insurance Services Office Forms CP 00 20 and CP 10 30.

3.5.2 Waiver of Occupancy Clause or Warranty: Policy must be specifically endorsed to eliminate any "Occupancy Clause" or similar warranty or representation that the building(s), addition(s) or structure(s) in the course of construction shall not be occupied without specific endorsement of the policy. The policy must be endorsed to provide the Builder's Risk coverage and will continue to apply until final acceptance of the building(s), addition(s), or structure(s) by the CITY.

3.5.3 Loss Payee: The City of Palm Coast, Florida, its officials, or officers and employees must be included as loss payee.

3.6 FLOOD INSURANCE

Notice of Cancellation and/or Restriction: The policy must be specifically endorsed to provide the CITY's Budget & Procurement Office with thirty (30) days' notice of cancellation and/or restriction.

3.6.1 Buildings: When buildings or structures are located within an identified special flood hazard area, flood insurance must be afforded for the lesser of the total insurable value of such buildings, structures and contents or the maximum amount of flood insurance coverage available under the National Flood Program.

3.6.2 Equipment: When the machinery or equipment is located within an identified special flood hazard area, flood insurance must be afforded for the lesser of the total insurable value of such equipment or the maximum amount of flood insurance coverage available under the National Flood Program.

3.7 INSTALLATION FLOATER

If the Work includes the installation of machinery and/or equipment into an existing structure, the following insurance coverages must be provided on that machinery and/or equipment.

3.7.1 Form: "All Risk" including Installation and Transit.

3.7.2 Cessation of Insurance: Coverage is not to cease and is to remain in force (subject to cancellation notice) until Final Acceptance.

3.7.3 Loss Payee: The City of Palm Coast City Council, Florida, its officials, officers and employees must be included as loss payee.

SECTION 4: COVERAGE

The insurance provided by CONTRACTOR pursuant to the Contract Documents shall apply on a primary basis and any other insurance or self-insurance maintained by the City Council of the City of Palm Coast, Florida or the CITY's officials, officers or employees shall be excess of and not contributing with the insurance provided by the CONTRACTOR.

SECTION 5: PROVISION

Workers' Compensation Policy, Commercial General Liability, Business Auto Policy and the OCP Policy required by the Contract Documents

shall be provided on an occurrence rather than a claims-made basis.

SECTION 6: OBLIGATIONS

Compliance with the foregoing requirements shall not relieve the CONTRACTOR, its employees or agents of liability from any obligations under a section or any other portions of the Contract Documents.

SECTION 7: AGREEMENT

In consideration of the contract, if awarded, the CONTRACTOR shall agree without reservation to indemnification and insurance clauses of the Contract Documents.

SECTION 8: REQUIRED LIMITS OF INSURANCE

The minimum amounts of insurance (inclusive of any amounts provided by an Umbrella or Excess policy) shall be as follows:

8.1 Workers' Compensation/Employers' Liability

8.1.1 Part One: There shall be no maximum limit (other than as limited by the applicable statute) for liability imposed by the Florida Workers' Compensation Act, the Longshoremen's and Harbor Workers' Compensation act or any other coverages required by the Contract Documents which are customarily insured under Part One of the standard Workers' Compensation Policy.

8.1.2 Part Two: The minimum amount of coverage required by the Contract Documents which are customarily insured under Part Two of the standard Workers' Compensation Policy shall be:

Each Accident	\$ 1,000,000
Disease-Policy Limit	\$ 1,000,000Disease-Each Employee \$ 1,000,000

8.2 Commercial General Liability

General Aggregate Products/Completed	\$Two (2) Times the Each Occurrence Limit
Operations Aggregate	\$1,000,000 Personal and Advertising
Injury	\$1,000,000 Each Occurrence \$1,000,000

8.3 Business Auto Policy:

Each Occurrence Bodily Injury and Property Damage Liability Combined	\$1,000,000
Annual Aggregate (if applicable)	\$Two (2) Times the Each Occurrence Limit

8.4 Owner's Protective Liability Coverage

General Aggregate Limit (Keep Higher for Road Projects) Products/Completed	\$Two (2) Times the Each Occurrence Limit
Operations Aggregate	\$6,000,000 Personal and Advertising
Injury	\$3,000,000 Each Occurrence \$3,000,000

8.5 Builders Risk

8.5.1 Owner's Protective Liability Coverage: The minimum OCP Policy limits per occurrence and, if subject to an aggregate, annual aggregate to be provided by the CONTRACTOR shall be the same as the amounts shown above as the minimum occurrence and policy aggregate limits respectively required for the Commercial General Liability Coverage. The limits afforded by the OCP Policy and any excess policies shall apply only to the CITY and the CITY 's officials, officers, agents and employees and only to claims arising out of or in connection with the Work under the Contract Documents. Requirement for OCP Policy shall be waived provided the CONTRACTOR shall require that its insurer name the CITY (and if required, the Engineer) as Additional

Insured on the CONTRACTOR's Commercial General Liability (inclusive of amounts provided by an Umbrella or Excess policy).

8.6 Property Insurance

100% of the completed value of such addition(s), building(s), or structure(s).

8.6.1 Maximum Deductible: \$5,000 each claim.

8.7 Installation Floater

8.7.1 Amount of Insurance: If the Contract Documents do not include construction of or additions to above ground buildings or structures, but do involve the installation of machinery or equipment, the CONTRACTOR shall provide an Installation Floater with the minimum amount of insurance to be 100% of the "installed replacement cost value" of such addition(s), building(s) or structure(s).

8.7.2 Maximum Deductible: \$5,000 each claim.

END OF SECTION



SECTION 00800
GENERAL CONDITIONS
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GENERAL CONDITIONS

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1. DEFINITIONS/INTERPRETATIONS

1.1. Definitions

Whenever used in the Contract Documents, the following terms shall have the meanings indicated, which shall be applicable to both the singular and plural thereof.

Addenda - Written or graphic instruments issued prior to the date for opening Bids which modify or interpret the Bidding Documents by additions, deletions, corrections or clarifications.

Acceptance, Final Acceptance - The formal action by CITY accepting the Work as being complete after certification by ENGINEER of Final Completion.

Agreement - The written Agreement between CITY and CONTRACTOR covering the Work to be performed; other Contract Documents are incorporated in or referenced in the Agreement and made a part thereof as provided therein.

Apparent Low Bidder - The Bidder submitting the lowest Bid at the Bid opening without correction of numerical discrepancies or determination of responsiveness and responsibility.

Application for Payment - The form furnished in the Contract Documents which is to be used in processing Partial or Final Payments to CONTRACTOR and which shall contain an affidavit by CONTRACTOR that Partial Payments theretofore received from CITY on account of the Work have been applied by CONTRACTOR to discharge in full all of CONTRACTOR's obligations stated in prior Applications for Payment. The application includes such supporting documentation as required by the Contract Documents.

Bid - The offer or proposal of a Bidder submitted in the prescribed manner on the prescribed forms to perform the Work in accordance with the Contract Documents.

Bidder - The individual, partnership, corporation, joint venture, or other legal entity or combination thereof submitting a Bid for the Work directly to CITY through an authorized representative.

Bidding Documents - The Invitation For Bid, Instructions to Bidders, Bid Forms, Addenda, Bid Bond, Sworn Statement Under Section 287.133(3)(a), Florida Statutes, Bidder Information, Non-Collusion Affidavit Of Bidder, Certificate of Non-segregated Facilities, List of Subcontractors and Major Materials Suppliers, Plans and Specifications, Agreement, General Conditions, Contract Documents, Bonds, Technical Specifications if applicable, CONTRACTOR's Insurance Requirements, Certificates, and Insurance Policies.

Bid Security - The security designated in the Instructions to Bidders.

Bonds - Instruments of security furnished by CONTRACTOR and his Surety in accordance with the Contract Documents.

Change Order - A written instrument issued on or after the Effective Date of the Agreement, which when duly executed by CITY and CONTRACTOR amends the Contract Documents to provide for changes in the Work or in the provisions of the Contract Documents, or changes in Contract Price or Contract Time, or any combination thereof.

CITY - City of Palm Coast, a political subdivision of the State of Florida; the owner.

Consultant - The professional engineer or engineering firm registered in the State of Florida who performs professional engineering services for the CITY other than CITY personnel. The Consultant may be the ENGINEER OF RECORD or may provide services through and be subcontracted to the ENGINEER OF RECORD.

Contract Claim - Any dispute arising out of or related to the Contract Documents between the CITY and CONTRACTOR including, but not limited to, any demand or assertion by one of the parties seeking any equitable adjustment of the Contract Price, Contract Time or other relief with respect to the Contract Documents.

Contract Documents - Those documents named in Section 8 of the Agreement.

Contract Price - The total compensation, subject to authorized adjustments, payable by CITY to CONTRACTOR for satisfactory completion of all Work under the Contract Documents as stated in the Agreement.

Contract Time - The period of time allotted in the Contract Documents, subject to authorized adjustments, for Substantial Completion and Final Completion of the Work, or other interim completion dates identified in the Contract Documents.

CONTRACTOR - The individual, partnership, corporation, joint venture, or other legal entity or combination thereof who has entered into the Agreement with CITY for the performance of the Work. The term "CONTRACTOR" means CONTRACTOR or its authorized representative.

Controlling Work Items - Those Work items that are directly interrelated such that each has a definite influence on progress of the critical path scheduling of the overall Work.

Cost and Pricing Data - Refers to all data available to or relied upon by CONTRACTOR in negotiating, pricing or costing Work covered by a Change Order or a Change Request, or involved in a Contract Claim.

Date of Commencement of the Contract Time - The date given by the Notice to Proceed when the Contract Time commences to run.

Day - A calendar day of Twenty Four (24) hours lasting from midnight one day to midnight the next day.

Defect or Defective - A reference to Work that is unsatisfactory, faulty or deficient, or does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract Documents, or has been damaged prior to Final Acceptance (unless responsibility for the protection thereof has been assumed by CITY).

Drawings, Plans - The drawings, plans or reproduction thereof, which show scope, character, location, dimensions, and other details of the Work to be performed under the Contract Documents.

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 by the last of the two parties to sign.

ENGINEER - The City of Palm Coast CITY Engineer or Owner's Representative acting directly or through duly authorized representatives or Consultants who may serve as the CITY's ENGINEERS for construction, engineering and inspection; such representatives or Consultants acting within the scope of the duties and authority assigned to them.

ENGINEER OF RECORD - The professional engineer or engineering firm contracted with by the CITY or employed by CITY and registered in the State of Florida who develops criteria and concept for the Work, performs the analysis and is responsible for the preparation of the Plans and Specifications. The ENGINEER OF RECORD may be CITY in-house staff or a Consultant retained by the CITY.

Equipment - The Machinery and Equipment, together with the necessary supplies for upkeep and maintenance thereof; also, the tools and all other apparatus necessary, for the construction and acceptable completion of the Work.

Field Order - A written instrument issued by ENGINEER to CONTRACTOR which orders minor variations in the Work, as opposed to a change in the Work, and which does not involve an adjustment in Contract Price or Contract Time.

Final Completion - That date when (a) the Work is complete in accordance with the Contract Documents including the minor items identified during the inspection described in these General Conditions, and (b) the CONTRACTOR has submitted its request for Final Payment including the CONTRACTOR's Release and all Subcontractor Affidavits.

General Conditions - Division I of the Standard Specifications.

Holidays - Days designated by the CITY OF PALM COAST as legal holidays. These days are:

New Year's Day	-	January 1st
Martin Luther King's Birthday	-	Third Monday in January
Memorial Day	-	Last Monday in May
Juneteenth	-	June 19
Independence Day	-	July 4th
Labor Day	-	First Monday in September
Veteran's Day	-	November 11
Thanksgiving Day	-	Fourth Thursday in November
Day After Thanksgiving Day	-	Day After Fourth Thursday
Christmas Eve	-	December 24th
Christmas Day	-	December 25th

Inspector or Field Representative - An authorized representative of the ENGINEER, assigned to make official inspections of the Materials furnished and of the Work performed by the CONTRACTOR.

Laws and Regulations; Laws or Regulations - Laws, Rules, Regulations, Ordinances, and/or court or administrative Orders of the federal, state and local governments.

Low Bidder - The lowest responsive, responsible Bidder.

Lump Sum - A pay item within the Contract Documents, which is paid without regard to quantities or units of measure.

Major Item of Work - Any item of Work having an original value in excess of five percent of the original Contract Price shall be considered as a major item of Work.

Materials - Any substances to be incorporated in the Work under the Contract Documents.

Notice of Award - The written notice of the acceptance of the Bid from CITY to Low Bidder.

Notice to Proceed - The written notice issued by CITY to CONTRACTOR authorizing it to proceed with the Work and establishing the Date of Commencement of the Contract Time.

Owner - Refer to definition of CITY OF PALM COAST.

Payment Bond - The security furnished by CONTRACTOR and its Surety as a guarantee that CONTRACTOR will pay in full all bills and accounts, from claimants as defined in Chapter 713, Florida Statutes, or as amended, for Material, labor, services and supplies used directly or indirectly in the prosecution of the Work. The covered amount of the Payment Bond is separate and distinct from the covered amount of the Performance Bond.

Plans - The approved plans, including reproductions thereof, showing the location, character, dimensions and details of the Work to be done.

Performance Bond - The security furnished by CONTRACTOR and its Surety as a guarantee that CONTRACTOR will perform all of its contractual obligations in accordance with the terms of the Contract Documents. The covered amount of the Performance Bond is separate and distinct from the covered amount of the Payment Bond.

Progress Schedule - All documentation related to the planning and scheduling of the Work as described in the Contract Documents.

Project - The total construction of which the Work to be provided under the Contract Documents is a part as indicated elsewhere in the Contract Documents.

Project Manager/Coordinator - The authorized representative of ENGINEER who is assigned to the Project.

Qualified – The meaning of qualified shall be the same as “Responsible”.

Responsive bid – A bid in which the Bidder describes the work in the same fashion as the City. A responsive bid means that the bid is submitted on the correct forms and contains all the required information, signatures and notarizations.

Responsible bid - Includes financial resources and ability. In addition, the City may consider the honesty and integrity of the Bidder necessary to a faithful performance of the contract and upon his skill and business judgment, his experience and his facilities for carrying out the contract, his previous conduct under other contracts, the quality of his work and his pecuniary ability.

Request for Information (RFI) - CONTRACTOR's inquiries for information as submitted on the Request for Information form included in the Contract Documents.

Right-of-Way (R-O-W) - The land which the CITY has title to, or right of use, for the road and its structures and appurtenances, and for Material pits furnished or to be furnished by the CITY.

Shop Drawings - All Drawings, diagrams, illustrations, schedules and other data which are specifically prepared by or for CONTRACTOR to illustrate some portion of the Work and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams and other information prepared by a Supplier and submitted by CONTRACTOR to illustrate Material or Equipment for some portion of the Work, specifically indicating how CONTRACTOR will comply with the Contract Documents.

Specifications - The directions and provisions contained herein, together with all stipulations contained in the Contract Documents, setting out or relating to the quality of the Work or conditions under which Work shall be performed, or to the quantities and qualities of Materials and labor to be furnished under the Contract Documents.

Standard Specifications - The covenants, directions, provisions and requirements set forth in Division I "General Conditions" set forth in this document, Division II "Construction Details" and Division III "Materials". Division II "Construction Details" and Division III "Materials" are incorporated by reference to Florida Department of Transportation's Standard Specifications For Road and Bridge Construction, (2010).

Subagreement - A contract or purchase order awarding a part of the Work under the Contract Documents to a Subcontractor, Supplier or other person or entity.

Subcontractor - An individual, partnership, corporation, joint venture, or other combination thereof having a Subagreement with CONTRACTOR for (a) the performance of labor in connection with part of the Work at the site; or (b) for both performing labor in connection with part of the Work at the site and furnishing items of Materials or Equipment for incorporation into the Work. Subcontractor also means an individual, partnership, corporation, joint venture, or other combination thereof who has a Subagreement with another Subcontractor to perform any of the Work at the site.

Substantial Completion - That date when (a) the Work is complete in accordance with the Contract Documents, with the exception of the minor items identified during the inspection described in these General Conditions, and (b) the Work can be utilized for the purposes for which it is intended,

as may be evidenced by successful completion of all specified pre-operational start-up and demonstration tests. The terms "substantially complete" and "substantially completed" as applied to any Work refer to Substantial Completion thereof.

Superintendent - The CONTRACTOR's authorized representative, who must be a principal or employee of the CONTRACTOR, in responsible charge of the Work.

Supplemental Agreement - A written agreement between the CONTRACTOR and the CITY, and signed by the Surety, modifying the contract within the limitations set forth in the Standard Specifications.

Supplementary Conditions - The part of the Contract Documents which amends or supplements these General Conditions.

Supplier - A manufacturer, fabricator, Supplier, distributor, materialman or vendor.

Surety - The corporate body which is bound by the Bonds required by the Contract Documents with and for the CONTRACTOR and which agrees to be responsible for performance of the Work for which the Agreement has been made and for payment of all costs pertaining thereto.

Technical Specifications - Directions and provisions relating to the quality of the Work or conditions under which Work shall be performed and described in the Technical Specifications section of these Contract Documents.

Total Bid - Amount stated in the Bid Form by the Bidder as the Bidder's offer to furnish all labor, Materials and Equipment to perform all Work in strict accordance with the Contract Documents. If an Agreement is awarded to a Bidder, the Total Bid amount shall be the Contract Price.

Underground Facilities - All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments, and any encasements containing such facilities which have been installed underground to furnish any of the following services or Materials: electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems or water.

Unit Price - Amount stated in the Contract Documents as a price per unit of measurement for Materials or services required in the Work.

Unit Price Work - Work to be paid on the basis of Unit Prices.

Value Engineering Change Proposal - A cost reduction bid initiated and developed by the CONTRACTOR for the purpose of refining the Contract Documents so as to contribute to design cost effectiveness or significantly improve the quality of Work.

Warranty Period - The period of time within which CONTRACTOR shall promptly, without cost to CITY and in accordance with CITY's written instructions, either correct Defective Work or, if it has been rejected by CITY, remove it from the site and replace it with non-Defective Work. The Warranty Period does not limit the CONTRACTOR's warranty that the Work has been completed in accordance with the Contract Documents.

Work - All labor, permits, Bonds, equipment, Materials and incidentals required for the construction of the improvement by the Contract Documents, including, but not limited to, superintendence, use of Equipment and tools, and all services and responsibilities prescribed or implied, which are necessary for the complete performance by the CONTRACTOR of his obligations under the Contract Documents. Unless otherwise specified herein or in the Contract Documents, all costs of liability and of performing the Work shall be at the CONTRACTOR's expense.

1.2. Interpretations

1.2.1. Any reference to a Section or subsection in these General Conditions without identification of the particular Section or subsection shall mean a reference to these General Conditions.

1.2.2. Each Section in these General Conditions is composed of sub-sections, numbered as this subsection 1.2 is numbered; parts, numbered as this part 1.2.2 is numbered; and sub-parts - all of which are generally referred to as subsections. A reference to a sub-section means a reference to the entire sub-section, or to a part, or a sub-part, or any combination of them, depending on the intent of the reference.

1.2.3. Often, the Contract Documents omit the modifying word "all" and "any", and the articles "the" and "an". However, omitting modifiers or articles from, or inserting any of them into, a statement shall not in any way affect the meaning or interpretation of either statement.

1.3. Abbreviations

AAN	American Association of Nurserymen, Inc.
AASHTO	American Association of State Highway and Transportation Officials
AGC	The Associated General Contractors of America, Inc.
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute, Inc.
AREA	American Railway Engineering Association
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials

AWS	American Welding Society
AWPA	American Wood Preservers Association
AWWA	American Water Works Association
CRSI	Concrete Reinforcing Steel Institute
FDOT	Florida Department of Transportation
FSS	Federal Specifications and Standards
IEEE	Institute of Electrical and Electronics Engineers
IES	Illuminating Engineering Society
IPCEA	Insulated Power Cable Engineers Association
MUTCD	Manual on Uniform Traffic Control Devices
NEC	National Electrical Code (As recommended by the National Fire Protection Association)
NEMA	National Electrical Manufacturers Association
SAE	Society of Automotive Engineers
SSPC	Steel Structures Painting Council

Each of the above abbreviations, when followed by a number or letter designation, or combination of numbers and letters, shall be understood to designate a specification, test method or other code or recommendation of the particular authority or organization so shown.

2. PRELIMINARY MATTERS

2.1. Copies of Documents. CITY shall furnish to CONTRACTOR one copy of the Contract Documents free of charge. CONTRACTOR will be responsible for obtaining additional copies.

2.2. Commencement of the Contract Time; Notice to Proceed.

2.2.1. The Contract Time will commence to run on the Day indicated in the Notice to Proceed. The Notice to Proceed may indicate a Date of Commencement of the Contract Time any time within thirty days after the Effective Date of the Agreement.

2.2.2. CONTRACTOR shall start to perform the Work on the Date of Commencement of the Contract Time. No Work shall be done at the site prior to the date on which the corresponding Contract Time commences to run unless otherwise authorized in writing by CITY.

2.2.3. Prior to the issuance of a Notice to Proceed, a preconstruction conference shall be attended by the CONTRACTOR and his subcontractors, ENGINEER and CITY and other entities as applicable to the Work at which time a date will be established for the issuance of the Notice to Proceed. Thereafter, the Notice to Proceed shall be sent by the CITY's Budget & Procurement Office for execution no later than five (5) calendar days prior to the date listed on the Notice to Proceed. The CONTRACTOR shall return the executed Notice to Proceed to the CITY by the date indicated on the Notice to Proceed. The failure of the CONTRACTOR to comply with this provision will not change the Contract Time.

2.3. Before Starting Construction.

2.3.1. Before undertaking each part of the construction, 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 or any of his Subcontractors or Suppliers may discover and shall obtain a written interpretation or clarification from ENGINEER before proceeding with any Work affected thereby; provided, however, CONTRACTOR shall not be liable to CITY or ENGINEER for failure to report any conflict, error or discrepancy unless CONTRACTOR or any of his Subcontractors or suppliers had actual knowledge thereof or should reasonably have known thereof.

2.3.2. Before starting construction, CONTRACTOR shall submit to ENGINEER for review a preliminary Progress Schedule indicating the starting and completion dates of the various stages of the Work, a proposed schedule of Shop Drawing submissions, and a listing of manpower and cash flow projections through the Contract Time.

2.3.3. CITY or ENGINEER will review and return the schedules submitted in accordance with this Section and CONTRACTOR, if required, shall revise, adjust or modify and resubmit acceptable schedules at least thirty (30) Days following the Notice To Proceed date or ten (10) days before submission of the first Application for Payment whichever shall first occur.

2.3.4. Before starting construction, the CONTRACTOR shall initiate his coordination and scheduling of the work by utility contractors, the CITY's own forces, and others performing work at the Project site by directly contacting the superintendent of each person performing work at the Project site to review the projected schedules of each other entity performing work at the Project site to assure that CONTRACTOR's Progress Schedule and meeting discussions address the starting and completion dates of all aspects of the work at the Project site whether the work is being performed by CONTRACTOR or others.

2.4. Preconstruction Conference. Prior to commencement of Work at the site, a conference will be held for review of the schedules, 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. CONTRACTOR shall attend such conference and shall require any or all of its Subcontractors and Suppliers, as CITY directs, to attend the conference. For Projects and Work involving the CITY Utilities Division, a separate utilities preconstruction conference shall be scheduled between the CITY, ENGINEER, CONTRACTOR, utility subcontractors and appropriate CITY Utilities Division personnel. After the utilities preconstruction conference, the CITY Utilities Division is responsible for issuance of an Underground Utilities Permit. No Work involving CITY utilities may commence until the Underground Utilities Permit is issued.

3. CONTRACT DOCUMENTS; INTENT AND REUSE

3.1. Applicable Law; Intent.

3.1.1. The Contract Documents comprise the entire agreement between CITY and CONTRACTOR concerning the Work. The Contract Documents are complementary; what is called for by one is as binding as if called for by all. The Contract Documents will be governed by the laws of the State of Florida and venue shall be in Flagler County for state actions and the Middle District of Florida for federal actions.

3.1.2. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any Work, Materials or Equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result shall be supplied whether or not specifically called for. 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 that meaning. Reference to specifications, manuals or codes of any technical society, organization or association, or to the Laws or Regulations of any governmental entity whether such reference be specific or by implication, shall mean the latest specification, manual, code or Laws or Regulations in effect at the time of opening of Bids, except as may be otherwise specifically stated. However, no provision of any referenced specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall change the duties and responsibilities of CITY, CONTRACTOR, ENGINEER OF RECORD or ENGINEER, or any of their consultants, agents or employees from those expressly set forth in the Contract Documents, nor shall it assign to CITY or ENGINEER, or any of their consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of Sections 8 or 9 of these General Conditions.

3.2. Priority of the Contract Documents.

3.2.1. If, during the performance of the Work, the CONTRACTOR finds a conflict, error or discrepancy in the Contract Documents, CONTRACTOR shall so report to ENGINEER in writing at once, and before proceeding with the Work affected thereby, shall obtain a written interpretation or clarification from ENGINEER. However, CONTRACTOR shall not be liable to CITY or ENGINEER for failure to report any conflict, error or discrepancy in the Contract Documents unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof. ENGINEER will promptly investigate the matter and respond to CONTRACTOR with an interpretation or clarification. After CONTRACTOR's discovery of such a conflict, error or discrepancy, or after the date when CONTRACTOR should have reasonably known thereof, until the interpretation or clarification is obtained from ENGINEER, any Work done by CONTRACTOR which is directly or indirectly affected by same, will be at CONTRACTOR's own risk and CONTRACTOR shall bear all costs and delay arising therefrom.

3.2.2. In resolving conflicts, errors or discrepancies, the Contract Documents shall be construed as one, what is required by one document shall be construed as being required by all Contract Documents.

3.2.3. If an issue of priority pertains to Divisions II and III of the Standard Specifications and the Drawings, figured dimensions shall govern over scaled dimensions, but Work not dimensioned shall be as directed, and Work not particularly shown, identified, sized, or located shall be the same as similar parts that are shown or specified. Further, detail Drawings shall govern over general drawings, larger scale drawings take precedence over smaller scale drawings, Change Order Drawings govern over Contract Drawings, and Contract Drawings govern over standard or Shop Drawings. In all cases where notes, specifications, sketches, diagrams, details or schedules in the Specifications or in the Drawings, or between the Specifications and the Drawings, conflict, the higher cost requirement shall be furnished by CONTRACTOR, unless otherwise directed by ENGINEER.

3.2.4. If the issue of priority is due to a conflict or discrepancy between express provisions of the Contract Documents and any referenced specification, manual, or code of any technical society, organization or association, the provisions of the Contract Documents will take precedence if they are more stringent or presumptively cause a higher level of performance. If there is any conflict or discrepancy between standard specifications, manuals, or codes of any technical society, organization or association, or between Laws or Regulations, the provision with the higher cost requirement shall be binding on CONTRACTOR, unless otherwise directed by ENGINEER.

3.2.5. In accordance with the intent of the Contract Documents, CONTRACTOR recognizes and accepts that compliance with the priority order specified shall not justify an increase in Contract Price or extension in Contract Time.

3.3. Use of Forms Provided. Unless CITY provides in writing to the contrary, only those forms provided by CITY with the sole exception of the

Bid Bond shall be used and no modifications or substitutions shall be allowed.

3.4 Re-use of Documents. Neither CONTRACTOR nor any Subcontractor or Supplier or other person or organization (other than the CITY) shall acquire any title to or have ownership rights of any of the Drawings, Specifications or other documents (or copies of any thereof) prepared by or bearing the seal of ENGINEER OF RECORD; and they shall not be reused on extensions of the Project or any other project nor shall they be generally published without written consent of CITY.

4. AVAILABILITY OF LANDS; PHYSICAL CONDITIONS; REFERENCE POINTS

4.1. Availability of Lands.

4.1.1. CITY shall furnish, as indicated in the Contract Documents, the lands upon which the Work is to be performed, Rights-of-Way and easements (permanent or temporary construction easements), and those 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 CITY, unless otherwise provided in the Contract Documents. Any additional lands, Rights-of-Way and easements not furnished by CITY that CONTRACTOR deems necessary including, but not limited to, requirements for temporary construction facilities, access and egress, or for storage, shall be obtained by CONTRACTOR at no increase in Contract Price or extension in Contract Time, and CONTRACTOR shall confine his operations to those areas furnished by CITY or obtained at its expense.

4.1.2. CONTRACTOR shall obtain permits and written approvals (and submit copies to CITY before utilization of those areas) from the appropriate governmental entity or property owner(s), for use of lands not furnished by CITY; and for all lands which include borrow pits, waste and disposal areas, such permits and approvals shall specify their treatment during and at completion of construction.

4.1.3. Access to CITY or public structures, hydrants, valves, manholes, fire alarms, etc., shall not be obstructed by CONTRACTOR. CONTRACTOR is to make no connections to or operate valves on water mains or otherwise interfere with the operation of the water system, without first giving written notice to and securing written approval from the appropriate governmental entity.

4.2. Physical Conditions (Including Underground Facilities).

4.2.1. The Contract Documents may identify reports of explorations and tests of subsurface conditions at the site, and those drawings of physical conditions in or relating to existing surface and subsurface structures or Underground Facilities owned by CITY which are at or contiguous to the site, that have been utilized by ENGINEER OF RECORD in preparation of the Contract Documents. CONTRACTOR shall have full responsibility for physical conditions, and Underground Facilities owned by CITY or others, shown or indicated in the Contract Documents.

4.2.2. The information and data shown or indicated in the Contract Documents with respect to Underground Facilities owned by others at or contiguous to the site is based on information and data furnished to CITY or ENGINEER OF RECORD by the owners of such Underground Facilities or by others. CITY, ENGINEER and ENGINEER OF RECORD shall not be responsible for the accuracy or completeness of any such information or data, and, CONTRACTOR shall have full responsibility for reviewing and checking all such information and data.

4.2.3. If the Contract Documents necessitate amending to order changes in the Work due to Underground Facilities owned by the CITY or others, whether they be shown or indicated or newly discovered, CITY shall authorize the required changes in the Work by Change Order. If those Underground Facilities owned by the CITY or others cause or will cause delays in the performance or extend completion of all part of the Work, CONTRACTOR shall absorb all related delay, extension or acceleration costs, however caused; except that, if CITY and CONTRACTOR agree that the delays require a change in Contract Time, CITY shall authorize the necessary change in Contract Time only to the extent that such delays exceed thirty (30) days impact to controlling Work items. However, an extension in Contract Time, when and if so granted shall be CONTRACTOR'S sole and exclusive remedy with respect to CITY for any delay, disruption, interference, inefficiency, acceleration, extension or hindrance and associated costs, however caused, resulting from variance in the location or configuration of Underground Facilities owned by the CITY or others shown or indicated, or from newly discovered Underground Facilities owned by the CITY or others.

4.2.4. Unless it prejudices Work already excavated and uncovered, CONTRACTOR shall schedule layout, excavation and uncovering of Work or Underground Facilities a sufficient time in advance to allow ENGINEER'S review, and the possible amending or supplementing of the Contract Documents.

4.3. Differing Physical Conditions (not including Underground Facilities). CONTRACTOR shall promptly, after becoming aware thereof, and before the conditions are disturbed, notify ENGINEER in writing of any subsurface or latent physical conditions, encountered at or contiguous to the site which differ materially from those indicated in the Contract Documents; unknown and unexpected physical conditions encountered or uncovered at or contiguous to the site, of an extremely unusual nature, differing materially from those ordinarily encountered at or contiguous to the site which differ materially from those indicated in the Contract Documents; unknown and unexpected physical conditions encountered or uncovered at or contiguous to the site, of an extremely unusual nature, differing materially from those ordinarily encountered and not generally recognized as inherent in Work of the character provided for in the Contract

Documents.

4.4. Resolution of a Report of Differing Physical Conditions.

- 4.4.1.** Promptly after receipt of notice from CONTRACTOR, ENGINEER will review the pertinent conditions, determine the necessity of obtaining additional explorations or tests, and advise CITY in writing of his findings and conclusions. Until such time when CONTRACTOR resumes the affected Work (and at all times thereafter), CONTRACTOR shall be responsible for the safety and protection of the affected Work.
- 4.4.2.** If the CITY, with the advice of ENGINEER, concludes that the conditions do materially differ, and that the Contract Documents need to be amended, CITY shall, without invalidating the Agreement and without notice to any Surety by duly executed Change Order, order the necessary changes in the Work, as long as CITY has not exercised its rights to terminate the Agreement. Upon receipt of that order, CONTRACTOR shall promptly proceed or continue with the Work involved pursuant to the conditions stated in the order.
- 4.4.3.** If the CITY, with the advice of ENGINEER, concludes that the Contract Documents need to be supplemented only, appropriate minor deviations in the Work shall be authorized by a Field Order issued by ENGINEER. CITY's determination that the Contract Documents do not need to be amended shall be final and binding on CONTRACTOR unless CONTRACTOR delivers to CITY written notice of a Contract Claim within seven (7) days of receipt of the applicable Field Order stating the precise justification for such contrary assertion. Such matters shall then be resolved by the ENGINEER in accordance with the Contract Documents.
- 4.4.4.** If any change in the Work required due to differing physical conditions causes an increase or decrease in CONTRACTOR's cost of or the time required for the performance of all or part of the Work, CITY shall make an adjustment in Contract Price or Contract Time or both, subject to the provisions of this Section, and Sections 10 and 11.
- 4.4.5.** No bid by CONTRACTOR for an adjustment under this Section, nor Contract Claim by CONTRACTOR for an adjustment on account of differing physical conditions, shall be allowed unless CONTRACTOR has given the written notice required in subsection 4.3.

4.5. Special Requirements for Underground Facilities. CONTRACTOR shall have full responsibility: a) for locating any and all Underground Facilities including utilities shown or indicated as to depth and alignment in advance of excavation; b) for identifying the owner of any newly discovered Underground Facility and promptly notifying that owner and ENGINEER of that discovery; c) for shoring, blocking, and protecting Underground Facilities including utilities shown, indicated or discovered; d) for coordination, scheduling and sequencing of the Work with the owners of all Underground Facilities shown, indicated or discovered; e) for repairing any damage done to the satisfaction of those owners, to the extent that the damage was due to CONTRACTOR's failure to adhere to the requirements of this subsection or subsection 4.2.2., or to the fault or negligence of CONTRACTOR; and f) for the safety and protection of any affected Work, and for repairing any damage done to the Work. Except as otherwise provided in subsection 4.2.3., all costs involved and time required to perform these responsibilities shall be considered as having been included in the Contract Price and in the CONTRACTOR's schedule for the performance of the Work within the Contract Time, even if the Contract Documents need amending to authorize minor deviations or changes in the Work due to those Underground Facilities including utilities.

4.6. Engineering and Layout.

- 4.6.1.** The ENGINEER will provide centerline control points (Begin Project, End Project, Pls, PTs, etc.) and bench marks at appropriate intervals along the line of the Project to facilitate the proper layout of the Work. Normally, only one bench mark will be furnished for water crossings. The CONTRACTOR shall preserve all reference points and bench marks furnished by the CITY. As an exception to the above, for Projects where the Plans do not show a centerline or other survey control line for construction of the Work (e.g.; resurfacing, safety modifications, etc.) the ENGINEER will provide only points marking the beginning and ending of the Project and all exceptions.
- 4.6.2.** The CONTRACTOR shall furnish all stakes, templates and other Materials necessary for establishing and maintaining of the lines and grades necessary for control and construction of the Work.
- 4.6.3.** Utilizing the control points furnished by the CITY in accordance with subsection 4.6.1, the CONTRACTOR shall establish all horizontal and vertical controls necessary to construct the Work in conformance with the Plans and Specifications. The Work shall include performing all calculations required and setting all stakes needed such as grade stakes, offset stakes, reference point stakes, slope stakes, and other reference marks or points necessary to provide lines and grades for construction of all roadway, bridge and miscellaneous items. When the Work includes utility construction to be done by the CONTRACTOR, he shall also establish all horizontal and vertical controls necessary to carry out such Work. The ENGINEER may assist in coding of input, arrange for processing by the CITY's computer and furnish computer output; however, ENGINEER's assistance shall not release CONTRACTOR from CONTRACTOR's responsibility.
- 4.6.4.** On Projects involving construction of new base, stakes to establish lines and grades for subgrade base, curb and related items shall be set at intervals along the line of the Work no greater than Fifty (50) feet on tangents and Twenty Five (25) feet on curves. Grade stakes shall be set at locations directed by the ENGINEER to facilitate checking of subgrade, base and pavement elevations in

crossovers, intersections and irregular shaped areas. For bridge construction stakes and other control, references shall be set at sufficiently frequent intervals to assure that all components of a structure are constructed in accordance with the lines and grades shown in the Plans. For Projects where the Plans do not show a centerline or other survey control line for construction of the Work (resurfacing, safety modifications, etc.) only such stakes as necessary for horizontal and vertical control of Work items will be required. For resurfacing and resurfacing widening type Projects, the CONTRACTOR shall establish horizontal controls adequate to assure that the asphalt mix added coincides with the existing pavement. In tangent sections, horizontal control points shall be set at one hundred (100) foot intervals by an instrument survey. In curbs sections, horizontal control points shall be set at twenty five (25) foot intervals by locating and referencing the centerline of the existing pavement. The CONTRACTOR shall reference the beginning and ending of each no passing zone for use during temporary striping operations. The CONTRACTOR shall establish by an instrument survey and mark on the surface of the finished pavement at twenty five (25) foot intervals, points necessary for striping of the finished roadway. As an exception, for resurfacing and resurfacing-widening Projects, these points shall be established in the same manner as used for horizontal control of paving operations. Marks shall be made with white paint. If striping is included in the Work to be done by the CONTRACTOR, an alternate method for layout of striping may be approved by the ENGINEER provided that the alignment achieved is equal to or better than that which would be achieved using an instrument survey. For Projects with permanent striping by the CONTRACTOR, the measurement and analysis in order to establish the location and length of no-passing zones shall be accomplished by approved electronic methods consisting of a minimum of two distance measuring devices, and shall be in accordance with Sections 3B-4 and 3B-5 of the MUTCD. For all Projects, a station identification stake shall be set at each right-of-way line at 100-foot intervals and at all locations where a change in right-of-way width occurs. Each of these stakes shall be marked with painted numerals, of sufficient size to be readable from the roadway, corresponding to the Project station at which it is located. As an exception to the above, for Projects where Plans do not show right-of-way lines, station identification stakes shall be set at locations and intervals appropriate to the type of Work being done. For resurfacing and resurfacing-widening Projects, station identification stakes shall be set at two hundred (200) foot intervals.

- 4.6.5.** The CONTRACTOR shall employ only competent personnel and utilize only suitable Equipment in performing layout Work. He shall not engage the services of any person or persons in the employ of the CITY for performance of layout Work. Adequate field notes and records shall be kept as layout Work is accomplished. These field notes and records shall be available for review by the ENGINEER as the Work progresses and copies shall be furnished to the ENGINEER at the time of completion of the Project. Any inspection or checking of the CONTRACTOR's field notes or layout Work by the ENGINEER and the acceptance of all or any part thereof, shall not relieve the CONTRACTOR of his responsibility to achieve the lines, grades and dimensions shown in the Plans and Specifications. Prior to final acceptance of the Work, the CONTRACTOR shall mark in a permanent manner on the surface of the completed Work all horizontal control points originally furnished by the CITY.

The cost of performing layout Work as described above shall be included in the Unit Prices for the various items of Work to which it is incidental.

5. BONDS

5.1. Performance, Payment and Other Bonds.

- 5.1.1.** CONTRACTOR shall furnish a Performance Bond, a Payment Bond and a Material and Workmanship Bond, each with good and sufficient surety. The Performance Bond shall be in an amount equal to 100% of the Contract Price; the Payment Bond shall be in an amount equal to 100% of the Contract Price; the Material and Workmanship Bond shall be in an amount equal to 10% of the Contract Price (including any direct purchases by the City) as adjusted in the Final Application For Payment. The Contractor shall deliver any required Bond(s) and power(s) of attorney to the Owner prior to commencement of the Work. All Bonds shall remain in effect after the date of Final Completion of the entire Work, except as otherwise provided by Laws or Regulations, or the other provisions of the Contract Documents. CONTRACTOR shall also furnish such other Bonds as are required by the Supplementary Conditions. The Performance Bond requirement in the Contract Documents shall inure solely to CITY's benefit and its successors or assigns, as obligee, and no other person shall have any right of action based thereon.
- 5.1.2.** All Bonds shall be in accordance with statutory Bond provisions in Florida Statutes and all other applicable Laws and Regulations and be in the form prescribed by the Contract Documents. All Bonds shall be executed by such Sureties as are licensed to conduct business in the state of Florida and, except as otherwise provided by Laws and Regulations, 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 its authority to act.
- 5.1.3.** If the Surety on any Bond furnished by CONTRACTOR is declared bankrupt or becomes insolvent or its license to do business in the state of Florida is terminated or it ceases to meet the requirements of the Contract Documents, CONTRACTOR shall within five (5) days thereafter substitute another Bond and Surety, both of which shall be in accordance with the Contract Documents and acceptable to CITY.
- 5.1.4.** In addition to the other bonding requirements, the Surety(ies) named on the Bonds submitted by CONTRACTOR pursuant to the Contract Documents shall be subject to the approval of CITY. If CITY has a reasonable objection to the proposed Surety, CITY may request CONTRACTOR to submit an acceptable substitute without an increase in the CONTRACT price. If CONTRACTOR declines or is unable to make any such acceptable substitution, CITY may, at its sole option, rescind the Notice of Award, and any award of the

Contract to CONTRACTOR will be of no effect.

6. CONTRACTOR'S RESPONSIBILITIES

6.1. Supervision and Superintendence.

- 6.1.1.** 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 all means, methods, techniques, scheduling, sequences and procedures of construction, for providing adequate safety precautions, for coordinating all portions of the Work under the Contract Documents, and for enforcement of order and cooperation among CONTRACTOR's employees and all Subcontractors and Suppliers. CONTRACTOR shall be responsible to see that the finished Work complies accurately with the Contract Documents.
- 6.1.2.** CONTRACTOR shall keep on the Work site at all times during its progress a competent resident Superintendent, who shall not be replaced without written notice to ENGINEER. The CONTRACTOR's resident Superintendent shall be a principal or employee of CONTRACTOR. CITY may, at its sole discretion, require replacement of the Superintendent, in which case CONTRACTOR shall submit an acceptable replacement at no increase in Contract Price nor extension in Contract Time. The Superintendent shall 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. Whenever the Superintendent is not present on any particular part of the Work where the ENGINEER may desire to inform the CONTRACTOR relative to interpretation of the Plans and Specifications or regarding disapproval or rejection of Materials or Work performed, the ENGINEER may so inform the foreman or other workers in charge of the particular part of the Work in reference to which the information is given. Information so given shall be as binding as if given to the Superintendent.
- 6.1.3.** The Superintendent and similar authorized representatives of any Subcontractor, Supplier or other person or organization shall attend all meetings pertaining to the Work, as requested by CITY or ENGINEER.
- 6.1.4.** No Work shall be performed by any Subcontractors without the CONTRACTOR's Superintendent physically present on the Work site.
- 6.1.5.** The CONTRACTOR's Superintendent at all pre-construction and Project meetings shall discuss the Progress Schedule and summary bar charts relating to coordination and scheduling including, but not limited to, CONTRACTOR's coordination of utility installations, relocations (temporary and permanent), CITY work, and the work of others at the Project site.

6.2. Personnel and Working Hours.

- 6.2.1.** CONTRACTOR shall at all times maintain good discipline and order at the site.
- 6.2.2.** CONTRACTOR shall provide competent, qualified personnel to perform construction as required by the Contract Documents. Contractor shall employ a Professional Land Surveyor with current Florida registration to survey and lay out the Work (in accordance with any additional provisions included in the Supplementary Conditions). CONTRACTOR is fully responsible to provide a sufficient number of skilled workers and supervisory personnel to perform the Work and assure that the Work is completed within the Contract Time. Failure to fully man the Project with supervisory personnel and skilled workers shall be cause for termination of CONTRACTOR.
- 6.2.3.** 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 normal Working hours, and CONTRACTOR will not permit overtime Work or the performance of Work on Saturday, Sunday or any Holiday without CITY's written consent given after prior written notice to ENGINEER. Normal Working hours shall be defined as the CONTRACTOR's normal eight hour Working period occurring between the hours beginning at 7:00 a.m. and ending at 6:00 p.m., exclusive of Saturdays, Sundays, or Holidays. Work during other than normal Working hours may be scheduled by CONTRACTOR if they first obtains written permission from CITY.
- 6.2.4.** CITY shall be entitled to deduct from the Contract Price, by issuing a Change Order, CITY's extra costs incurred in connection with CONTRACTOR's performance of Work during hours other than normal Working hours. Such costs may include, but shall not be limited to, ENGINEER'S charges to CITY while acting as CITY's representative (including charges outside of normal Working hours for Construction Manager, Field Representatives, and Inspectors), CITY's costs incurred in the performance of CITY's responsibilities as set forth in the Contract Documents, and other related costs.
- 6.2.5.** CONTRACTOR shall not hire/employ any independent contractors during the term of this Contract without the express written approval of the City.

6.3. Apprentices. CONTRACTOR's utilization of apprentices shall conform to the provisions of Chapter 446, Florida Statutes.

6.4. CONTRACTOR's Responsibilities for Furnishing. Unless otherwise specified in the Contract Documents, CONTRACTOR shall furnish and

assume full responsibility for all Materials, Equipment, labor, transportation, construction Equipment and machinery, tools, appliances, fuel, power, light, heat, ventilation, cooling, telephone, water, sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up and completion of the Work.

6.5. Items of Material or Equipment.

- 6.5.1.** All Materials and Equipment 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. All Materials and Equipment shall be handled, stored, applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable Supplier except as otherwise provided in the Contract Documents; but no provision of any such instructions will be effective to assign to ENGINEER, or any of CITY's or ENGINEER's consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility assigned to CONTRACTOR under the Contract Documents.
- 6.5.2.** Manufacturers' or Suppliers' warranties for all Materials, products and Equipment to be furnished by CONTRACTOR and to be incorporated into the completed Work shall be furnished to CITY through CONTRACTOR.
- 6.5.3.** CONTRACTOR shall obtain from Suppliers of all Materials, products and Equipment, complete information as to any special condition or restriction to be applied in the use of these items. Should the manner or method of installation, specified performance or test results as set forth in the Specifications be contrary to the manufacturer's recommendations for use of the product, CONTRACTOR shall notify ENGINEER in writing of such conflict as soon as reasonably possible, but no later than the time of Shop Drawing submittal including those products. Failure to provide such written notice before proceeding with the Work affected thereby shall be certification by CONTRACTOR that the Specification requirements will be met by the Materials, products and Equipment, and that the cost and time required to perform or complete the Work affected thereby have been included in the Contract Price and in the schedule for the performance of the Work within the Contract Time.
- 6.5.4.** Data submitted on all Equipment shall include complete operation and maintenance instructions (including preventive maintenance and operating requirement data) and parts lists in sufficient detail to facilitate ordering replacements. Such submittals shall conform to any additional requirements provided in the Contract Documents.

6.6. Wood Products. Except as may be otherwise provided by Laws or Regulations, pursuant to Chapter 225, Florida Statutes, lumber, timber and other forest products specified in the Contract Documents shall be produced and manufactured in Florida whenever such products are available, provided that price, fitness and quality are equal to other available products. This requirement does not apply where plywood is specified for monolithic concrete forms.

6.7. Equivalent Materials and Equipment.

- 6.7.1.** 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 Supplier, 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 Suppliers may be accepted by ENGINEER if sufficient information is submitted by CONTRACTOR to allow ENGINEER to determine that the material or Equipment proposed is equivalent to that named.
- 6.7.2.** Requests for review of substitute items of material and Equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR. If CONTRACTOR wishes to furnish or use a substitute item of material or Equipment CONTRACTOR shall, within ten (10) Days prior to the opening date to allow a proper review without impacting the schedule, make written application to ENGINEER for acceptance thereof, certifying that the proposed substitute will perform adequately the functions called for by the general design, be similar and of equal substance to that specified and be suited to the same use and capable of performing the same function as that specified. The application shall state whether or not acceptance of the substitute for use in the Work will require a change in the 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 shall be indicated. The application shall also contain an itemized estimate of all increases or decreases in (1) the cost of, or the time required to perform any part of the Work, and the corresponding adjustments in Contract Price and Contract Time, resulting directly or indirectly from evaluation and acceptance of the proposed substitute, including, but not as a way of limitation, costs and delays associated with redesign, or claims of other contractors affected by the resulting substitute; and (2) increases or decreases in operating, maintenance, repair, replacement or spare part costs, all of which will be considered by ENGINEER in evaluating the proposed substitute. ENGINEER may require CONTRACTOR to furnish, at CONTRACTOR's expense, additional data about the proposed substitute.
- 6.7.3.** ENGINEER shall be the sole judge of acceptability, and no substitute shall be ordered or installed without ENGINEER's prior written acceptance. However, CITY reserves the right to reject any proposed substitute which would result in an increase in Contract Price or Contract Time, and CITY may require CONTRACTOR to furnish at CONTRACTOR's expense a special performance guarantee or other Surety with respect to any substitute. If approval is given, CONTRACTOR shall not be excused from producing Work in conformity with the requirements of the Contract Documents.

- 6.7.4.** ENGINEER will record time required by ENGINEER, ENGINEER OF RECORD and their consultants in evaluating substitutions proposed by CONTRACTOR and in making changes in the Drawings or Specifications occasioned thereby. Whether or not ENGINEER accepts a proposed substitute, CITY shall be entitled to deduct from the Contract Price, by issuing a Change Order, CITY's costs including the charges of ENGINEER, ENGINEER OF RECORD and their consultants for evaluating any proposed substitute.
- 6.7.5.** The net difference in cost between the substitute item and that specified shall benefit CITY and CONTRACTOR in equal proportions. If ENGINEER estimates that the deduction proposed by CONTRACTOR does not, in its opinion, reflect the sharing of costs in the portions described above, this shall be adequate justification to reject the proposed substitution.
- 6.7.6.** CONTRACTOR assumes sole responsibility for verifying that the proposed substitute items are in accordance with the requirements of the Contract Documents, and that the dimensions, arrangement, design and construction details, and all other features of substitute items are suitable for their intended purpose.
- 6.7.7.** In the event that a substitute item differs materially from the specified item of Material or Equipment, and said difference was not expressly identified in CONTRACTOR's request for the substitution, or the incorporation of the substitute into the Work results in a change(s) to the Work or in the function or general design of the Project, ENGINEER will have authority to require the removal and replacement of said substitute.

6.8. Concerning Subcontractors, Suppliers and Others.

- 6.8.1.** CONTRACTOR shall not employ any Subcontractor, Supplier or other person or organization (including but not limited to those who are to furnish the principal items of Materials or Equipment), whether initially or as a substitute, against whom CITY or ENGINEER may have reasonable objection. A Subcontractor, Supplier or other person or organization identified in writing to CITY and ENGINEER by CONTRACTOR prior to the Notice of Award and not objected to in writing by CITY or ENGINEER prior to the Notice of Award will be deemed acceptable to CITY or ENGINEER. Acceptance of any Subcontractor, Supplier or other person or organization by CITY or ENGINEER shall not constitute a waiver of any right of CITY or ENGINEER to reject Defective Work by CONTRACTOR or any Subcontractor, Supplier or any other person or organization. If CITY or ENGINEER after due investigation has reasonable objection to any Subcontractor, Supplier or other person or organization proposed by CONTRACTOR after the Notice of Award, CONTRACTOR shall submit an acceptable substitute. Such Subcontractor, Supplier person or organization shall neither commence nor continue Work after CITY or ENGINEER objects to said entity. In the event that any such reasonable objection and acceptable substitute will cause additional expense or extend performance of the Work, or part thereof, beyond the Contract Time for the Work, or part thereof, CONTRACTOR may make a request for an adjustment in Contract Price or Contract Time. However, any changes in Contract Price made under this subsection shall exclude any adjustments for any increases in CONTRACTOR's costs in connection with an increase in Contract Time resulting from the reasonable objection and acceptable substitute submitted pursuant to this subsection. In any such case, the extension in Contract Time so granted, if any, shall be CONTRACTOR's sole and exclusive remedy for delay, disruption, interference, inefficiency, acceleration, hindrance and costs thereto. CONTRACTOR shall not be required to employ any Subcontractor, Supplier or other person or organization against whom CONTRACTOR has reasonable objection.
- 6.8.2.** CONTRACTOR shall give prompt written notice to CITY with copy to ENGINEER of CONTRACTOR's intent to remove or replace a Subcontractor, Supplier or other person.
- 6.8.3.** CONTRACTOR shall be fully responsible for all acts and omissions of his Subcontractors and Suppliers 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 CITY or ENGINEER and any Subcontractor or Supplier or other person or organization having a Subagreement with CONTRACTOR, nor shall it create any obligation on the part of CITY or ENGINEER to pay or to see to the payment due any Subcontractor, Supplier or other person or organization, except as may otherwise be required by law. CITY or ENGINEER 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. No Subcontractor, Supplier or other person or organization shall be a third party beneficiary of this Contract.
- 6.8.4.** The divisions and sections of the Specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade. The divisions of the Specifications are complementary, and anything mentioned or shown in a division of the Specifications or in a specific trade Drawing shall be of like effect as if shown in all divisions of the Specifications and in all Drawings. In addition to other requirements in the Contract Documents, Shop Drawings of a specific trade shall be compared to and coordinated with those from other trades by CONTRACTOR before submission to ENGINEER.
- 6.8.5.** All Work performed for CONTRACTOR by a Subcontractor, Supplier or other person or organization will be pursuant to an appropriate Subagreement between CONTRACTOR and the Subcontractor, Supplier or other person or organization which specifically binds the Subcontractor, Supplier or other person or organization to the applicable terms and conditions of the Contract Documents for the benefit of CITY.
- 6.8.6.** If requested in writing by CITY, CONTRACTOR shall deliver to CITY a copy of each Subagreement with a Subcontractor, Supplier or

other person or organization performing a part of the Work within seven (7) days of CITY's request.

6.9. Patent Fees and Royalties. 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 its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, it shall remain the responsibility of CONTRACTOR to assume all costs incident to the use in the performance of the Work or the incorporation in the Work of said invention, design, process, product or device. Whenever CONTRACTOR is required or desires to use any design, device, material or process covered by letters, patent, trademark or copyright, the right for such use shall be provided for by suitable legal agreements with the patentee or owner, and a copy of this Agreement shall be filed with ENGINEER. However, whether or not such agreement is made or filed as noted, CONTRACTOR and CONTRACTOR's Surety in all cases shall indemnify and hold harmless and defend CITY and ENGINEER and anyone directly or indirectly employed by either of them from and against all claims, damages, losses and expenses (including but not limited to charges of engineers, architects, other professionals and attorneys' fees and attorneys' fees on appeal and all costs of defense or appeal) arising out of any infringement of letters, trademark, 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.

6.10. Permits. Unless otherwise provided in the Contract Documents, CONTRACTOR shall obtain and pay for all construction permits and licenses. CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the Work, which are applicable at the time of opening of Bids. CONTRACTOR shall pay all charges of utility service companies for utilities service to accomplish the Work. CONTRACTOR shall meet all requirements of all permits and licenses and shall be responsible for all fines, assessments, and penalties of any nature assessed against the CONTRACTOR or CITY or both relating to any permit violation.

6.11. Laws and Regulations.

6.11.1. CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to the Work. If CONTRACTOR observes that the Contract Documents are at variance therewith, CONTRACTOR shall give ENGINEER prompt written notice thereof, and any necessary changes shall be adjusted by an appropriate Change Order (subject to the provisions of Sections 3, 10, and 11). If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to such Laws or Regulations and without such notice to ENGINEER, CONTRACTOR shall bear all costs arising therefrom.

6.11.2. CONTRACTOR shall pay all sales, consumer, use and other taxes required to be paid by it in accordance with the Laws and Regulations of the place of the Project, except as otherwise specifically indicated in the contract documents.

6.12. Use of Premises.

6.12.1. CONTRACTOR shall confine construction Equipment, the storage of Materials and Equipment and the operations of workers to areas permitted by Laws and Regulations, rights-of-way, easements, or the requirements of the Contract Documents, and shall not unreasonably encumber the premises with construction Equipment or other Materials or Equipment. CONTRACTOR shall assume full responsibility for any damage to any such property, or to the owner or occupant thereof or of any other property, caused or alleged to have been caused by or incident to the execution of this Work. CONTRACTOR shall promptly attempt to settle with such other party by agreement or otherwise resolve the claim.

6.12.2. Notwithstanding the designation of Project limits or the indication of temporary fences or barricades, the provisions of the Contract Documents governing certain phases or portions of the Work, such as trenching and landscaping, may require that certain operations be carried out beyond such limits. Those operations, if required beyond such designated limits, shall be scheduled in such a manner as to cause or occasion a minimum of inconvenience or disturbance to or interference with the normal operation of CITY, abutters and the public. CONTRACTOR shall obtain CITY's prior approval and all necessary approvals from others, governmental entities and utility companies for such operations, and prosecute such operations expeditiously and restore the affected property to its original condition immediately upon completion of such operations, unless otherwise specified in the Contract Documents. All those areas on which temporary driveways or walks are routed shall be restored to their original condition, immediately when normal routing can be reinstated, unless otherwise specified in the Contract Documents. Pumping, draining and control of surface and groundwater shall be carried out so as to avoid endangering the Work or any adjacent facility or property, or interrupting, restricting or otherwise infringing or interfering with the use thereof.

6.12.3. Except as specifically arranged with the owners of adjacent premises, CONTRACTOR shall avoid any encroachment on adjacent premises. It is specifically agreed that CONTRACTOR shall repair and make good any damage to adjacent premises or improvements thereon caused by its operation, including any damage or loss to the tenant of such adjoining premises or to the owners thereof, whether to buildings, stocks of merchandise, trade fixtures, or otherwise.

6.12.4. During the progress of the Work, CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the Work. At the completion of the Work 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 CITY. CONTRACTOR shall restore to original condition all property not

designated for alteration by the Contract Documents.

6.12.5. CONTRACTOR shall not load or permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to loads that will endanger it.

6.12.6. During the progress of the Work, CONTRACTOR shall maintain the Project premises including, but not limited to, all property owned by the CITY and all easements (temporary and permanent). CONTRACTOR shall implement a grass mowing schedule for all property within the Project premises including all property owned by the CITY and all easements (temporary and permanent). The grass mowing schedule shall assure that grass and weeds within the Project premises do not exceed eighteen inches (18") in height.

6.13. Record Documents. CONTRACTOR shall maintain in a safe place at the site, one (1) record copy of all Drawings, Specifications, Addenda, Change Orders, Change Requests, Field Orders correspondence, field test records, contractor's daily reports and construction photographs, and written interpretations and clarifications in good order, and annotated to show all changes made during construction. These record documents, together with all approved samples and shop drawings will be available at all times during regular Working hours to ENGINEER and CITY. In addition, CONTRACTOR shall submit on a daily basis two (2) copies of the preceding day's daily report to the CITY through ENGINEER. The record drawings shall be marked up as the Work progresses to reflect current conditions and shall become the "as-built" plans. The revisions are to be indicated in a neat, well-organized manner and are to include the elevation and plan location of all utilities, structures, etc., encountered or installed. A "record" survey book shall be kept and shall include the following items:

- A. The location and elevation of all existing Underground Facilities, utilities, structures, etc. encountered.
- B. The finished location and elevation of all Underground Facilities, utilities and structures installed, including, but not limited to, fire hydrants, catch basin and manhole lids, inverts, pipes, curbs, driveways, pavement and any and all underground structures.

All record notes shall be kept in book(s) designated "record" and no other survey notes will be kept in such books. CONTRACTOR will be required to review with ENGINEER the status of the as-built plans and the record survey notes in connection with ENGINEER's evaluation of each Application for Payment. Failure to maintain record documents current shall be just cause to withhold payments for Work performed. Upon completion of the Work, ENGINEER shall deliver to the CONTRACTOR a reproducible set of current Plans. CONTRACTOR will transfer all his as-built information to these reproducibles and deliver the resultant as-built set of plans, together with the record survey book to ENGINEER for CITY. Each completed set of "As-Built" drawings must include on its face, a certified statement by the CONTRACTOR'S Professional Land Surveyor that the set of "As-Built" drawings accurately depicts the actual Work as constructed.

6.14. Safety and Protection.

6.14.1. CONTRACTOR shall be solely and completely 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 all employees on the Work and other persons (including but not limited to the general public) who may be affected thereby; all the Work and all Materials or Equipment to be incorporated therein, whether in storage on or off the site; and other property at the site, adjacent thereto, or utilized by CONTRACTOR including but not limited to trees, shrubs, lawns, walks, pavements, roadways, structures, Underground Facilities and utilities not designated for removal, relocation or replacement in the course of construction regardless of whether such other property is indicated in the Contract Documents. CONTRACTOR's duties and responsibilities for the safety and protection of the Work shall continue until such time as ENGINEER issues a notice to CITY and CONTRACTOR that the Work is acceptable.

6.14.2. All damage, injury or loss to any property caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor, Supplier 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 at his sole cost.

6.14.3. CONTRACTOR shall comply with all applicable Laws and Regulations of any governmental entity having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss including, but not limited to, OSHA (Public Law 91-596) and the Contract Work Hours and Safety Standards Act (Public Law 91-54); and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall designate a responsible member of his organization at the site whose duties shall be preventing accidents and insuring compliance with all applicable safety regulations. This person shall be CONTRACTOR's Superintendent unless otherwise designated in writing by CONTRACTOR to CITY.

6.14.4. When the performance of the Work requires the use of shoring, sheet piling and other special construction related to excavation, and when required by Laws or Regulations, CONTRACTOR shall cause the design of said shoring, sheet piling and other special construction to be performed by a registered professional engineer licensed in the State of Florida. CONTRACTOR shall submit, as a Shop Drawing, a certification by the registered engineer, stating that it has complied with this requirement. CONTRACTOR shall meet all requirements of such designs prepared by a registered engineer. In addition to any requirements imposed by law, CONTRACTOR shall shore up, brace, underpin, and protect as may be necessary, all foundations and other parts of all existing structures adjacent to and adjoining the site of the Work which are in any way affected by the excavations or other operations connected with the performance of the Work.

6.14.5. CONTRACTOR shall notify owners of adjacent property and of Underground Facilities and utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation and replacement of their property. Whenever any notice is required to be given by CITY or CONTRACTOR to any adjacent or adjoining landowner or other party before commencement of any Work, such notice shall be given by CONTRACTOR.

6.14.6. CONTRACTOR shall take reasonable care 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.

6.14.7. At all times CONTRACTOR shall, and shall cause his Subcontractors and Suppliers to, carefully protect its and their Work, Materials, Equipment, and supplies against damage or injury from the weather. If in the opinion of ENGINEER any of the above has been damaged or injured by reason of failure on the part of CONTRACTOR, any Subcontractor or Supplier to perform according to the requirements of this provision, said Work, Materials, Equipment and supplies shall be removed and replaced at the expense of CONTRACTOR.

6.14.8. CONTRACTOR shall notify ENGINEER of any job site injuries at the Project site. Serious injuries shall be verbally reported to the ENGINEER within two (2) hours of occurrence of the incident. CONTRACTOR shall submit a written report of each serious injury to ENGINEER within twenty-four (24) hours of occurrence of the incident. CONTRACTOR shall prepare injury reports regardless of whether the injury is to the CONTRACTOR's personnel, subcontractors, CITY personnel or other persons.

6.14.9. Prior to mobilization, CONTRACTOR shall submit to ENGINEER a copy of CONTRACTOR's safety plan. CONTRACTOR's safety plan shall adhere to, but not be limited to, the following requirements:

- A. Trench Safety Procedures;
- B. Confined Space Entry Procedures;
- C. Compliance with all U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) requirements applicable to the Work;
- D. Assurance that a first aid person is designated, phone numbers of physicians, hospitals and ambulance services must be posted at the site, assurance that a first aid kit is available at the job site;
- E. Provide all necessary personnel protective equipment including as necessary, but not limited to, the following: hard hats, safety glasses, respirators, ear protection, protective clothing;
- F. Assure observation of all applicable speed limits;
- G. Provide all necessary safety equipment including as necessary, but not limited to, the following: barricades, flags and flagmen, bracing, shoring and sloping at excavations and scaffolds.
- H. The safety plan shall assure proper use of lasers or other activities involving combustibles;
- I. The safety plan shall assure that during welding and cutting operations, the CONTRACTOR shall provide appropriate fire watchmen and fire extinguishers;
- J. CONTRACTOR's safety plan shall assure that all heavy equipment shall be equipped as required by all applicable OSHA, ANSI, or other regulations.
- K. No provision of these Contract Documents or the requirement that CONTRACTOR provide a copy of CONTRACTOR's safety plan shall be effective to assign to ENGINEER or to the CITY, their Consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work relating to CONTRACTOR's responsibility for safety or any duty or authority to undertake responsibility assigned to CONTRACTOR under the Contract Documents.

6.15. Emergencies. 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 ENGINEER or CITY, is obligated to act to prevent threatened damage, injury or loss. CONTRACTOR shall give CITY prompt written notice if CONTRACTOR believes that any significant changes in the Work have resulted because of the action taken in response to an emergency. If CITY determines that changes are required, CITY shall authorize the changes by Change Order. If the emergency was not due to the fault or negligence of CONTRACTOR, or any Subcontractor or Supplier or anyone for whose acts any of them may be liable and the changes cause an increase or decrease in CONTRACTOR's cost or the time required to perform any part of the Work, CITY shall make an adjustment in Contract Price or Contract Time, as provided in Sections 10 and 11.

6.16. Shop Drawings and Samples.

6.16.1. After checking and verifying all field measurements and after complying with applicable procedures specified in the Specifications, CONTRACTOR shall submit to ENGINEER for review and approval in accordance with the accepted schedule of Shop Drawing submissions, five (5) copies for use by CITY, ENGINEER and plus additional copies as required by CONTRACTOR (unless otherwise specified in the Contract Documents) of all Shop Drawings, which shall have been checked by and stamped with the approval of CONTRACTOR and identified as ENGINEER may require. CONTRACTOR shall submit a copy of the transmittal letter providing drawing numbers and titles for each item included in a Shop Drawing submittal to ENGINEER.

6.16.2. CONTRACTOR shall also submit to ENGINEER for review and approval, with such promptness as to cause no delay in the Work, all samples required by the Contract Documents. All samples shall have been checked by and stamped with the approval of CONTRACTOR, identified clearly as to material, manufacturer, any pertinent data such as catalog numbers and the use for which it is intended.

6.16.3. CONTRACTOR's stamp of approval on any Shop Drawing or sample shall specifically indicate in writing, or if not indicated in writing, shall constitute a representation that CONTRACTOR has either determined and verified all quantities, dimensions, field construction criteria, Materials, catalog numbers, specified performance criteria, and similar data or assumes full responsibility for doing so, and that CONTRACTOR has reviewed or coordinated each Shop Drawing or sample with the requirements of the Work and the Contract Documents.

6.16.4. At the time of each submission, CONTRACTOR shall in writing call ENGINEER's and ENGINEER OF RECORD's attention to any deviations that the Shop Drawings or samples may have from the requirements of the Contract Documents, and, in addition, shall cause a specific notation to be made on each Shop Drawing submitted of each such variation.

6.16.5. ENGINEER will review Shop Drawings and review samples and return CONTRACTOR's submittals stamped with the following notation:

APPROVED	[]
APPROVED AS CORRECTED	[]
REVISE AND RESUBMIT	[]
NOT APPROVED	[]

Approval is only for general conformance with the design concept of the Project and compliance with the information given in the Contract Documents. Such reviews and approvals or other actions shall not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions and programs incident thereto. The CONTRACTOR is responsible for dimensions to be confirmed and correlated at the job site; for information that pertains solely to the fabrication processes or to techniques of construction; and for coordination of the Work of all trades.

ENGINEER OF RECORD's and ENGINEER's review and approval will 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 the accuracy of other matters that may be contained in the submittals, including but not limited to such matters as dimensions, quantities, performance of Equipment and systems designed by CONTRACTOR, engineering design furnished by CONTRACTOR, CONTRACTOR's means, methods, techniques, sequences or procedures of construction (except where a specific means, method, technique, sequence, or procedure of construction is indicated in or required by the Contract Documents) or to safety precautions or programs incident thereto, the correctness of which shall remain the sole responsibility of CONTRACTOR. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions. CONTRACTOR shall make any corrections required by ENGINEER OF RECORD and ENGINEER and shall return the required number of corrected copies of Shop Drawings and resubmit new samples for review. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER OF RECORD or ENGINEER on previous submittals.

6.16.6. ENGINEER OF RECORD's and ENGINEER's review and approval of Shop Drawings or samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called ENGINEER OF RECORD's and ENGINEER's attention to each such variation at the time of submission and ENGINEER OF RECORD or ENGINEER has given written approval of each such variation by a specific written notation thereof incorporated in or accompanying the Shop Drawing or sample approval; nor will any approval by ENGINEER OF RECORD or ENGINEER relieve CONTRACTOR from responsibility for errors or omissions in the Shop Drawings or from responsibility for having complied with the provisions of subsection 6.16.3.

6.16.7. Where a Shop Drawing or sample is required by the Specifications, no related Work shall be commenced until the submittal has been returned by ENGINEER OF RECORD or ENGINEER and noted "Approved" or "Approved As Corrected".

6.16.8. All costs incurred in connection with ENGINEER OF RECORD's or ENGINEER's review and return of a particular Shop Drawing or sample submission after ENGINEER OF RECORD's or ENGINEER's second time review shall be borne by CONTRACTOR, including ENGINEER OF RECORD's and ENGINEER's charges to CITY under the terms of their agreements with CITY. CITY shall be entitled to deduct these costs from the Contract Price by issuing a Change Order.

6.16.9. In reviewing Shop Drawings or samples, ENGINEER OF RECORD or ENGINEER shall be allowed thirty (30) days from the date ENGINEER OF RECORD or ENGINEER receives the submittal or resubmittal from CONTRACTOR to return the submittal in accordance with this Section, unless otherwise provided in the Contract Documents. ENGINEER OF RECORD's or ENGINEER's review and return of a Shop Drawing or sample within the time allowed shall not justify an increase in Contract Price or an extension in Contract Time. Any delay in connection with CONTRACTOR's submittal and any resubmittal of a particular Shop Drawing or sample shall represent delays under the control of CONTRACTOR and shall not justify an increase in Contract Price or an extension in Contract Time.

6.17. Continuing the Work. CONTRACTOR shall carry on the Work and maintain the Progress Schedule during all disputes or disagreements with CITY. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as CONTRACTOR and CITY may otherwise agree in writing. Suspension of the Work by CONTRACTOR during any dispute or disagreement with CITY shall entitle CITY to terminate the CONTRACT for cause, except as otherwise provided in Section 15.

6.18. Indemnity.

6.18.1. To the fullest extent permitted by law, CONTRACTOR shall indemnify, hold harmless and defend (provide and pay for legal defense) CITY, OWNER'S REPRESENTATIVE and their consultants, and each of their directors, officers, agents, and employees from and against all claims, damages, losses, expenses, and other costs, including costs of defense and attorneys' fees, and cost and attorney's fees on appeal, arising or allegedly arising in any manner out of, related to, resulting from, or in connection with the performance of the Work, both on and off the Project site, including any act or omission of CONTRACTOR, any Subcontractor, any Supplier, anyone directly or indirectly employed by any of them or anyone for whose acts or omissions any of them may be liable, caused by the negligence, recklessness, or intentional wrongful misconduct of the CONTRACTOR and persons or entities employed or utilized by the CONTRACTOR in the performance of the Work.

6.18.2. In any and all claims against the indemnified parties by any employee of CONTRACTOR, any Subcontractor, any Supplier, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under subsections 6.18.1 and 6.18.4 shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable, by or for CONTRACTOR, or any Subcontractor, or any supplier, or other person under Workers' compensation acts, disability benefit acts, or other employee acts.

6.18.3. The obligations of CONTRACTOR under subsections 6.18.1 and 6.18.4 shall not extend to the liability of ENGINEER OF RECORD, ENGINEER and their consultants, directors, officers, employees and agents and each of their directors, officers, employees, and agents arising out of, or resulting from, or in connection with the preparation or approval of maps, Drawings, opinions, reports, surveys, designs or Specifications, providing that the foregoing were the sole and exclusive cause of the loss, damage, or injury.

6.18.4. CONTRACTOR shall also indemnify and hold harmless the City, its officers and employees, from liability, losses, damages, 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 and persons employed or utilized by the Contractor in their performance of this contract.

6.18.5. At CITY's sole option and utilizing attorneys agreeable to CITY, CONTRACTOR shall defend all suits or claims as set out in this Section 6.18.

6.18.6. In the event that CITY incurs costs contrary to this indemnification agreement, CITY shall be entitled to deduct these costs from the Contract Price by issuing a Change Order.

6.19. Progress of the Work.

6.19.1. The CONTRACTOR shall physically mobilize at the Work site within fourteen (14) Days of the Date of Commencement of the Contract Time and substantially complete mobilization activities no later than thirty (30) Days from the Date of Commencement of Contract Time. Substantial completion for mobilization shall be defined as activities that include, at least (1) installation of the field office, (2) temporary utility provisions for water, sewer, electrical, telephone and other utilities in service, and (3) commencement of initial site Work including clearing and grubbing or blasting and removal of existing improvements at the Work site. In the event that the CONTRACTOR fails to mobilize as required in this Section, the CITY may withhold payment as provided in Section 6 of the Agreement.

6.19.2. If ENGINEER determines that CONTRACTOR is failing to maintain progress of the Work in accordance with the Progress Schedules, CONTRACTOR shall take steps as may be necessary to improve his progress, and ENGINEER may require him to increase his Work force, or hours, or days of Work, or the amount of construction plant or all of them, and to submit to ENGINEER for approval such supplementary schedule or schedules as may be deemed necessary to demonstrate the manner in which the requisite progress will be regained and maintained, all without time extensions or additional cost to CITY.

6.19.3. Failure of CONTRACTOR to comply with the requirements of ENGINEER under this Section shall be grounds for determination by ENGINEER that CONTRACTOR is not prosecuting the Work with such diligence as will insure completion within the time specified. ENGINEER will then so inform CITY. CITY may thereupon withhold payment in anticipation of liquidated damages as provided in Section 6 of the Agreement or suspend the Work or terminate CONTRACTOR's services should CONTRACTOR fail to comply with this Section.

6.20. Project Meetings.

6.20.1. The CONTRACTOR along with appropriate subcontractors shall attend Project meetings requested by ENGINEER or CITY for the purpose of discussing and resolving matters concerning the various elements of the Work. If CONTRACTOR or his subcontractors fail to attend a meeting, CITY shall be entitled to deduct the costs of CITY, ENGINEER, and ENGINEER OF RECORD representatives attending the meeting from the CONTRACT PRICE by issuing a Change Order.

6.20.2. CONTRACTOR shall submit for the Project meeting a summary bar chart of the Work activities anticipated for the following fourteen (14) days. This schedule will be used by the CONTRACTOR to discuss and coordinate the Progress Schedule with utility contractors, the CITY's own forces, and others performing work at the Project site and by ENGINEER for the ENGINEER's planning of testing and inspection within ENGINEER's scope of responsibility and shall be an item of discussion at the Project meeting.

6.20.3. CONTRACTOR's obligation to coordinate the Progress Schedule with all utility contractors, the CITY's own forces and others performing work at the Project site shall be an item of discussion raised by the CONTRACTOR at each Project meeting. The CONTRACTOR shall discuss scheduling concerns related to the work of each utility contractor, the CITY and others. The CONTRACTOR's summary bar chart of Work activities referenced above and CONTRACTOR's discussion shall identify all reasonable measures taken by the CONTRACTOR to minimize the effect of utility, CITY and work by others on the Progress Schedule including CONTRACTOR's cooperative scheduling of all such work. CONTRACTOR's summary bar chart and CONTRACTOR's discussion shall include the advance notification, required by subsection 6.43.2.2 including dates on which utility, CITY and work by others must be coordinated with the CONTRACTOR's Work and operations to avoid delay.

6.21. CONTRACTOR Not Agent of CITY. CONTRACTOR shall perform all Work under the Contract Documents as an independent contractor and shall not be considered an agent of CITY, nor shall CONTRACTOR's Subcontractors or Suppliers or employees be considered agents of CITY. CONTRACTOR and not CITY shall be solely responsible to any and all Subcontractors and Suppliers and all those employed by them for their costs, expenses, fees and profits, if any, in performing the Work.

6.22. Inspection and Audit.

6.22.1. CITY shall have access to the Work and the right to audit all of CONTRACTOR's books, ledgers, records, correspondence, instructions, drawings, receipts, vouchers, memoranda, and other documents pertinent to all Cost and Pricing Data used by CONTRACTOR in the determination of CONTRACTOR'S Bid for the Work, in pricing, negotiating or costing Work covered by a Change Order, Change Request or Contract Claim, or otherwise relating to the Work, and CONTRACTOR shall preserve and make available at CONTRACTOR's office at all reasonable times all such records for a period of five (5) years after Final Payment.

6.22.2. In the event of termination, the records relating to the Work, or part thereof, affected by such termination shall be made available for five (5) years after the termination. Records pertaining to Contract Claims, to litigation or the settlement of Contract Claims arising under or relating to the performance of the Work shall be made available until disposition of such appeals, litigation, or Contract Claims.

6.22.3. CONTRACTOR shall insert a provision containing all the requirements of subsection 6.22, including this subsection 6.22.3, in all Subagreements between CONTRACTOR and Subcontractors or Suppliers or other persons, altering the subsection only as necessary to properly identify the contracting parties.

6.23. Truth-In-Negotiation.

6.23.1. CONTRACTOR warrants that all bid line items are true, complete and accurate and include all costs, overhead, profit and all other amounts associated with such items and may be relied upon by CITY when making additions or deductions to the Contract Price. CONTRACTOR further warrants that all Cost and Pricing Data provided to ENGINEER and CITY during the term of the Contract Documents shall be complete, accurate and current when provided. Should there be any changes in the Cost and Pricing Data previously submitted, the CONTRACTOR shall notify and provide the new information to ENGINEER and CITY immediately. CITY shall be entitled to issue an appropriate Change Order to adjust the Contract Price and Contract Time on account of corrections to inaccurate or incomplete information provided by CONTRACTOR.

6.23.2. Despite any provisions in the Contract Documents to the contrary, any amounts paid by CITY to CONTRACTOR in excess of what it is entitled under the Contract Documents shall be reimbursed by CONTRACTOR to CITY. The making of Final Payment to CONTRACTOR shall not be a waiver of CITY's right to reimbursement from CONTRACTOR nor shall it discharge CONTRACTOR's obligation to refund the overpayment. The terms of subsection 6.23 shall survive the CITY's making Final Payment.

6.23.3. CONTRACTOR shall insert a provision containing all the requirements of subsection 6.23, including this subsection 6.23.3, in all Subagreements between CONTRACTOR and Subcontractors or Suppliers or other persons, altering the subsection only as necessary to identify properly the contracting parties.

6.24. Correspondence. All CONTRACTORS's correspondence shall include the CITY's Project name and the CITY's designated contract number. All CONTRACTOR's correspondence shall have identification numbers assigned by CONTRACTOR. The identification numbers shall be sequential and assigned chronologically to these Contract Documents only such that each CONTRACTOR's submission can be individually identified by reference to the assigned identification number. The numbering system must be approved by ENGINEER. Any correspondence not so identified may not be accepted by ENGINEER.

6.25. Protection of Historical Properties.

6.25.1. CONTRACTOR shall comply with Florida's Archives and Historical Act (Chapter 267, Florida Statutes) and the regulations of the local historic preservation board as applicable and protect against the potential loss or destruction of significant historical or archaeological data, sites, and properties in connection with the Work.

6.25.2. CONTRACTOR shall be responsible for immediately reporting to the governmental entity or agency with jurisdiction any archaeological features which are encountered or unearthed during the performance of the Work, and for protecting same to the satisfaction of such governmental entity or agency. CONTRACTOR shall absorb all related delay, extension or acceleration costs, however caused, except that if CITY and CONTRACTOR believe the delays require an extension in Contract Time, CITY shall authorize the necessary change in Contract Time only and CONTRACTOR shall not be entitled to any increase in Contract Price.

6.26. Responsibility for Connecting to Existing Services and Utilities. At all points where the Work constructed by CONTRACTOR connects to existing utilities and services, the actual Work of making the necessary connection to the existing service or utility shall be arranged for by CONTRACTOR at no expense to CITY (unless specifically indicated otherwise). Services and utilities included within (but not limited to) this responsibility are roads, ditches, electrical, sewer, mechanical utilities, water, fencing, etc. Connections shall be made at a time that will result in the least possible interference with existing services.

6.27. Additional Provisions.

6.27.1. CONTRACTOR shall be responsible for all cutting of masonry and other Materials, and all fitting, drilling or patching which may be necessary to complete the Work or to make its several parts fit together properly, whether or not such Work is expressly specified in the Contract Documents.

6.27.2. CONTRACTOR shall be responsible for preparing and delivering to ENGINEER, on a daily basis, reports recording labor and Equipment available and utilized, and Materials and Equipment received each day, on a form acceptable to ENGINEER. If CONTRACTOR fails to submit reports daily, ENGINEER may withhold approval of any Application for Payment until such time as CONTRACTOR submits the required information. CONTRACTOR shall make available any such records as requested by ENGINEER to verify that the reports are accurate.

6.27.3. CONTRACTOR shall submit to ENGINEER at the beginning of each Work shift, a list of specific items requiring final inspection, monitoring, or witnessing by ENGINEER.

6.28. Inspection and Tests at Source of Supply.

6.28.1. If the volume, progress of the Work, and other considerations warrant the ENGINEER may undertake the inspection of Materials at the source of supply.

6.28.2. The CONTRACTOR shall assure that the CITY representative has free entry at all times to such parts of the plant as concern the manufacture or production of the Materials ordered, and shall bear all costs incurred in providing all reasonable facilities to assist in determining whether the Material furnished complies with the requirements of the Specifications.

6.28.3. The CITY, however, assumes no obligation to make such inspection of Materials at the source of supply, and the responsibility for assuring that the Materials are satisfactory rests entirely with the CONTRACTOR.

6.28.4. The CITY may elect to retest Materials which have been tested and accepted at the source of supply, after they have been delivered, and all Materials which, when retested, do not comply with the requirements of the Specifications will be rejected.

6.29. Control by Samples and Tests.

- 6.29.1.** The ENGINEER may require any or all Materials to be subjected to tests by means of samples or otherwise, at production points, after delivery, or both, as he may determine. Unless otherwise provided, such tests will be made by and at the expense of the CITY. The CONTRACTOR shall afford such facilities as the ENGINEER may require, for collecting and forwarding samples and shall not make use of, nor incorporate in the Work, any Materials represented by the samples until the tests have been made and the Materials found acceptable. The CONTRACTOR shall furnish at his own expense, the Material necessary for the required samples, delivered to the point designated, without charge. Boxes for shipping of concrete cylinders will be furnished by the CITY.
- 6.29.2.** In the case of pavements, both base course and surface course, the CONTRACTOR shall, when required by the ENGINEER, furnish samples taken from the completed Work at any point indicated by the ENGINEER and shall immediately replace the areas to removed with Materials and construction to conform to the Specifications and to the line and grade of the immediate surrounding pavement surface. No additional compensation will be allowed for furnishing such samples and replacing the areas with new pavement as described above.
- 6.29.3.** Methods of sampling and testing Materials shall be in accordance with Florida Methods so far as covered therein. Otherwise, they shall be in accordance with standards of AASHTO, ASTM, or other criteria as specifically designated. Where an AASHTO, ASTM or other non-Florida Method is designated, but a Florida Method which is similar exists, sampling and testing shall be in accordance with the Florida Method. Whenever in these Specifications Florida, AASHTO, ASTM, or other standards are referenced without identification of the specific time of issuance, the reference shall construed to mean the most current issuance, including interims or addendums thereto, at the time of advertisement for Bids for a Project.
- 6.29.4.** The bearing value of soils shall be determined by FDOT's Florida Soil Bearing Tests or by the methods required for the Limerock Bearing Ratio Method, whichever is designated in the Plans.
- 6.29.5.** Sieves shall conform to the requirements of AASHTO M 92.
- 6.29.6.** As a general practice, the CITY, in order to expedite the Work, may accept certain Materials on the basis of tests made on advance samples taken and submitted by the producer, provided that tests on a representative number of samples of the Material taken by the ENGINEER after its arrival at the Work site confirm that the Material meets the CITY's Specifications. In the event that tests made on the samples taken by the ENGINEER do not substantiate those made on the advance samples submitted by the producer, and there is evidence that this privilege of expediting the use of the Material is being abused, then this privilege will no longer be extended to such producer.
- 6.29.7.** A card shall be attached to each producer's sample, showing the following information: Project designation, intended use of Material, name of producer, source of supply, quantity represented by sample, date sampled and any other information pertinent to the Material or Work. Care shall be used in preparing and shipping samples to assure that all packages are clean before Material has been placed therein, and are tied, or closed and wrapped, securely.
- 6.29.8.** For the verification of weights or proportions and character of Materials, and determination of temperatures used in the preparation of Materials and mixtures, the ENGINEER or his authorized representative shall have access at all times to all parts of any paving or other plants connected with the Work. The CONTRACTOR shall facilitate and assist in the verification of the accuracy of all scales, measures and other devices, and shall protect them from the wind and elements whenever such protection is necessary.
- 6.29.9.** For all aggregates entering into asphaltic concrete mixes, unless the ENGINEER specifically directs otherwise, all samples are to be selected and taken by the ENGINEER. The ENGINEER shall be advised as to location and source three (3) weeks prior to the time the aggregates are needed for the design of the mix, in order that he can arrange for the samples of the Materials to be taken.
- 6.29.10.** For the designs of asphaltic concrete mixes by the CITY not more than three (3) design mixes will be established without charge, for each type of mixture on any one (1) Agreement.

6.30. Storage of Materials.

- 6.30.1.** Materials shall be stored by the CONTRACTOR to ensure the preservation of their quality and fitness for the Work and shall be so located as to facilitate prompt inspection, and to minimize noise impacts on sensitive receivers. More detailed Specifications concerning the storage of specific Materials are prescribed in Division II (Construction Details). Materials improperly stored may be rejected without testing.
- 6.30.2.** If permitted by the ENGINEER, that portion of the right-of-way outside the clear zone not required for public vehicular or pedestrian travel may be used for storage purposes and for placing of the CONTRACTOR's plant and Equipment. Any additional space required shall be provided by the CONTRACTOR at their expense.
- 6.30.3.** The protection of stored Materials shall be the CONTRACTOR's responsibility and the CITY shall not be liable for any loss of Materials, by theft or otherwise, nor for any damage to the stored Materials.

- 6.31. Defective Materials.** All Materials not conforming to the requirements of the Specifications; segregated Materials, even though previously tested and approved; Materials which are or have been improperly stored; and Materials which are mixed with an excess of clay, coal,

sticks, burlap, hay, straw, loam or earth, or other debris. All such Materials, whether in place or not, will be rejected and shall, unless otherwise permitted by the ENGINEER, be removed immediately from the site of the Work and from the CONTRACTOR's storage areas, at the CONTRACTOR's expense. No rejected material, the defects of which have been subsequently corrected, shall be used until approval has been given. Upon failure on the part of the CONTRACTOR to comply promptly with any order of the ENGINEER made under the provisions of this Section, the ENGINEER shall have authority to remove and replace defective material and to deduct the cost of removal and replacement from any moneys due or to become due the CONTRACTOR.

6.32. Preservation of Property.

6.32.1. The CONTRACTOR shall preserve from damage all property along the line of Work, or which is in the vicinity of or is in any way affected by the Work, the removal or destruction of which is not called for by the Plans. This applies to public and private property, public and private utilities (except as modified by the provisions of 6.33), trees, shrubs, crops, signs, monuments, fences, guardrail, pipe and underground structures, public highways (except natural wear and tear of highway resulting from legitimate use thereof by the CONTRACTOR), etc., and whenever such property is damaged due to the activities of the CONTRACTOR it shall be immediately restored to a condition similar or equal to that existing before such damage or injury was done by the CONTRACTOR, and at his own expense, or he shall make good such damage or injury in an acceptable manner. The CONTRACTOR shall protect existing bridges during the entire construction period, from damage caused by any of his operations or Equipment. The CONTRACTOR will not be required to provide routine repairs or maintenance for such structures but will be required, at his own expense, to make immediate repairs of any damage occasioned by his use or operations. In the event that the CONTRACTOR's use or operations result in damage to a bridge requiring repairs, such repairs shall have a prior right to any Equipment, Materials or labor at the CONTRACTOR's disposal

6.32.2. In case of failure on the part of the CONTRACTOR to restore such property, bridge, road or street, or to make good such damage or injury, the ENGINEER may, upon forty-eight (48) hours notice, proceed to repair, rebuild or otherwise restore such property, road or street as may be deemed necessary, and the cost thereof will be deducted from any monies due or which may become due the CONTRACTOR under the Agreement contract. Nothing in this Section shall prevent the CONTRACTOR from receiving proper compensation for the removal, damage or replacement of any public or private property, not shown on the Plans, which is made necessary by alteration of grade or alignment and such Work is authorized by the ENGINEER provided that such property has not been damaged through fault of the CONTRACTOR or his employees or agents.

- A. Where the CONTRACTOR hauls Materials or Equipment to the Project over roads and bridges on the state park road system, state highway system, County roadways or City street system and such use causes damage, he shall immediately, at his expense, repair such road or bridge to as good a condition as before the hauling began. The above requirement may be modified in accordance with any agreement the CONTRACTOR might make with the governmental unit having jurisdiction over a particular road or bridge provided that he submits written evidence of such agreement.
- B. Operation of Equipment or hauling units of such weight as to cause damage to previously constructed elements of the Project including, but not necessarily limited to bridges, drainage structures, base course and pavement, will not be permitted. Equipment or hauling units loaded in excess of the maximum weights permitted shall not be operated on existing pavements that are to remain in place (including pavement being resurfaced), cement-treated subgrades and bases, concrete pavement, any course of asphalt pavement, and bridges. Exceptions to these weight restrictions may be allowed for movement of necessary Equipment to and from its Work site, for hauling of offsite fabricated components to be incorporated into the Project and for crossings as authorized by the ENGINEER.
- C. All existing roadside traffic signs and guardrail for which permanent removal is not indicated shall be protected against damage or displacement. Whenever such signs or guardrail lie within the limits of construction, or wherever so directed by the ENGINEER due to exigencies of construction operations, the existing roadside signs and guardrail shall be taken up by the CONTRACTOR, properly stored, and subsequently reset at the original location or, in the case of widened pavement or roadbed, at locations designated by the ENGINEER.

6.32.3. The CONTRACTOR shall give notification to the ENGINEER or the superintendent of the railroad company appropriately in advance of (minimum of seventy-hours 72 hours) his beginning of any operations within the limits of the railroad right-of-way, any operations requiring movement of employees, trucks or other Equipment across the tracks of the railroad company at other than an established public crossing and any other Work which may affect railroad operations or property.

6.32.4. The CONTRACTOR shall comply with whatever requirements an authorized representative of the railroad company deems necessary in order to safeguard the railroad's property and operations. Any damage, delay or injury and any suits, actions or claims brought on account of damages or injuries resulting from the CONTRACTOR's operations within or adjacent to railroad company right-of-way shall be the CONTRACTOR's responsibility.

- A. When protective services to insure the safety of railroad operations (watchman or flagman service) are essential during certain periods of the Work, the railroad company will furnish such services and the CITY will reimburse the railroad company for the cost thereof. The CONTRACTOR shall schedule their Work which affects railroad operations so as to minimize the need for protective services by the railroad company.

6.33. Utilities.

6.33.1. At points where the CONTRACTOR's operations are adjacent to utility facilities or other property, damage to which might result in expense, loss, disruption of service or other undue inconvenience to the public or to the owners, Work shall not be commenced until all necessary arrangements for the protection thereof have been made. The CONTRACTOR shall be solely and directly responsible to the owners and operators of such properties for any damage, injury, expense, loss, inconvenience, or delay, caused by the CONTRACTOR's operations. Relocations or adjustments requested only on the basis of the CONTRACTOR's proposed use of a particular method of construction or a particular type of Equipment will not be considered as being essential to the construction of the Project if other commonly used methods and Equipment will determine the responsibility for any such required adjustments of utilities. Relocations or adjustments requested because of delivery to the job of Materials furnished by the CONTRACTOR will be the responsibility of and at the expense of the CONTRACTOR. Circumstances under which it will be considered essential to remove or adjust (or to otherwise protect) utilities in order to construct the Project shall include, but not be limited to, the following:

- A. Utilities lying within the vertical and horizontal construction limits, plus the reasonably required Working room necessary for operation of Equipment normally used for the particular type of construction. In the case of overhead electrical conductors which carry more than four hundred (400) volts, a minimum of ten feet (10') clearance between the conductor and the nearest possible approach of any part of the Equipment will be required, except where the utility owner effects safeguards approved by the Florida Department of Labor and Employment Security.
- B. Utilities lying within the horizontal limits of the Project and within twelve inches (12") below the ground surface or the excavation surface on which the construction Equipment is to be operated, or within twelve inches (12") below the bottom of any stabilizing course called for on the plans.
- C. Utilities lying within the normal limits of excavation for underground drainage facilities or other structures. Such normal limits shall extend to side slopes along the angle of repose, as established by sound engineering practice, unless the sides of the excavation are required by the Plans or special provisions to be supported by sheeting, or the CONTRACTOR elects to sheet such excavation for his own convenience.
- D. Where utilities cross pipe trenches transversely within the excavation area, but not within positions from which relocation or removal is necessary, the CONTRACTOR shall provide necessary coordination and support to the utility owner in the utility owner's effecting support and protective measures to utilities. In the event that CONTRACTOR is performing utility Work for the CITY under the Contract Documents, the CONTRACTOR shall be responsible for providing and effecting all measures for utility support and protection during construction operations. It is the responsibility of the CONTRACTOR to provide all sheeting, bracing, shoring and other forms of support for all utilities when working adjacent to or directly upon existing and proposed utilities. The CONTRACTOR shall comply with support requirements for the duration of the Work, whether the CONTRACTOR is installing, relocating or removing roadway infrastructure (including but not limited to (1) stormwater, piping structures; or (2) any proposed traffic signalization devices; (3) roadwork including the base, subbase or final pavement) or installing or removing utilities that are owned by the CITY or any other utility. The CONTRACTOR shall be responsible for any damage to the utility which is caused by neglect or failure on the CONTRACTOR's part to cooperate and to use proper precaution in performing their Work. In the event that a temporary relocation of a utility or a particular sequence of timing in the relocation of a utility is necessary, such relocation shall be accomplished only as directed by the ENGINEER so as to cause the least impediment to the overall construction operations. The CITY will not assume responsibility for utility adjustments or temporary relocation Work, nor for the conditions resulting therefrom.

6.33.2. The CONTRACTOR shall cooperate with the owners of any underground or overhead utility lines in their removal and rearrangements operations in order that these operations may progress in a reasonable manner, that duplication or rearrangement Work may be reduced to minimum, and that services rendered by the utility owners will not be unnecessarily interrupted. In the event of interruption of water or other utility services as a result of accidental breakage or as a result of their being exposed or unsupported, the CONTRACTOR shall promptly notify the proper authority and shall cooperate with the authority in the prompt restoration of service. If water service is interrupted, repair Work shall be continuous until the service is restored. No Work shall be undertaken around fire hydrants until provisions for continued service have been approved by the local fire authority.

- A. Certain utility installations, relocations (temporary and permanent), adjustments and reconstruction work may be underway during the progress of the Work. The CONTRACTOR will be required to cooperate as is necessary with the various utility construction crews in order that utility service may be maintained. Upon completion of the utilities work by others the utilities will be in their final location and the CONTRACTOR shall exercise due caution when working adjacent to such utilities. Any damage to the relocated utilities resulting from the CONTRACTOR's operations shall be repaired at his expense. The CONTRACTOR's attention is directed to the requirements of subsection 6.33.1 and 6.33.2 outlining responsibility for protection of utility facilities.
- B. No additional monetary compensation will be allowed for any delays, disruptions, inconveniences, inefficiencies,

constructive acceleration or damages of any nature sustained by CONTRACTOR due to any delay, disruptions, constructive accelerations, inefficiency, interference relating to utilities or appurtenances or from the operations of relocating and installing utilities.

- 6.34. CONTRACTOR's Responsibility For Work.** Until acceptance of the Work by the CITY it shall be under the charge and custody of the CONTRACTOR and he shall take every necessary precaution against injury or damage to the Work by the action of the elements or from any other cause whatsoever, arising either from the execution or from the nonexecution of the Work. The CONTRACTOR shall rebuild, repair, restore and make good, without additional compensation, all injury or damage to any portion of the Work occasioned by any of the above causes before its completion and acceptance except that in case of catastrophic damage the CITY may, at its discretion, reimburse the CONTRACTOR for the repair of such damage due to unforeseeable causes beyond the control of and without the fault or negligence of the CONTRACTOR including, but not restricted to, Acts of God, of the public enemy or of governmental authorities.
- 6.35. Interference with Traffic.** The CONTRACTOR shall at all times conduct the Work in such manner and in such sequence as to ensure the least practicable interference with traffic. The CONTRACTOR's vehicles and other Equipment shall be operated in such manner that they will not be a hazard or hinderance to the traveling public. Materials stored along the road shall be placed so as to cause as little obstruction to the traveling public as possible. To prevent any open trench remaining after Working hours where existing pavement is to be widened and stabilizing is not required, the CONTRACTOR shall schedule his operations such that at the end of each Work day the full thickness of the base for widening will be in place. Construction of the widening strips will not be permitted simultaneously on both sides of the road except where separated by a distance of at least one-fourth mile along the road, where either the Work of excavation has not been started or the base has been completed.
- 6.36. Coordination with other Contractors.** The CONTRACTOR shall arrange their Work and dispose of his Materials so as not to interfere with operations of other contractors engaged upon adjacent work and to join his Work to that of others in a proper manner, in accordance with the spirit of the Plans and Specifications, and to perform his Work in the proper sequence in relation to that of other contractors. Each contractor shall be responsible for any damage done by their agents to the work performed by another contractor.
- 6.37. Drainage.** The CONTRACTOR shall so conduct his operations and maintain the Work in such condition that adequate drainage will be in effect at all times. Existing functioning storm sewers, gutters, ditches, and other run-off facilities shall not be obstructed.
- 6.38. Fire Hydrants.** Fire hydrants on or adjacent to the highway shall be kept accessible to fire apparatus at all times and Material or obstruction shall be placed within fifteen feet (15') of any such hydrant.
- 6.39. Protection of Structures.** Heavy Equipment shall not be operated close enough to pipe headwalls or other structures to cause their displacement.
- 6.40. Fencing.** On all Work which includes fencing and where the ENGINEER determines it to be necessary for maintaining the security of livestock or adjacent property, or for protection of pedestrians who are likely to gain access to the Work from adjacent property, the CONTRACTOR shall erect appropriate temporary security fence as a first order of business. Temporary fencing shall be installed at temporary construction easement areas on all commercial and residential properties appropriate to secure the Work areas and protect persons and domestic animals. At all times, the CONTRACTOR shall conduct the Work under secure temporary fencing. Permanent fencing shall be addressed as required by the Plans and Specifications.
- 6.41. Hazardous or Toxic Waste.** When the CONTRACTOR's operations encounter or expose any abnormal condition which may indicate the presence of a hazardous or toxic waste such operations shall be discontinued in the vicinity of the abnormal conditions and the ENGINEER shall be notified immediately. The presence of tanks or barrels; discolored earth, metal, wood, ground water, etc.; visible fumes; abnormal odors; excessively hot earth; smoke; or other conditions which appear abnormal may be indicators of hazardous or toxic wastes and shall be treated with extraordinary caution.

Every effort shall be made by the CONTRACTOR to minimize the spread of any hazardous or toxic waste into uncontaminated areas.

The CONTRACTOR's operations shall not resume until so directed by the ENGINEER.

Disposition of the hazardous or toxic waste will be made in accordance with the requirements and regulations of any Local, State, or Federal Agency having jurisdiction. Where the CONTRACTOR performs work necessary to dispose of hazardous or toxic waste, and the contract does not include pay items for disposal, payment will be made as provided in 4.4, Resolution of a report of Differing Physical Conditions.

6.42. Contractor's Vacation.

6.42.1. The CONTRACTOR will be allowed to suspend operations, except as provided in Subsection 6.42.7 for a total period not to exceed fourteen (14) Days annually (three hundred sixty five (365) calendar day period(s), beginning with Date of Commencement of the Contract Time in order to provide vacation time for their employees. These fourteen (14) Days shall include the two periods allowed for automatic suspension, if used, and shall be divided into no more than two (2) separate periods of vacation time.

6.42.2. Two (2) periods of time are established for automatic time suspensions. These periods are Thanksgiving, which includes

Thanksgiving Day and the following Friday, Saturday and Sunday; and Christmas, which includes December 24th through January 1st. Vacation days other than provided at Thanksgiving and Christmas will require written request. These automatic time suspensions may be approved verbally by the ENGINEER upon notification by the CONTRACTOR of their intent to shut down his operations for one or both of these periods. If the CONTRACTOR does not shut down their operations during these periods, Contract Time will be charged as usual.

- 6.42.3. The CONTRACTOR shall submit written request to the ENGINEER for permission to suspend operations at least ten (10) days in advance of the date of suspension.
- 6.42.4. The CITY reserves the right to refuse permission for a suspension (including automatic suspensions) when it might cause undue inconvenience to the traveling public or when, because of other factors, uninterrupted prosecution of the Work is essential.
- 6.42.5. The CONTRACTOR shall retain sufficient personnel at the job site to properly maintain all maintenance of traffic requirements.
- 6.42.6. Contract Time will not be charged during the period of any approved suspension for vacation, as long as no Work (with the exception of that specified in 6.42.5) is accomplished on the Project.
- 6.42.7. The CONTRACTOR shall not be permitted to suspend operations for vacation periods when the CONTRACTOR has failed to achieve Substantial Completion in accordance with the Contract Documents.

6.43. Computation of Contract Time.

6.43.1. The CONTRACTOR shall perform fully, entirely and in accordance with the Specifications, the contracted Work within the Contract Time or as may be extended in accordance with the Contract Documents. The CONTRACTOR acknowledges that the allowable Contract Time is calculated with consideration given that significant Work is not normally accomplished on Saturdays, Sundays, CITY Legal Holidays and during seasonal inclement weather conditions common to Central Florida with accompanying normal delays in prosecution of Work on controlling items. The effect on job progress of utility relocation and adjustments and the scheduling of construction operations required in order to adequately maintain traffic, as detailed in the Plans, has also been considered in the computation of the allowable Contract Time.

6.43.2. Adjusting Contract Time.

- A. The CITY may grant an extension of Contract Time when a Controlling Work Item is delayed by factors not anticipated or foreseeable at the time of Bid. Such extension of time may be allowed only for delays occurring during the Contract Time period or authorized extension of the Contract Time period. When failure by the CITY to fulfill an obligation under the agreement results in delays in the Controlling Work Items, such delays will be considered as a basis for granting credit to the Contract Time. Extensions of Contract Time will not be granted for delays due to the fault or negligence of the CONTRACTOR. Time extensions for delays caused by the effects of inclement weather are justified only when rains or other inclement weather conditions or related adverse soil conditions prevent the CONTRACTOR from productively performing Controlling Work Items resulting in:
 - B. The CONTRACTOR being unable to work at least fifty (50) percent of the normal Work day on pre-determined Controlling Work Items due to adverse weather conditions or;
 - C. The CONTRACTOR must make major repairs to Work damaged by weather. Providing the damage was not attributable to a failure to perform or neglect by the CONTRACTOR, and providing that the CONTRACTOR was unable to Work at least fifty (50) percent of the normal Workday on pre-determined Controlling Work Items.

The affect of utility relocation (temporary and permanent) and adjustment Work on job progress will be considered as the basis for granting a time extension only if all the following criteria are met:

- I. Delays are the result of utility Work not detailed in the Plans or utility Work detailed in the Plans which is not accomplished in reasonably close accordance with the schedule;
 - II. Utility Work actually affected progress toward completion of Controlling Work Items; and,
 - III. The CONTRACTOR took all reasonable measures to minimize the effect of utility Work on job progress including cooperative scheduling of their operations with the scheduled utility Work at the preconstruction conference, at Project meetings, and providing adequate advance notification was given to utility companies at Project meetings as to the dates on which their operations must be coordinated with the Contractor's operations to avoid delays.
 - IV. Such delays exceed thirty (30) impact to Controlling Work Items.
- D. Extension of Contract Time under the provisions of these Contract Documents shall not entitle CONTRACTOR to additional compensation or form the basis for Contract Claims.

6.44. Rights In and Use of Materials Found On the Site of the Work.

6.44.1. Except as provided in the Plans and Specifications, all Materials which are not the property of the CITY or other persons, in both roadway and structures, found on the right-of-way, and all Material in structures removed by the CONTRACTOR, shall become the property of the CONTRACTOR and shall be disposed of by him. Such Materials shall not include earth or other excavated Material required for the construction of the Work. Materials from existing structures required to be removed and which are designated to remain the property of the CITY may generally be used by the CONTRACTOR during construction. Such material shall not be cut or otherwise damaged during removal unless permission is given, and shall subsequently be stored in an accessible location if so directed by the ENGINEER.

6.44.2. Any ornamental trees and shrubs existing in the right-of-way, which are required to be removed for the construction operations and which are not specifically designated on the Plans to be reset, installed at another location, or to be removed by others prior to the construction operations, shall become the property of the CONTRACTOR.

6.45. Final Cleaning Up of Right-of-Way. Upon completion of the Work, and before Acceptance and Final Payment will be made, the CONTRACTOR shall remove from the CITY's right-of-way and adjacent property all false Work, Equipment, surplus and discarded Materials, rubbish and temporary structures; shall restore in an acceptable manner all property, both public and private, which has been damaged during the prosecution of the Work, and shall leave all waterways and drainage facilities unobstructed and the roadway in a neat and presentable condition throughout the entire length of the Work.

6.46. Maintenance of Traffic.

6.46.1. The Maintenance of Traffic requirements of the Contract Documents are essential life safety requirements designed to assure the safety of the traveling public.

6.46.2. Project specific Maintenance of Traffic requirements may be set forth in the Supplementary Conditions. If Project specific Maintenance of Traffic requirements are set forth in the Supplementary Conditions then Division II "Construction Details", Section 102 Maintenance of Traffic is deleted. If Project specific Maintenance of Traffic requirements are not set forth in the Supplementary Conditions then Division II "Construction Details", Section 102 Maintenance of Traffic shall apply.

6.47. Pollution, Vibration and Noise Controls.

6.47.1. Scope of Work. The CONTRACTOR shall minimize noise, vibration, and air pollution caused by construction activities. The CONTRACTOR shall control the generation and disposal of solid and hazardous wastes.

6.47.2. Implementation.

- A. Noise Control shall be in accordance with Federal, State, and CITY regulations. The CONTRACTOR shall comply with all CITY Ordinances and regulations dealing with noise abatement.
- B. Vibration Control shall be in accordance with Federal, State, and CITY regulations. It is the CONTRACTOR's sole responsibility to prevent damage from vibration to adjacent structures and property.
- C. Air Pollution Control shall be in accordance with Federal, State, and CITY regulations.

6.48. Dust and Waste Control.

6.48.1. CONTRACTOR shall take precautions to minimize dust emissions from operations involving demolition, excavation, grading, clearing of land and disposal of solid waste.

6.48.2. Solid and Hazardous Waste Control shall be in accordance with Federal, State, and CITY regulations. The CONTRACTOR is solely responsible for the disposal of any hazardous waste that is generated by the CONTRACTOR's operation.

6.48.3. In order to implement these regulations, CONTRACTOR shall use the following procedures and techniques:

- A. Air Pollution.
 - I. Dust
 - a) Cover loads of materials, debris and soil transported from construction sites.
 - b) As necessary, provide street sweeps and water downs on streets which have heavy volumes of construction vehicles carrying debris and excavated materials.
 - c) As needed, wash trucks which haul soil from the site.
 - d) Water down construction sites as needed to suppress dust, during handling of excavation soil, debris or during demolition.
 - e) Remove scrap and waste material and dispose of in accordance with laws, codes, regulations, ordinances and permits.

f) Use construction equipment which has been designed and equipped to prevent or control air pollution in conformance with the regulations of the EPA, state and local authorities.

B. Solid and Hazardous Waste.

- I. Solid wastes may be disposed of in a number of ways, including reuse on the project, sale for fuel, through controlled incineration, donation to other public private dump sites, either free or for a fee. Hazardous material shall be disposed of at properly permitted disposal facilities.
- II. Haul routes for transporting solid or hazardous wastes shall comply with the requirements of state and local authorities.

6.49. Temporary Facilities.

6.49.1. Description. This section describes the CONTRACTOR'S responsibility for temporary facilities and utilities that the CONTRACTOR may require during construction.

6.49.2. Scope.

A. Provide temporary facilities required which may include, but are not necessarily limited to, the following:

- I. Telephone (two lines at a minimum)
- II. Storage sheds
- III. Temporary water service
- IV. Temporary sanitary service
- V. Temporary lighting and electrical service
- VI. Temporary fire protection
- VII. Temporary office trailers, including temporary utilities
- VIII. Safety and Visitor Protection

B. Furnish and install temporary water service for use throughout construction period.

- I. Water for construction purposes.
- II. Water for other purposes:
 - g) Testing
 - h) Temporary sanitary facilities
 - i) Cleaning
- III. Drinking water.

C. Maintain adequate volume of water for all purposes.

D. Provide separate supply of potable water. If supplied from CITY source, the system shall be protected by approved back flow devices.

E. Maintain strict supervision of use of temporary services.

- I. Enforce conformance with applicable codes and standards.
- II. Enforce sanitary practices.
- III. Prevent abuse of services.
- IV. Prevent wasteful use of water.

F. Pay costs for temporary water supply used by all trades, including costs of installation, maintenance, and removal of pipe and equipment.

G. Requirements of Regulatory Agencies.

- I. Obtain, pay for permits, fees, deposits required by governing authorities.
- II. Comply with federal, state and local codes.

6.49.3. Temporary Electricity and Lighting.

A. Furnish, install and maintain adequate temporary lighting and electric power service for construction needs throughout construction period. ALL TEMPORARY ELECTRICAL FACILITIES SHALL MEET THE REQUIREMENTS OF ALL PERTINENT BUILDING CODES.

B. Maintain strict supervision of use of temporary services.

- I. Enforce conformance with applicable standards.
 - II. Enforce safe practices.
 - III. Prevent abuse of services.
- C. Pay costs of, installation, maintenance and removal of temporary electrical services used.
- D. Requirements of Regulatory Agencies.
- I. Obtain and pay for permits as required by governing authorities.
 - II. Comply with applicable codes.
 - a) National Electrical Code.
 - b) National Electrical Safety Code.
 - c) National Fire Protection Association Pamphlet.
 - d) Federal, state and local codes and utility company regulations.
- E. Provide night security lighting at secured areas within construction limits at offices, storage facilities and excavated areas.

6.49.4. Temporary Sanitary Facilities.

- A. Furnish, install and maintain temporary sanitary facilities for use throughout construction period.
- I. Potable water for construction personnel using portable containers to dispense drinking water.
 - II. Enclosed toilet facilities for construction personnel.
- B. Maintain strict supervision of use of facilities.
- I. Enforce conformance with applicable standards.
 - II. Maintain, service and clean facilities.
 - III. Enforce proper use of sanitary facilities.
- C. Cost of Installation and Operation.
- I. Pay costs of temporary sanitary facilities, including costs of installation, maintenance and removal.
 - II. Pay service charges for use of portable units.
 - III. Pay costs of water or ice.
- D. Facility Locations.
- I. Within the project site.
 - II. Drinking water: Convenient to work stations.
 - III. Toilet and washing facilities:
 - a) Secluded from public observation if possible.
 - b) Convenient for use of personnel in relation to work stations.
- E. Requirements of Regulatory Agencies.
- I. Obtain and pay for permits as required by governing authorities.
 - II. Comply with federal, state and local codes, and utility company regulations.

6.49.5. Contractor Employee Parking.

- A. The CONTRACTOR is to submit a plan of intended parking areas prior to mobilizing on site.
- B. The CONTRACTOR is to maintain strict supervision of use of the parking areas. The CONTRACTOR is to maintain, service and clean the areas.

6.49.6. Contractor Offices.

- A. If the CONTRACTOR is going to move an office trailer to the Project site, the CONTRACTOR'S and subcontractor's office trailers are to be located in an area approved by the CITY.

- B. The CONTRACTOR shall provide the following temporary utilities for the office trailers:
 - III. Potable water
 - IV. Sanitary sewer
 - V. Electrical
 - VI. Telephone (two lines at a minimum)
- C. The CONTRACTOR shall be responsible for costs of installing the utilities from the points of connection, maintenance, and removal of all materials for all temporary utilities. Additionally, the CONTRACTOR shall be responsible for maintenance and removal of parking areas around the CONTRACTOR'S office trailers. This shall include policing the area of litter and debris, and weed control.
- D. Provide and maintain a temporary fire protection system as construction progresses for control of fires that may occur during construction. Temporary fire protection shall be provided in accordance with Code requirements.

6.50. Video and Photographs.

6.50.1. CONTRACTOR shall provide the CITY with a video record of the existing conditions prior to construction. This video shall be DVD format or on a USB storage device. The following features shall be shown in a clear manner to include, but not be limited to, the following:

- A. All existing features and improvements within the right-of-way.
- B. All existing features and improvements within temporary construction easements.
- C. All existing features and improvements within permanent easements.
- D. All existing features and improvements adjacent to any construction.

6.50.2. Detail of the video shall be such that the following features and improvements shall be clear and visible:

- A. Cracks in walls.
- B. Condition of fencing.
- C. Condition of planted areas and types of vegetation.
- D. Condition of sodded areas.
- E. Conditions of sprinkler systems and associated controls and wiring.
- F. Condition of signs.
- G. Conditions of lighting and associated wiring.

Significant detail of any pre-existing damages to physical features and improvements shall be shown. The coverage of the video should include the limits of effects of the use of vibratory rollers. This video record shall be presented to the CITY within thirty (30) Days of the Commencement Date specified in the Notice to Proceed.

6.50.3. CONTRACTOR shall provide CITY with still photographs of the existing conditions prior to construction. The scope and detail of required still photographs may be further detailed in the Supplementary Conditions.

6.51. Field Materials on Private Property. Work performed on private property when the CITY owns permanent easements for access, drainage facilities, or other purposes, may require excavation and the use of fill materials. The CONTRACTOR shall, when possible, backfill excavated lands with the fill materials originally excavated. In any event the filling of excavated lands shall be accomplished using material of substantial similarity to the excavated material.

7. WORK BY OTHERS

7.1. Related Work At Site.

7.1.1. CITY may perform other work at the site by CITY'S own forces, provide for or allow other work to be performed by other owners, or let other direct contracts for other work. If the fact that such other work is to be performed was not noted in the Contract Documents, written notice thereof will be given to CONTRACTOR prior to starting any such other work.

7.1.2. CONTRACTOR shall afford each owner and contractor (or CITY, if CITY is performing the additional work with CITY'S employees)

proper and safe access to the site and a reasonable opportunity for the introduction and storage of Materials and Equipment and the execution of such work, and shall properly connect and coordinate the Work with theirs. CONTRACTOR shall do all cutting, fitting and patching of the Work that may be required to make it integrate properly with such other work. 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 ENGINEER and the others whose work will be affected.

7.1.3. If any part of CONTRACTOR's Work depends for proper execution or results upon the work of CITY or any such other contractor or owner, CONTRACTOR shall inspect and promptly report to ENGINEER in writing any delays, defects or deficiencies in such work that render it unavailable or unsuitable for such proper execution and results. CONTRACTOR's failure to so report will constitute an acceptance of the other work as fit and proper for integration with CONTRACTOR's Work except for latent or nonapparent defects and deficiencies in the other work. Wherever Work to be performed by CONTRACTOR is dependent upon the work of any separate contractor, CONTRACTOR shall: (1) coordinate their Work with the dependent work; (2) provide necessary dependent data and requirements; (3) supply or install items to be built into dependent work of others; (4) make provisions for dependent work; (5) check and verify dependent dimensions of previously placed work; (6) notify ENGINEER of previously placed dependent work or dependent dimensions which are unsatisfactory or will prevent a satisfactory installation of any such Work; and (7) not proceed with any such Work until any unsatisfactory dependent conditions have been corrected. Installation of work by CONTRACTOR or by a Subcontractor in any given area shall constitute acceptance by CONTRACTOR or by such Subcontractor of all previously placed dependent work, subject to the exceptions previously noted.

7.1.4. If CITY contracts with others for the performance of other work at the site, the CONTRACTOR shall be responsible for coordination of the activities among the various contractors. Unless otherwise provided in the Supplementary Conditions, coordination with other contractors will be the responsibility of CONTRACTOR and neither CITY nor ENGINEER shall have any authority or responsibility in respect of such coordination.

7.2. Mutual Duties and Responsibilities.

7.2.1. Should CONTRACTOR cause damage to the work or property of any separate contractor or owner performing work at or contiguous to the site, or should any claim arising out of CONTRACTOR's performance of Work at or contiguous to the site be made by any separate contractor or utility owner against CONTRACTOR, CITY, ENGINEER, or ENGINEER OF RECORD, CONTRACTOR shall promptly attempt to settle with such separate contractor or utility owner by agreement, or to otherwise resolve the dispute at equity or at law.

7.2.2. Should any separate contractor or owner cause damage to the Work or property of CONTRACTOR, or should the performance of work by any separate contractor or owner at or contiguous to the site give rise to any other claim by CONTRACTOR, CONTRACTOR shall promptly attempt to settle with such separate contractor or owner by agreement, or to otherwise resolve the dispute at equity or at law. CONTRACTOR shall not institute any action, legal or equitable, against CITY, ENGINEER, ENGINEER OF RECORD, or their consultants directors, officers, agents, and employees or permit any action against them to be maintained and continued in its name or for its benefit in any court or before any arbiter which seeks to impose liability or recover damages from CITY, ENGINEER, ENGINEER OF RECORD or their consultants, directors, officers, agents, or employees on account of these.

7.2.3. In the event that CITY incurs costs contrary to the provisions of this subsection, CITY will be entitled to deduct these costs from the Contract Price by issuing a Change Order.

7.3. Extensions in Contract Time. If CONTRACTOR is delayed at any time in performing or furnishing the Work by any act or neglect of another contractor or entity performing work at the site noted in the Contract Documents, CONTRACTOR may request an extension in Contract Time; if CITY agrees that the delay requires an adjustment in Contract Time, CITY shall authorize the necessary extension of Contract Time. However, an extension in Contract Time(s), if so granted, shall be CONTRACTOR's sole and exclusive remedy with respect to CITY, ENGINEER, and ENGINEER OF RECORD, and their consultants, agents and employees for any delay, disruption, interference, inefficiency, extension, constructive acceleration or hindrance and associated costs, however caused, resulting from delays caused by others performing other work at the site.

7.4. Contract Time Coordination.

7.4.1. CONTRACTOR shall give prompt written notice to CITY, ENGINEER and any other affected contractor(s) whenever CONTRACTOR anticipates a conflict in Contract Time(s) related to or simultaneous with associated Contract Time's in the work of others. Within seven (7) days thereafter, CONTRACTOR shall be required to deliver to ENGINEER proposed actions to either (a) prevent an adverse effect on the Progress Schedule of the other contractors arising from delays to the Work, or (b) prevent or overcome an adverse effect on the Progress Schedule for the Work arising from delays from another contract.

7.4.2. When Work is performed out of sequence and ahead of interfacing Work, CONTRACTOR shall be responsible for taking reasonable steps to minimize damage or loss to the Work which may be caused by others during the performance of their work, including, but not limited to, furnishing written notice to ENGINEER and to the other contractors that Work has been performed out of sequence and ahead of interfacing Work.

7.4.3. When work by others is performed out of sequence and ahead of interfacing Work, the said work shall be considered as if it had

been shown on the Contract Documents. CONTRACTOR shall be responsible for protecting said work and shall replace, repair or otherwise settle with others any and all damage caused as a result of the performance of Work out of sequence.

8. CITY'S RESPONSIBILITIES

8.1. General.

- 8.1.1.** CITY shall generally issue all communications to CONTRACTOR through ENGINEER. However, communications related to Contract Claims under the Budget & Procurement Office Procedures, shall be issued by the CITY's Budget & Procurement Manager or CITY Manager.
- 8.1.2.** In case of termination of the employment of an ENGINEER, CITY shall appoint a new ENGINEER whose status under the Contract Documents shall be that of the former ENGINEER.
- 8.1.3.** CITY shall furnish the data required of CITY under the Contract Documents promptly and shall make payments to CONTRACTOR promptly after they are due as provided in Section 14.
- 8.1.4.** CITY's duties in respect of providing lands and easements and engineering surveys to establish reference points, and identifying and making available to CONTRACTOR copies of reports of explorations and tests of subsurface conditions at the site and in existing structures which have been utilized by ENGINEER OF RECORD in preparing the Drawings and Specifications are set forth in Section 4.
- 8.1.5.** CITY will issue unilaterally or negotiate, at its discretion, Change Orders as provided in these Contract Documents.
- 8.1.6.** CITY's responsibility in respect of certain inspections, tests and approvals is set forth in Section 13.
- 8.1.7.** CITY may allow its consultants, agents, attorneys, employees, and others access to the site. CONTRACTOR shall cooperate with CITY in allowing such access.

9. ENGINEER'S AND ENGINEER OF RECORD'S STATUS DURING CONSTRUCTION

- 9.1. CITY'S Representative.** ENGINEER will be CITY's representative during the construction of the Work. The duties and responsibilities and the limitations of authority of ENGINEER as CITY's representative during construction are set forth in the Contract Documents and shall not be extended without written consent of CITY and ENGINEER.

9.2. Visits to Site.

- 9.2.1.** ENGINEER OF RECORD may make visits to the site at intervals appropriate to the various stages of construction to observe the progress and quality of the executed Work and to determine, in general, if the Work is proceeding in accordance with the Contract Documents.
- 9.2.2.** ENGINEER will make visits to the site at intervals appropriate to the various stages of construction to observe the progress and quality of the executed Work and to determine, in general, if the Work is proceeding in accordance with the Contract Documents.

- 9.3. Project Representation.** ENGINEER, in the ENGINEER's sole discretion, may furnish a Project Manager and Field Representative(s) including inspectors to assist ENGINEER in observing the performance of the Work. In the event that ENGINEER elects not to furnish a Project Manager, Field Representative or Inspectors, the ENGINEER or its designated agents shall perform the duties of the Project Manager, Field Representative or Inspectors set forth in the Contract Documents. CITY may designate another agent to represent CITY at the site who is not ENGINEER's agent or employee.

9.4. Duties, Responsibilities and Limitations of Authority of Project Manager.

- 9.4.1.** Project Manager will act as directed by ENGINEER and will confer with ENGINEER regarding his activities. Project Manager will perform the duties and responsibilities described herein with the assistance of Field Representative(s). ENGINEER shall generally issue all communications to CONTRACTOR through Project Manager, including but not limited to communications directed to CONTRACTOR, from CITY through ENGINEER. CONTRACTOR shall generally issue all communications to CITY, ENGINEER OF RECORD and ENGINEER through Project Manager.
- 9.4.2.** Project Manager will provide instructions to Field Representative(s) on procedures to be followed and schedule inspections of the Work; review daily inspection reports prepared by Field Representative(s); prepare draft Field Orders, Change Requests or Change Orders as required and review them with Field Representative(s), ENGINEER or CITY, as applicable.
- 9.4.3.** Project Manager will attend meetings with CONTRACTOR, such as the Preconstruction Conference, Project Meetings and any other Project related meetings and prepare and circulate copies of minutes thereof. The preparation and circulation of minutes of preconstruction conferences, Project meetings and any other Project related meetings shall not relieve CONTRACTOR of

CONTRACTOR's responsibility to coordinate the work of the CITY, utility contractors, or the work of others or the CONTRACTOR's responsibility for scheduling and sequencing its Work with the work of the CITY, utility contractors or the work of others.

- 9.4.4. Project Manager will serve as ENGINEER's liaison with CONTRACTOR, Working principally through CONTRACTOR's superintendent, to assist in understanding the intent of the Contract Documents, and will serve as CITY's liaison with CONTRACTOR when CONTRACTOR's operations affect CITY's on-site operations, and when additional information is required from CITY for proper execution of the Work.
- 9.4.5. Project Manager will advise CONTRACTOR, through or with the assistance of Field Representative(s), of the commencement of any Work requiring a Shop Drawing or sample, when it is observed that a submittal has not been reviewed by ENGINEER OF RECORD.
- 9.4.6. Project Manager will conduct general on-site observations of the Work in progress and receive Field Representative(s)'s observation comments and non-conformance reports, to determine if the Work is proceeding in accordance with the Contract Documents.
- 9.4.7. Project Manager will notify CONTRACTOR of disapproval or rejection of Work whenever Project Manager or ENGINEER believe that any Work is Defective, and will notify CONTRACTOR whether Defective Work is to be corrected, or replaced.
- 9.4.8. Project Manager will notify CONTRACTOR of any Work that is to be uncovered for observation, testing inspection or approval.
- 9.4.9. Project Manager will accompany, through or with the assistance of Field Representative(s), visiting inspectors representing governmental or other agencies having jurisdiction over the Project, and record the results of the inspections and report to ENGINEER.
- 9.4.10. Project Manager will transmit to CONTRACTOR clarifications and interpretations as issued by ENGINEER.
- 9.4.11. Project Manager will consider and evaluate CONTRACTOR's proposed variations and the changes in the Work or the Contract Documents and report such proposals and evaluations to ENGINEER. Project Manager will communicate decisions on such proposals to CONTRACTOR as issued by ENGINEER or CITY.
- 9.4.12. Project Manager will report promptly to ENGINEER and CITY upon gaining knowledge of the occurrence of any accident at the site.
- 9.4.13. Project Manager will prepare reports of the progress of the Work and of CONTRACTOR's compliance with the Progress Schedule.
- 9.4.14. Project Manager will consult as appropriate with ENGINEER in advance of scheduled major tests, inspections or the commencement of important phases of the Work.
- 9.4.15. Project Manager will review and evaluate CONTRACTOR's Application for Payment and advise ENGINEER accordingly.
- 9.4.16. Project Manager will review and evaluate CONTRACTOR's notice that CONTRACTOR considers the Work (or part thereof) substantially complete and advise ENGINEER accordingly.
- 9.4.17. Project Manager will observe whether all items on lists of items to be completed prior to Final Payment have been completed and make recommendations to ENGINEER concerning Acceptance.
- 9.4.18. During the course of the Work, the Project Manager will verify that 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 Material to ENGINEER.
- 9.4.19. Project Manager will not: (1) authorize any variation or change in the Work or in the Contract Documents or approve any equivalent Material or Equipment; (2) exceed the limitations of Project Manager's authority as set forth in this document; (3) undertake any of the responsibilities of CONTRACTOR, Subcontractors or CONTRACTOR's superintendent, or expedite the Work; (4) inspect, advise on or issue directions relative to any aspect of the means, methods, techniques, sequences or procedures of construction unless such is specifically called for in the Contract Documents; (5) inspect, advise on or issue directions as to safety precautions and programs in connection with the Work; (6) certify Substantial Completion of the Work; or (7) participate in specialized field or laboratory tests, unless qualified by an appropriate certifying agency.

9.5. Duties, Responsibilities and Limitations of Authority of Field Representative(s).

- 9.5.1. As requested by Project Manager, Field Representative(s) will assist in obtaining from CITY additional details or information, when required at the job site for proper execution of the Work.
- 9.5.2. Field Representative(s) will advise Project Manager and CONTRACTOR of the commencement of any Work requiring a Shop Drawing or sample submission if he observes that a submittal(s) has not been reviewed by ENGINEER OF RECORD.

- 9.5.3.** Field Representative(s) will conduct on-site observations of the Work in progress to assist Project Manager in determining if the Work is proceeding in accordance with the Contract Documents and that completed Work will substantially conform to the Contract Documents.
- 9.5.4.** Field Representative(s) will notify CONTRACTOR and report to Project Manager for review and possible disapproval or rejection by ENGINEER or Project Manager whenever he believes that any Work is defective.
- 9.5.5.** Field Representative(s) will notify CONTRACTOR and report to Project Manager for determination of necessary action by ENGINEER or Project Manager when he believes Work should be uncovered for observation, testing, inspection or approval.
- 9.5.6.** Field Representative(s) will 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 to Project Manager appropriate details relative to the test procedures and start-ups.
- 9.5.7.** Field Representative(s) will report to Project Manager when clarifications and interpretations of the Contract Documents are needed or requested.
- 9.5.8.** Field Representative(s) will keep a diary recording hours on the job site, weather conditions, data relative to questions of extras or deductions, lists of visiting officials and representatives of Suppliers, daily activities, decisions, observations in general and specific observations in more detail as in the case of observing test procedures. Field Representative(s) will summarize such information on the daily diary and submit copies to Project Manager.
- 9.5.9.** Field Representative(s) will assist Project Manager with record keeping as directed by Project Manager.
- 9.5.10.** Field Representative(s) will report immediately to CITY, ENGINEER and Project Manager upon gaining knowledge of the occurrence of any accident.
- 9.5.11.** Field Representative(s) will assist Project Manager with the review and evaluation of CONTRACTOR's Application for Payment, noting particularly their relation to the schedule of values, Work completed, and Materials and Equipment delivered at the site but not incorporated in the Work.
- 9.5.12.** Field Representative(s) will prepare draft lists of items to be completed or corrected (punch lists) as directed by Project Manager.
- 9.5.13.** Field Representative(s) will not: (1) authorize any variation or change in the Work or in the Contract Documents or approve any equivalent Material or Equipment; (2) exceed the limitations of Field Representative(s)'s authority as set forth in this document; (3) undertake any of the responsibilities of CONTRACTOR, Subcontractors or CONTRACTOR's superintendent, or expedite the Work; (4) inspect, advise on or issue directions relative to any aspect of the means, methods, techniques, sequences or procedures of construction unless such is specifically called for in the Contract Documents; (5) inspect, advise on or issue directions as to safety precautions and programs in connection with the Work; (6) certify Substantial Completion of the Work; or (7) participate in specialized field or laboratory tests unless qualified by an appropriate certifying agency.
- 9.6. Clarifications and Interpretations.** ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the requirements 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.
- 9.7. Authorized Variations in Work.** ENGINEER may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Time and are consistent with the overall intent of the Contract Documents and required to produce the intended result. These may be accomplished by a Field Order and will be binding on CONTRACTOR who shall perform the Work involved promptly.
- 9.8. Rejecting Defective Work.** ENGINEER will have authority to disapprove or reject Work at any time during the construction of the Work, which ENGINEER believes to be Defective. ENGINEER will also have authority to require special inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed. When CONTRACTOR has been notified by ENGINEER of disapproval or rejection of Defective Work, CONTRACTOR shall take immediate action to correct or replace same.
- 9.9. Determinations of Quantities and Classifications of Unit Price Work.** ENGINEER will determine the actual quantities of each classification of Unit Price Work. ENGINEER will review with CONTRACTOR, ENGINEER's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). ENGINEER's written decisions thereon will be final and binding upon CONTRACTOR, unless, within seven (7) days after the date of any such decision, CONTRACTOR delivers to CITY written notice of a Contract Claim.
- 9.10. Decisions on Disputes.** ENGINEER will be the initial interpreter of the requirements of the Contract Documents, and in such capacity will render initial determinations in respect of the acceptability of the Work thereunder. Unless otherwise provided in the Contract Documents, notices, bids or other matter relating to the acceptability of the Work or the interpretation of the requirements of the Contract

Documents pertaining to the performance and furnishing of the Work will be referred initially to ENGINEER in writing with a request for a formal decision in accordance with this subsection which ENGINEER will render within a reasonable time. ENGINEER's written determination thereon shall be final and binding on CONTRACTOR unless CONTRACTOR delivers to CITY written notice of a Contract Claim within seven (7) days of receipt of such decision.

9.11. Limitations on ENGINEER's and ENGINEER OF RECORD's Responsibilities.

- 9.11.1.** Neither ENGINEER's or ENGINEER OF RECORD authority to act under this Section or elsewhere in the Contract Documents nor any decision or determination made by ENGINEER or ENGINEER OF RECORD in good faith to exercise or not to exercise such authority shall give rise to any duty or responsibility of ENGINEER or ENGINEER OF RECORD to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization performing any of the Work, or to any Surety for any of them.
- 9.11.2.** Whenever in the Contract Documents the terms "as ordered", "as directed", "as required", "as allowed", "as approved" or terms of like effect or import are used, or the adjectives "reasonable", "suitable", "acceptable", "proper" or "satisfactory" or adjectives of like effect or import are used to describe requirement, direction, review or judgment of ENGINEER or ENGINEER OF RECORD 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 shall not be effective to assign to ENGINEER or ENGINEER OF RECORD any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of this Section.
- 9.11.3.** ENGINEER and ENGINEER OF RECORD will not be responsible for CONTRACTOR's means, schedules, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, and ENGINEER and ENGINEER OF RECORD will not be responsible for CONTRACTOR's failure to perform or furnish the Work in accordance with the Contract Documents.
- 9.11.4.** ENGINEER and ENGINEER OF RECORD will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other person or organization performing or furnishing any of the Work.

10. CHANGES IN THE WORK

10.1. Changes in the Work.

- 10.1.1.** Without invalidating the Agreement and without notice to any Surety, CITY may, at any time, by duly executed Change Order, order changes within the scope of the Contract Documents consisting of additions, deletions or other revisions in the Work. Upon receipt of that order, CONTRACTOR shall promptly proceed or continue with the Work involved (based on the conditions stated and other applicable conditions in the Contract Documents). If a change under this Section causes an increase or decrease in the Contract Price or any extension or shortening of the Contract Time, CITY will make an adjustment as provided in Section 11.
- 10.1.2.** CITY or ENGINEER may present to CONTRACTOR a change request requesting that CONTRACTOR submit a proposal for an adjustment in Contract Price or Contract Time or both for a proposed change in the Work. CONTRACTOR shall submit a proposed adjustment with all supporting data and the directions given in the change request within 14 days of receipt. Said proposed adjustment shall include an itemized estimate of all costs and time for the performance that will result directly or indirectly from the changes described. Estimates shall be prepared and in sufficient detail and with documentation such that ENGINEER can (1) analyze all Material, labor, Equipment, subcontract, overhead costs and fees, and any other costs covering all aspects of the Work involved in the change, whether such was added, deleted, changed, or impacted; (2) determine that the proposal reflects all impacts on the Contract Documents of the proposed change; and (3) establish that all provisions of the Contract Documents have been complied with.
- 10.1.3.** CITY or ENGINEER may give instructions which may result in changes in the Work not involving an adjustment in the Contract Price or the Contract Time when such changes are necessary or expedient to the satisfactory performance and completion of the Work. These instructions shall be binding on CONTRACTOR. Any instruction, direction, interpretation, or determination from CITY or ENGINEER which causes a change shall be treated as a change under this Section provided that CONTRACTOR gives ENGINEER written notice stating the date, circumstances, specific order, and that CONTRACTOR regards the instruction as a change. Such written notification shall be given to ENGINEER within seven (7) days after receipt and before CONTRACTOR acts on said instruction, direction, interpretation, or determination. No Contract Claim, change or notice by CONTRACTOR will be allowed if asserted after Work has commenced on, or if notice is not provided within the stated time limit provided after receipt of, the instruction, direction, interpretation, or determination from CITY, ENGINEER, or any other source.
- 10.1.4.** In making changes under this Section, CITY may give consideration to a notice, bid or Contract Claim from CONTRACTOR, provided the notice, bid or Contract Claim is presented in accordance with the requirements of this Section. CONTRACTOR shall provide CITY or ENGINEER any additional or supplemental information requested for purposes of evaluation of CONTRACTOR's submittal, but such requests by the CITY or ENGINEER will not constitute acceptance of the notice, bid or Contract Claim.

10.1.5. ENGINEER will evaluate a change notice from CONTRACTOR, and CITY will review with CONTRACTOR the results of the evaluation before rendering a determination. If CITY, with the advice of ENGINEER, concurs that a change in the Work has occurred or been ordered, CONTRACTOR will be directed to submit a proposal for an adjustment. If CITY concludes that a change has not occurred or been ordered, CITY's determination shall be final and binding on CONTRACTOR unless CONTRACTOR delivers to CITY written notice of a Contract Claim within seven (7) days from receipt of such decision.

10.2. Change Orders and Change Requests.

10.2.1. Contract Price, Contract Time or scope of the Work shall be changed only by Change Order (unilateral or bilateral).

10.2.2. A Change Order duly executed by CITY and CONTRACTOR provides for an all inclusive settlement for all changes and direct, supplemental, indirect, consequential and cumulative costs and delays, and CONTRACTOR's execution of the Change Order represents a waiver of any and all rights to file a Contract Claim on account of that instrument. An executed Change Order constitutes an accord and satisfaction of all claims related to the Change Order.

10.2.3. CITY and CONTRACTOR shall execute Change Orders covering changes in the Work (including any necessary adjustments in Contract Price or Contract Time) which are ordered or agreed to by the parties, changes in Contract Price or Contract Time which are agreed to in total with reasonable promptness. Adjustments to Contract Price resulting from changed Work shall only be included in Applications for Payment after a Change Order has been duly executed.

10.2.4. A Change Order, duly executed by CITY, but not executed by CONTRACTOR, or executed by CONTRACTOR with a notice of reservation of rights to claim additional adjustments under a Contract Claim, shall become final and binding on CONTRACTOR as a unilateral Change Order, without consideration of the reservation of rights, unless CONTRACTOR delivers to CITY written notice of a Contract Claim within seven (7) days after receipt of that instrument.

10.3. Waivers.

10.3.1. No Contract Claim by CONTRACTOR for an adjustment under these Contract Documents shall be allowed for any costs, disruption, suspension, interference, inefficiency, constructive acceleration or delay incurred more than seven (7) days before CONTRACTOR gives written notice as required.

10.3.2. No Contract Claim by CONTRACTOR for an adjustment under this Section shall be allowed if made after the date of Final Payment.

10.3.3. Additional Work performed without authorization of a Change Order will not entitle CONTRACTOR to an increase in Contract Price or an extension of Contract Time.

10.3.4. CONTRACTOR acknowledges that there may be changes during the course of the Work and acknowledges that the probable effect of changes has been accounted for in the development of the Contract Price and Progress Schedule. Whenever CONTRACTOR makes a Contract Claim under Section 11 such Contract Claim shall include the total amount of adjustment in Contract Price and Contract Time to which the CONTRACTOR believes it is entitled. Except as CITY and CONTRACTOR may otherwise agree in writing, CONTRACTOR shall be deemed to have waived (1) any adjustment to which it might otherwise be entitled under Section 11 where such Contract Claim fails to request such adjustments, (2) any increase in the amount of adjustment additional to that requested in the Contract Claim, and (3) any Contract Claim for reimbursement of impact allegedly resulting from the cumulative effect of the number, nature, or extent of any changes.

10.3.5. CONTRACTOR recognizes and accepts the notice provisions of these Contract Documents as material conditions of the Contract Documents and agrees to make no claim based upon CITY'S actual notice or lack of prejudice to the CITY.

11. CHANGES IN CONTRACT PRICE OR CONTRACT TIME

11.1. Changes in Contract Price or Contract Time. The Contract Price constitutes the total compensation (subject to authorized adjustments) payable to CONTRACTOR for the Work. All duties, responsibilities, risks of every nature, and obligations assigned or undertaken by CONTRACTOR shall be at CONTRACTOR's sole expense without change in the Contract Price or Contract Time except as set out below.

11.2. Change Requests or Contract Claims Substantiating Adjustments.

11.2.1. Supporting data for any change request or Contract Claim by the CONTRACTOR shall include at a minimum a complete and detailed breakdown of the proposed price and a detailed explanation of any time impact for the change. Said proposed price shall be based on the lowest reasonable cost consistent with sound construction practice. Such breakdown shall include itemizations by trade of all labor with man hours and hourly rates, Equipment with hours of use and rates, and Material by item with costs, all in sufficient detail to evaluate the cost of the individual components of the Work, including copies of purchase orders, invoices and subcontract change orders.

11.2.2. CONTRACTOR change request or Contract Claim shall state in writing, and provide evidence that the amounts included cover all direct, supplemental, indirect, consequential, and cumulative costs and delays, as applicable, and that those costs and delays would

be or were necessarily incurred, despite CONTRACTOR's reasonable, prudent and diligent efforts to mitigate them.

- 11.2.3.** CONTRACTOR change request and Contract Claim supporting data shall become due within seven (7) days of receipt of a change request or receipt by CITY of written notice of Contract Claim and shall remain firm for a period of not less than sixty (60) days from receipt by ENGINEER of the proposal or supporting data. Any delay in the submittal of change request or Contract Claim will not justify or constitute basis for an increase in Contract Price or Contract Time. Contract Claims shall be submitted on the forms provided in the Contract Documents.
- 11.2.4.** Failure of CONTRACTOR to comply with the time requirements for written notice or for submittal of supporting data shall be considered a waiver by CONTRACTOR of any Contract Claim for an addition to the Contract Price or an adjustment to the Contract Time and CONTRACTOR agrees that no additional compensation or time adjustments are due if the provisions of Section 10 and this Section are not complied with.
- 11.2.5.** Where the change in Contract Price arises from changes in the schedule of all or part of the Work, or where a change in Contract Time is sought, the change request shall be based on a detailed analysis of the Progress Schedule, and shall cover all applicable elements affecting the Work involved.
- 11.2.6.** Contract Claims shall cover all aspects of the Work involved, whether relating to deleted, added, revised, or impacted items of Work. Amounts for Subcontractors or Suppliers at any tier shall be equally supported.
- 11.2.7.** Contract Claims for an adjustment in Contract Price or Contract Time shall not be valid unless submitted in accordance with Section 10 and this Section.
- 11.2.8.** Contract Claims shall be resolved in accordance with the Budget & Procurement Office Procedures.

11.3. Methods for Determining Adjustments in Contract Price.

- 11.3.1.** The methods to be used to determine an adjustment in Contract Price necessitated by changes ordered, negotiated pursuant to these General Conditions, or a Contract Claim, collectively to be referred to as the "Work involved," are limited to the following:
- 11.3.2.** Where the Work involved is covered or is of the same character as Unit Price Work (whether the Work involved is within the Project limits or not), by application of those Unit Prices to the quantities of the items involved (subject to the provisions covering Unit Price Work). No additional allowances or charges shall be added to these Unit Prices.
- 11.3.3.** Where the Work involved is not covered by Unit Prices contained in the Contract Documents, Unit Prices may be negotiated on the basis of costs calculated in accordance with this Section.
- 11.3.4.** By mutual acceptance of a lump sum price negotiated on the basis of CONTRACTOR's itemized estimate of the anticipated cost of the Work involved, determined as specified in this Section.
- 11.3.5.** Where CITY and CONTRACTOR cannot agree on any of the methods described in subsections 11.3.2, 11.3.3, or 11.3.4, CITY may direct CONTRACTOR to proceed with the Work involved on the basis of actual costs in accordance with this Section. When the cost of the Work basis is directed by CITY, CITY shall prescribe the required procedures for accounting of the allowed costs. These procedures shall include daily accounting of the Material and Equipment used and labor employed. Failure to submit this information for acknowledgement by the ENGINEER within one day after any part of the Work is performed shall result in any discrepancy between ENGINEER's records and CONTRACTOR's records being resolved in favor of the ENGINEER's records.
- 11.3.6.** Where CITY and CONTRACTOR cannot agree on any of the methods described in subsections 11.3.2, 11.3.3, or 11.3.4, and the CITY does not wish to proceed on a Cost of the Work basis as described in subsection 11.3.5, CITY with the advice of ENGINEER shall determine a reasonable adjustment of the Contract Price for the Work involved on the basis as described in Section 10 and this Section. The adjustment in Contract Price and Contract Time will be issued by unilateral Change Order and CONTRACTOR shall be paid on that basis. CITY's determination shall be final and binding unless CONTRACTOR delivers to CITY written notice of a Contract Claim within seven (7) days of receipt of such unilateral Change Order.
- 11.3.7.** Where the Work involved is not covered by any of the preceding methods, and when payment is to be determined in any alternative dispute, resolution procedure or by a court of competent jurisdiction, it is agreed that the actual cost of the Work method shall be the appropriate method for determining the cost of the Work involved. Payroll, Equipment, Material and other costs will only be allowable when determined from daily time sheets which expressly correlate to the Work involved, were prepared while Work was in progress, clearly list actual units and usage, and were submitted to ENGINEER as the Work was performed. Costs, including but not limited to, office overhead and home office overhead of CONTRACTOR or subcontractors of every tier, shall not be derived from the computation of a rate by application of the Eichleay, Allegheny, Burden Fluctuation, total cost, or other similar formula based methodology.
- 11.3.8.** Anticipated or actual costs computed for the Work involved means the sum of all incremental costs which would be, or actually were, necessarily incurred by CONTRACTOR in the proper performance of the Work. Those costs shall be in amounts no higher than

those prevailing in the locality of the Project or as allowed elsewhere in these Contract Documents, and shall include only the appropriate items for labor, Material, Equipment, and supplemental costs specified below.

11.4. Determining Cost Adjustments to Changes in Contract Price.

11.4.1. CONTRACTOR shall provide to ENGINEER proof of any burdens, including insurance costs, added to base wages to determine payroll costs described in this Section.

A. Changes in the Contract Price made on the basis of the methods described in Section 11.3 shall be based upon the following: Payroll costs for craft labor in the direct employ of CONTRACTOR assigned to the site and engaged in furnishing and incorporating Materials or Equipment in the Work involved. Payroll costs shall include wages plus the necessary labor burdens, which may include social security, unemployment, Workers compensation, health and retirement benefits, vacation and Holiday pay, and other payments pursuant to union agreements but shall exclude profit sharing, bonuses, and similar remunerations. Labor charges shall be allowed only for hourly labor directly involved in the Work. Such personnel may include Working foreman at the site. The cost of all salaried employees shall be considered as a part of allowances allowed in this Section. Labor rates shall be as actually paid based on certified payroll records or in accordance with general rates for various pay categories established by union agreements or by mutual agreement between CITY and CONTRACTOR prior to the commencement of the Work. The expenses of performing Work outside of normal Working hours, on weekends or Holidays, shall be included in the above to the extent authorized by CITY as set out in the Contract Documents.

11.4.2. Payments by CONTRACTOR to Suppliers for all Material and Equipment in the Work involved, including transportation and storage costs, and necessary Suppliers field services. All cash deposits shall accrue to CITY, if CITY advances funds to CONTRACTOR with which to make payments. All trade discounts, rebates and refunds and all returns from sale of surplus items shall accrue to CITY and CONTRACTOR shall make provisions so that they may be obtained. When required by CITY, CONTRACTOR shall obtain competitive bids from Suppliers in order to achieve a reasonable price. When determining Material and Equipment costs, actual invoices segregating items associated with Work involved shall be the record upon which actual costs shall be based.

11.4.3. Costs of field supplies consumed in the performance of the Work involved, and purchase costs of small tools used or consumed in the performance of the Work involved (and purchase cost less market value if used but not consumed) which are individually valued at less than \$1,000.00. Consumable shall include such items as rags, nails, fasteners, weld rod, gases, lubricants, paper, grout, stakes, power and fuel for tools and Equipment, chains, cables, hoses, water, and similar items normally used in the course of the Work. Costs of field supplies will be paid as a percentage of direct labor cost in an amount that shall not exceed the allowance shown in this Section.

11.4.4. Equipment costs required solely in connection with the Work involved reflecting rented or leased or owned Equipment cost for individual construction Equipment or machinery whose replacement value is in excess of \$1,000.00. Transportation, loading and unloading, installation, dismantling and removal costs shall be included only if such Equipment is or was transported to the site solely to perform the Work involved. All Equipment costs shall cease when the Equipment is no longer necessary to perform the Work involved. Payroll costs for craft labor operating the Equipment shall be as in subsection 11.4. Equipment costs shall be computed using the same accounting and estimating rules regardless of whether related to added or deleted items of Work.

11.4.5. Rented or owned Equipment at the site, and not in actual use, shall be paid at the rates for rented Equipment, or on the basis of fifty percent (50%) of the rates for owned Equipment, respectively, as specified below. In no event shall the idle time claimed in a day exceed the established normal Working hours. Payments for idle Equipment shall come due only as long as the Equipment was idled solely by actions of CITY, and provided that the idle period exceeds that normally experienced for such Equipment.

11.4.6. Except as provided below, for Equipment rented or leased, CONTRACTOR shall be entitled to amounts based on negotiated rental or lease rates, but in no event shall the amounts allowed exceed an hourly rate based on the monthly rates, listed in the most current and most appropriate Rental Rate Blue Book (Blue Book) published by Dataquest, Inc. for the area where the Project is located (presently three (3) volumes, relating to Equipment of various ages) divided by one hundred seventy six (176) hours per month. Rates for Equipment not included in the Blue Book shall be interpolated or extrapolated from the information contained therein. In addition to the rental or leasing rate, operating costs shall not exceed the estimated hourly operation rate in the Blue Book. For multiple shift Work, the allowable Equipment rate for second or third shifts shall not exceed fifty percent (50%) of the adjusted base rate.

11.4.7. For Equipment rented or leased from lessor firms associated with or owned by CONTRACTOR, CONTRACTOR shall be entitled to reimbursement as though the Equipment was owned Equipment, as specified below.

11.4.8. For Equipment owned by CONTRACTOR, CONTRACTOR shall be entitled to costs based on billings established by his normal accounting practices, but in no event shall those costs exceed the maximum allowable costs for rented or leased Equipment.

11.4.9. Costs of special consultants who are not employees in the direct employ of CONTRACTOR or any of the Subcontractors or Suppliers, or special Subcontractors; provided that those costs are or were authorized by CITY prior to proceeding with the Work involved, and only if their activities are not covered by costs included under subsection 11.4, or are not excluded by subsection 11.9.

11.4.10. Sales, consumer, or similar taxes related to the Work involved, and for which CONTRACTOR is liable, royalty payments, and fees for permits and licenses, any of them related solely to the Work involved.

11.4.11. Deposits to be lost for causes other than negligence of CONTRACTOR, any Subcontractor or anyone directly or indirectly to be employed by any of them or for whose acts any of them may be liable, related solely to the Work involved.

11.4.12. Increased costs of premiums for Bonds and Insurance resulting solely because of the Work involved.

11.5. Costs Covered by CONTRACTOR's Allowances.

11.5.1. Except as otherwise specifically provided in subsection 11.9, the cost of the Work involved shall not include any of the following costs, all of which are considered to be covered by CONTRACTOR's Allowances:

11.5.2. Payroll costs and other compensation of personnel employed by CONTRACTOR whether at the site or in CONTRACTOR's principal or a branch office for management or administration of the Work, including, but not limited to, (a) CONTRACTOR's officers, executives, principals, general managers, Project managers, Project Managers, estimators, schedulers, detailers, claims consultants, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, and (b) resident superintendents, nonworking foremen, field engineers and architects, safety personnel, timekeepers, and clerks.

11.5.3. Expenses of CONTRACTOR's principal, branch and site offices and all field and home office overhead expenses of any nature except as authorized in writing by CITY prior to proceeding with the Work involved.

11.5.4. Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the Work involved and charges for delinquent payments.

11.5.5. Costs due to the fault or 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, including but not limited to deposits to be lost, costs to correct Defective Work, disposal of Materials or Equipment wrongly supplied and making good any damage to property.

11.5.6. Market value of small tools used but not consumed which remain in the property of CONTRACTOR.

11.5.7. Costs associated with the preparation of Change Orders (whether or not ultimately authorized by CITY), or the preparation or filing of Contract Claims or other claims of any nature.

11.5.8. Expenses of CONTRACTOR associated with anticipated lost profits or lost revenues, lost income or earnings, lost interest on earnings or unpaid retainage.

11.5.9. Costs derived from the computation of a "home office overhead" rate by application of the Eichleay, Allegheny, Burden Fluctuation, total cost, or other similar formula based methods.

11.5.10. Costs of special consultants or attorneys, whether or not in the direct employ of CONTRACTOR, employed for services specifically related to the resolution of a Contract Claim, dispute, or other matter relating to the acceptability of the Work.

11.5.11. Other administrative expense or contingent costs of any kind, and the costs of any item not specifically and expressly included in Section 11.

11.6. CONTRACTOR Allowances for Changes to the Work. CONTRACTOR's allowances, which includes costs not directly chargeable under this Section, expenses itemized in subsection 11.5, and profit shall not exceed the following percentages of the various portions of the Work involved. The percentages for allowances are specific as to each identified cost element and are not layered or cumulative in effect. No other allowances in addition to these will be allowed.

<u>Cost Element</u>	<u>Allowance For Additions</u>	<u>Allowances for Deletions</u>
CONTRACTOR and Subcontractor labor per subsection 11.4.2.1. exclusive of the premium portion of craft labor	15%	(7.5)%
CONTRACTOR and Subcontractor Equipment and Materials per subsection 11.4.2.2.	15%	(7.5)%

Subcontractor costs resulting from direct Subagreement with CONTRACTOR per subsection 11.4.2.3.	5%	(2.5)%
Allowance for small tools and consumable per subsection 11.4.2.4. (percentage of direct labor)	2%	0%
CONTRACTOR and Subcontractor owned or rented Equipment per subsection 11.4.2.5.	15%	(7.5)%
CONTRACTOR and Subcontractor supplemental costs per subsection 11.4.2.9. premium portion of craft labor costs; and other authorized costs.	0%	0%

11.7. Unit Price Work.

11.7.1. Where the Contract Documents provide for Unit Price Work, the Contract Price stated in the Agreement will include for all Unit Price Work an amount equal to the sum of the Unit Prices for each item of Unit Price Work times the estimated quantity of each item as indicated in the Contract Documents. Each Unit Price will be deemed to include an amount considered by CONTRACTOR to be adequate to cover all costs, including supplemental and administrative costs, and profit.

11.7.2. CONTRACTOR shall promptly, after becoming aware of, and before proceeding with any quantities of affected Work, notify CITY in writing of any additional or reduced quantities for an item of Unit Price Work.

11.7.3. CITY reserves the right to notify CONTRACTOR in writing of any variation in quantities meeting the criteria established in this subsection.

11.7.4. Prior to Final Payment, or before the total amount paid exceeds the established Contract Price, an appropriate Change Order will be issued on the recommendation of ENGINEER, to adjust the estimated quantities for Unit Price Work and to correspondingly adjust the Contract Price.

11.7.5. If CITY determines that the additional or reduced quantities for an item of Unit Price Work justify an adjustment in the Unit Price, CITY shall authorize such an adjustment. No adjustment shall be provided under this subsection unless the variation between actual and estimated quantities for all Unit Price Work result in an increase or decrease in Contract Price by more than ten percent (10%). If CITY determines that the Unit Prices established in the Contract Documents are valid even for the additional or lower quantities, that decision shall be final and binding on CONTRACTOR unless CONTRACTOR delivers to CITY written notice of a Contract Claim within seven (7) days from receipt of such decision.

11.7.6. In re-evaluating Unit Prices contained in the Contract Documents, CONTRACTOR and CITY shall take into account increases or decreases in CONTRACTOR's supplemental and administrative costs for the performance of the Work solely as a result of the variation in quantities, as opposed to as a result of CONTRACTOR's fault or negligence, or bid estimate errors.

11.8. Cash Allowances. It is understood that when cash allowances are named in the Contract Documents CONTRACTOR has included in the Contract Price all allowances so named. CONTRACTOR shall cause the Work so covered to be within the limit of the allowances set forth in the Contract Documents. Upon Final Payment, the Contract Price shall be adjusted as required and an appropriate Change Order issued. CONTRACTOR agrees that the original Contract Price includes such sums as the CONTRACTOR deems proper for costs and profit on account of cash allowances. No demand for additional cost or profit in connection therewith will be valid.

11.9. Criteria for Determining Adjustments in Contract Time.

11.9.1. The criteria to be used to determine an adjustment in Contract Time necessitated by changes ordered or negotiated pursuant to these General Conditions or a Contract Claim, are limited to the following:

11.9.2. An extension in Contract Time will not be granted unless CONTRACTOR can demonstrate through an analysis of the Progress Schedule that the increases in the time to complete the Work, or specified part of the Work, beyond the corresponding Contract Time(s) arise from unforeseeable causes beyond the control and without the fault or negligence of both CONTRACTOR and his Subcontractors, Suppliers or other persons or organizations, and that such causes in fact lead to performance or completion of the Work, or specified part in question, beyond the corresponding Contract Time. An adjustment in Contract Time will be based solely upon net increases in the time required for the performance or completion of parts of the Work controlling achievement of the

corresponding Contract Time(s) at the time that the incident which causes the change occurs. However, even if the time required for the performance or completion of Controlling Work Items of the Work is extended, an extension in Contract Time will not be granted until performance or completion of the Controlling Work Items necessarily extends beyond the Contract Time in question despite CONTRACTOR's reasonable and diligent actions to guard against those effects. Examples of unforeseeable causes include: (1) acts of God or of the public enemy; (2) acts of CITY or ENGINEER in its sovereign or contractual capacity; (3) acts of the Government or another Public Entity in its sovereign capacity; (4) acts of another contractor in the performance of a contract with the CITY, if not identified in the Contract; (5) fires, floods, epidemics, quarantine restrictions; (6) sink holes, archaeological finds; (7) strikes, freight embargoes; (8) unusually severe weather; (9) a case of differing physical conditions; and (10) unusually severe shortages of construction Materials from such causes as area-wide shortages, an industry-wide strike, or a natural disaster which affects all feasible sources of supply.

11.9.3. Notwithstanding any provisions in the Contract Documents to the contrary, an extension of Contract Time shall be the sole remedy of CONTRACTOR for any delay of any kind. The CITY's exercise of any of its rights under Section 10 and this Section regardless of the extent or number of the changes, or the CITY's exercise of its remedies of stopping the Work or requiring correction or re-execution of any defective Work shall not under any circumstances be construed as active or intentional interference with the CONTRACTOR's performance of the Work.

11.10. Waivers. The CONTRACTOR expressly waives recovery (1) of acceleration costs incurred as an alternative to an extension in Contract Time on account of delays not meeting the requirements for extensions in Contract Time or an adjustment in Contract Price; (2) of escalation costs for any part of the Work; and, (3) of any Contract Claim for an addition to the Contract Price when the CONTRACTOR fails to comply with the time requirements for notice or submittal of supporting data under these Contract Documents.

12. SCHEDULES

12.1. Project and Submittal Schedules.

12.1.1. Types of Schedules

A. Project Schedule:

I. Project Schedule Definitions:

- a) Work Items are the significant activities of the Project. There is no one "right way" to define Work Items for a given project, however all significant project activities must be identified in sufficient detail to track progress towards project completion.
- b) Start Date and Finish Date are the dates a Work Item will begin and will be completed.
- c) Duration is the length of time it takes for a Work Item to be completed, from Start Date to Finish Date.
- d) Sequence is the order in which the Work Items must be completed. This includes Work Items that are done concurrently (at the same time), sequentially (must finish one before starting the next) or overlap (may start one before finishing the other).
- e) Critical Path is the sequence of those Work Items whose durations determine the length of time needed to complete the entire project from start to finish.
- f) Controlling Work Items are those Work Items on the Critical Path.
- g) Float Time is the time a Work Item not on the Critical Path could be delayed without affecting the Critical Path.

B. CONTRACTOR shall prepare and submit for ENGINEER's review a time scaled Project Schedule. The Project Schedule shall show the sequence in which CONTRACTOR proposes to accomplish the Work Items (including procurement of Materials and Equipment) and shall clearly depict the order, interdependence, duration, and installation man-days by craft of each Work Item. The Project Schedule shall show all of the Work Items to be completed and the duration of the Critical Path leading to each substantial and final completion requirement. The duration of the Project Schedule's Critical Path shall comply with the Contract Time and shall meet the Contract Agreement's substantial and final completion requirements. The float time for each Work Item not on the critical path shall be depicted. At a minimum, a schedule diagram shall be submitted which is neatly lettered and legibly drawn to a time scale. The Project Schedule breakdown shall be by divisions of Work subdivided into areas or facilities in sufficient detail so that ENGINEER may readily evaluate CONTRACTOR's progress at any given time during the project and shall be arranged and itemized so ENGINEER can evaluate CONTRACTOR'S requests for progress payments.

C. CONTRACTOR shall include in the Project Schedule Work Item(s) clearly showing CONTRACTOR's coordination of all utility work at, or adjacent to, the Project site. These Work Item(s) apply to all utility work at the site; including all connections to existing utilities, removal, re-locations and adjustments (temporary and permanent) regardless of whether the work is performed by CONTRACTOR, the CITY's own forces or by others. The CONTRACTOR shall assign reasonable and realistic start and finish dates to utility relocation work item(s) and must include a

mandatory thirty (30) days minimum float time. The thirty (30) days of float time for utility relocations must be clearly depicted on the Project Schedule. The CITY will not consider any Contract Time extensions related to utility coordination matters unless the utility related delays exceed the thirty (30) Days float time and extend the Critical Path of the Project Schedule.

- D. Shop Drawing Schedule: CONTRACTOR shall prepare and submit to ENGINEER for review, a schedule of Shop Drawing and sample submissions. This schedule shall consist of a list of the submittals to be made over the course of the Project; anticipated and actual dates of submittal and return for both initial and resubmissions; and the anticipated dates of submittal approval so as not to delay the Project. The schedule shall allow for review and processing time by ENGINEER OF RECORD and ENGINEER.
- E. Manpower/Cash Flow Schedule: CONTRACTOR shall prepare and submit to ENGINEER for review with the Project Schedule, manpower charts and cash flow Projections contemplated or required by the schedule in a form acceptable to ENGINEER. Updated plan and actual expended manpower charts and cash flow Projections shall be submitted with each monthly or interim Project Schedule submission.

12.1.2. Submittal.

- A. CONTRACTOR shall submit to the ENGINEER for ENGINEER's acceptance the initial Project Schedule within thirty (30) Days of the Notice To Proceed date.
- B. CONTRACTOR shall enter on the Project Schedules the actual progress on a monthly basis, or at such intervals as requested by ENGINEER, and shall deliver to ENGINEER five (5) copies of the schedule documentation.
- C. Updated Project Schedules are to be submitted with each Application for Payment. An Application for Payment shall not be paid until the schedule submittal, including cash flow projections, and any requested corrections or clarifications have been accepted by ENGINEER for inclusion into the Application for Payment. If additional updated schedules are requested by ENGINEER they are to be provided within seven days of the date of request, but do not constitute permission to submit additional Applications for Payment.

12.1.3. Review.

- A. ENGINEER shall review schedule submittals. If, in the opinion of ENGINEER, the schedule (1) does not accurately reflect CONTRACTOR's actual progress or Work plan or, (2) is unreasonable or cannot be used to effectively evaluate CONTRACTOR's progress or, (3) is not in compliance with this Section and other appropriate sections of the Contract Documents, it will be returned to CONTRACTOR for corrections or clarification. CONTRACTOR shall make the necessary corrections and resubmit or shall respond in detail to ENGINEER's comments and request that the submittal be accepted without modification. Failure by CONTRACTOR to provide corrections or clarifications to schedule submittals as directed by ENGINEER shall constitute reason to withhold approval of any Application for Payment.
- B. ENGINEER's review of schedule submittals shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has, in writing, called CITY's attention to each such variation at the time of submission and CITY has given written approval of each such variation; nor shall any approval by CITY or ENGINEER relieve CONTRACTOR from responsibility for compliance with any provision of the Contract Documents.
- C. The Contract Time establishes the period and duration in which CITY expects the Work to be performed. Any schedule which shows completion ahead of the Contract Time shall include additional supporting data to explain the basis of the shorter time for performance. Submission by CONTRACTOR of any schedule indicating completion ahead of schedule shall not constitute an adjustment in Contract Time; however, CONTRACTOR may complete the Work ahead of the Contract Time and close out the Work as provided in the Contract Documents. The increased schedule flexibility represented in the shorter schedule shall allow the use of the increased schedule flexibility by the CITY. In any case CITY shall not be responsible for any costs, actual or anticipated, resulting from any delay to CONTRACTOR that prevents completion of any part or all of the Work unless it prevents completion by the Contract Time(s); nor shall the CITY be obligated to incur any additional costs for administration or inspection of the CONTRACTOR's voluntary accelerated Work. No Contract Claims for Contract Time or Contract Price shall be compensated to the CONTRACTOR for CITY delay, disruption, interference, inefficiency, constructive acceleration or other time impacts prior to the original Contract Time(s) for completion of the Work.
- D. It is understood that revisions in the schedule are inherent in the nature of construction especially when the Work involves Underground Facilities and utilities. This may require that changes be made in the schedule to reflect the dynamic nature of the design and the Work. Actions by CITY, ENGINEER or ENGINEER OF RECORD that may affect the progress of any part or all of the Work shall make use of the flexibility in the Project Schedule, often expressed as schedule float or slack time, and that which may result from changes in the sequencing of individual Work items,

to limit the impact of such actions. The flexibility in the Project Schedule shall not be limited by the inclusion of restraints, logic or imposed dates into the schedule that cannot be reasonably justified. Float or slack time is defined as the amount of time between the early start date and the late start date or the early finish date and the late finish date of any of the activities on the Project Schedule. Positive float or slack time is for the exclusive use or benefit of CITY. Positive float or slack time is owned and belongs to the CITY and must be used in the best interest of the public to assure timely completion of the Work. Therefore, any float or slack time shall be used to the maximum extent possible to offset: (1) unexpected delays which occur in connection with the Work; (2) acts of God; and (3) change actions initiated by the CITY including, but not limited to, unilateral Change Orders and acceleration orders.

- E. After Substantial Completion, but prior to Final Payment, CONTRACTOR shall submit an as-built schedule. The schedule shall reflect (1) all as-built critical paths, (2) all contract activities, including all added activities, with their actual start and finish dates, (3) the actual number of separate Work days during which Work was performed on each activity, and (4) the actual number of man-days that were required to complete each activity.
- F. It is expressly agreed that CONTRACTOR shall not be entitled to damages for any type of delay whatsoever under any circumstances and the CONTRACTOR expressly waives any increase in Contract Price or damages of any type on account of time impacts to the Project Schedule including, but not limited to, Contract Claims for delay, disruption, suspension, interference, inefficiency and constructive acceleration. It is further expressly agreed that the exclusive remedy for time impacts to the Project Schedule including, but not limited to, Contract Claims for delay, disruption, suspension, interference, inefficiency and constructive acceleration, will consist of Contract Time extensions under the terms of the Contract Documents and will exclude the CONTRACTOR's right to recover any time impact monetary damages of any nature from CITY. The parties agree that this no damages for delay clause applies to all damages or claims that may arise because of delay or acceleration of any nature experienced by CONTRACTOR, no matter how caused, because of acts or omissions of the CITY, the presence and operations of the CITY performing work with its forces, the work of utility contractors, or the work of others at the Project site; the CITY assumes no direct or vicarious liability for any losses and expenses incurred by CONTRACTOR. In the event that this subsection is found by a court of competent jurisdiction to be void or inapplicable, then CONTRACTOR shall compute all damage claims as provided in subsection 17.9 of these General Conditions.
- G. Delays of Subcontractors, suppliers, materialmen, or others selected by CONTRACTOR or CONTRACTOR's Subcontractors, without regard to the tier or privity of contract between the CONTRACTOR and CONTRACTOR's Subcontractors, shall not be excusable to the CONTRACTOR and shall not be the basis of a Contract Claim for Contract Time or Contract Price by CONTRACTOR.

13. WARRANTY AND GUARANTEE, TESTS AND INSPECTIONS, CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.1. Warranty and Guarantee. CONTRACTOR warrants and guarantees that all Work will be in accordance with the Contract Documents and will not be Defective. All Defective Work, whether or not in place, may be rejected, corrected or accepted as provided in this Section. The obligations of CONTRACTOR under this subsection shall be in addition to and not in limitation of any obligation imposed upon him by special guarantees required by the Contract Documents or otherwise prescribed by Laws or Regulations.

13.2. Access to Work. CITY, ENGINEER, ENGINEER OF RECORD, their representatives, testing agencies and governmental entities with jurisdiction shall be permitted access to the Work for their observation, inspection and testing. CONTRACTOR shall provide proper and safe conditions for such access.

13.3. Tests and Inspections.

13.3.1. CONTRACTOR shall give ENGINEER timely notice of readiness of the Work for all required inspections, tests or approvals. Inspections, tests or observations by ENGINEER, ENGINEER OF RECORD, CITY or their agents may be performed at their discretion to provide information to the CITY on the progress of the Work. However, such information is not intended to fulfill the CONTRACTOR's obligations in accordance with the Contract Documents.

13.3.2. If any law, ordinance, rule, regulation, code or order of any public body, government entity or court having jurisdiction requires any Work (or part thereof) to specifically be inspected, tested or approved, CONTRACTOR shall assume full responsibility therefor, pay all related costs, schedule related activities at appropriate times, 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 CITY's or ENGINEER's acceptance of a proposed manufacturer, fabricator, supplier or distributor of Materials or Equipment proposed to be incorporated in the Work, or of Material or Equipment submitted for approval prior to CONTRACTOR's purchase thereof for incorporation of the Work. All inspections, tests or approvals shall be performed by persons or organizations acceptable to CITY and ENGINEER.

13.3.3. The CONTRACTOR shall perform sufficient testing and inspection of the Work to support the Warranty and Guaranty requirements.

13.3.4. Neither observations by ENGINEER or CITY nor inspections, tests or approvals by others shall relieve CONTRACTOR from their obligations to perform the Work in accordance with the Contract Documents.

13.3.5. If any testing, inspection or approval under this subsection reveal Defective Work, CONTRACTOR shall not be allowed to receive any associated costs and CITY shall be entitled to deduct from the Contract Price, by issuing a Change Order, CITY's costs arising out of the Defective Work, including costs of repeated procedures, compensation for ENGINEER's and ENGINEER OF RECORD's services and other related costs.

13.4. Uncovering Work.

13.4.1. 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 and will exclude the right to an increase in the Contract Price or Contract Time unless CONTRACTOR has given ENGINEER timely written notice of CONTRACTOR's intention to cover such Work and ENGINEER has not acted with reasonable promptness in response to such notice.

13.4.2. 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, any additional expenses experienced by the CITY due to delays to others performing additional Work, other contractual obligations, and attorneys' fees and CITY shall be entitled to issue an appropriate deductive Change Order. CONTRACTOR shall further bear the responsibility for maintaining the schedule and will not be allowed an increase in Contract Price or Contract Time due to the uncovering. If, however, such Work is not found to be Defective, and subsection 13.4.1 is not applicable, CONTRACTOR shall be allowed an increase in the Contract Price or the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction if it makes a Contract Claim therefor as provided in Section 10.

13.5. Correction or Removal of Defective Work. CONTRACTOR shall promptly, without cost to CITY 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 conforming Work. The CONTRACTOR shall bear the cost of repairing or replacing all Work and property of the CITY or others destroyed or damaged or in any way impacted by such correction or removal.

13.6. Acceptance of Defective Work. If, instead of requiring correction or removal and replacement of Defective Work, CITY prefers to accept it, CITY may do so. In such case, if acceptance occurs prior to Final Payment, CITY shall be entitled to issue a Change Order incorporating the necessary revisions in the Contract Documents, including appropriate reduction in the Contract Price. If the acceptance occurs after such Final Payment, an appropriate amount shall be paid by CONTRACTOR to CITY.

13.7. CITY May Correct Defective Work. 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 this Section, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents (including any requirements of the Progress Schedule), CITY may, after seven (7) days written notice to CONTRACTOR, correct and remedy any such deficiency. In exercising its rights under this subsection CITY shall proceed with reasonable promptness. To the extent necessary to complete corrective and remedial action, CITY 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 CITY has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow CITY, CITY's representatives, agents and employees such access to the site as may be necessary to enable CITY to exercise its rights under this subsection. All direct and indirect costs of CITY in exercising such rights shall be charged against CONTRACTOR in an amount documented by CITY, and CITY will be entitled to issue a Change Order 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, all corrective or replacement costs, compensation for additional professional services required and all costs of repair and replacement of property of others destroyed, impacted or damaged by correction, removal or replacement of CONTRACTOR's Defective Work. CONTRACTOR shall not be allowed an increase in the Contract Price or the Contract Time because of any delay in the performance of the Work attributable to the exercise by CITY of CITY's rights hereunder.

13.8. Warranty Period.

13.8.1. The Warranty Period shall commence on the date of Final Completion of the entire Work, or a later date if so specified in the Contract Documents, and extend until two (2) years after that date (or whatever longer period may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee or specific provision of the Contract Documents).

13.8.2. If within the designated Warranty Period, the Work, or any part of the Work, is discovered to be Defective, CONTRACTOR shall promptly, without an adjustment in Contract Price and in accordance with CITY's or ENGINEER's written instructions, either correct that Defective Work, or if it has been rejected by CITY or ENGINEER, remove it from the site and replace it with non-Defective Work. If circumstances warrant it, including, but not limited to, in an emergency, CITY may have the defective Work corrected or the rejected Work removed and replaced. In that event, CONTRACTOR shall not be allowed to recover any associated costs, and he shall reimburse CITY for all direct, indirect and consequential costs of CITY, or CITY shall be entitled to issue a Change Order to incorporate an appropriate decrease in Contract Price if prior to Final Payment. CITY shall reserve and retain all of its rights and remedies at law and equity against CONTRACTOR and its Surety for damages and for corrections of any and all latent defects.

13.9. Extended Warranties and Guarantees.

13.9.1. CITY may at its sole discretion advance or defer the date of commencement of the Warranty Period, in which case CONTRACTOR shall maintain the warranties and guarantees in full force and effect until the revised date for commencement of the Warranty Period. If such advancement or deferral in the date for commencement of the Warranty Period causes an increase or decrease in the cost of the warranties and guarantees provided by CONTRACTOR, CITY shall make an adjustment in Contract Price or Contract Time, as provided in Sections 10 and 11.

13.9.2. In circumstances where CITY undertakes partial utilization of a portion of the Work which was specifically identified in the Contract Documents, CONTRACTOR shall maintain the warranties and guarantees in full force and effect during the period between the applicable commencement of partial utilization date, and the date of commencement of the Warranty Period, and for such warranties and guarantees CONTRACTOR shall receive no adjustment in Contract Price.

13.9.3. In special circumstances where CONTRACTOR fails to complete the Work or a separable portion of the Work within the corresponding Contract Time, including any authorized adjustments and CITY undertakes partial utilization, CONTRACTOR shall maintain the warranties and guarantees in full force and effect during the period between the applicable commencement of partial utilization date, and the date of commencement of the Warranty Period, and for such warranties and guarantees CONTRACTOR shall receive no adjustment in Contract Price.

13.10. Special Maintenance Requirements. In special circumstances where the Work, or a designated part, reaches Substantial Completion, but as provided in the Contract Documents, is not placed in continuous service until the commencement of the Warranty Period, CONTRACTOR shall maintain the Work, or designated part, in good order and in proper Working condition, provide suitable drainage, and take all other actions as are necessary for its protection during the period between the applicable Substantial Completion date and the date of commencement of the Warranty Period, and for such maintenance CONTRACTOR shall receive no adjustment in Contract Price. In the event that Work suffers loss or damage, however caused, CONTRACTOR shall rebuild, repair, restore, and make good without an increase in Contract Price all losses or damages to any portion of any Work and shall without an increase in Contract Price provide suitable drainage and erect such temporary structures and take all other actions as are necessary for its protection. Suspension of Work or the granting of an extension in Contract Time for any cause shall not relieve CONTRACTOR of his responsibility for the Work, or designated part, as specified in this subsection.

13.11. Extended Warranty Period Due to Defective Work. Any Defective Work that is either corrected or rejected and replaced will be warranted and guaranteed for a period of two (2) years from the date of such correction or removal and replacement, even if it had previously been corrected or replaced, in accordance with the provisions of this Section 13. If within such extended Warranty Period, that Work is once again found to be Defective, CITY shall be entitled to all of CITY's rights and remedies under this Section.

14. PAYMENTS TO CONTRACTOR AND COMPLETION

14.1. Schedules. The Contractor will not be entitled to receive a Progress Payment until the Progress Schedule is approved by the ENGINEER.

14.2. Application for Payment. Not later than the first day of each month, CONTRACTOR shall meet with ENGINEER to agree on quantities of Work completed and Materials on site to be used as the basis for an Application for Payment for the previous month. The CITY's Project manager shall review and approve a draft copy of the Application For Payment prior to ENGINEER and CONTRACTOR agreeing on the applicable figures. Using the agreed upon figures, ENGINEER shall generate the Application for Payment and deliver it to CONTRACTOR for completion and signature. CONTRACTOR shall submit the signed Application for Payment to ENGINEER, accompanied by such supporting documentation as is required by the Contract Documents and also as ENGINEER may reasonably require.

14.2.1. The CONTRACTOR shall submit partial releases of liens from all Subcontractors and Suppliers in a form satisfactory to the CITY, prior to processing any Pay Applications.

14.2.2. Neither CITY or ENGINEER is under any duty or obligation whatsoever to any Subcontractor, Supplier, laborer or any other party to ensure that payments due and owing by CONTRACTOR to any of them are or will be made.

14.3. Stored Materials.

14.3.1. CITY may, at its sole option, pay an amount equal to ninety percent (90%) of the value of Materials and Equipment not incorporated into the Work but delivered and suitably stored, less in each case the aggregate of payments previously made. In no

event shall payments for Materials and Equipment stored on site exceed ninety percent (90%) of the value of the related cost for the specific item of Work shown in the schedule of values regardless of the stated value of the Material or Equipment. CITY may, at its sole option, pay an amount equal to ninety percent (90%) of the value of Materials and Equipment not incorporated into the Work and stored off site. When payment to CONTRACTOR is made for stored Material and Equipment, CONTRACTOR shall submit invoices marked paid by the Supplier with the Application for Payment following payment to CONTRACTOR documenting that CONTRACTOR has paid for said Materials and Equipment or the previously paid amount shall be deducted from remaining payments or retainage for stored Materials and Equipment not so properly documented.

14.3.2. If payment is requested on the basis of Materials and Equipment not incorporated into the Work but delivered and suitably stored at the site or at a bonded warehouse, the Application for Payment shall be accompanied by such data, satisfactory to CITY, as will establish CITY's title to the Material and Equipment and protect CITY's interest therein, including applicable insurance. In no event shall the quantity of Material and Equipment submitted for payment be in excess of the actual final installed quantity. CITY may deduct from the final Application for Payment amounts paid CONTRACTOR for Material and Equipment not finally installed in the Work.

14.3.3. If payment is requested on the basis of Materials and Equipment not incorporated into the Work but stored off site, the CONTRACTOR shall store all off site Materials and Equipment in a bonded warehouse. The shipping yards of manufacturers or suppliers are not suitable off site storage sites.

14.3.4. Without limitation, the CONTRACTOR shall assume all risk of loss and be solely responsible for all stored Materials and Equipment on-site, off-site stored in bonded warehouses including, but not limited to, stored Materials paid under prior Applications For Payment.

14.4. CONTRACTOR's Warranty of Title. The CONTRACTOR warrants and guarantees that title to all Work, Materials and Equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to CITY at the time of payment free and clear of all liens, claims, security interests and encumbrances (hereafter referred to as "Liens").

14.5. Review and Payment.

14.5.1. ENGINEER must approve all Applications For Payment prior to recommending payment to the CITY. Applications For Payment shall be processed in accordance with Chapter 218, Part VII, Florida Statutes, the "Florida Prompt Payment Act" including all applicable provisions for ENGINEER's review time.

14.5.2. ENGINEER's recommendation of any payment requested in an Application for Payment will constitute a representation by ENGINEER to CITY, based on on-site observations of the Work in progress and on ENGINEER's review of the Application for Payment and the accompanying data and schedules, that the Work has progressed to the point indicated; that to the best of ENGINEER's 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 prior to or upon Substantial Completion; to the results of any subsequent tests called for in the Contract Documents; or to any qualifications stated in the recommendation) and that CONTRACTOR is entitled to payment of the amount recommended. However, by recommending any such payment, ENGINEER will not thereby be deemed to have represented that any examination has been made to ascertain how or for what purpose CONTRACTOR has used the monies paid or to be paid to CONTRACTOR on account of the Contract Price, or that title to any Work, Materials or Equipment has passed to CITY free and clear of any lien.

14.5.3. ENGINEER may refuse to recommend the whole or any part of any payment if, in its opinion, it would be incorrect to make such representations to CITY. ENGINEER 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 CITY from loss or anticipated loss because: (1) the Work is Defective, or completed Work has been damaged requiring correction or replacement or, (2) written Contract Claims have been made against CITY or Liens have been filed in connection with the Work or, (3) the Contract Price has been reduced because of Change Order or, (4) CITY has been required to correct Defective Work or complete the Work or, (5) of CONTRACTOR's unsatisfactory prosecution of the Work in accordance with the Contract Documents or, (6) of CONTRACTOR's failure to make payment to Subcontractors, Suppliers or for labor, or (7) of CONTRACTOR's failure to provide acceptable schedule submittals for inclusion into the Application for Payment or, (8) of CONTRACTOR's failure to properly maintain and submit with Application for Payment Record Documents.

14.6. Retainage.

14.6.1. The value of each Application for Payment shall be equal to the total value of the Work performed to date, less an amount retained in accordance with Chapter 218.735, Part VII Florida Statutes, the "Florida Prompt Payment Act", and less payments previously made and amounts withheld in accordance with the Contract Documents.

14.6.2. Retainage under the Contract Documents is held by CITY as collateral security to assure completion of the Work.

A. The value of each Application for Payment shall be equal to the total value of the Work performed to date, less an amount retained, and less payments previously made and amounts withheld in accordance with the Contract

Documents.

- B. Payments will be in an amount equal to ninety-five percent (95%) of the work completed.
- C. Retainage under the Contract Documents is held by the CITY as collateral security to assure completion of the Work

14.6.3. This Section shall be subject to preemption, as appropriate, by State law

14.7. Overpayment. Any overpayment by CITY to CONTRACTOR shall be promptly repaid to CITY upon demand.

14.8. Final Application for Payment.

14.8.1. After CONTRACTOR has completed all corrections to the satisfaction of CITY and ENGINEER as verified by Final Inspection and delivered all maintenance and operating instructions, schedules, guarantees, warranties, Bonds, certificates of inspection, marked-up record documents and other documents, all as required by the Contract Documents and acceptable to CITY, and after ENGINEER has indicated that Work is acceptable, CONTRACTOR may make application for Final Payment following the procedure for Applications for Payment.

14.8.2. 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 waiver (satisfactory to CITY) of all Liens and Contract Claims arising out of or filed in connection with the Work. In lieu thereof and as approved by CITY, CONTRACTOR may furnish receipts or releases in full with an affidavit of CONTRACTOR that the releases and receipts include all labor, services, Material and Equipment for which a Lien or Contract Claim could be filed, and that all payrolls, Material and Equipment bills and other indebtedness in connection with the Work for which CITY might in any way be responsible, have been paid or otherwise satisfied. CITY shall require consent of the Surety to Final Payment.

14.9. Final Payment and Acceptance.

14.9.1. If, on the basis of ENGINEER's observations 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 its obligations under the Contract Documents, ENGINEER will, within twenty days after receipt of the final Application for Payment, indicate in writing its recommendation of payment and present the Application to CITY for payment. Thereupon ENGINEER will give written notice to CITY and CONTRACTOR that the Work is acceptable. 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, CITY shall, within twenty (20) days after receipt from ENGINEER, pay CONTRACTOR the amount due giving consideration to the recommendations of ENGINEER, but not being bound thereby.

14.9.2. After receipt of the ENGINEER's written notice that the Work is acceptable and prior to Final Payment, CONTRACTOR shall submit an affidavit, in a form acceptable to CITY, certifying that the Bonds and insurances required under Section 5 are in effect and will not be allowed to expire for the required period of time.

14.10. Waiver of Claims.

14.10.1. The making and acceptance of Final Payment shall constitute:

14.10.2. A waiver of all claims by CITY against CONTRACTOR, except claims arising from unsettled liens, from Defective Work appearing after final inspection, from fraud or gross negligence or from failure to comply with the Contract Documents or the terms of any special guarantees specified therein or the terms of any Bonds; however, it shall not constitute a waiver by CITY of any rights in respect of CONTRACTOR's continuing obligations under the Contract Documents; and

14.10.3. A waiver of all Contract Claims, requests for equitable adjustment or claims of any nature by CONTRACTOR against CITY, ENGINEER, and ENGINEER of RECORD.

14.11. CITY's Obligations.

14.11.1. In no event shall any interest be due and payable to CONTRACTOR on any of the sums retained by CITY pursuant to any of the terms or provisions of any of the Contract Documents.

14.11.2. Any provision to the contrary notwithstanding, CITY shall not be obligated to make any payment to CONTRACTOR and may withhold partial payments if any of the following conditions exists: (1) CITY has reason to believe CONTRACTOR is in default of any of its obligations or otherwise is in default under any of the Contract Documents; (2) Any part of such payment is attributable to Work which is Defective; (3) CONTRACTOR has failed to make payments promptly to Subcontractors and Suppliers or for labor and

Material for which CITY has made payment to CONTRACTOR; (4) If CITY, in its good faith judgment, determines that the portion of the Contract Price remaining unpaid will not be sufficient to complete the Work in accordance with the Contract Documents; (5) CONTRACTOR has failed to maintain progress of the Work in accordance with the Progress Schedule or CONTRACTOR has failed to meet an interim completion date or the Substantial or Final Completion Date.

14.12. Partial Utilization.

14.12.1. Use by CITY of completed portions of the Work may be accomplished at the option of CITY prior to Substantial Completion of all the Work subject to the following:

- A. CITY at any time may request CONTRACTOR in writing to permit CITY to use any part of the Work which CITY 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 shall certify to CITY 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. CONTRACTOR at any time may notify CITY and ENGINEER in writing when CONTRACTOR considers that a portion of the Work which has been identified in the Contract Documents as eligible for Partial Utilization is substantially complete. Within a reasonable time thereafter, CITY, 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 the reasons therefor. If ENGINEER considers that part of the Work to be substantially complete, ENGINEER will execute and deliver to CITY and CONTRACTOR a certificate to that effect, fixing the date of Substantial Completion as to that part of the Work, and attaching a list of minor items as to that part of the Work to be completed or corrected before Final Payment.
- B. Prior to issuing a certificate of Substantial Completion as to part of the Work, ENGINEER will deliver to CITY and CONTRACTOR a written recommendation as to the division of responsibilities pending Final Payment between CITY and CONTRACTOR with respect to security, operation, safety, maintenance, utilities, insurance and the Warranty Period for that part of the Work. CITY shall have the right to exclude CONTRACTOR from any part of the Work which ENGINEER has so certified to be substantially complete, but CITY shall allow CONTRACTOR reasonable access to complete or correct items described above.
- C. In lieu of the issuance of a certificate of Substantial Completion as to part of the Work, CITY 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 useable; provided that prior to any such takeover, CITY and CONTRACTOR have agreed in writing as to the division of responsibilities between CITY and CONTRACTOR for security, operations, safety, maintenance, Warranty Period, utilities and insurance with respect to such facility. During such utilization and prior to Substantial Completion of that portion of the Work, CITY shall allow CONTRACTOR reasonable access to complete or correct items and to complete other related Work.

14.13. Substantial Completion.

- A. When CONTRACTOR considers the entire Work to have progressed to the point where it is substantially complete, CONTRACTOR shall, in writing to ENGINEER, certify that the entire Work is substantially complete, submit to ENGINEER all operation and maintenance manuals and instructions and spare parts required by the Contract Documents, and request that ENGINEER issue a Certificate of Substantial Completion. Within a reasonable time thereafter, CITY, 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 the reasons therefor. CONTRACTOR shall then accomplish the requisite Work and then recertify that the entire Work is substantially complete. If ENGINEER considers the Work substantially complete, ENGINEER will prepare and deliver to CONTRACTOR and CITY a Certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a list of items (which should be minor in scope and nature) to be completed or corrected before Final Payment. CONTRACTOR shall continue to be responsible for maintaining the Work until the date of certification of Substantial Completion, or longer if so required by the Contract Documents.
- B. After the date of Substantial Completion, CITY shall allow CONTRACTOR reasonable access to complete or correct items on the list attached to the Certificate of Substantial Completion.

14.14. Final Inspection. Upon written notice from CONTRACTOR that the minor items described in the list attached to the Certificate of Substantial Completion have been completed, ENGINEER will make an inspection with CITY and CONTRACTOR and will notify CONTRACTOR in writing of the results of this inspection as to the items of the Work that appear to be incomplete, non-conforming or Defective. CONTRACTOR shall immediately take such measures as are necessary to remedy such deficiencies, and notify ENGINEER upon completion. The Final Inspection by ENGINEER with CITY and CONTRACTOR will verify completion of all items.

14.15. Contractor's Continuing Obligation. 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 CITY to CONTRACTOR nor any Partial Utilization by CITY nor any act of acceptance by CITY nor any failure to do so, nor any review and approval of the Shop Drawings or samples, nor any review of a Progress Schedule, nor the issuance of a notice of acceptability by ENGINEER, nor any correction of Defective Work by CITY will 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 except as provided in a waiver of Contract Claims at the time of making and acceptance of Final Payment.

14.16. Deleted Work. The CITY shall have the right to cancel the portions of the Agreement relating to the construction of any item therein by the payment to the CONTRACTOR of a fair and equitable amount covering all items of cost incurred prior to the date of cancellation or suspension of the Work by order of the ENGINEER.

14.17. Partial Payments.

- A. General. The CONTRACTOR will receive partial payments on monthly estimates based on the amount of Work done or completed (including delivery of certain Materials, as specified herein). The monthly payments shall be approximate only, and all partial estimates and payments shall be subject to correction in the subsequent estimates and the final estimate and payment. The amount of such payments shall be the total value of the Work done to the date of the estimate, based on the quantities and the Unit Prices, less an amount retained and less payments previously made.
- B. Withholding Payment for Defective Work. Should any defective Work or Material be discovered prior to the Final Acceptance, or should a reasonable doubt arise prior to Final Acceptance as to the integrity of any part of the completed Work, payment for such defective or questioned Work will not be allowed until the defect has been remedied and causes for doubt removed.

15. SUSPENSION OF WORK AND TERMINATION

15.1. CITY May Stop the Work. If the Work is Defective and the CONTRACTOR has been notified by ENGINEER or CITY, or if CONTRACTOR fails to perform the Work in compliance with the Maintenance of Traffic requirements of the Contract Documents, or if CONTRACTOR fails to furnish or perform the Work in such a way that the completed Work will conform to the Contract Documents, or suitable Materials or Equipment, or if CONTRACTOR fails to obtain, maintain or renew insurance in conformance with the Contract Documents in a form acceptable to CITY, or if any insurance company CONTRACTOR has obtained insurance from declares bankruptcy or is declared bankrupt, or if CONTRACTOR fails to prosecute the Work without endangering persons or property, CITY may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated. CITY's order to stop the Work may be communicated through ENGINEER or by CITY. This right of CITY to stop the Work shall not give rise to any duty on the part of CITY or ENGINEER to exercise this right for the benefit of CONTRACTOR or any other party. CONTRACTOR shall bear all direct, indirect, and consequential costs of such order to stop the Work (including but not limited to fees and charges of engineers, attorneys and other professionals, any additional expenses incurred by CITY due to delays to others performing Work under a separate contract with CITY, and other obligations), and CONTRACTOR shall further bear the responsibility for maintaining the Progress Schedule and shall not be entitled to any extension of Contract Time or increase in the Contract Price. CITY shall be entitled to deduct any expenses so incurred from the Contract Price by issuing a Change Order.

15.2. Suspension for Convenience.

15.2.1. Without invalidating the Contract Documents, and without notice to any surety, CITY may, at any time, order CONTRACTOR in writing to stop, delay or interrupt Work for such a period of time as CITY may deem appropriate. Upon receipt of that order, CONTRACTOR shall immediately proceed in accordance with any specific provisions or instructions, protect and maintain the Work, and make reasonable and diligent efforts to mitigate costs associated with the suspension order.

15.2.2. If any suspension of Work under this subsection causes an increase or decrease in CONTRACTOR's cost or the time required to perform or complete any part of the Work, CITY shall make a change in Contract Price or Contract Time, as provided in Section 10 and 11; except that no change in Contract Price or Contract Time will be made for any suspension of Work to the extent that performance would have been suspended anyhow by causes not meeting the criteria in Section 11, or for which an adjustment is provided or excluded under any other provision of the Contract Documents.

15.3. Termination for Cause.

15.3.1. CITY may upon the occurrence of any one or more of the following events terminate the services of CONTRACTOR:

- A. If a trustee, receiver, custodian or agent of CONTRACTOR is appointed under applicable law or under contract, whose appointment or authority to take charge of property of CONTRACTOR is for the purpose of enforcing a Lien against such property or for the purpose of general administration of such property for the benefit of CONTRACTOR's creditors;
- B. If CONTRACTOR admits in writing an inability to pay its debts generally as they become due;

- C. If CONTRACTOR fails to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled Workers, sufficient supervisory personnel, or suitable Materials or Equipment or failure to adhere to the Progress Schedules);
- D. If CONTRACTOR discontinues prosecution of the Work or any portion thereof;
- E. If CONTRACTOR allows any final judgment against it to remain unsatisfied for a period of ten days;
- F. If CONTRACTOR disregards laws, policies, court orders, or administrative directives, etc. of any governmental body, agency or court having jurisdiction;
- G. If CONTRACTOR disregards the authority of ENGINEER;
- H. If CONTRACTOR otherwise violates in any substantial way any provisions of the Contract Documents; or
- I. If CONTRACTOR fails to promptly pay Subcontractors, Suppliers, Materialmen, Laborers, etc.

15.3.2. As it is recognized that if CONTRACTOR is adjudged bankrupt or makes a general assignment for the benefit of creditors or if a receiver is appointed on account of its insolvency, such could impair or frustrate CONTRACTOR's performance of the Work, therefore it is agreed that upon occurrence of any such event, CITY shall be entitled to request CONTRACTOR or its successor to provide adequate assurance of future performance in accordance with the terms and conditions of the Contract Documents. Failure to provide said adequate assurance within seven (7) days of the delivery of the request shall entitle CITY to terminate CONTRACTOR. In all events pending receipt of adequate assurance of performance and actual performance in accordance herewith, CITY shall be entitled to proceed with the Work with its own forces or with their contractors on a time and Material or other appropriate basis the cost of which will be back charged against CONTRACTOR. CITY shall be entitled to deduct these costs from the Contract Price by issuing a Change Order.

15.3.3. CITY may, after giving CONTRACTOR and Surety seven (7) days written notice, and to the extent permitted by laws and regulations, 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 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 CITY has paid CONTRACTOR but which are stored elsewhere, and finish the Work as CITY may deem expedient. CONTRACTOR shall assign all of its interest in any or all Subagreements to CITY upon CITY's request. 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, indirect and consequential costs of completing the Work (including but not limited to fees and charges of engineers, architects, attorneys and other professionals and court and arbitration costs including costs for appellate proceedings) such excess will be paid to CONTRACTOR. If such costs exceed such unpaid balance, CONTRACTOR shall pay the difference to CITY. If CONTRACTOR leaves the site at any time during the seven day period, CITY shall have the right to secure the site to protect the property from damage and to ensure the health and safety of the public.

15.3.4. Notwithstanding the above notice period, in the event of an emergency, the CITY may take over the site and perform any or all of the activities set out above immediately. CITY shall provide notice of such takeover within twenty four (24) hours after its occurrence.

15.3.5. Where CONTRACTOR's services have been terminated by CITY, the termination shall not affect any rights of CITY against CONTRACTOR then existing or which may thereafter accrue. Any retention or payment due CONTRACTOR by CITY will not release CONTRACTOR from liability.

15.3.6. CITY may, at its sole discretion, permit CONTRACTOR to continue to perform Work when CONTRACTOR is in default, however caused. Such a decision by CITY shall in no way operate as a waiver on the part of CITY of any of its rights under the Contract Documents.

15.4. Termination for Convenience.

15.4.1. CITY may, without prejudice to any other right or remedy, terminate this Agreement in whole or in part at any time for its convenience by giving CONTRACTOR and Surety seven (7) days written notice. CITY shall have the right, in that event, to take over any or all of CONTRACTOR's Materials, (whether stored on or off site) supplies, Equipment, Subagreements or other obligations to complete the Work and CONTRACTOR shall assign them to CITY upon CITY's request. CONTRACTOR shall proceed to complete any part of the Work, as directed by CITY, and shall settle all its Contract Claims and obligations under the Agreement.

15.4.2. In any such termination for the convenience of CITY, CONTRACTOR shall be paid for Work completed in accordance with the Contract Documents prior to receipt of the notice of termination, and for reasonable termination settlement costs relating to commitments which had become firm prior to the termination; however, payment to CONTRACTOR will exclude any and all anticipated supplemental costs, administrative expenses overhead and profit on uncompleted Work and any type of wrongful

termination damages. CONTRACTOR shall justify its Contract Claims as requested by CITY with thorough, accurate records and data.

15.4.3. If, after notice of Termination for Cause of CONTRACTOR, it is determined that CONTRACTOR was not in default, the termination shall be deemed to have been for the convenience of CITY. In such event CONTRACTOR may recover from CITY payment in accordance with subsection 15.4.2.

16. MISCELLANEOUS

16.1. Giving Notice

16.1.1. Whenever any provision of the Contract Documents requires the giving of written notice it shall be deemed to have been validly given as of the time of actual delivery if delivered in person; or if it is delivered by registered mail, at the actual time of delivery.

16.1.2. Written notice to be delivered to CITY or ENGINEER or to any of its representatives by CONTRACTOR shall be delivered at the office stated in the Agreement, unless otherwise specified in writing to CONTRACTOR. Written notice to CONTRACTOR by CITY or ENGINEER shall be delivered to the individual or member of the firm or to an officer of the corporation for whom it is intended at the office stated in the Agreement, or such other office or individual designated by CONTRACTOR in writing to CITY.

16.2. Notice to Other Agencies. CONTRACTOR shall notify all public and private entities or agencies in accordance with any and all ordinances, laws, agreements, licenses, and any other directions of construction activity, disruption of access or services. CITY or ENGINEER shall not be responsible for any such notification.

16.3. Computation of Time. When any period of time is referred to in the Contract Documents by Days, it shall be computed to include the first and the last Day of such period. If the last Day of any such period falls on a Saturday or Sunday or on a Holiday, such Day shall be omitted from the computation.

16.4. Claims for Injury or Damage to Person or Property. Should CITY or CONTRACTOR suffer injury or damage to person or property because of any error, omission or act of the other party or of any of the other party's employees or agents or others for whose acts the other party is legally liable, claim will be made in writing to the other party within a reasonable time from the first observance of such injury or damage. This provision shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitations or repose.

16.5. No Conflict with Laws or Regulations.

16.5.1. The duties, obligations, criteria or procedure imposed by these General Conditions and the rights and remedies made available are in addition to, and are not to be construed in any way as a limitation of any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, except that in the event that a specific part or detailed requirement of a provision, criterion or procedure in these General Conditions and a specific part or detailed requirement of a provision, criterion or procedure imposed or available by Laws or Regulations are in conflict the specific part or detailed requirement of Laws and Regulations shall govern. All other specific parts or detailed requirements in the provisions, criteria or procedures of the applicable Laws or Regulations and these General Conditions not in conflict shall remain in full force and effect and be read with the controlling specific part or detailed requirement.

16.5.2. The provisions of this subsection will 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.

16.5.3. Each and every provision of law and clause required by law to be inserted in the Contract Documents shall be deemed to be inserted therein and the Contract shall be read and enforced as though it were included therein.

16.6. Partial Invalidity. If any provision of this contract is held by a court of competent jurisdiction to be invalid or unenforceable, such invalidity or unenforceability shall not affect the other parts of this Agreement if the rights and obligations of the parties contained herein are not materially prejudiced and if the intentions of the parties can continue to be effectuated. To that end, this Agreement is declared severable.

16.7. No Waiver of Rights, Duties.

16.7.1. Except as otherwise specifically provided in the Contract Documents, no action or failure to act by the CITY, ENGINEER, CITY's Representative(s), or CONTRACTOR on one or more occasions shall constitute a waiver of any right or duty afforded any of them under the Contract Documents, nor shall any such action or failure to act constitute an approval of or acquiescence of any breach thereunder.

16.7.2. All representations, indemnities, warranties and guarantees required by the Contract Documents, including the Warranty Period shall survive Final Payment and termination or completion of the Agreement.

16.8. Advertising. No advertising shall be permitted upon any part of the site or structures located on the site. News or press releases pertaining to the services, Work product(s), or performance of CONTRACTOR under the Contract Documents or the Project to which it relates shall

be at the sole discretion of CITY.

16.9. Recovery of Damages. In no event shall CONTRACTOR be entitled to recover from CITY any indirect, incidental, or consequential damages in any proceeding arising out of or relating to this Agreement or breach thereof. In the event that subsection 12.1.7 is found by a court of competent jurisdiction to be void, inapplicable or in the event that subsequent legislation renders such provisions void or inapplicable, then no formula based or total cost approaches including, but not limited to, the Eichleay, Allegheny, Burden Fluctuation or other similar formula based methods shall be used to compute damages. CONTRACTOR shall base all damage claims upon Cost and Pricing Data at the time of the occurrence of the event upon which the damage claims are based.

16.10. Recovery of Interest. Any prejudgment or postjudgment interest assessed against either party to this Agreement shall be assessed at the rate provided by Florida law or four percent (4%) per annum, whichever is less.

16.11. Notice of Claims. The contractual limitations periods for filing Contract Claims or other claims for increases in Contract Price, Contract Time, or any other claim of any nature set forth in the Contract Documents shall be controlling. However, in the event that no limitations periods is established in the Contract Documents for the specific type of claim asserted then, the parties agree that all such claims shall be made in writing with complete supporting documentation to the persons designated to receive such claims (CONTRACTOR's Superintendent, ENGINEER and CITY's Budget & Procurement Manager) no more than seven (7) days after the occurrence of the event giving rise to any such claim, or else any such claim shall be waived and deemed invalid.

16.12. Waiver of Jury Trial. The parties expressly waive any right to jury trials under Florida law.

16.13. Attorney Fees. The parties expressly agree that each party shall be solely responsible for their own attorney's fees and costs incurred in any negotiation, alternative dispute resolution procedure, or litigation related to or arising out of these Contract Documents.

17. MEASUREMENT AND PAYMENT

17.1. Measurement of Quantities.

17.1.1. Measurement Standards: Unless otherwise stipulated, all Work completed under the Contract Documents shall be measured, by the ENGINEER, according to United States Standard Measures.

17.1.2. Method of Measurements: Unless otherwise provided by in the Specifications for the particular items involved, all measurements shall be taken horizontally or vertically.

17.1.3. Determination of Pay Areas:

A. In measurement of items paid for on the basis of area of finished Work, where the pay quantity is designated to be determined by calculation, the lengths or widths to be used in the calculations shall be the station to station dimensions shown on the Plans; the station to station dimensions actually constructed within the limits designated by the ENGINEER; or the final dimensions measured along the surface of the completed Work within the neat lines shown on the Plans or designated by the ENGINEER. The method or combination of methods of measurement shall be those which will reflect with reasonable accuracy the actual surface area of the finished Work as determined by the ENGINEER.

B. In measurement of items paid for on the basis of area of finished Work, where the pay quantity is designated to be the Plan quantity, the final pay quantity shall be the plan quantity subject to subsection 18.3.2. Generally the plan quantity shall be calculated using lengths based on station to station dimensions and widths based on neat lines shown in the Plans.

17.2. Scope of Payments.

17.2.1. For any item of Work contained in the proposal, except as might be specifically provided otherwise in the basis of payment clause for the item, the Unit Price (or lump sum price) for the pay item or items shall include all labor, Equipment, Materials, tools, overhead expenses, profit, and incidentals required for the complete item of Work, including all requirements of the section specifying such item of Work, except as specifically excluded from such payments.

17.2.2. If the Bid Form contains a bid item price for mobilization, partial payments will be made therefor in accordance with the following:

<u>Percent of Original Contract</u>	<u>Allowable Percent of the Lump Sum</u>
5	25
10	50
25	75
50	100

Partial payments for any project will be limited to ten (10) percent of the original contract amount for that project. Any remaining amount will be paid upon completion of all work on the project.

17.3. Compensation for Altered Quantities.

17.3.1. Whenever any change or combination of changes in the Plans, including changes outside the original limits of the Project, results in an increase or decrease in the original contract quantities, and the Work added or eliminated is of the same general character as that shown on the original Plans, the Contractor shall accept payment in full at the original contract Unit Prices for the actual quantities of Work done, and no allowance will be made for any loss of anticipated profits because of increases or decreases in quantities.

17.3.2. Payment Based on Plan Quantity.

- A. Where the pay quantity for any item is designated to be the original plan quantity, such quantity will be revised only in the event that it is determined to be substantially in error. An error shall be deemed substantial if the quantity will increase or decrease in excess of five percent of the original plan quantity for that item or the amount due for that item will increase or decrease in excess of five hundred dollars (\$500) (whichever is smaller). In general, such revisions will be determined by final measurement or plan calculations or both as additions to or deductions from plan quantities. In the event either the CITY or the CONTRACTOR contends that the plan quantity for any item is in error and additional or less compensation is thereby due, he shall submit, at his own expense, evidence of such in the form of acceptable and verifiable measurements or calculations. The plan quantity will not be revised solely on the basis of a particular method of construction selected by the CONTRACTOR. For earthWork items, any significant differences in the original ground surfaces from that shown in the original plan cross sections which would result in an adjustment to the plan quantity, must be noted by the CONTRACTOR and properly documented by appropriate level notes, acceptable to both the CONTRACTOR and the CITY, prior to disturbance of the original ground surface by construction operations to the extent that the original ground surface elevations in question cannot be documented. Any Contract Claim based upon significant differences in the original ground surface must be supported by documentation as provided above. A significant difference in the earthWork surface is defined as a consistent difference in elevation, either up or down, averaging in excess of 0.3 foot over a length of five hundred (500) feet in any one area, or an equivalent volume in any individual roadway area of a lesser distance.
- B. Where the pay quantity for any item is designated to be the original plan quantity and a plan change which results in an increase or decrease in the quantity of that item is authorized, the plan quantity will be revised accordingly provided that such change will increase or decrease the amount due for the item in excess of one hundred dollars (\$100). In general, such revisions will be determined by final measurement or plan calculations or both.
- C. The limitations set out in subsections 17.3.2.1 and 17.3.2.2 do not apply:
 - I. Where these Specifications provide that the pay quantity for an item to be paid for on the basis of area of finished Work is to be adjusted according to the ratio of measured thickness to nominal thickness.
 - II. Where the Specifications provide for a deduction due to test results falling outside of the allowable Specification tolerances.

18. CONTRACT CLAIMS RESOLUTION

18.1. Purpose. The purpose of this Section is to provide a cooperative team building dispute resolution process for payment of monetary obligations and provision of time extensions under the Contract Claim provisions of the Contract Documents. The team building approach to dispute resolution provided in this Section is intended to complement other requirements imposed by the Contract Documents and is not intended to create duties or obligations not otherwise imposed by law or these Contract Documents. The parties remain responsible for performance of all obligations imposed under these Contract Documents. At all times during the time that any Contract Claim is pending and in the process of being resolved or decided, the CONTRACTOR shall proceed diligently with the Work so as to achieve completion of the Work within the Contract Time.

18.2. Administrative Forum. The parties agree that all Contract Claims arising under the Contract Documents shall be submitted for alternative dispute resolution under the Budget & Procurement Office Procedures. CONTRACTOR agrees that the submission of Contract Claims during performance of the Work provides an efficient dispute resolution procedure and that resolution of disputes by the CITY's Budget & Procurement Manager and the CITY's Appeal Committee or their designees provide adequate remedies. The CONTRACTOR agrees that the status of hearing officers as CITY employees does not violate public policy, deny due process, or provide the basis for disregarding or avoiding the alternative dispute resolution procedures established by Budget and Procurement Office. The CONTRACTOR, by executing the Contract Documents, expressly waives due process rights and agrees to resolve disputes under these Alternative Dispute Resolution procedures.

18.3. Contract Claims Procedure. Contract Claims procedure shall comply with the requirements of the Budget & Procurement Office

Procedures. The parties agree to voluntarily exchange information and documents necessary for resolution of the Contract Claim. The hearing officers (Budget & Procurement Manager or Appeal Committee) under the Budget & Procurement Office Procedures, shall have the right to make written requests to the CITY staff, ENGINEER, ENGINEER of RECORD, and CONTRACTOR at any time for additional information and documents needed to render a decision. Hearing officers may grant extensions of time and direct CITY staff and CONTRACTOR to participate in structured negotiations or mediation to resolve disputes prior to rendering a decision. In the event of referral to mediation, the parties agree that mediators shall be mutually acceptable to the parties and that the costs of mediation shall be shared equally among the parties participating in the mediation. Further, the parties agree that hearing officers under the Budget & Procurement Office Procedures, shall not be required to render written decisions until Substantial Completion of the Work has been accomplished and the parties expressly waive the time periods for written decisions by the CITY's Budget & Procurement Manager and Appeal Committee. In the event that CONTRACTOR appeals any decision of the Budget & Procurement Manager under the Budget & Procurement Office Procedures, CONTRACTOR agrees to identify specific exceptions to the Budget & Procurement Manager's decision including specific identification of the provisions of the Contract Documents relied upon. General assertions that the Budget & Procurement Manager's decision is contrary to provisions of the Contract Documents, law, or fact are not sufficient. The CONTRACTOR recognizes and accepts the Budget & Procurement Office Procedure requirements for posting an appeal bond.

- 18.4. Resolution of Contract Time and Contract Price Disputes.** Contract Claims related to Contract Time under the Contract Documents provide for extensions of the Contract Time as the sole and exclusive remedy of CONTRACTOR. As to Contract Claims related to Contract Time or Contract Price disputes under the Contract Documents, the parties agree to exhaust CITY administrative alternative dispute resolution procedures prior to filing suit or otherwise pursuing legal remedies. The parties agree that they will file no suit or otherwise pursue legal remedies based on facts or evidentiary materials that were not presented for consideration in the CITY alternative dispute resolution procedures of which the parties had knowledge and failed to present during the CITY alternative dispute resolution procedures. In the event that CITY administrative dispute resolution procedures are exhausted and a suit is filed or legal remedies are otherwise pursued, the parties shall exercise best efforts to resolve disputes through voluntary mediation. Mediator selection and the procedures to be employed in voluntary mediation shall be mutually acceptable to the parties. Costs of voluntary mediation shall be shared equally among the parties participating in the mediation.
- 18.5. Notice of Contract Claims.** Contract Claims by the CONTRACTOR must be made by written notice on the form provided in the Contract Documents with complete documentation to ENGINEER and the CITY's Budget & Procurement Manager. Notwithstanding the allowance of a specific time for giving notice in the Contract Documents, notices shall be given at the earliest possible moment and in no event later than the time allowed in the Contract Documents.
- 18.6. Contract Claim Correspondence.** To assure prompt resolution of Contract Claims, the CONTRACTOR's correspondence related to Contract Claims shall have Contract Claim identification numbers assigned by CONTRACTOR. The Contract Claim numbers shall be sequential and assigned chronologically so that each Contract Claim can be individually identified by reference to the Contract Claim number. Each document submitted in support of a Contract Claim must bear the appropriate Contract Claim number.
- 18.7. Contract Claim Disposition.** Each Contract Claim shall be treated separately under the Budget & Procurement Office Procedures and this Section. Continuing Contract Claims or Contract Claims asserting damages for the cumulative effect of more than one Contract Claim are not permitted. However, if CONTRACTOR files a timely notice of Contract Claim under the Contract Documents, CONTRACTOR may file supplemental documents in support of any Contract Claim prior to the decision of the CITY's Budget & Procurement Manager under the Budget & Procurement Office Procedures. As to Contract Claim disputes under the Contract Documents, the decision of the CITY Budget & Procurement Manager or Appeal Committee or their designees shall stand as a CITY staff recommendation of settlement of the Contract Claim to the CITY of Palm Coast City Council.
- 18.8. Reservation of Contract Claims.** The parties agree that these Contract Documents provide no procedure for reservation, notice of reservation or notice of intent to file a Contract Claim and that such notices are void and of no effect. The parties agree that prompt and separate resolution of each Contract Claim benefits CONTRACTOR, CITY and the public.
- 18.9. False Claims.** The CITY and CONTRACTOR acknowledge that the "Florida False Claims Act" provides civil penalties not more than \$10,000.00 plus remedies for obtaining treble damages against contractors or persons causing or assisting in causing Florida governments to pay claims that are false when money or property is obtained from a Florida government by reason of a false claim.

END OF SECTION



**SECTION 00841
NOTICE OF AWARD**

TO: _____
Contractor _____

Address _____

City State Zip

PROJECT: ITB-SWE-23-43 / London Waterway Expansion

The City of Palm Coast has considered the Bid submitted by you for the above described work in response to its Advertisement for Bids _____, 20____.

You are hereby notified that your Bid has been accepted for items in the amount of \$ _____.

You are required to execute the Agreement in duplicate and furnish the required Contractor's Performance Bond, Payment Bond and Certificate of Insurance within ten (10) calendar days from the date of this Notice to you.

If you fail to execute said Agreement and to furnish Bonds within ten (10) days from the date of this Notice, the City shall be entitled to consider all your rights arising out of the City's acceptance of your Bid as abandoned and void.

You are required to return an acknowledged copy of the Notice of Award, executed Agreement, Bonds, and Insurance Certificates to The City of Palm Coast, Florida, Attn: Contracts Administrator, 160 Lake Avenue, Palm Coast, Florida 32164.

Dated this _____ day of _____, 20_____.

THE CITY OF PALM COAST

BY: _____

TITLE: _____

ACCEPTANCE OF NOTICE

Receipt of the above Notice of Award is hereby acknowledged by _____

this the _____ day of _____, 20_____.

BY _____ TITLE: _____

END OF SECTION



**SECTION 00842
NOTICE TO PROCEED**

TO: _____
CONTRACTOR

ADDRESS

CITY STATE ZIP

PROJECT: **ITB-SWE-23-43 / London Waterway Expansion**

You are hereby notified to commence work in accordance with the Agreement dated _____, 20____.

The Contract time for Substantial Completion is ____ consecutive calendar days from the date of commencement.

The Contract time for Final Completion is ____ consecutive calendar days from the date of Substantial Completion.

The Contract time commences to run _____, 20____.

The date of Substantial Completion is _____, 20____.

The date of Final Completion is _____, 20____.

THE CITY OF PALM COAST

BY: _____

TITLE: _____ DATE: _____

You are required to return an acknowledged copy of the Notice to Proceed to The City of Palm Coast, Florida, Attn: Contracts Administrator, 160 Lake Avenue, Palm Coast, Florida 32164.

ACCEPTANCE OF NOTICE

Receipt of the above Notice To Proceed is hereby acknowledged

this the _____ day of _____, 20____.

BY: _____ TITLE: _____

END OF SECTION



**SECTION 00843
CHANGE ORDER**

PROJECT CHANGE ORDER SUMMARY

Project Title:	_____	ITB Number:	_____
Original Contract Date:	_____	Original Contract Price:	_____
Purchase Order #:	_____	Contingency PO #:	_____
Contractor Name:	_____	Engineer/Architect:	_____
Contact:	_____	Contact:	_____
Address:	_____	Address:	_____
Phone #:	_____	Phone #:	_____
Email:	_____	Email:	_____

Instructions

1. Fill out project information in grey fields above.
2. Add the number of days to substantial and the number of days from substantial to final completion below in the blue fields below.
3. Enter the Notice to Proceed Date in the MM/DD/YY format.
4. Fill out the Change Order Description, Change in Price (if applicable) and/or the Change in time (if applicable) for the appropriate change order.
5. Print out the corresponding Change Order, attach necessary documentation, have it signed and submit for processing.

ORIGINAL CONTRACT TIMES

Notice to Proceed (NTP) Date:	_____	Total days from NTP to Final Completion:	0
Original Substantial Completion Date:	01/00/00	Number of days to Substantial Completion:	_____
Original Final Completion Date:	01/00/00	Number of days from Substantial to Final Completion:	_____

CHANGE ORDER 1

DESCRIPTION OF CHANGE: *(add supporting documents or additional pages to provide detail as needed)*

Change Order 1 Summary

Change in Price:	_____	Change in Time:	_____
Revised Contract Price:	\$0.00	New Substantial:	01/00/00
Net Change from CO1:	N/A	New Final:	01/00/00

RECOMMENDED:	APPROVED:	ACCEPTED:
By: _____	By: _____	By: _____
Engineer/Architect (Authorized Signature)	City (Authorized Signature)	Contractor (Authorized Signature)
Firm: _____	Title: _____	Company: _____
Date: _____	Date: _____	Date: _____

Project Manager Signature: _____ Date: _____

END OF SECTION



**SECTION 00844
APPLICATION AND CERTIFICATE FOR PROGRESS PAYMENT**

OWNER: The City of Palm Coast

CONTRACTOR: _____

Purchase Order No.: _____ Project Title: **ITB-SWE-23-43 / London Waterway Expansion**

Engineer/Architect: _____

Engineer/Architect Project No.: _____ Contract Date: _____

Progress Payment No.: _____ for Period _____ to _____

1. Original Contract Sum.....	\$ _____
2. Net Change by Change Orders.....	\$ _____
3. Contract Sum to Date (Line 1 ± Line 2)	\$ _____
4. Work Completed and Stored to Date	\$ _____
5. Amount Retained (_____ Percent)	\$ _____
6. Total Earned Less Retainage (Line 4 minus Line 5)	\$ _____
7. Less Previous Payments	\$ _____
8. CURRENT PAYMENT DUE.....	\$ _____

CERTIFICATION OF CONTRACTOR

The undersigned CONTRACTOR certifies that (1) all previous progress payments received from OWNER on account of Work done under the Contract referred to above have been applied on account to discharge CONTRACTOR's legitimate obligations incurred in connection with Work covered by prior Applications for Payment numbered 1 through _____ inclusive; (2) title of all Work, materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment shall pass to OWNER at time of payment free and clear of all Liens, security interests and encumbrances (except such as are covered by a Bond acceptable to OWNER indemnifying OWNER against any such Lien, security interest or encumbrance); and (3) all Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.

Contractor

Date

By: _____
(Authorized Representative)
Title

CERTIFICATION OF ENGINEER / ARCHITECT

In accordance with the Contract Documents, based upon on-site observations by the undersigned or duly authorized representatives or assistants, the Engineer / Architect certifies to the Owner that to the best of its knowledge, information and belief, the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED:\$ _____
(Attach explanation if amount certified differs from the amount applied for)

ENGINEER / ARCHITECT:

By: _____

(Date)

(Firm)

AFFIDAVIT OF CONTRACTOR

STATE OF _____

COUNTY OF _____

Before me this day personally appeared _____ who, being first duly sworn, deposes and says:

That he is the _____ of _____

and the Contractor on the following described public works project:

JOB DESCRIPTION: _____

CONTRACTING AUTHORITY: _____ City of Palm Coast _____

That all persons who furnish labor, supplies or materials or did work in connection with such improvements set out in the CONTRACT have been paid, to date, in full, including all subcontractors.

AND FURTHER AFFIANT SAYETH NOT.

By: _____

WITNESS my hand and official seal, this ____ day of __, A.D. _____.

Notary Public

My Commission Expires:

Project Title:

City Purchase Order No.:

Engineer / Architect Project No.:

Progress Payment No.:

A	B	C	D	E	F	G		H	I
Item No.	Description of Work	Scheduled Value	Work Completed		Materials Presently Stored (Not in D or E)	Total Completed and Stored to Date (D+E+F)	% (G ÷ C)	Balance to Finish (C - G)	Retainage (If Variable Rate)
			From Previous Application	This Period					
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									

END OF SECTION



**SECTION 00848
CERTIFICATE OF SUBSTANTIAL COMPLETION**

Bid No./Project: **ITB-SWE-23-43 / London Waterway Expansion**

Purchase Order No.: _____ Contract Date: _____

This Certificate of Substantial Completion applies to: All work under Contract Portion of work described as follows: The contractor shall furnish all labor, material, equipment, tools, supervision, and any other items required for asphalt paving delivered and placed for fiscal year 2015 (estimated approximately 14 linear miles).

The work to which this Certificate applies shall be inspected by authorized representatives of the CITY and the CONTRACTOR and that work is hereby declared to be substantially complete in accordance with the Contract Documents on: DATE _____.

A tentative list of items to be completed or corrected is attached hereto. This list shall not be all-inclusive, and the failure to include an item in it does not alter the responsibility of CONTRACTOR to complete all the work in accordance with the Contract Documents. The items in the tentative list shall be completed or corrected by CONTRACTOR within _____ days of the above date of Substantial Completion.

The date of Substantial Completion is the date upon which all guarantees and warranties begin.

SIGNED:

THE CITY OF PALM COAST STORMWATER DEPARTMENT

By: _____ DATE: _____

THE CITY OF PALM COAST STORMWATER INSPECTOR

By: _____ DATE: _____

THE CITY OF PALM COAST PROJECT MANAGER

By: _____ DATE: _____

CONSULTING ENGINEER/ARCHITECT, ETC.:

By: _____ DATE: _____

CONTRACTOR:

By: _____ DATE: _____

**TENTATIVE LIST OF ITEMS TO BE COMPLETED OR CORRECTED
(PUNCH LIST)**

Date: _____

Purchase Order No.: _____

Project: _____

Contractor: _____

This list shall not be all-inclusive, and the failure to include an item does not alter the responsibility of the CONTRACTOR to complete all the Work in accordance with the Contract Documents.

<u>NO.</u>	<u>ITEM</u>

END OF SECTION



SECTION 00849
CERTIFICATE OF FINAL INSPECTION & COMPLETION

Bid No./Project: **ITB-SWE-23-43 / London Waterway Expansion**

Purchase Order No.: _____

Contract Date: _____

This Certificate of Final Inspection & Completion applies to:

The work under this Contract has been inspected by authorized representatives of the CITY and the CONTRACTOR and all work is hereby declared to be complete in accordance with the Contract Documents on: _____.

DATE

SIGNED:

THE CITY OF PALM COAST STORMWATER DEPARTMENT

By: _____

DATE: _____

THE CITY OF PALM COAST STORMWATER INSPECTOR

By: _____

DATE: _____

THE CITY OF PALM COAST PROJECT MANAGER

By: _____

DATE: _____

CONSULTING ENGINEER/ARCHITECT, ETC.:

By: _____

DATE: _____

CONTRACTOR:

By: _____

DATE: _____

END OF SECTION



SECTION 00850
CONTRACTOR'S WAIVER AND RELEASE OF LIEN UPON PROGRESS PAYMENT

The undersigned lienor, in consideration of the progress payment in the amount of \$_____, hereby waives and releases its lien and right to claim a lien for labor, services or materials furnished through (date) _____ to (customer) _____ on the job of (City property) _____ to the following described property:

This waiver and release shall not cover any retention of labor, services, or materials furnished after the date specified.

Dated on _____, 20____.

Lienor's Name _____

Address _____

By _____

Printed _____

NOTE: This is a statutory form prescribed by Section 713.20, Florida Statutes.

END OF SECTION



SECTION 00851
CONTRACTOR'S WAIVER AND RELEASE OF LIEN UPON FINAL PAYMENT

The undersigned lienor, in consideration of the final payment in the amount of \$ _____, hereby waives and releases its lien and right to claim a lien for labor, services or materials furnished through (date) _____ to (customer) _____ on the job of (City property) _____ to the following described property:

Dated on _____, 20____.

Lienor's Name _____

Address _____

By _____ Printed Name _____

NOTE: This is a statutory form prescribed by Section 713.20, Florida Statutes.

Instructions to Contractor:

With final invoice(s) submit one (1) original and one (1) copy. The original must bear the original signature of a person authorized to bind the Contractor. The additional copy shall bear photocopied signatures.

Submission of Final Invoice:

Pursuant to **contract number** _____ entered into between the City of Palm Coast and the Contractor (identified below, the Contractor does acknowledge that final payment has been requested via **invoice number(s)** _____, in the **amount(s) of \$** _____ and **dated** _____. If necessary, "Attach" copies of invoices if more than one invoice with a dollar total.

Release of all Obligations:

By signing this form, and upon receipt of the amount specified in the invoice number(s) referenced above, the Contractor does hereby release and discharge the City, its officers, agents and employees of and any and all liabilities, obligations, claims, and demands whatsoever arising from the above referenced contract.

Contractor's Legal Name (as on Contract): _____

Signature of Contractor or Official Designee: _____

Printed Name/Title of Person Signing: _____ Date: _____

END OF SECTION



**SECTION 00852
CONTRACTOR'S REQUEST FOR INFORMATION**

TO: **THE CITY OF PALM COAST**

FROM: _____ (CONTRACTOR) DATE: _____

CONTRACTOR REQUEST FOR INFORMATION NO.: _____

BID NO./PROJECT NAME: **ITB-SWE-23-43 / London Waterway Expansion**

PURCHASE ORDER NO.: _____

QUESTION: _____

BY: _____ DATE: _____

REPLY: _____

BY: _____ DATE: _____

END OF SECTION



**SECTION 00853
HYDROSTATIC TEST RESULTS**

Bid No./Project: **ITB-SWE-23-43 / London Waterway Expansion**

Date _____

Purchase Order No.: _____

Contractor _____

Road or Street _____ Station _____ to Station _____

Water Main _____ Reuse Main _____ Raw Water _____ Main Force Main _____

Length of Pipe Tested (Ft.)	Nominal Pipe Diameter (In.)	Square Root of Avg Test Pressure	Divided by 133,200	Allowable Loss In Gallons/Hour

Test Began at _____

Pressure on Gauge _____

First Hour Gallons Used _____

Pressure on Gauge _____

Second Hour Gallons Used _____

Pressure on Gauge _____

2-Hour Total Gallons Used _____

Pressure on Gauge _____

RESULTS: Passed _____ Failed _____

Remarks: _____

Contractor's Signature _____

Inspector's Signature _____

END OF SECTION



**SECTION 00854
WORK CHANGE DIRECTIVE**

BID NO./PROJECT: **ITB-SWE-23-43 / London Waterway Expansion**

REQUEST NO: _____

PURCHASE ORDER NO.: _____

CONTRACTOR: _____

You are directed to proceed promptly with the following change(s):

Description: _____

Purpose of Work Directive Change: _____

Attachments: _____

If a claim is made that the above change(s) have affected the Contract Price or Contract Time, any claim for a Change Order based thereon shall involve one of the following methods of determining the effect of the change(s).

Method of determining a change in
Contract Price:

Time and materials

Unit prices

Cost plus fixed fee

Other _____

Method of determining change in
Contract Time:

Contractor's records

Owner's records

Other _____

Estimated increase (decrease) in Contract
Price: \$ _____

If the change involves an increase, the
estimated amount is not to be exceeded
without further authorization.

Estimated increase (decrease) in Contract
Time: _____ days. If the change
involves an increase, the estimated time is not to
be exceeded without further authorization.

AUTHORIZED BY:

DATE:

END OF SECTION



**SECTION 00855
FIELD ORDER**

BID NO./PROJECT: **ITB-SWE-23-43 / London Waterway Expansion**

REQUEST NO: _____

PURCHASE ORDER NO.: _____

CONTRACTOR: _____

You are hereby directed to execute promptly this Field Order which interprets the Contract Documents or orders minor changes in the Work without change in Contract Price or Contract Time.

If you consider that a change in Contract Price or Contract Time is required, please submit a Work Change Directive to the Owner immediately and before proceeding with this Work.

Field Order: _____

Attachments: (Listing of attached documents that support description)

1. Work Change Directive No. _____
2. _____
3. _____
4. _____
5. _____

BY: _____ DATE: _____

END OF SECTION



**SECTION 00860
SUBCONTRACTOR/VENDOR'S WAIVER AND
RELEASE OF LIEN UPON FINAL PAYMENT**

The undersigned lienor, in consideration of the final payment in the amount of \$ _____, hereby waives and releases its lien and right to claim a lien for labor, services or materials furnished through (date) _____ to (customer) _____
_____ on the job of (City property) _____ to the following described property:

Dated on _____, 20____.

Lienor's Name _____

Address _____

By _____

Printed Name _____

NOTE: This is a statutory form prescribed by Section 713.20, Florida Statutes.

END OF SECTION



**SECTION 00861
CONSENT OF SURETY TO FINAL PAYMENT**

WE, the _____, having heretofore executed Performance and Payment Bonds for the Project known as _____, in the amount of \$ _____ * hereby agree that the OWNER shall make full payment of the final estimate, including the retained percentage, to said CONTRACTOR. The Surety concurs that full payment to the CONTRACTOR is appropriate and the Surety expressly releases the OWNER from all liability to Surety resulting from full payment to CONTRACTOR. It is fully understood that the granting of the right to the OWNER to make payment of the final estimate to said CONTRACTOR and/or his assigns, shall in no way relieve this surety company of its obligations under its Bond, as set forth in the specifications, contract and Bond pertaining to the above project.

* = Dollar Value of Issued Performance and Payment Bonds

IN WITNESS WHEREOF, the _____ has caused this instrument to be executed on its behalf by its _____ and its duly authorized attorney in fact all on this _____ day of _____, _____.

Surety

Attorney-in-Fact
(Power of Attorney must be attached if executed by Attorney in Fact)

STATE OF _____

COUNTY OF _____

The foregoing instrument was acknowledged before me, by means of physical presence or online notarization, this _____ day of _____, 20__ by _____ of _____ (corporation), on behalf of the corporation, who is personally known to me or has produced _____ (Type of Identification) as identification and who did (did not) take an oath.

Sworn to and subscribed to before me, me by means of physical presence or online notarization, this _____ day of _____, 20__.

(Signature)

(Print name) Notary Public in and for the
County and State Aforementioned

My Commission Expires: _____

END OF SECTION



**SECTION 00865
CHECK OUT FORM**

[] OWNER: City of Palm Coast No. Copies _____
[] ENGINEER: _____ No. Copies _____
[] ARCHITECT: _____ No. Copies _____
[] CONTRACTOR: _____ No. Copies _____
[] FIELD: _____ No. Copies _____
[] OTHER: _____ No. Copies _____

BID NO. /PROJECT: **ITB-SWE-23-43 / London Waterway Expansion**

PURCHASE ORDER NO.: _____ DATE: _____

DRAWING NO.: _____ SPECIFICATION SECTION: _____

Name of equipment checked:
Name of manufacturer of equipment:

1. The equipment furnished has been checked on the job. Reviewed (where applicable) the performance verification information submitted to City staff by the Contractor.
2. The equipment is properly installed, except for items noted on page 00865-2.
3. The equipment is operating satisfactorily, except for items noted on page 00865-2.
4. The written operating and maintenance information (where applicable) provided to the Contractor, and reviewed in detail. Five (5) copies of all applicable operating and maintenance information and parts lists have been furnished to the Contractor.

Checked by:

_____	_____
Name of Manufacturer's Representative	Name of General Contractor
_____	_____
Signature of Person Performing Check-out	Authorized Signature
_____	_____
Title	Title
_____	_____
Address of Representative	Date
_____	_____
Phone No. of Representative	Name of Subcontractor
_____	_____
Date Checked	Authorized Signature/Title/Date

Manufacturer's Representative Notations:
Exceptions noted at time of check were:

Manufacturer's Representative to note adequacy of related equipment that directly affects operation, performance or function of equipment checked.
(No comment presented herein shall indicate adequacy of related systems or equipment):

END OF SECTION



SECTION 00866
CERTIFICATE OF COMPLETED DEMONSTRATION FORM

[]	OWNER: <u>City of Palm Coast</u>	No. Copies _____
[]	ENGINEER: _____	No. Copies _____
[]	ARCHITECT: _____	No. Copies _____
[]	CONTRACTOR: _____	No. Copies _____
[]	FIELD: _____	No. Copies _____
[]	OTHER: _____	No. Copies _____

BID NO./PROJECT: **ITB-SWE-23-43 / London Waterway Expansion**

PURCHASE ORDER NO.: _____ DATE: _____

DRAWING NO.: _____ SPECIFICATION SECTION: _____

NOTE TO CONTRACTOR:

Submit five (5) copies of all information listed below for checking at least one (1) week before scheduled demonstration of the Work. After all information has been approved by the City, give the City a Demonstration of Completed Systems as specified and have the City sign five (5) copies of this form. Once signed, a written request for a final inspection of the system shall be made.

MEMORANDUM:

This memo is for the information of all concerned that the City has been given a Demonstration of Completed Systems on the work covered under this Specification Section. This conference consisted of the system operation, a tour on which all major items of equipment were explained and demonstrated, and the following items were given to the City:

- (a) City's copy of Operation and Maintenance Manual for equipment or systems specified under this section containing approved submittal sheets on all items, including the following:
 - (1) Maintenance information published by manufacturer on equipment items.
 - (2) Printed warranties by manufacturer on equipment items.
 - (3) Performance verification information as recorded by the Contractor.
 - (4) Check-Out Memo on equipment by manufacturer's representative.
 - (5) Written operating instructions on any specialized items.
 - (6) Explanation of guarantees and warranties on the system.
- (b) Prints showing actual "As-Built" conditions.
- (c) A demonstration of the System in Operation and of the maintenance procedures which shall be required.

Name of General Contractor

By: _____
Authorized Signature

Title Date

Name of Subcontractor

By: _____
Authorized Signature

Title Date

Operations and Maintenance Manual, Instruction Prints, Demonstration & Instruction in Operation Received:

The City of Palm Coast

By: _____
Authorized Signature

Title Date

END OF SECTION



SECTION 00900 SUPPLEMENTARY CONDITIONS

Section 1. Introduction. These Supplementary Conditions amend or supplement the General Conditions of the Contract Documents as indicated below.

Section 2. Emergency Phone Numbers

City of Palm Coast Public Works Number 386-986-2335

City of Palm Coast Budget & Procurement Office 386-987-3730

Section 3: The City shall not intentionally award publicly-funded contracts to any CONTRACTOR who knowingly employs unauthorized alien workers, constituting a violation of the employment provisions contained in 8 U.S.C. Section 1324a(e) Section 274A(e) of the Immigration and Nationality Act (INA)] and such employment by the CONTRACTOR shall constitute a per se violation of this Agreement. The City shall consider the employment by the CONTRACTOR of unauthorized aliens, a violation of Section 274A (e) of the INA. Such violation by the CONTRACTOR of the employment provisions contained in Section 274A (e) of the INA shall be grounds for immediate termination of this Agreement by the City.

Section 4: Road Improvements Projects & Others – (Proximate to Schools & Parks):

Effective March 6, 2007, all private contractors, vendors, employees of private contractors or vendors, repair persons and delivery persons involved in the road improvement projects and other projects, as determined by the City Manager, when work being accomplished on or proximate to schools or parks shall be subject to the screening requirements of **Section 2-73, Code of Ordinances of the City of Palm Coast.**

Be advised that once the Notice to Proceed has been issued, all CONTRACTORS and sub-contractors shall have their employees who will be working on project sites undergo criminal history background screenings and be verified through the Florida Department of Law Enforcement's Sexual Offender/Predator Database (<http://offender.fdle.state.fl.us/offender/homepage.do>) and the National Sex Offender Register (<http://www.nsopr.gov/>). CONTRACTOR shall be required to badge all cleared employees and no employee shall be allowed onto a project site until they have been badged. Badges must be clearly visible and worn at all times at the project site. Once employees have been cleared, CONTRACTOR shall supply to the Project Manager a current and complete list of all employees who have passed the screening and who will be working on the project site. This list must be updated and supplied to the Project Manager on an ongoing basis due to general attrition activities.

If employees are found to be in non-compliance with the above requirements, the CONTRACTOR shall confiscate that employee's badge, remove that employee from the project site immediately, and provide the City (Project Manager) with an updated approved employee list. Should employees remain on site who are not wearing badges, the CONTRACTOR shall be deemed in breach of this Agreement.

END OF SECTION



SECTION 00901
ADDITIONAL SUPPLEMENTAL TERMS AND CONDITIONS

WITNESSETH:

(1) The CONTRACTOR hereby warrants and represents to the OWNER that it is competent and otherwise able to provide professional and high quality goods and/or services to the OWNER by means of employees who are neat in appearance and of polite demeanor.

(2) The CONTRACTOR acknowledges that the OWNER shall retain other goods and/or service providers to provide the same goods and/or services for OWNER projects. The CONTRACTOR acknowledges that the OWNER, at the OWNER'S option, shall request proposals from the CONTRACTOR and the other goods and/or service providers for OWNER projects. The OWNER reserves the right to select which goods and/or services provider shall provide goods and/or services for the OWNER'S projects.

(3) Each party hereto represents to the other that it has undertaken all necessary actions to execute this Agreement, and that it has the legal authority to enter into this Agreement and to undertake all obligations imposed on it. The person(s) executing this Agreement for the CONTRACTOR certify that he/she/they is/are authorized to bind the CONTRACTOR fully to the terms of this Agreement,

(4) The CONTRACTOR hereby guarantees the OWNER that all materials, supplies, services and equipment as listed on a Purchase Order meet the requirements, specifications and standards as provided for under the *Federal Occupations Safety and Health Act of 1970*, from time to time amended and in force on the date hereof.

(5) It is agreed that nothing herein contained is intended or should be construed as in any manner creating or establishing a relationship of co-partners between the parties, or as constituting the CONTRACTOR (including, but not limited to, its officers, employees, and agents) the agent, representative, or employee of the OWNER for any purpose, or in any manner, whatsoever. The CONTRACTOR shall be and shall remain forever an independent contractor with respect to all services performed under this Agreement.

(6) Persons employed by the CONTRACTOR in the provision and performance of the goods and/or services and functions pursuant to this Agreement shall have no claim to pension, workers' compensation, unemployment compensation, civil service or other employee rights or privileges granted to the OWNER'S officers and employees either by operation of law or by the OWNER.

(7) No claim for goods and/or services furnished by the CONTRACTOR not specifically provided for herein shall be honored by the OWNER.

(8) Execution of this Agreement by the CONTRACTOR is a representation that the CONTRACTOR is familiar with the goods and/or services shall be provided and/or performed and with local conditions. The CONTRACTOR shall make no claim for additional time or money based upon its failure to comply with this Agreement. The CONTRACTOR has informed the OWNER, and hereby represents to the OWNER, that it has extensive experience in performing and providing the services and/or goods described in this Agreement and that it is well acquainted with the components that are properly and customarily included within such projects and the requirements of laws, ordinance, rules, regulations or orders of any public authority or licensing entity having jurisdiction over the OWNER'S Projects.

(9) The CONTRACTOR shall be responsible for the professional quality, accepted standards, technical accuracy, neatness of appearance of employees, employee conduct, and the coordination of all goods and/or services furnished by the CONTRACTOR under this Agreement as well as the conduct of its staff, personnel, employees and agents. The CONTRACTOR shall work closely with the OWNER on all aspects of the provision of the goods and/or services. With respect to services, the CONTRACTOR shall be responsible for the professional quality, technical accuracy, competence, methodology, accuracy and the coordination of all of the following which are listed for illustration purposes and not as a limitation: documents, analysis, reports, data, plans, plats, maps, surveys, specifications, and any and all other services of whatever type or nature furnished by the CONTRACTOR under this Agreement.

(10) Neither the OWNER'S review, approval or acceptance of, nor payment for, any of the goods and/or services required shall be construed to operate as a waiver of any rights under this Agreement or of any cause of action arising out of the performance of this Agreement and the CONTRACTOR shall be and remain liable to the OWNER in accordance with applicable law for all damages to the OWNER caused by the CONTRACTOR negligent or improper performance or failure to perform any of the goods and/or services furnished under this Agreement.

(11) The rights and remedies of the OWNER, provided for under this Agreement, are in addition to any other rights and remedies provided by law.

(12) The OWNER and the CONTRACTOR shall make every effort to resolve all disputable items contained in the CONTRACTOR'S invoices.

(13) Each invoice shall reference this Agreement, the appropriate billing period.

(14) The *Florida Prompt Payment Act* shall apply when applicable. A billing period represents the dates in which the CONTRACTOR completed goods and/or services referenced in an invoice.

(15) Invoices are shall be forwarded directly to:

City of Palm Coast
Financial Services
160 Lake Avenue, Suite 214
Palm Coast, FL 32164

(16) OWNER designates the OWNER Manager or his/her designated representative, to represent the OWNER in all matters pertaining to and arising from the work and the performance of this Agreement.

(17) The OWNER Manager, or his/her designated representative, shall have the following responsibilities:

(a) Examination of all work and rendering, in writing, decisions indicating the OWNER'S approval or disapproval within a reasonable time so as not to materially delay the work of the CONTRACTOR;

(b) Transmission of instructions, receipt of information, and interpretation and definition of OWNER'S policies and decisions with respect to design, materials, and other matters pertinent to the work covered by this Agreement;

(c) Giving prompt written notice to the CONTRACTOR whenever the OWNER official representative knows of a defect or change necessary in the project; and

(d) Coordinating and managing the CONTRACTOR'S preparation of any necessary applications to governmental bodies, to arrange for submission of such applications.

(18) Until further notice from the OWNER Manager the designated representative for this Agreement is:

City Manager
City of Palm Coast
160 Lake Avenue, Palm Coast FL, 32164

(19) The performance or provision of the CONTRACTOR'S goods and/or services under this Agreement can be suspended by the OWNER at any time.

(20) Upon receipt of written notice from the OWNER that the CONTRACTOR'S provision of goods and/or services hereunder are to be resumed, the CONTRACTOR shall continue to provide the services to the OWNER.

(21) The CONTRACTOR agrees that it shall not discriminate against any employee or applicant for employment for work under this Agreement because of race, color, religion, sex, age, national origin or disability and shall take affirmative steps to ensure that applicants are employed and employees are treated during employment without regard to race, color, religion, sex, age, national origin or disability. This provision shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment advertising; layoff or termination; rates of pay or their forms or compensation; and selection for training, including apprenticeship. The CONTRACTOR, moreover, shall comply with all the requirements as imposed by the *Americans with Disability Act*, the regulations of the Federal government issued there under, and any and all requirements of Federal or State law related thereto.

(22) Nothing herein shall be deemed to affect the rights, privileges, and immunities of the OWNER as set forth in Section 768.28, *Florida Statutes*.

(23) In claims against any person or entity indemnified under this Section by an employee of the CONTRACTOR or its agents or subcontractors, anyone directly or indirectly employed by them or anyone for whose acts they shall be liable, the indemnification obligation under this Section shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the CONTRACTOR or its agents or subcontractors, under Workers Compensation acts, disability benefits acts, or other employee benefit acts.

(24) The execution of this Agreement by the CONTRACTOR shall obligate the CONTRACTOR to comply with the indemnification provision in this Agreement; provided, however, that the CONTRACTOR must also comply with the provisions of this Agreement relating to insurance coverage's.

- (25) The CONTRACTOR shall obtain or possess and continuously maintain the insurance coverage as set forth and required in the bid documents.
- (26) All insurance other than Workers Compensation and Professional Liability that must be maintained by the CONTRACTOR shall specifically include the OWNER as an additional insured.
- (27) The CONTRACTOR shall provide Certificates of Insurance to the OWNER evidencing that all such insurance is in effect prior to the issuance of the first Purchase/Work Order under this Agreement from the OWNER. These Certificates of Insurance shall become part of this Agreement. Neither approval by the OWNER nor failure to disapprove the insurance furnished by a CONTRACTOR shall relieve the CONTRACTOR of the CONTRACTOR'S full responsibility for performance of any obligation including the CONTRACTOR'S indemnification of the OWNER under this Agreement. If, during the period which an insurance company is providing the insurance coverage required by this Agreement, an insurance company shall: (1) lose its Certificate of Authority, (2) no longer comply with Section 440.57, Florida Statutes, or fail to maintain the requisite Best's Rating and Financial Size Category, the CONTRACTOR shall, as soon as the CONTRACTOR has knowledge of any such circumstance, immediately notify the OWNER and immediately replace the insurance coverage provided by the insurance company with a different insurance company meeting the requirements of this Agreement. Until such time as the CONTRACTOR has replaced the unacceptable insurer with insurance acceptable to the OWNER, the CONTRACTOR shall be deemed shall be in default of this Agreement.
- (28) The insurance coverage shall contain a provision that requires that prior to any changes in the coverage, except increases in aggregate coverage, thirty (30) days prior notice shall be given to the OWNER by submission of a new Certificate of Insurance,
- (29) The CONTRACTOR shall furnish Certificates of Insurance directly to the OWNER'S Designated Representative. The certificates shall clearly indicate that the CONTRACTOR has obtained insurance of the type, amount and classification required by this Agreement.
- (30) Nothing in this Agreement or any action relating to this Agreement shall be construed as the OWNER'S waiver of sovereign immunity beyond the limits set forth in Section 768.28, *Florida Statutes*.
- (31) The OWNER shall not be obligated or liable under the terms of this Agreement to any party other than the CONTRACTOR. There are no third party beneficiaries to this Agreement,
- (32) The CONTRACTOR is an independent contractor and not an agent, representative, or employee of the OWNER. The OWNER shall have no liability except as specifically provided in this Agreement.
- (33) All insurance shall be primary to, and not contribute with, any insurance or self-insurance maintained by the OWNER.
- (34) The CONTRACTOR warrants that it has not employed or retained any company or person, other than a *bona fide* employee working solely for the CONTRACTOR, to solicit or secure this Agreement and that the CONTRACTOR has not paid or agreed to pay any person, company, corporation, individual or firm other than a *bona fide* employee working solely for the CONTRACTOR, any fee, commission, percentage, gift, or any other consideration, contingent upon or resulting from the award of making this Agreement.
- (35) The CONTRACTOR shall not discriminate on the grounds of race, color, religion, sex, or national origin in the performance of work under this Agreement or violate any laws pertaining to civil rights, equal protection or discrimination.
- (36) The CONTRACTOR hereby certifies that no undisclosed (in writing) conflict of interest exists with respect to the Agreement, including, but not limited to, any conflicts that shall be due to representation of other clients, customers or vendees, other contractual relationships of the CONTRACTOR, or any interest in property that the CONTRACTOR shall have. The CONTRACTOR further certifies that any conflict of interest that arises during the term of this Agreement shall be immediately disclosed in writing to the OWNER. Violation of this Section shall be considered as justification for immediate termination of this Agreement.
- (37) The CONTRACTOR shall ensure that all taxes due from the CONTRACTOR are paid in a timely and complete manner including, but not limited to, occupational license tax.
- (38) If the OWNER determines that any employee or representative of the CONTRACTOR is not satisfactorily performing his/her assigned duties or is demonstrating improper conduct pursuant to any assignment or work performed under this Agreement, the OWNER shall so notify the CONTRACTOR, in writing. The CONTRACTOR shall immediately remove such employee or representative of the CONTRACTOR from such assignment.
- (39) The CONTRACTOR shall not publish any documents or release information regarding this Agreement to the media without prior approval of the OWNER.
- (40) The CONTRACTOR shall certify, upon request by the OWNER, that the CONTRACTOR maintains a drug free workplace policy in accordance with Section 287.0878, *Florida Statutes*. Failure to submit this certification shall result in termination.

(41) If the CONTRACTOR or an affiliate is placed on the convicted vendor list following a conviction for a public entity crime, such action shall result in termination by the OWNER. The CONTRACTOR shall provide a certification of compliance regarding the public crime requirements set forth in State law upon request by the OWNER.

(42) The OWNER reserves the right to unilaterally terminate this Agreement if the CONTRACTOR refuses to allow public access to all documents, papers, letters, or other materials subject to provisions of *Chapter 119, Florida Statutes*, and other applicable law, and made or received by the CONTRACTOR in conjunction, in any way, with this Agreement

(43) The CONTRACTOR shall comply with the requirements of the Americans with Disabilities Act (ADA), and any and all related Federal or State laws which prohibit discrimination by public and private entities on the basis of disability.

(44) The OWNER shall not intentionally award publicly-funded contracts to any Contractor who knowingly employs unauthorized alien workers, constituting a violation of the employment provisions contained in 8 U.S.C. Section 1324a(e) Section 274A(e) of the *Immigration and Nationality Act (INA)* as the *INA* may be amended from time-to-time. The City shall consider the employment by the Contractor of unauthorized aliens, a violation of Section 274A (e) of the *INA*. Such violation by the Contractor of the employment provisions contained in Section 274A (e) of the *INA* is a *per se* breach of this Agreement and shall be grounds for immediate termination of this Agreement by the City.

(45) The CONTRACTOR agrees to comply with Federal, State, and local environmental, health, and safety laws and regulations applicable to the goods and/or services provided to the OWNER. The CONTRACTOR agrees that any program or initiative involving the work that could adversely affect any personnel involved, citizens, residents, users, neighbors or the surrounding environment shall ensure compliance with any and all employment safety, environmental and health laws.

(46) The CONTRACTOR shall ensure that all goods and/or services are provided to the OWNER after the CONTRACTOR has obtained, at its sole and exclusive expense, any and all permits, licenses, permissions, approvals or similar consents,

(47) If applicable, in accordance with Section 216.347, *Florida Statutes*, the CONTRACTOR shall not use funds provided by this Agreement for the purpose of lobbying the Legislature, the judicial branch or State agency.

(48) The CONTRACTOR shall advise the OWNER in writing of it who has been placed on a discriminatory vendor list, shall not submit a bid on a contract to provide goods or services to a public entity, or shall not transact business with any public entity.

(49) The CONTRACTOR shall not engage in any action that would create a conflict of interest in the performance of that actions of any OWNER employee or other person during the course of performance of, or otherwise related to, this Agreement or which would violate or cause others to violate the provisions of Part III, Chapter 112, *Florida Statutes*, relating to ethics in government.

(50) The OWNER shall perform, or cause to have performed, an audit of the records of the CONTRACTOR before or after final payment to support final payment under any Purchase/Work Order issued hereunder. This audit shall be performed at a time mutually agreeable to the CONTRACTOR and the OWNER subsequent to the close of the final fiscal period in which goods and/or services are provided or performed. Total compensation to the CONTRACTOR shall be determined subsequent to an audit as provided for in this Section, and the total compensation so determined shall be used to calculate final payment to the CONTRACTOR. Conduct of this audit shall not delay final payment as required by this Section.

(51) In addition to the above, if Federal, State, County, or other entity funds are used for any goods and/or services under this Agreement, the Comptroller General of the United States or the Chief Financial Officer of the State of Florida, or the County of Flagler, or any representatives, shall have access to any books, documents, papers, and records of the CONTRACTOR which are directly pertinent to goods and/or services provided or performed under this Agreement for purposes of making audit, examination, excerpts, and transcriptions.

(52) In the event of any audit or inspection conducted reveals any overpayment by the OWNER under the terms of the Agreement, the CONTRACTOR shall refund such overpayment to the OWNER within thirty (30) days of notice by the OWNER of the request for the refund.

(53) The CONTRACTOR agrees to fully comply with all State laws relating to public records.

(54) The CONTRACTOR agrees that if any litigation, claim, or audit is started before the expiration of the record retention period established above, the records shall be retained until all litigation, claims or audit findings involving the records have been resolved and final action taken.

(55) The CONTRACTOR shall not sublet, assign or transfer any interest in this Agreement, or claims for the money due or shall become due out of this Agreement to a bank, trust company, or other financial institution without written OWNER approval. When approved by the OWNER, written notice of such assignment or transfer shall be furnished promptly to the OWNER.

(56) Any CONTRACTOR proposed subcontractors shall be submitted to the OWNER for written approval prior to the CONTRACTOR entering into a subcontract. Subcontractor information shall include, but not be limited to, State registrations, business address, occupational license tax proof of payment, and insurance certifications.

(57) The CONTRACTOR shall coordinate the provision of goods and/or services and work product of any OWNER approved subcontractors, and remain fully responsible for such goods and/or services and work under the terms of this Agreement.

(58) This Agreement is the result of *bona fide* arm's length negotiations between the OWNER and the CONTRACTOR and all parties have contributed substantially and materially to the preparation of the Contract. Accordingly, this Agreement shall not be construed or interpreted more strictly against any one party than against any other party.

(59) Any alterations, amendments, deletions, or waivers of the provisions of this Agreement shall be valid only when expressed in writing and duly signed by the parties.

(60) In no event shall any obligation of the OWNER under this Agreement be or constitute a general obligation or indebtedness of the OWNER, a pledge of the *ad valorem* taxing power of the OWNER or a general obligation or indebtedness of the OWNER within the meaning of the *Constitution of the State of Florida* or any other applicable laws, but shall be payable solely from legally available revenues and funds.

(61) The CONTRACTOR shall not have the right to compel the exercise of the *ad valorem* taxing power of the OWNER.

(62) Each exhibit referred to and attached to this Agreement is an essential part of this Agreement. The exhibits and any amendments or revisions thereto, even if not physically attached hereto, shall be treated as if they are part of this Agreement.

(63) The Section headings and captions of this Agreement are for convenience and reference only and in no way define, limit, describe the scope or intent of this Agreement or any part thereof, or in any way affect this Agreement or construe any provision of this Agreement.

(64) If any term, provision or condition contained in this Agreement shall, to any extent, be held invalid or unenforceable, the remainder of this Agreement, or the application of such term, provision or condition to persons or circumstances other than those in respect of which it is invalid or unenforceable, shall not be affected thereby, and each term, provision and condition of this Agreement shall be valid and enforceable to the fullest extent permitted by law when consistent with equity and the public interest.

(65) All provisions of this Agreement shall be read and applied in *para material* with all other provisions hereof.

(66) (a) In the event of a dispute related to any performance or payment obligation arising under this Agreement, the parties agree to exhaust any alternative dispute resolution procedures reasonably imposed by the City prior to filing suit or otherwise pursuing legal remedies.

(b) The Contractor agrees that it shall file no suit or otherwise pursue legal remedies based on facts or evidentiary materials that were not presented for consideration to the City in alternative dispute resolution procedures or which the Contractor had knowledge and failed to present during the City procedures.

(c) In the event that City procedures are exhausted and a suit is filed or legal remedies are otherwise pursued, the parties shall exercise best efforts to resolve disputes through voluntary mediation. Mediator selection and the procedures shall be employed in voluntary mediation shall be mutually acceptable to the parties. Costs of voluntary mediation shall be shared equally among the parties participating in the mediation."

(67) This Agreement shall be executed in any number of counterparts, each of which shall be deemed an original, but all of which, taken together, shall constitute one and the same document.

(68) The following shall be applied when grant funds are utilized: On each Application for Payment, CONTRACTOR shall (1) list the name and address of each of its Subcontractors and Suppliers who have performed Work or provided supplies or Material during the time period of Work reflected by the Application; (2) submit certified payroll sheets for his own forces and all Subcontractors for the month preceding this application; and, (3) submit a monthly updated Progress Schedule including cash flow projections. After the first Application for Payment, CONTRACTOR shall include an affidavit stating that all previous progress payments received on account of the Work have been applied (1) to discharge CONTRACTOR's obligations and (2) to pay in full (less retainage) all amounts owed to its Subcontractors and Suppliers reflected in prior Applications for Payment. CONTRACTOR shall on the Application for Payment form note and explain when it has not discharged its obligations or paid in full (less retainage) all amounts owed as stated above.

END OF SECTION



**SECTION 01000
TECHNICAL SPECIFICATIONS**

(UNDER SEPARATE ATTACHMENT)

Appendix "A" – Drawings

END OF SECTION



**DIVISION 1 GENERAL REQUIREMENTS
SECTION 01010
SUMMARY OF WORK**

1. GENERAL

1.1. WORK COVERED BY CONTRACT DOCUMENTS

- 1.1.1. The Contractor shall furnish all labor, materials, equipment, tools, services and incidentals to complete all Work required by these Specifications and as shown on the Drawings.
- 1.1.2. 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 City.
- 1.1.3. 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.
- 1.1.4. The Contractor shall comply with all Federal, State and local laws, rules and regulations which are applicable to this Project.

1.2. CONTRACTOR'S USE OF PREMISES

- 1.2.1. The Contractor shall assume full responsibility for the protection and safekeeping of products and materials stored 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 City.

1.3. WORK SEQUENCE

- 1.3.1. The Contractor shall establish his work sequence based on the use of crews to facilitate completion of construction and testing within the allotted Contract Time.

- 1.3.2. Contractor shall discuss work sequence at Pre-Construction Conference.

- 1.3.3. is seeking qualified Contractors to expand the Stormwater attenuation and treatment capacity of the London Waterway by construction of a lake on City-owned property that is adjacent to the London Canal, in accordance with the attached set of construction plans. The stormwater storage capacity "lake" to be created is located in the Matanzas Woods Neighborhood on the northern part of Palm Coast City Limits (see location maps) and is surrounded by residential homes. Access to this site will be through easements and indicated on construction plans. The Contractor shall provide all work required for a completed project including, but not limited to labor, supervision, traffic control, materials, equipment, installation, and incidentals required for a complete project. CONTRACTOR shall also provide material samples, as necessary, to ensure compliance with manufacturer's recommendations. Installation of all materials shall be in accordance with all applicable CITY standards and requirements, applicable Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction (latest edition), manufacturer and industry preferred standards. Work assigned to this contract may include but is not limited to the following:

- Easement access
- Temporary Traffic Control (TTC)
- Isolation and by-pass pumping
- Erosion and sediment control
- Site restoration
- Stormwater pre-and post-work inspections
- Demolition and replacement of existing culverts
- Construction of headwalls
- Earthwork
- Landscaping
- Swale Regrading

- Construction of Boardwalks

2. **PRODUCTS (NOT USED)**

3. **EXECUTION (NOT USED)**

END OF SECTION



SECTION 01025 MEASUREMENT AND PAYMENT

1. GENERAL

1.1. DESCRIPTION

1.1.1. This Section defines the method, which shall be used to determine the quantities of work performed, or materials supplied and establish the basis upon which payment shall be made.

1.2. ESTIMATED QUANTITIES

1.2.1. 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. The CITY does not assume any responsibility for the final quantities, nor shall the CONTRACTOR claim misunderstanding because of such estimate of quantities. Final payment shall be made only for the satisfactorily completed quantity of each item.

1.3. MEASUREMENT STANDARDS

1.3.1. All work completed under the Contract shall be measured according to United States Standard Methods.

1.4. METHOD OF MEASUREMENT

1.4.1. 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.

1.4.2. 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 shall be measured from the outside edge of the width allowed along the main trench.

1.4.3. Measurement of Weight of Asphaltic Concrete Materials: Measurements of the weight of Asphaltic Concrete Materials shall be made as provided in the latest edition of the Florida Department of Transportation, Standard Specifications for Road and Bridge construction, except that the CONTRACTOR shall be responsible for writing and certifying the accuracy of truck tally tickets.

1.5. PAYMENT

1.5.1. Lump Sum Line Items: Where payment for items is shown to be paid for on a lump sum basis, no separate payment shall be made for any item of work described herein and listed on the Bid Form required to complete the lump sum item.

1.5.2. Unit Price Items: Where payment for items is shown to be paid for on a unit price basis, separate payment shall 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

1.6.1. No separate payment shall be made for the following items and the cost of such work shall be included in the applicable pay items of work:

- A. Construction Surveying
- B. Clearing and grubbing
- C. Trench excavation including necessary pavement removal, except as otherwise specified

- D. Dewatering and disposal of surplus water
- E. Structural fill, backfill and grading
- F. Replacement of unpaved roadways, grass and shrubbery plots
- G. Cleanup
- H. Foundation and borrow materials, except as hereinafter specified
- I. Testing and placing system in operation
- J. Any material and equipment required to be installed and utilized for tests
- K. Concrete encasement
- L. Pipe, structures, pavement replacement, restoration and/or appurtenances included within the limits of total sum work, unless otherwise shown
- M. Maintaining the existing quality of service during construction
- N. Maintaining or detouring of the traffic
- O. Appurtenant work as required for a complete and operable system

1.6.2. Cleanup: Contractor's attention is called to the fact that the cleanup is considered a part of the work of construction. No payment shall be made until cleanup is essentially complete.

1.6.3. Work Outside Authorized Limits: No payment shall be made for work constructed outside the authorized limits of work.

1.7. APPLICATIONS FOR PAYMENT

1.7.1. Applications for payment shall be prepared by the CONTRACTOR and submitted to the CITY in accordance with the schedule established by the Conditions of the Contract Documents and Agreement.

1.7.2. Applications for payment shall be submitted in the number and format established by the CITY at the Pre-Construction 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, and appropriate releases of lien shall be attached to each copy of the application.

1.8. CHANGE ORDER PROCEDURE

1.8.1. As defined in the General Terms and Conditions and the Supplementary Conditions a Change Order is a written order to the CONTRACTOR signed by the CITY 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:

- A. For Additions to the Work: The CITY 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 shall submit a Change Order as prescribed in the Conditions for the Contract.
- B. For Deletions From the Work: The CITY shall issue a written order to the CONTRACTOR directing him to make the change. If the CITY feels that the Contract price should be reduced as a result of the change, the CITY shall make a claim for the reduction as provided in the Conditions for 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.

2. PRODUCTS (NOT USED)

3. EXECUTION

END OF SECTION



SECTION 01027 APPLICATION FOR PAYMENTS

1. GENERAL

1.1. DESCRIPTION

1.1.1. Scope of Work: Submit Application for Payments to the City in accordance with schedule established by Conditions of the Contract and Agreement between City and Contractor.

1.1.2. Related Requirements Described Elsewhere:

- A. Agreement between City and Contractor.
- B. Application for Payment Form.
- C. Schedule of Values.
- D. Contract Closeout.
- E. Project Record Documents.

1.2. FORMAT AND DATA REQUIRED

1.2.1. Submit applications typed on forms provided by the City, "Application and Certificate for Progress Payment", with itemized data typed on 8-1/2 inch x 11 inch or 8-1/2 inch x 14 inch white paper continuation sheets.

1.2.2. Provide itemized data on continuation sheet of format, schedules, line items and values: Those of the Schedule of Values approved by the Engineer.

1.3. PREPARATION OF APPLICATION FOR EACH PROGRESS PAYMENT

1.3.1. Application Form:

- A. Fill in required information, including that for Change Orders executed prior to date of submittal of application.
- B. Fill in summary of dollar values to agree with respective totals indicated on continuation sheets.
- C. Execute certification with signature of a responsible officer of Contract firm.

1.3.2. Continuation Sheets:

- A. Fill in total list of all scheduled component items of work, with items number and scheduled dollar value for each item.
- B. Fill in dollar value in each column for each scheduled line item when work has been performed or products stored. Round off values to nearest dollar, or as specified for Schedule of Values.
- C. List each Change Order executed prior to date of submission, at the end of the continuation sheets. List by Change Order Number, and description, as for an original component item of work.
- D. To receive approval for payment on component material stored on site, submit copies of the original invoices with the Application for Payment.
- E. As provided for in the "Application and Certificate for Progress Payment" form, the Contractor shall certify, for each

current pay request, that all previous progress payments received from the City, under this Contract, have been applied by the Contractor to discharge in full all obligations of the Contractor in connection with Work covered by prior Applications for Payment, and all liens, claims, security interest and encumbrances. Contractor shall attach to each Application for Payment like affidavits by all Subcontractors.

1.4. SUBSTANTIATING DATA FOR PROGRESS PAYMENTS

1.4.1. When the City requires substantiating data, Contractor shall submit suitable information, with a cover letter identifying:

- A. Project.
- B. Application number and date.
- C. Detailed list of enclosures.
- D. For stored products:
 - I. Item number and identification as shown on application.
 - II. Description of specific material.

1.4.2. Submit one (1) copy of data and cover letter for each copy of application.

1.4.3. Submit requisite number of photographs with each application.

1.4.4. List the name and address of all Subcontractors and Suppliers who have performed work or provided supplies or material for each application.

1.4.5. Submit certified payroll sheets for Contractor's forces and all Subcontractors for the month preceding the submitted application.

1.4.6. Submit revised monthly progress schedules with each month's Application for Payment, including cash flow projections.

1.4.7. The Contractor is to maintain an updated set of drawings to be used as record drawings in accordance with the Contract Documents. AS A PREREQUISITE FOR PAYMENT OF MONTHLY PROGRESS PAYMENTS, THE CONTRACTOR IS TO EXHIBIT THE UPDATED RECORD DRAWINGS FOR REVIEW BY THE CITY.

1.5. PREPARATION OF APPLICATION FOR FINAL PAYMENT

1.5.1. Fill in Application Form as specified for progress payments.

1.6. SUBMITTAL PROCEDURE

1.6.1. Submit Applications for Payment to the City at the time stipulated in the Agreement. Review the percent's complete with the City to resolve any conflicts or discrepancies.

1.6.2. Number of copies for each Application for Payment:

- A. City: Four (4) copies
- B. Contractor: As required for his needs.

1.6.3. When the City finds Application properly completed and correct, the City shall process Certificate for Payment.

2. PRODUCTS (NOT USED)

3. EXECUTION (NOT USED)

END OF SECTION



SECTION 01050 FIELD ENGINEERING

1. GENERAL

1.1. SECTION INCLUDES

1.1.1. Provide field engineering service for project as indicated on Drawings and specified in this Section.

1.2. QUALIFICATIONS OF SURVEYOR OR ENGINEER

1.2.1. Florida Registered Engineer or Land Surveyor.

1.3. SURVEY REFERENCE POINTS

1.3.1. Existing basic horizontal and vertical control points are designated on Drawings. All elevations are referred to NAVD 1988. Establish all vertical and horizontal controls required for construction.

1.3.2. Locate and protect control points prior to starting site work, and preserve permanent reference points during construction.

- A. Make no changes or relocations of such points without prior written notice to Engineer.
- B. Report to Engineer when any reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.
- C. Require surveyor to replace control points which shall be lost or destroyed. Establish replacements based on original survey control.
- D. Engineer shall identify existing control points and properly line corner stakes indicated on Drawings, as required.

1.4. PROJECT SURVEY REQUIREMENTS

1.4.1. Establish a minimum of two (2) permanent bench marks on the project site, all referenced to data established by survey control points. Record locations, with horizontal and vertical data, on Project Record Documents.

1.4.2. Establish lines and levels, locate and lay out, by instrument and similar appropriate means.

- A. Site improvements.
- B. Building foundation, column locations, floor levels and roof levels.
- C. Controlling lines and levels required for mechanical and electrical trades.

1.4.3. Verify layouts by same methods from time to time.

1.5. RECORDS

1.5.1. Maintain a complete, accurate log of control and survey work as it progresses.

1.5.2. On completion of foundations and major site improvements, prepare a certified survey showing finished dimensions, locations, angles and elevations of construction.

1.6. SUBMITTALS

1.6.1. Submit name and address of surveyor or professional engineer to Engineer.

1.6.2. On request of Engineer, submit documentation to verify accuracy of field survey work.

1.6.3. Submit certificate signed and sealed by a State of Florida Registered Engineer or Land Surveyor certifying that elevations and locations of improvements are in conformance with Contract Documents.

2. PRODUCTS (NOT USED)

3. EXECUTION (NOT USED)

END OF SECTION



SECTION 01065 PERMITS AND FEES

1. GENERAL

1.1. DESCRIPTION

- 1.1.1. Scope of Work: Obtain and pay for all permits and licenses including, but not limited to all construction and Right-of-Way utilization permits.
- 1.1.2. Permits by the Contractor: Contractor shall apply for and receive prior to construction, permits from but not limited to the following agencies:
 - A. National Pollution Discharge Elimination System (NPDES) General Permit for Stormwater Discharges from Construction Activities

NPDES PERMIT CONFORMANCE

- B. Summary: This section specifies requirements for this contract associated with the National Pollution Discharge Elimination System (NPDES) program of the United States Environmental Protection Agency (EPA).
- C. General Information
 - I. The NPDES permit program requires that if the magnitude of construction activities covered by general permit are above certain thresholds, development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) specifically designed for each construction site is required. Also involved are certain certification, notification, inspection and record-keeping activities.
 - II. For this contract, the Engineer has determined that the magnitude of the Work will exceed the threshold levels cited above. It is therefore required that the Contractor develop and implement a SWPPP plan.
 - III. Guidance on the development of the SWPPP is contained in the State of Florida Department of Environmental Protection Document No. 62-621.300(4)a dated May 1, 2003, titled Generic Permit for Stormwater Discharges from Large and Small construction Activities.
- D. Specific Requirements
 - I. The Contractor shall develop, implement and comply with a plan specifically designed for this construction site, and including Best Management Practices (BMP's) and controls which prevent the pollution of storm water discharges.
 - II. The Contractor shall incorporate into the SWPPP all applicable requirements specified in State or local sediment and erosion control plans or permits, or stormwater management plans or permits. The Contractor shall submit a certification that the SWPPP reflects these requirements, and that these requirements will be complied with during the term of the contract.
 - III. Prior to commencement of construction, the SWPPP must be prepared and certified by the Contractor. Notice of Intent (NOI) must be forwarded to the Environmental Protection Agency and the St. Johns River Water Management District (with an information copy to the City of Palm Coast) at least 48 hours prior to any land clearing.
 - IV. Record-Keeping: The Contractor shall maintain the Plan and the associated records and reports, including documentation of the required inspections. These documents shall be maintained at the job site until the site is finally stabilized. Thereafter, the Contractor (Permittee) shall keep the SWPPP and all reports for at least three years.
 - V. When the construction activity has ceased and all areas affected by the work are stabilized, the Contractor shall prepare, certify and submit the required Notice of Termination to the Environmental Protection Agency, the City, and to the St. Johns River Water Management District. Final Payment Application will not be processed in the absence of the required submissions.
- E. The Engineer has also prepared a suggested format for the inspection records required to be kept under the SWPPP, attached hereto as Appendix "E".

1.1.3. Permits by Owner: The City has applied and paid for the following permits:

1.1.4. Copies of the referenced permits are attached to this Section.

2. PRODUCTS (NOT USED)

3. EXECUTION (NOT USED)

END OF SECTION



SECTION 01070 CODES, REFERENCES AND ABBREVIATIONS

1. GENERAL

1.1. SECTION INCLUDES

Referenced standards and abbreviations.

1.2. REFERENCED STANDARDS

1.2.1. Any reference to published specifications or standards of any organization or association shall comply with the requirements of the specification or standard which is current on the date of Advertisement for Bids. In case of a conflict between the referenced specifications or standards, the one having the more stringent requirements shall govern.

1.2.2. In case of conflict between the referenced specifications or standards and the Contract Documents, the Contract Documents shall govern.

1.3. ABBREVIATIONS

The following are definitions of abbreviations used within the Project Manual:

AA	Aluminum Association, Inc.
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AISC	American Institute of Steel Construction, Inc.
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
AMA	Acoustical Materials Association
AMCA	Air Movement and Control Association, Inc.
ANSI	American National Standards Institute, Inc.
APA	American Plywood Association
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc.
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWMA	Aluminum Window Manufacturer's Association
AWPA	American Wood Preserves Association
AWPB	American Wood Preservers Bureau
AWPI	American Wood Preservers Institute
AWS	American Welding Society, Inc.

AWWA	American Water Works Association
CPSC	U.S. Consumer Product Safety Commission
CRSI	Concrete Reinforcing Steel Institute
CS	Commercial Standards and National Bureau of Standards
FM	Factory Mutual Research Corp.
FS	Federal Specifications
FS	Florida Statutes
GA	Gypsum Association
HI	Hydraulic Institute
IEEE	Institute of Electrical and Electronic Engineers
NAAMM	National Association of Architectural Metal Manufacturers
NBFU	National Board of Fire Underwriters
NCMA	National Concrete Masonry Association
NECA	National Electrical Contractors' Association
NEMA	National Electrical Manufacturers' Association
NFiPA	National Fire Protection Association
NFoPA	National Forest Products Association
NSF	National Sanitation Foundation
PCA	Portland Cement Association
PCI	Precast Prestressed Concrete Institute
PS	Product Standards - National Institute of Standards and Technology
SDI	Steel Door Institute
SJI	Steel Joist Institute A
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association, Inc.
SSPC	Structural Steel Painting Council
UL	Underwriters Laboratories, Inc.

1.4. CODES AND GOVERNMENTAL DEPARTMENTS

CFR	Code of Federal Regulations
EPA	Environmental Protection Agency
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation

FAC	Florida Administrative Code
NEC	National Electric Code (Published by NFIPA)
OSHA	Occupational Safety and Health Act

2. PRODUCTS (NOT USED)

3. EXECUTION (NOT USED)

END OF SECTION



SECTION 01100 SPECIAL PROJECT PROCEDURES

1. GENERAL

1.1. WATER TIGHTNESS

1.1.1. Special precautions shall be taken in the curing of concrete to reduce concrete cracking as called for in Section 03300 Cast-In-Place Concrete. The water retaining structures (those which are intended to hold a liquid) shall be filled and tested for leaks by the contractor with potable water prior to surface coating or painting. Procedure and manner in which any leaks are repaired must meet the approval of the City.

1.2. PUBLIC NUISANCE

1.2.1. The Contractor shall not create a public nuisance including, but not limited to, encroachment on adjacent lands, flooding of adjacent lands, or excessive noise.

1.2.2. Sound levels measured by the City 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 City 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.

1.2.3. No extra charge shall be made for time lost due to work stoppage resulting from the creation of a public nuisance.

1.3. SUSPENSION OF WORK

1.3.1. During inclement weather, all work which might be damaged or rendered inferior by such weather conditions shall be suspended. The orders and decisions of the City as to suspensions shall be final and binding. During suspension of the work from any cause, the work shall be suitably covered and protected so as to preserve it from injury by the weather or otherwise; and, if the City shall so direct, rubbish and surplus materials shall be removed.

1.4. SPECIAL REQUIREMENTS

1.4.1. The following requirements shall govern:

- A. No additional payment shall be made for pumping or other difficulties encountered due to water.
- B. The Contractor shall, prior to interrupting a utility service (water, sewer, etc.) for the purpose of making cut-ins to the existing lines or for any other purposes, contact the City and make arrangements for the interruption which shall be satisfactory to the City.
- C. All equipment delivered to the job site shall be properly protected from dirt, dust, dampness, water and any other condition detrimental to the life of the equipment from the date of delivery to the time that control of the equipment is assumed by the City. If any equipment is delivered to the job site before any building thereon is enclosed, it shall be housed in a temporary, structurally rigid, watertight enclosure.
- D. 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, and the location of underground structures shown shall be inaccurate and other obstructions that those shown shall be encountered. The Contractor hereby distinctly agrees that the City 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; and that consideration for equitable compensation shall be made for conditions materially different from those shown on the

Drawings, as determined by the City.

1.5. JURISDICTIONAL DISPUTES

1.5.1. It shall be the responsibility of the Contractor to pay all costs that shall 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 with precedent agreements and decisions on record with the Building and Construction Trades Department, AFL-CIO, dated June, 1973, including any amendments thereto.

1.6. PUMPING

1.6.1. The Contractor, with his own equipment, shall do all pumping necessary to prevent flotation of any part of the structures during construction operations.

1.6.2. The Contractor shall, for the duration of the Contract and with his own equipment, pump out water which shall seep or leak into the structures. Operating areas shall be kept dry at all times. The extent of pumping required in non-operating areas shall be determined by the Engineer.

1.7. HAULING AND CONSTRUCTION OPERATIONS ON PLANT PROPERTY

1.7.1. The Contractor shall conduct access, hauling, filling and storage operations as specified herein and as shown on the Contract Drawings.

A. On-site borrow areas are designated as follows: None, all borrow material required shall be provided by the Contractor from off-site.

B. On-site spoil areas shall be designated as follows: All spoils shall be removed from the site.

1.7.2. Construct all fill areas so runoff shall not flood improved areas.

2. PRODUCTS (NOT USED)

3. EXECUTION (NOT USED)

END OF SECTION



SECTION 01310 ADMINISTRATIVE REQUIREMENTS

1. GENERAL

1.1. SECTION INCLUDES

1.1.1. Meetings, construction progress documentation, submittals, record documents.

1.2. PRECONSTRUCTION MEETING

1.2.1. The OWNER will schedule a preconstruction meeting prior to beginning the Work to review shop drawing procedures, submittal requirements, and construction administration requirements (project coordination and communication). The CONTRACTOR shall bring to the preconstruction meeting the proposed construction schedule, a preliminary schedule of shop drawing submissions, and a preliminary schedule of values of work. All will be reviewed with the OWNER during the meeting.

1.3. PROGRESS SCHEDULES

1.3.1. 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 value of the work. Include sub-schedules of related activities which are essential to its progress.

1.3.2. Revised schedules shall be submitted periodically as changes become apparent.

1.3.3. 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.

1.3.4. 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.

1.4. SCHEDULE OF VALUES

1.4.1. At least 10 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 the form of Application for Payment shown in Section 00844.

1.4.2. 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.

1.5. DEFINITIONS

1.5.1. Shop Drawings: Shop drawings are original drawings, prepared by the CONTRACTOR, a subcontractor, supplier, or distributor, which illustrate some portion of the Work; showing fabrication, layout, setting, or erection details. Shop drawings shall be prepared by a qualified detailer and shall be identified by reference to sheet and detail numbers on the Contract Drawings.

1.5.2. Product Data: Product data are manufacturer's standard schematic drawings and manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts, illustrations, and other standard descriptive data. Catalog sheets, brochures, etc., shall be clearly marked to identify pertinent materials, products, or models.

- 1.5.3. Samples: Samples are physical examples to illustrate materials, equipment, or workmanship and to establish standards by which work is to be evaluated.
- 1.5.4. Miscellaneous Submittals: Miscellaneous submittals related directly to the work (non-administrative) include warranties, maintenance agreements, Material & 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.

1.6. SUBMITTAL REQUIREMENTS

- 1.6.1. Prior to submission, thoroughly check shop drawings, product data, and samples for completeness and for compliance with the Contract Documents. Verify all field measurements, quantities, dimensions, specified performance criteria, fabrication, shipping, handling, storage, assembly, installation, and safety requirements.
- 1.6.2. Coordinate the submittals with the requirements for other related work.
- 1.6.3. Notify the ENGINEER, in writing at the time of submission, of deviations in submittals from the requirements of the Contract Document. The CONTRACTOR'S responsibility for deviations in submittals from the requirements of the Contract Documents is not relieved by the ENGINEER'S review of submittals, unless the ENGINEER gives written acceptance of specific deviations.
- 1.6.4. Submit at least six (6) copies of each shop drawing and product data. The specific number of copies required of all submittals will be determined during the preconstruction meeting. Submit the number of samples indicated in the individual Specification Sections.
- 1.6.5. Where a specific product manufacturer and model number is listed in individual specification sections and is proposed by the CONTRACTOR to be used, full submittal of product data is not required. In this case, submit in letter format the name of the product, manufacturer, model number, specification section, and name of project. Certify the identified product is proposed to be used in the project.
- 1.6.6. Shop drawings, product data, and samples shall be accompanied by a letter of transmittal referring to the name of the project and to the specification page number and/or Drawing number for identification of each item. Submittals for each type of work shall be numbered consecutively, and the numbering system shall be retained throughout all revisions.
- 1.6.7. Submittals shall bear the CONTRACTOR'S stamp of approval certifying that they have been checked and indicate appropriate specification section and/or drawing location. Submittals without the CONTRACTOR'S initialed or signed certification stamp and submittals which, in the ENGINEER'S opinion, are incomplete, contain numerous errors or have not been properly checked, will be returned unchecked by the ENGINEER for resubmission.
- 1.6.8. Begin no work which requires submittals until return of submittals with ENGINEER stamp and initials or signature indicating the submittal has been approved.
- 1.6.9. Systems to be submitted in the shop drawing submittal shall include but not necessarily be limited to:
- A. Each item of equipment and/or materials listed in the project equipment and material schedules.
 - B. Each item of process instrumentation and control system including instrumentation system schematic diagrams.
 - C. Prestressed or precast concrete members.
 - D. Reinforcing steel.
 - E. Structural steel fabrication (including pre-engineered building).
 - F. Miscellaneous metals.
 - G. Special casings.
 - H. Piping and duct work, layout and dimension drawings.
- 1.6.10. In addition to the above, the manufacturer shall submit through the CONTRACTOR copies of the results of the tests performed by an independent laboratory that demonstrate compliance with the reference specification for:
- A. Ductile iron pipe
 - B. Casing pipe
 - C. Fiberglass material
 - D. Concrete pipe
 - E. PVC pipe
 - F. Steel pipe
 - G. Concrete aggregates
 - H. Asphaltic materials

1.6.11. Finishes and Materials: Finishes and materials shall be submitted for color and/or pattern selection including:

- A. Decorative block
- B. Brick
- C. Exposed aggregate panels
- D. Ceramic tile
- E. Laminated plastics
- F. Paint color chips
- G. Paneling
- H. Carpet
- I. Decorative materials
- J. Acoustical tile
- K. Resilient flooring
- L. Resilient and epoxy flooring

1.7. ENGINEER'S REVIEW OF SUBMITTALS

- 1.7.1. ENGINEER'S review and approval of submittals will not extend to means, methods, techniques, sequences, procedures of construction, or to safety precautions.
- 1.7.2. The review and approval of a separate item will not indicate approval of the assembly in which the item functions. ENGINEER'S review and approval of submittals shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents.
- 1.7.3. The ENGINEER will review submittals with reasonable promptness. The ENGINEER'S review of submittals shall not be construed as a complete check and shall not relieve the CONTRACTOR from responsibility for complete compliance with the Contract requirements.
- 1.7.4. No corrections, changes, or deviations indicated on submittals reviewed by the ENGINEER shall be considered as a change order.
- 1.7.5. Where review of submittals is required by the Owner of other agencies, the ENGINEER will forward the appropriate submittal(s) to these parties after ENGINEER review. Once review of all parties is complete, the submittal(s) will be returned to the CONTRACTOR reflecting the review of all parties.
- 1.7.6. If the submittal is not satisfactory, one copy of the submitted item will be retained by the ENGINEER and all other copies returned to the CONTRACTOR for appropriate action.
- 1.7.7. In the event a third submittal is required, due to previous submittals of incomplete or incorrect data or not in compliance with the Contract Documents, the CONTRACTOR will be charged one-half of the cost incurred by the ENGINEER for the review of the third submittal. The CONTRACTOR shall bear the total cost incurred by the ENGINEER for all subsequent reviews. The ENGINEER costs charged to the CONTRACTOR will be at the cost plus rate generally charged by the ENGINEER and will be deducted by the OWNER from payments due to the CONTRACTOR. Distribution of copies of acceptable submittals will be as mutually determined by the CONTRACTOR, OWNER, and ENGINEER on an individual item basis during or following the preconstruction conference.

1.8. PROGRESS MEETINGS

- 1.8.1. The frequency of progress meetings shall be determined during the preconstruction meeting. As a minimum, progress meetings shall be held once per month during construction.
- 1.8.2. The CONTRACTOR and OWNER shall attend the progress meetings.

2. PRODUCTS (NOT USED)

3. EXECUTION (NOT USED)

END OF SECTION



SECTION 01400 QUALITY CONTROL

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 of retesting when materials and workmanship fail to meet specified requirements will be deducted from monies due the CONTRACTOR.

The testing laboratory shall conform to the applicable requirements of ASTM E329-77 (Latest Edition) STANDARD RECOMMENDED PRACTICE FOR INSPECTION AND TESTING AGENCIES FOR CONCRETE, STEEL AND BITUMINOUS MATERIALS USED IN CONSTRUCTION and shall be inspected and approved by the ELF/FC&PA Joint Technical Committee, Inc., or by an equivalent recognized national authority.

The agent of the testing laboratory performing field sampling and field testing of concrete shall be certified by the American Concrete Institute as a Concrete Field Testing Technician Grade 1 or by an equivalent recognized national authority for an equivalent level of competence, or shall be a licensed Professional Engineer.

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 Protection, 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.

2. PRODUCTS (NOT USED)

3. EXECUTION (NOT USED)

END OF SECTION



SECTION 01500 TEMPORARY FACILITIES AND CONTROLS

1. GENERAL

1.1. DESCRIPTION OF REQUIREMENTS

1.1.1. This section specifies the minimum requirements for temporary facilities, utilities to be brought to the site, 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 requirements of this section.

1.1.2. 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-alone plant facilities comply with governing regulations. Prior to availability of temporary utility services, provide trucked-in/trucked-out containerized or unitized services for start-up of construction operations at the site.

A. Except as otherwise indicated, the costs of providing and using temporary utility services are included in the Contract Sum.

1.2. TEMPORARY FACILITIES

1.2.1. 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
Gas (fuel) Service
Telephone Service

A. 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.

B. Temporary Electricity: The CONTRACTOR shall provide for a temporary power source for his use during construction and arrange for modification of the permanent power supply by the power company as required. The permanent power supply service will remain as the OWNER'S account throughout the project.

C. 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.

D. 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 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.

E. 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. TEMPORARY CONTROLS

- 1.3.1. **Noise Control:** The CONTRACTOR shall provide adequate protection against objectionable noise levels caused by the operation of construction equipment.
- 1.3.2. **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.
- 1.3.3. **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. CONTRACTOR shall be responsible for obtaining and complying with the requirements of any dewatering or consumptive use permits required by regulatory authorities.
- 1.3.4. **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.
- A. 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.
 - B. The CONTRACTOR shall take sufficient precautions to prevent pollution of streams, lakes and reservoirs with fuels, oils, bitumen's, 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.
 - C. 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.
- 1.3.5. **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. Refer to Section 01568, Erosion and Sedimentation Control.
- 1.3.6. **Paint Splatter Control:** The CONTRACTOR shall take precautions necessary to prevent paint splatter and wind-blown splatter from falling on adjacent buildings, vehicles and vehicular traffic and shall be solely responsible for any damage resulting from the work.
- 1.3.7. **Sandblasting, Dust & Debris Control:** The CONTRACTOR shall provide for adequate protection of the work area to prevent nuisance and damage to adjacent properties and vehicular traffic from cleaning and sandblasting debris and shall be solely responsible for any damage therefrom.

1.4. STORAGE FACILITIES

- 1.4.1. 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 weather tight 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.
- 1.4.2. 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.
- 1.4.3. 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

- 1.5.1. 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.
- 1.5.2. 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.
- 1.5.3. 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

- 1.6.1. 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.
- 1.6.2. 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.
- 1.6.3. 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. "Street Closed to Through Traffic" signs and "Detour" routes shall be indicated and maintained by the CONTRACTOR when the job is located in a public or private street or way.
- 1.6.4. 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 street intersected will not be permitted without specific authorization of the local street department. 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 that streets are required to be closed, the CONTRACTOR shall notify 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.
- 1.6.5. On completion of work, the CONTRACTOR shall remove all debris, excess materials, barricades and temporary work leaving walkways and road clear of obstructions.
- 1.6.6. Detour routes for the diverting of traffic from the Work Area are limited in the Project Area. The Project Area may be marked "ROAD CLOSED AHEAD - LOCAL TRAFFIC ONLY" to discourage through traffic from using the route. Short areas where work is underway may be closed to traffic, provided detour routes are marked to guide the public around the work area. Where detour routes are not available, flagmen shall be provided to direct one-way traffic through the construction area.
- 1.6.7. Refer to Section 01570: Traffic Regulation, for additional information.

1.7. PROJECT IDENTIFICATION AND SIGNS

- 1.7.1. If required, the OWNER shall erect a sign at the project site identifying the project and identifying the participants in the development of the project.

2. MATERIALS AND EQUIPMENT (Not Applicable)

3. EXECUTION (Not Applicable)

END OF SECTION



SECTION 01568 EROSION & SEDIMENTATION CONTROL

1. GENERAL

1.1. DESCRIPTION

1.1.1. In addition to the requirements of Division 1 and any other Divisions of this document that may apply:

- A. 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.
- B. Location of the control features shall be as required to facilitate drainage and control erosion and sedimentation within and adjacent to the site.
- C. Control features are defined as, but not limited to, swales, berms, silt fences, silt barriers and temporary fences.

1.2. QUALITY ASSURANCE

1.2.1. 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.

1.3. SUBMITTALS

- 1.3.1. Procedures shall be in accordance with General Terms and Conditions.
- 1.3.2. Product data: Manufacturers' literature, application instructions and samples.
- 1.3.3. List of materials and their characteristics for other erosion control items.

1.4. START OF WORK

1.4.1. Do not start work until erosion control measures are in place.

2. PRODUCTS

2.1. MATERIALS

2.1.1. Silt Barriers

- A. Two (2) types of silt barriers shall be installed in accordance with the plans: silt barriers installed on the ground, and floating silt barriers.
- B. Silt barriers (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° F) to one hundred twenty degrees Fahrenheit (120° F). Hay bales shall not be used for silt barriers, unless specifically approved by the City.
- C. 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 (Test ASTM D2263):	50 lbs.

- A. Contractor shall submit further filter fabric specifications and installation configuration prior to start of construction.
- B. Silt barriers shall be maintained in place until substantial completion of the Project.
- C. 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.
- D. The following items shall be installed and maintained in accordance with the applicable sections of the FDOT Standard Specifications:
 - I. Temporary silt fences and staked silt barriers
 - II. Floating silt barrier

2.1.2. Temporary Fence

- A. Brightly colored fence as manufactured by Mirafi, product Mirasafe, or approved equal.
- B. 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.

2.1.3. Filter Fabric for Placement Beneath Rip-Rap

- A. Filter Fabric should be Mirafi 600X or approved equal.

2.1.4. Rip-Rap

- A. Rubble type rip-rap consisting of broken stone meeting the requirements of Section 530-2.3 of the FDOT Standard Specifications for Road and Bridge Construction, Latest Edition.

3. EXECUTION

3.1. GENERAL

- 3.1.1. 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 shall 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 Design Standards.
- 3.1.2. Incorporate permanent erosion control features into the project at the earliest practical time. Correct conditions, using temporary measures that develop during construction to control erosion prior to the time it is practical to construct permanent control features.
- 3.1.3. 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.
- 3.1.4. Copies of approved permits shall 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

- 3.2.1. The following items shall be installed and in accordance with the FDOT Standard Specifications. The procedures are only generally described herein.
 - A. Temporary Grassing: This work shall consist of furnishing and placing grass seed.
 - B. Temporary Sod: This work shall consist of furnishing and placing sod.
 - C. 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., shall 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.

- D. Sandbagging: This work shall consist of furnishing and placing sandbags in configurations, so as to control erosion and siltation.
- E. 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 Design Standards or as suitable to adequately perform the intended function.
- F. Sediment Basins: Sediment basins shall be constructed in accordance with the details shown in FDOT's Design Standards or as suitable to adequately perform the intended function. Sediment basins shall be cleaned out as necessary.
- G. Artificial Coverings: This work shall consist of furnishing and applying fiber mats, netting, plastic sheeting, or other approved covering to the earth surfaces.
- H. Berms: This work shall consist of construction of temporary earth berms to divert the flow of water from an erodible surface.
 - I. 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 Design Standards.
 - II. 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 shall be used if approved.
- I. Filter Fabric for placement beneath rip-rap:
 - I. Unroll filter fabric adequately longitudinally with the swale.
 - II. Install anchoring pins in the fabric to protect the material from wind uplift.
 - III. Toe filter fabric into soil a minimum of twelve inches (12") at the top and bottom of the slope.
- J. Rubble Rip-Rap:
 - I. 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.
 - II. Placement of rip-rap shall be in accordance with Section 530-3.3 of the FDOT Standard Specifications for Road and Bridge Construction Latest edition.
 - III. Minimum thickness of rip-rap layer is two feet (2').

3.3. SILT BARRIERS

- 3.3.1. 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.
- 3.3.2. Silt barrier shall be of the staked type and stakes shall be installed as indicated in the Drawings.
- 3.3.3. The height of the silt barrier fabric shall be a minimum of forty-two inches (42").
- 3.3.4. 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.
- 3.3.5. 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

- 3.4.1. 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.
- 3.4.2. Floating silt barriers shall meet or exceed the Florida Department of Transportation 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

- 3.5.1. 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.
- 3.5.2. Follow manufacturer's installation recommendations.

3.6. MAINTENANCE

- 3.6.1. 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.
- 3.6.2. 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 8 of Section 00700 General Terms and Conditions until such time as the repair or replacement has been made.
- 3.6.3. Sediment deposits shall be removed after each storm event. The Contractor shall repair and restore the installations to a working and effective condition to the satisfaction of the City.
- 3.6.4. At the completion of all work, the silt barriers and the temporary fences shall be removed unless otherwise directed by the City.
- 3.6.5. 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 SHALL RESULT IN WATER POLLUTION

- 3.7.1. Take sufficient precautions to prevent pollution of streams, canals, lakes, reservoirs, wetlands and other sensitive areas with silt, sediment, fuels, oils, bitumen's, 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.
- 3.7.2. 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.
- 3.7.3. 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.
- 3.7.4. 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.
- 3.7.5. 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

- 3.8.1. 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 01570 TRAFFIC REGULATION

1. GENERAL

1.1. DESCRIPTION

1.1.1. This Section covers procedures for developing and implementing traffic control and regulation measures and maintenance of traffic in and around the construction area to provide for safe and efficient protection and movement of vehicular and pedestrian traffic through and adjacent to the construction site areas.

1.2. REFERENCE STANDARDS

1.2.1. General

- A. Codes, specifications, and standards referred to by number or title shall form a part of this Specification to the extent required by the reference thereto. Latest revisions shall apply, unless otherwise shown or specified.

1.2.2. Florida Department of Transportation (FDOT) Standards

- A. USDOT Manual on Uniform Traffic Control Devices
- B. FDOT Manual of Traffic Control and Safe Practices for Street and Highway Construction, Maintenance and Utility Operations.
- C. FDOT Standard Specifications for Road and Bridge Construction.
- D. FDOT Design Standards, latest Edition.

1.3. SUBMITTALS

1.3.1. Before closing or restricting traffic flow through any thoroughfare, the Contractor shall give written notice to and, if necessary, obtain a permit or permits from the duly constituted public authority having jurisdiction over the thoroughfare. Contractor shall also notify the applicable law enforcement, fire, and emergency services having jurisdiction in the area. Notice shall be given no less than seventy-two (72) hours in advance of the time when it shall be necessary in the process of construction to close or restrict traffic to such thoroughfare, or as shall be otherwise required by the governing authority.

1.4. SITE CONDITIONS

1.4.1. The Contractor shall plan construction operations such that existing local traffic access can be maintained and shall maintain during the construction such barricades, lights, flagmen, and other protective devices as appropriate, whether specified for the project or required by the local governing authority. Traffic control devices and implementation used for maintenance of traffic shall comply with the FDOT Manuals.

1.4.2. The Contractor shall conduct his work in such manner as not to unduly or unnecessarily restrict or impede normal traffic through the streets of the community. Insofar as it is practicable, excavated material and spoil banks shall not be located in such manner as to obstruct traffic. The traveled way of all streets, roads, and alleys shall be kept clear and unobstructed insofar as is possible and shall not be used for the storage of construction materials, equipment, supplies, or excavated earth, except when and where necessary. If required by duly constituted public authority, the Contractor shall, at his own expense, construct bridges or other temporary crossing structures over trenches so as not to unduly restrict traffic. Such structures shall be of adequate strength and proper construction and shall be maintained by the Contractor in such manner as not to constitute an undue traffic hazard. Private driveways shall not be closed except when and where necessary, and then only upon due advance notice to the City, property owner and applicable jurisdictional authority, and shall be for the shortest practicable period of time consistent with efficient and expeditious construction. The Contractor shall be liable for any damages to persons or property resulting from his work.

1.4.3. The Contractor shall make provisions at cross streets for the free passage of vehicles and foot passengers, either by bridging or

otherwise, and shall not obstruct the sidewalks, gutters, or streets, nor prevent in any manner the flow of water in the latter, but shall use all proper and necessary means to permit the free passage of surface water along the gutters. The Contractor shall immediately cart away all offensive matter, exercising such precaution as shall be directed by the City or applicable jurisdictional authority. All material excavated shall be so disposed of as to inconvenience the public and adjacent tenants as little as possible and to prevent injury to trees, sidewalks, fences, and adjacent property of all kinds. The Contractor shall be required to erect suitable barriers to prevent such inconvenience or injury.

1.4.4. Unless otherwise required by the governing authority, maintenance of traffic in and around the construction zone shall conform to Section 102 of the FDOT Specification, and 600 Series Design Standards drawings of the FDOT Standards, as applicable.

2. PRODUCTS (NOT USED)

3. EXECUTION (NOT USED)

END OF SECTION



SECTION 01600 MATERIAL AND EQUIPMENT

1. GENERAL

1.1. DESCRIPTION

1.1.1. Scope of Work: Material and equipment incorporated into the Work:

- A. Conform to applicable specifications and standards.
- B. Comply with size, make, type and quality specified, or as specifically approved in writing by the City.
- C. Manufactured and fabricated products:
 - I. Design, fabricate and assemble in accord with the best engineering and shop practices.
 - II. Manufacture like parts of duplicate units to standard sizes and gauges, to be interchangeable.
 - III. Two (2) or more items of the same kind shall be identical, by the same manufacturer.
 - IV. Products shall be suitable for service and conditions.
 - V. Equipment capacities, sizes and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.
- D. Do not use material or equipment for any purpose other than that for which it is designed or is specified.

1.1.2. Related Requirements Described Elsewhere:

- A. Conditions of the Contract.
- B. Summary of Work: Section 01010
- C. Special Project Procedures: Section 01100
- D. Operating and Maintenance Data: Section 01730

1.2. APPROVAL OF MATERIALS

- 1.2.1. Only new materials and equipment shall be incorporated in the work. All materials and equipment furnished by the Contractor shall be subject to the inspection and approval of the City. No material shall be delivered to the work without prior approval of the City.
- 1.2.2. Within thirty (30) days after the Effective Date of the Agreement, the Contractor shall submit to the City, data relating to materials and equipment he proposes to furnish for the work. Such data shall be in sufficient detail to enable the City to identify the particular product to form an opinion as to conformity to the specifications. If Asbestos is contained in any item, the Contractor shall include a notification of this fact. This notification must include the type and percent of asbestos content. All data shall comply with Paragraph 1.06 of this Section.
- 1.2.3. Facilities and labor for handling and inspection of all materials and equipment shall be furnished by the Contractor. If the City requires, either prior to beginning or during the progress of the work, the 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 the Contractor's expense. Except as otherwise noted, the Contractor may make arrangements for and pay for the tests.
- 1.2.4. The 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 the Contractor's failure to submit samples or data promptly shall not be used as a basis of claim against the City.
- 1.2.5. In order to demonstrate the proficiency of workmen or to facilitate the choice among several textures, types, finishes and surfaces, the

Contractor shall provide such samples of workmanship or finish as may be required.

1.2.6. The materials and equipment used on the work shall correspond to the approved samples or other data.

1.3. MANUFACTURER'S INSTRUCTION FOR INSTALLATION

1.3.1. When Contract Documents require the installation of work shall comply with manufacturer's printed instruction, obtain and distribute copies of such instruction to parties involved in the installation, including five copies to the City.

1.3.2. Handle, install, connect, clean, condition and adjust products in strict accord with such instruction and in conformity with specified requirements.

A. Should job conditions or specified requirements conflict with manufacturer's instruction, consult with City for further instructions.

B. Do not proceed with work without clear instructions.

1.3.3. 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.

1.4. TRANSPORTATION AND HANDLING

1.4.1. Arrange deliveries of products in accordance with construction schedules, coordinate to avoid conflict with work and conditions at the site.

A. Deliver products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.

B. Immediately on delivery, inspect shipments to assure compliance with requirements of Contract Documents and approved submittals, and that products are properly protected and undamaged.

1.4.2. Provide equipment and personnel to handle products by methods to prevent soiling or damage to products or packaging.

1.5. SPECIAL TOOLS

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. The Contractor shall preserve and deliver to the City these tools and instruction in good order no later than upon completion of the Contract.

1.6. STORAGE AND HANDLING OF EQUIPMENT ON SITE

1.6.1. Because of the long period allowed for construction, special attention shall be given to the storage and handling of equipment on site. As a minimum, the procedure outlined below shall be followed:

A. Equipment shall not be shipped until approved by the City. 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 the City. Equipment shipped to the site shall be stored in accordance with Paragraph 1.05, herein. Operation and maintenance data as described in Paragraph 1.08 of Section 01730 shall be submitted to the City for review prior to shipment of equipment.

B. 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 the City, until such time as the equipment is to be installed.

C. All equipment shall be stored fully lubricated with oil, grease, etc. unless otherwise instructed by the manufacturer.

D. Manufacturer's storage instructions shall be carefully studied by the Contractor and reviewed with the City. These instructions shall be carefully followed and a written record of this kept by the Contractor.

E. Moving parts shall be rotated a minimum of once weekly to insure proper lubrication and to avoid metal-to-metal "welding". Upon installation of the equipment, the Contractor shall start the equipment, does not deteriorate from lack of use.

- F. 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 the City.
- G. Prior to acceptance of the equipment, the Contractor shall have the manufacturer inspect the equipment and certify that its condition has not been detrimentally affected by the long storage period. Such certification 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 may 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 the Contractor's expense.

1.7. WARRANTY

- 1.7.1. For all major pieces of equipment, submit a warranty from the equipment manufacturer as specified in Section 01740. The manufacturer's warranty period shall be concurrent with the Contractor's for two (2) years after the time of completion and acceptance.

1.8. SPARE PARTS

- 1.8.1. Spare parts for certain equipment provided have been specified in the pertinent sections of the Specifications. The Contractor shall collect and store all spare parts so required in an area to be designated by the City. In addition, the Contractor shall furnish to the City 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. Copies of actual invoices for each item shall be furnished with the inventory to substantiate the delivered cost.

1.9. GREASE OIL AND FUEL

- 1.9.1. All grease, oil and fuel required for testing of equipment shall be furnished with the respective equipment. The City shall be furnished with a year's supply of required lubricants including grease and oil of the type recommended by the manufacturer with each item of equipment supplied.
- 1.9.2. The Contractor shall be responsible for changing the oil in all drives and intermediate drives of each mechanical equipment after initial breaking in of the equipment, which in no event shall be any longer than three (3) weeks of operation.

2. PRODUCTS (NOT USED)

3. EXECUTION (NOT USED)

END OF SECTION



SECTION 01640 PRODUCT SELECTION AND SUBSTITUTION PROCEDURES

1. GENERAL

1.1. DESCRIPTION

1.1.1. This Section covers procedures for product selection and substitution procedures.

1.2. PRODUCT SELECTION

1.2.1. Provide products that comply with the Contract Documents, that are undamaged, and unless otherwise indicated, new at the time of installation.

1.2.2. To the fullest extent possible, provide products of the same kind from a single source.

1.2.3. Compatibility among product options is required. Where more than one choice is available as options during product selection, select an option that is compatible with other products and materials already selected.

1.2.4. Provide products complete with accessories, trim, finish, safety guards, and other devices and details needed for a complete installation and the intended use and effect.

1.2.5. Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.

1.2.6. Where Contract Documents are at variance with specific manufacturer's details and installation procedures, contact the ENGINEER for resolution prior to start of work.

1.2.7. For products specified by naming a number of products and manufacturers with "or equal", select any of the products and manufacturers listed, or propose a substitution. If the CONTRACTOR wishes to propose a substitution, the CONTRACTOR must submit a request for product substitution for approval by the ENGINEER and CITY.

1.2.8. For products specified naming only one product and manufacturer, or a number of products and manufacturers without the "or equal" allowance, no substitutes are allowed.

1.2.9. For products specified by reference standards only, the CONTRACTOR may provide any product complying with the specified standard.

1.2.10. For products specified by performance and descriptive methods, without naming manufacturer's products, the CONTRACTOR may provide the products of any manufacturer complying with the Contract Documents, subject to the review of the product data and concurrence by the ENGINEER as specified within.

1.3. SUBSTITUTIONS

1.3.1. The intent of these Specifications is to provide the CITY with a quality facility without discouraging competitive bidding. Substitutions may be submitted and will be evaluated as specified herein.

1.3.2. If the CONTRACTOR wishes to provide a product other than one named in the Specifications, he shall submit sufficient information to the ENGINEER for evaluation and determination of acceptability of the product prior to Bid Opening.

1.3.3. The CONTRACTOR is responsible for obtaining information required by the ENGINEER for the evaluation of products. The ENGINEER is responsible for determining the quality of products; and his decision shall be final, except as otherwise provided by law and funding agency regulations.

1.3.4. Substitution requests can be made after Bid Opening when:

A. A specified product is no longer available.

- B. The product cannot be delivered by the manufacturer in a timely manner.
- C. The product is found to be incompatible with other specified products.
- D. Proposed substitutions will yield a cost savings to the CITY.

1.3.5. Work not conforming to Contract Documents, including substitutions not properly approved and authorized, may be considered defective.

2. PRODUCTS (NOT USED)

3. EXECUTION (NOT USED)

END OF SECTION



SECTION 01650 START-UP

1. GENERAL

1.1. DESCRIPTION

1.1.1. Scope of Work: The work is segmented into several phases of construction in a logical order to maintain uninterrupted service to the City's customers. Portions of the Work shall be utilized prior to Substantial Completion of all the Work and prior to initiation of Operation.

1.1.2. Related Work Described Elsewhere:

- A. Instructions to Bidder: Section 00100.
- B. General Terms and Conditions: Section 00800.

2. PRODUCTS

2.1. START-UP PLAN

2.1.1. Submit for approval to the City a detailed Start-Up Plan outlining the schedule and sequence of all tests and start-up activities, including training and equipment manufacturer representative visits. Start-up and commissioning shall not begin until the plan is approved. Plan to be submitted with initial construction schedule.

3. EXECUTION

3.1. COMPONENT TEST AND CHECK-OUT

3.1.1. Start-up Certification: Prior to system start-up, successfully complete all the testing required of the individual components of the work. Submit five (5) copies of CHECK-OUT FORM (Section 00865) signed by Contractor or subcontractor and the manufacturer's representative. All copies of the Operation and Maintenance Manuals must be provided before start-up shall begin. These forms shall be completed and submitted before Instruction in Operation to the City or a request for final inspection.

3.1.2. Demonstrate to the City that all temporary jumpers and/or bypass have been removed and that all of the components are operating under their own controls as designated.

3.1.3. Coordinate start up activities with the City's operating personnel at the site and with the City's Engineer prior to commencing system start-up.

3.2. START UP

3.2.1. Confirm that all equipment is properly energized, that the valves are set to their normal operating condition and that the flow path through the new work is unobstructed.

3.2.2. Slowly fill each structure in the process flow stream with liquid.

3.2.3. Initiate start-up in accordance with the plant operation and maintenance manual.

3.2.4. Observe the component operation and make adjustments as necessary to optimize the performance of the Work.

3.2.5. Coordinate with the City for any adjustments desired or operational problems requiring debugging.

3.2.6. Make adjustments as necessary.

3.3. START-UP DEMONSTRATION AND TESTING

- 3.3.1. 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 City. The demonstration shall be held upon completion of all systems at a date to be agreed upon in writing by the City.
- 3.3.2. The start-up testing shall be conducted for seven (7) consecutive days. The work must operate successfully during the seven (7) 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 shall be corrected and the test shall start over from day one. The party causing the interruption shall be subject to the assessment of actual damages due to delay.
- 3.3.3. During the start-up demonstration period, operate the work, instruct designated plant operating personnel in the function and operation of the work, and cause various operational circumstances to occur. As a minimum, these circumstances shall include average and peak daily flows, random equipment failures, tank overflows, surcharges and bypasses. 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 shall be accomplished through the City.
- 3.3.4. Acceptability of the Work's performance shall be based on the Work performing as specified, under these actual and simulated operating conditions and producing a product as defined in the Contract Documents. The intent of the start-up demonstration and testing is for the Contractor to demonstrate to the City that the work shall function as a complete and operable system under normal as well as emergency operating conditions and is ready for acceptance.
- 3.3.5. Demonstrate the essential features of all mechanical systems as they apply to the work. Each system shall be demonstrated once only, after completion of testing.
- 3.3.6. Demonstrate the essential features of all electrical systems as they apply to the work.
- 3.3.7. Certificate of Completed Demonstration (Section 00866): Submit five (5) copies of Certificate of Completed Demonstration, memo signed by the Contractor, Subcontractor and the City and insert one (1) copy in each Operation and Maintenance Manual.

END OF SECTION



SECTION 01700 CONTRACT CLOSEOUT

1. GENERAL

1.1. DESCRIPTION

1.1.1. Scope of Work: Comply with requirement stated in Conditions of the Contract and in specifications for administrative procedures in closing out the Work.

1.1.2. Related Requirements Described Elsewhere:

- A. Conditions of the Contract, Fiscal provisions, legal submittals and additional administrative requirements.
- B. Project Record Documents: Section 01720.
- C. Operation and Maintenance Data: Section 01730
- D. Warranties and Bonds: Section 01740.
- E. The respective section of specifications: Closeout Submittals Required of Trades.

1.2. SUBSTANTIAL COMPLETION

1.2.1. When Contractor considers the Work as substantially complete, the Contractor shall submit to the City:

- A. A written notice that the Work, or designated portion thereof, is substantially complete.
- B. A list of items to be completed or corrected.

1.2.2. Within a reasonable time after receipt of such notice, the City shall make an inspection to determine the status of completion.

1.2.3. Should the City determine that the Work is not substantially complete:

- A. The City shall promptly notify the Contractor in writing, giving the reasons thereof.
- B. Contractor shall remedy the deficiencies in the Work and send a second written notice of substantial completion to the City.
- C. The City shall re-inspect the Work.

1.2.4. When the City finds that the Work is substantially complete, the Contractor shall:

- A. Prepare and deliver to City a tentative Certificate of Substantial Completion on form provided herein, with a tentative list of items to be completed or corrected before final payment.

1.3. FINAL INSPECTION

1.3.1. When Contractor considers the Work is complete, it shall submit written certification that:

- A. Contract Documents have been reviewed.
- B. Work has been inspected for compliance with Contract Documents.
- C. Work has been completed in accordance with Contract Documents.

- D. Equipment and systems have been tested in the presence of the City and are operational.
- E. Work is completed and ready for final inspection.

1.3.2. The City shall make an inspection to verify the status of completion with reasonable promptness after receipt of such certification.

1.3.3. Should the City consider that the Work is incomplete or defective:

- A. The City shall promptly notify the Contractor in writing, listing the incomplete or defective work.
- B. Contractor shall take immediate steps to remedy the stated deficiencies, and send a second written certification to the City that the Work is complete.
- C. The City shall re-inspect the Work.

1.4. REINSPECTION FEES

1.4.1. Should the City perform re-inspections due to failure of the Work to comply with the claims of status of completion made by the Contractor:

- A. The City shall compensate the Engineer / Architect / Consultants, etc., for such additional services.
- B. The City shall deduct the amount of such compensation from the final payment to the Contractor.

1.5. CONTRACTOR'S CLOSEOUT SUBMITTALS TO ENGINEER

1.5.1. Evidence of compliance with requirements of governing authorities. Certificates of Completed Demonstration: Section 01650. (If Applicable)

1.5.2. Project Record Documents: To requirements of Section 01720.

1.5.3. Operation and Maintenance Data, Instructions to City's Personnel: To requirements of Section 01730. (If Applicable)

1.5.4. Warranties and Bonds: To requirements of Section 01740.

1.5.5. Keys and Keying Schedule. (If Applicable)

1.5.6. Spare Parts and Maintenance Materials: To requirement of Section 01730. (If Applicable)

1.5.7. Evidence of Payment and Release of Liens: To requirements of the General Terms and Conditions and Supplementary Conditions.

1.5.8. Certificate of Insurance for Products and Completed Operations.

1.6. FINAL ADJUSTMENT OF ACCOUNTS

1.6.1. Submit a final statement of accounting to the City.

1.6.2. Statement shall reflect all adjustments to the Contract Sum:

- A. The original Contract Sum.
- B. Additions and deductions resulting from:
 - I. Previous change orders or written amendment
 - II. Allowances
 - III. Unit prices
 - IV. Deductions for uncorrected work
 - V. Penalties and bonuses
 - VI. Deductions for liquidated damages
 - VII. Deductions for re-inspection payments
 - VIII. Other adjustments

- C. Total Contract Sum, as adjusted.
- D. Previous payments.
- E. Sum remaining due.

1.6.3. The City shall prepare a Final Change Order, reflecting approved adjustments to the Contract Sum which were not previously made by Change Orders.

1.7. FINAL APPLICATION FOR PAYMENT

1.7.1. Contractor shall submit the final Application for Payment in accordance with procedures and requirements stated in the Conditions of the Contract.

2. PRODUCTS (NOT USED)

3. EXECUTION (NOT USED)

END OF SECTION



SECTION 01720 PROJECT RECORD DOCUMENTS

1. GENERAL

1.1. DESCRIPTION

1.1.1. Scope of Work: Maintain at the site for the City one (1) record copy at a minimum:

- A. Drawings
- B. Specifications
- C. Addenda
- D. Change Orders and other modifications of the Contract
- E. Field Orders or written instructions
- F. Approved Shop Drawings, Working Drawings and Samples
- G. Field Test records
- H. Construction photographs
- I. Change Requests
- J. Contractor's Daily Reports
- K. Written Interpretations and Clarifications

1.2. MAINTENANCE OF DOCUMENTS AND SAMPLES

1.2.1. Store documents and samples in Contractor's field office apart from documents used for construction.

- A. Provide files and racks for storage of documents.
- B. Provide locked cabinet or secure storage space for storage of samples.

1.2.2. File documents and samples in accordance with CSI format with section numbers as provided herein.

1.2.3. Maintain documents in a clean, dry, legible, condition and in good order. Do not use record documents for construction purposes.

1.2.4. Make documents and samples available at all times for inspection by the City.

1.2.5. As a prerequisite for monthly progress payments, the Contractor is to exhibit the currently updated "Record Documents" for review by the City.

1.2.6. Contractor shall submit on a daily basis two (2) copies of the preceding day's daily report to the City.

1.3. MARKING DEVICES

1.3.1. Provide felt tip marking pens for recording information in the color code designated by the City.

1.4. RECORDING

1.4.1. Label each document "PROJECT RECORD" in two inch (2") high printed letters.

- 1.4.2. Keep record documents current at the end of work each day marking any changes and inserting change orders and directives into the documents.
- 1.4.3. Do not permanently conceal any work until required information has been recorded. This includes markups and any "as-built" survey as required by these specifications.
- 1.4.4. Record Contract Drawings: Legibly mark drawings to record actual construction with the following information verified by a registered Florida Land Surveyor.
 - A. Depths of various elements of foundation in relation to survey datum.
 - B. Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements.
 - C. Location of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of structure.
 - D. Field changes of dimension and detail.
 - E. Changes made by Revision Order, Directive, and other modifications.
 - F. Details not shown on the original Contract Drawings.
 - G. Installation of power and control wiring with point-to-point wiring identification.
- 1.4.5. Record Specifications and Addenda: Legibly mark-up each Section to record:
 - A. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed.
 - B. Changes made by Revision Order, Directive, and other modifications.
 - C. Other matters not originally specified.
- 1.4.6. Shop Drawings and Samples: Legibly annotate to record changes made after approval.

1.5. "AS-BUILT" DRAWINGS

- 1.5.1. The Contractor shall engage the services of a professional land surveyor registered in the State of Florida prior to any construction activities. The surveyor shall be named in the list of subcontractors.
- 1.5.2. The surveyor must comply with all requirements of 5J-17.052 Minimum Technical Standards: Specific Survey, Map, and Report Requirements of the Florida Administrative Code.
- 1.5.3. The surveyor shall use the locational requirements of the State of Florida.
- 1.5.4. The surveyor shall provide on-site survey while construction is in progress and at such other times as required to fulfill all professional obligations and as listed below.
 - A. Elevations and state plane coordinates shall be identified for the ends of all conduits or pipelines installed or used for construction, ends of all duct bank stub-outs, and all direct buried cable splice locations.
 - B. Elevations and coordinates shall be identified along the center line of pipelines, direct buried cable, buried conduit or duct bank by no less than one elevation shot per one hundred (100) linear feet and at any change of direction vertical or horizontal of underground utility length. Slopes shall be identified.
 - C. All elevation shots shall be referenced to "top-of-pipe" (T.O.P.), "top-of-concrete-duct-bank" (T.O.D.B.), "bottom-of-concrete-duct-bank" (B.O.D.B.), "top-of-conduit" (T.O.C.) or "top-of-electric-cable" (T.O.E.), as appropriate for the project.
 - D. Manhole rings, slabs on grade, valve box rims, equipment pads, surface body water levels and other project construction features shall be recorded by elevation and state plane coordinates as "As-Built".

- E. For directionally drilled crossings and other "trenchless technology" installations, provide continuous plots of utility plan and profile derived from actual telemetry data used during the installation.
- F. All existing structures, utilities, and features revealed during the course of construction shall be accurately located and dimensioned. Movement of such utilities or structures required by project installation shall be recorded as "As-Built". This requirement shall apply whether the existing structure, utility or feature was shown on the original contract drawings or not.

1.5.5. At the conclusion of the work, the Contractor shall provide the City one (1) Vellum, three (3) approved, certified "As-Builts" and one (1) "As-Built" Survey Drawing file in AutoCAD format (latest release) on a compact disk(s). The AutoCAD drawing files shall comply with the following standards:

- A. The diskette(s) or compact disk(s) shall be formatted for AutoCAD type DWG files or self-extracting compressed data file to a DWG format.
- B. The drawing format shall not contain any "X-REFS" (cross references) to other files.
- C. The drawing format shall contain only AutoCAD Standard Font Files and Acad.mnu type menu references only.
- D. Text from different layers shall not overlap. Colors and line types shall be "BY-LAYER". Only AutoCAD standard fonts and line types shall be used.
- E. All coordinate and elevation numbers shall be limited to three (3) decimal places.
- F. Text height shall be entered such that when the drawing is plotted to scale, the actual text height is no less than one-eighth inch (1/8"). The plotting scale for the drawings shall be the same scale as the construction drawings.
- G. Drawings shall be plotted on twenty-four inch (24") x thirty-six inch (36") sheets. The areas on each sheet shall match the areas shown on the construction drawings.

1.6. SUBMITTALS

1.6.1. The Contractor shall deliver the following documentation, drawing(s), data, and diskette(s) to the City no later than two (2) weeks after the declared date of Substantial Completion.

- A. Two (2) sets of contract drawings marked in red to reflect the final "As-Built" conditions.
- B. Two (2) sets of signed and sealed plots of the "As-Built" drawings(s) provided by the surveyor together with one (1) electronic copy on a CD(s) of the "As-Built" survey drawing file(s).
- C. One (1) set of Specifications with Addenda marked in red to reflect the final "As-Built" conditions.

1.6.2. Such other documents as shall be required by the regulations of the State of Florida shall be supplied in accordance with the provisions of law.

1.6.3. Accompany submittal with transmittal letter, in duplicate, containing:

- D. Date, Project title and number.
- E. Contractor's name and address.
- F. Title and number of each record document.
- G. Certification that each document as submitted is complete and accurate, and contains signature of Contractor, or its authorized representative.

1.6.4. Failure to deliver any of the above items shall be considered justification for withholding payment in accordance with Section 6 of the Contract.

2. PRODUCTS (NOT USED)

3. EXECUTION (NOT USED)

END OF SECTION



SECTION 01730 OPERATION AND MAINTENANCE DATA

1. GENERAL

1.1. DESCRIPTION

1.1.1. Scope of Work:

- A. Compile product data and related information appropriate for City's maintenance and operation of products furnished under Contract.
 - I. Prepare operating and maintenance data as specified in this Section and as referenced in other pertinent sections of Specifications.
- B. Instruct City's personnel in maintenance of products and in operation of equipment and systems.

1.1.2. Related Requirements Described Elsewhere:

- A. General Terms and Conditions: Section 00700
- B. Special Project Procedures: Section 01100
- C. Contract Closeout: Section 01700
- D. Project Record Documents: Section 01720
- E. Warranties and Bonds: Section 01740

1.2. QUALITY ASSURANCE

1.2.1. Preparation of data shall be done by personnel:

- A. Trained and experienced in maintenance and operation of described products.
- B. Familiar with requirements of the Section.
- C. Skilled as technical writer to the extent required to communicate essential data.
- D. Skilled as draftsman competent to prepare required drawings.

1.3. FORM OF SUBMITTALS

1.3.1. Prepare data in form of an instructional manual for use by City's personnel.

1.3.2. Format:

- A. Size: Eight and one-half inches (8-1/2") x eleven inches (11").
- B. Paper: Twenty (20) pound minimum, white, for typed pages.
- C. Text: Manufacturer's printed data, or neatly typewritten.
- D. Drawings:
 - I. Provide reinforced punched binder tab, bind in with text.
 - II. Reduce larger drawings and fold to size of text pages but not larger than fourteen inches (14") x seventeen inches (17").

- E. Provide fly-leaf for each separate product, or each piece of operating equipment.
 - I. Provide typed description of products and major component parts of equipment.
 - II. Provide identify tabs.
- F. Cover: Identify each volume with typed or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS". List:
 - I. Title of Project.
 - II. Identity of separate structure as applicable.
 - III. Identity of general subject matter covered in the manual.

1.3.3. Binders:

- A. Commercial quality three-post binders with durable and cleanable plastic covers.
- B. Maximum post width: Two inches (2").
- C. When multiple binders are used, correlate the data into related consistent groups.

1.4. CONTENT OF MANUAL

1.4.1. Neatly typewritten table of contents for each volume, arranged in systematic order.

- A. Contractor, name of responsible principal, address and telephone number.
- B. A list of each product required to be included, indexed to content of the volume.
- C. List, with each product, name, address and telephone number of:
 - I. Subcontractor or installer.
 - II. A list of each product required to be included, indexed to content of the volume.
 - III. Identify area of responsibility of each.
 - IV. Local source of supply for parts and replacement.
- D. Identify each product by product name and other identifying symbols as set forth in Contract Documents.

1.4.2. Product Data:

- A. Include only those sheets which are pertinent to the specific product.
- B. Annotate each sheet to:
 - I. Clearly identify specific product or part installed.
 - II. Clearly identify data applicable to installation.
 - III. Delete references to inapplicable information.

1.4.3. Drawings:

- A. Supplement product data with drawings as necessary to clearly illustrate:
 - I. Relations of component parts of equipment and systems.
 - II. Control and flow diagrams.
- B. Coordinate drawings with information in Project Record Documents to assure correct illustration of completed installation.
- C. Do not use Project Record Documents as maintenance drawings.

1.4.4. Written test, as required to supplement product data for the particular installation:

- A. Organize in consistent format under separate headings for different procedures.

- B. Provide logical sequence of instruction of each procedure.
- 1.4.5. Copy of each warranty, Bond and service contract issued.

- A. Provide information sheet for City's personnel, give:
 - I. Proper procedures in event of failure.
 - II. Instances which might affect validity of warranties or Bonds.

1.5. MANUAL FOR MATERIALS AND FINISHES

1.5.1. Submit five copies of complete manual in final form.

1.5.2. Content: for architectural products, applied materials and finishes:

- A. Manufacturer's data, giving full information on products.
 - I. Catalog number, size, and composition.
 - II. Color and texture designations.
 - III. Information required for reordering special manufacturing products.
- B. Instructions for care and maintenance.
 - I. Manufacturer's recommendation for types of cleaning agents and methods.
 - II. Cautions against cleaning agents and methods which are detrimental to product.
 - III. Recommend schedule for cleaning and maintenance.

1.5.3. Content, for moisture protection and weather-exposed products:

- A. Manufacturer's data, giving full information on products.
 - I. Applicable standards.
 - II. Chemical composition.
 - III. Details of installation.
- B. Instructions for inspection, maintenance and repair.

1.5.4. Additional requirements for maintenance data: Respective sections of Specifications.

1.6. MANUAL FOR EQUIPMENT AND SYSTEMS

1.6.1. Submit five (5) copies of complete manual in final form.

1.6.2. Content, for each unit of equipment and system, as appropriate:

- A. Description of unit and component parts.
 - I. Function, normal operating characteristics, and limiting conditions.
 - II. Performance curves, engineering data and tests.
 - III. Complete nomenclature and commercial number of replaceable parts.
- B. Operating procedures:
 - I. Start-up, break-in, routine and normal operating instructions.
 - II. Regulation, control, stopping, shut-down and emergency instructions.
 - III. Summer and winter operating instructions.
 - IV. Special operating instructions.
- C. Maintenance procedures:
 - I. Routine operations.
 - II. Guide to "trouble-shooting".

- III. Disassembly, repair and re-assembly.
 - IV. Alignment, adjusting and checking.
- D. Servicing and lubrication required.
- E. Manufacturer's printed operating and maintenance instructions.
- F. Description of sequence of operation by control manufacturer.
- G. Original manufacturer's parts list, illustrations, assembly drawings and diagrams required for maintenance.
 - I. Predicted life of parts subject to wear.
 - II. Items recommended to be stocked as spare parts.
- H. As-installed control diagrams by controls manufacturer.
- I. Each contractor's coordination drawings.
 - I. As-installed color coded piping diagrams.
- J. Charts of valve tag numbers, with location and function of each valve.
- K. List of original manufacturer's spare parts, manufacturer's current prices and recommended quantities to be maintained in storage.
- L. Other data as required under pertinent sections of specifications.

1.6.3. Content, for each electric and electronic systems, as appropriate:

- A. Description of system and component parts.
 - I. Function, normal operating characteristics, and limiting conditions.
 - II. Performance curves, engineering data and tests.
 - III. Complete nomenclature and commercial number of replaceable parts.
- B. Circuit directories and panel boards.
 - I. Electrical service
 - II. Controls
 - III. Communications
- C. As installed color coded wiring diagrams.
- D. Operating procedures:
 - I. Routine and normal operating instructions.
 - II. Sequences required.
 - III. Special operating instructions.
- E. Maintenance procedures:
 - I. Routine operations.
 - II. Guide to "trouble-shooting".
 - III. Disassembly, repair and re-assembly.
- F. Manufacturer's printed operating and maintenance instructions.
- G. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.
- H. Other data as required under pertinent sections of specifications.

1.6.4. Prepare and include additional data when the need for such data becomes apparent during instruction of City's personnel.

1.6.5. Additional requirements for operating and maintenance data: Respective sections of Specifications.

1.7. SUBMITTAL SCHEDULE

1.7.1. Submit two (2) copies of completed data in final form no later than thirty (30) days following the City's review of the last shop drawing and/or other submittal specified within the General Conditions.

A. One (1) copy shall be returned with comments to be incorporated into final copies.

1.7.2. Submit five (5) copies of approved manual in final form directly to the City, within thirty (30) calendar days of product shipment to the project site and preferably within thirty (30) days after the reviewed copy is received.

1.7.3. Append six (6) copies of addendum to the operation and maintenance manuals as applicable and certificates as specified within thirty (30) days after final inspection and plant start-up test.

1.8. INSTRUCTION OF OWNER'S PERSONNEL

1.8.1. Prior to final inspection or acceptance, fully instruct City's designated operating and maintenance personnel in operation, adjustment and maintenance of products, equipment and systems.

1.8.2. Operating and maintenance manual with personnel in full detail to explain all aspects of operations and maintenance.

2. PRODUCTS (NOT USED)

3. EXECUTION (NOT USED)

END OF SECTION



SECTION 01740 WARRANTIES AND BONDS

1. GENERAL

1.1. DESCRIPTION

1.1.1. Scope of Work:

- A. Compile specified warranties and Bonds, as in Articles 13 and 22 of Section 00800 General Terms and Conditions and as specified in these Specifications.
 - I. Co-execute submittals when so specified.
 - II. Review submittals to verify compliance with Contract Documents.
 - III. Submit to the Engineer for review and transmittal to City.
- B. Related to Work Described Elsewhere:
 - I. General Terms and Conditions: Section 00800
 - II. Conditions of the Contract: Performance Bond, Payment Bond, Material and Workmanship Bond.
 - III. Special Project Procedures: Section 01100
 - IV. Contract Closeout: Section 01700

1.2. SUBMITTAL REQUIREMENTS

- A. Assemble warranties, 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.
 - I. Product of work item
 - II. Firm, with name of principal, address and telephone number
 - III. Scope
 - IV. Date of beginning of warranty, Bond or service and maintenance contract
 - V. Duration of warranty, Bond or service maintenance contract
 - VI. Provide information for City's personnel:
 - a) Proper procedure in case of failure.
 - b) Instances which might affect the validity or warranty or Bond.
 - c) Contractor, name of responsible principal, address and telephone number

1.3. FORM OF SUBMITTALS

1.3.1. Prepare in duplicate packets.

1.3.2. Format:

- A. Size eight and one half inches (8-1/2") x eleven inches (11), punch sheets for standard three (3)-post binder
 - I. Title of Project
 - II. Name of Contractor

1.3.3. Binders: Commercial quality, three (3)-post binder, with durable and cleanable plastic covers and maximum post width of two inches (2").

1.4. WARRANTY SUBMITTALS REQUIREMENTS

- 1.4.1. For all major pieces of equipment, submit a warranty from the equipment manufacturer. The manufacturer's warranty period shall be concurrent with the Contractor's for two (2) year plus time equipment is not functional to the City unless otherwise specified, commencing at the time of final acceptance by the City.
- 1.4.2. The Contractor shall be responsible for obtaining certificates for equipment warranty for all major equipment specified in the specifications and which has at least a one (1) horsepower motor or which lists for more than \$500.00. The City reserves the right to request warranties for equipment not classified as major. The Contractor shall still warrant equipment not considered to be "major" in the Contractor's one-year warranty period even though certificates of warranty shall not be required.
- 1.4.3. In the event that the equipment manufacturer or supplier is unwilling to provide the warranty described above commencing at the date of substantial completion, 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 two (2) year warranty starting at the time of City acceptance of the equipment.
- 1.4.4. The City shall incur no labor or equipment cost during the guarantee period.
- 1.4.5. 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 the manufacturer.

2. PRODUCTS (NOT USED)

3. EXECUTION (NOT USED)

END OF SECTION



DIVISION 2 – TECHNICAL SPECIFICATIONS
SECTION 02220
SELECTIVE DEMOLITION

1. GENERAL

1.1. DESCRIPTION

1.1.1. Scope of Work:

- A. Work necessary to demolish, remove and dispose of the equipment, materials, piping and appurtenances as shown or specified.
- B. Demolition includes salvaging of designated piping and equipment, backfilling of trenches, craters, holes and pits resulting from demolition work, and filling of below ground voids.
- C. Limits of demolition are indicated on the Drawings.

1.2. SUBMITTALS

1.2.1. Submittals shall be as specified in the General Conditions.

1.2.2. Develop demolition procedures and submit for review by ENGINEER before demolition is started. Use demolition procedures which provide for safe conduct of work, protection of property which is to remain undisturbed, including protection of property to be removed and delivered to OWNER.

1.3. QUALITY ASSURANCE

1.3.1. Accomplish all demolition work without injury to any persons or damage to adjacent structures or property. Conduct all demolition in full compliance with municipal, county, state and federal laws and ordinances. Comply with requirements of Occupational Safety & Health Administration (OSHA).

1.3.2. Comply with all municipal, county, state and federal laws, ordinances and regulations regarding disposal of rubble, scrap metal and refuse.

1.4. EXISTING CONDITIONS

1.4.1. General: Visit site and determine, to extent necessary to properly plan and execute work of this Section, nature and condition of items to be removed and extent of work required before submitting Bid.

1.4.2. Disconnection of Utilities: Disconnect utilities at points indicated on Drawings or as specified. Where such disconnection will interrupt utility services to area not included in Contract, make arrangements for such interruption with ENGINEER at least 72 hours in advance of interruption.

2. PRODUCTS

2.1. TEMPORARY MATERIALS

2.1.1. Provide temporary fencing, barricades, and other items complying with Section 01500: Temporary Facilities and Controls.

2.2. REPAIR AND REPLACEMENT MATERIALS

2.2.1. Use materials for repair or replacement of existing work to remain identical or equal to materials used in existing work when new.

2.3. OWNER RETAINED EQUIPMENT

2.3.1. OWNER will retain title to designated equipment.

3. EXECUTION

3.1. STRUCTURES AND BUILDINGS

3.1.1. Remove all parts of existing structures and buildings to be demolished which interfere with new work.

3.1.2. Completely remove structures which are to be totally demolished.

3.1.3. When structures and buildings are to be partially demolished, make break between part removed and part remaining as indicated on the Drawings.

3.1.4. Completely remove concrete bases for tanks, poles, towers and similar structures to be demolished.

3.2. EQUIPMENT

3.2.1. Completely remove equipment designated to be removed. Carefully remove, without damage, all equipment designated to be retained by OWNER.

3.3. PIPING AND UTILITIES

3.3.1. Completely remove piping, conduit and wiring in structures and buildings to be demolished. Completely remove piping, conduit and wiring in parts to be demolished of structures and in buildings to be partially demolished. Completely remove other piping, conduit and wiring designed to be removed.

3.3.2. Underground piping, conduit and wiring to be abandoned which do not interfere with new work may be left in place, unless otherwise shown on the Drawings. Plug and seal cut ends of underground piping and conduit to be abandoned. Do not leave abandoned branches of piping and wiring "live". Isolate abandoned piping branches by closing branch valve at main or by disconnecting branch at main. Plug, cap and seal active branch at isolating valve or point of disconnection. Disconnect abandoned wiring branches at distribution panel(s) and remove from the panel(s).

3.3.3. Properly disconnect, seal and plug utility services to completely demolished structures and buildings. Properly disconnect, seal and plug utility lines within partially demolished structures and buildings.

3.4. PAVEMENT, SIDEWALKS, CURBS AND GUTTERS

3.4.1. Completely remove pavement, sidewalks, curbs and gutters designed to be removed.

3.5. OPENINGS

3.5.1. Plug all openings in walls, floors and ceilings resulting from removal of existing equipment, piping and conduit. Plug openings in concrete with pipe plugs, blind flanges, caps, or expansive grout. Plug openings in metal building walls with sheet metal bent to conform to shape of metal building walls and of a thickness not less than existing metal building walls. Plug openings in a manner that will result in a structurally suitable seal and a neat and presentable appearance.

3.6. DISPOSAL

3.6.1. Move equipment, piping and materials designated to be retained by OWNER to location designated by OWNER.

3.6.2. Remove all equipment, piping and materials not specifically designated to be retained by OWNER from site as CONTRACTOR'S property.

3.6.3. Do not allow debris and rubbish to accumulate on site. Remove debris and rubbish from site.

3.7. FILLING

3.7.1. Backfill excavations, trenches, craters, holes and pits resulting from demolition and below ground, abandoned remains of partially demolished structures.

3.7.2.

3.7.3. Backfill as specified in Section 02315: Excavating, Backfilling and Compacting.

3.8. CLEAN UP

3.8.1. Following demolition, clean up areas where other work is to be done as specified in Section(s) applicable to work to be done.

3.8.2. Following demolition, clean up areas where no other work is to be done under this Contract. Remove all debris and rubbish, temporary facilities and equipment. Level surface irregularities to eliminate depressions. Leave work in a neat and presentable condition.

3.9. PROTECTION

3.9.1. Protect existing work. Repair work damaged to match existing work. Repair damaged work with workers specifically qualified in trade(s) involved.

END OF SECTION



SECTION 02230 CLEARING, GRUBBING, AND STRIPPING

1. GENERAL

1.1. DESCRIPTION

1.1.1. Scope of Work: This section describes the work included in clearing, grubbing, stripping, and otherwise preparing the project site for construction operations.

1.1.2. Related Work Described Elsewhere:

- A. Site Grading: Section 02310.
- B. Excavating, Backfilling, and Compacting: Section 02315.
- C. Seeding: Section 02936
- D. Sodding: Section 02938

1.1.3. Clearing: Remove and dispose of trees, shrubs, brush, limbs, and other vegetative growth. Remove all evidence of their presence from the surface including sticks and branches. Remove and dispose of trash piles and rubbish that currently is scattered over the construction site or collects there during construction. Protect trees, shrubs, vegetative growth, and fencing which are not designed for removal. Clearing operations shall be conducted so as to prevent damage to existing structures and installations, and to those under construction, so as to provide for safety of employees and others.

1.1.4. Grubbing: Grubbing shall consist of the complete removal of all stumps, roots larger than 1-1/2 inches in diameter, matted roots, brush, timber, logs, and any other organic or metallic debris remaining after clearing not suitable for foundation purposes, resting on, under or protruding through the surface of the ground. All depressions excavated below the original ground surface for or by the removal of such objects, shall be refilled with suitable materials and compacted to a density conforming to the surrounding ground surface.

1.1.5. Stripping: Remove and dispose of all organics and sod, topsoil, grass, and grass roots, and other objectionable material remaining after clearing and grubbing from the areas designated to be stripped. Grass and grass roots in areas to be excavated or filled upon shall be stripped of sod to a depth of 4 inches. In areas so designated, topsoil shall be stockpiled. Topsoil so stockpiled shall be protected until it is placed as specified. Any topsoil remaining after all work is in place, shall be disposed of by the CONTRACTOR unless directed otherwise by the Owner/Engineer.

2. PRODUCTS

2.1. GENERAL

2.1.1. Trees and Shrubbery: Existing trees, shrubbery, and other vegetative material may not be shown on the Drawings. Inspect the site as to the nature, location, size, and extent of vegetative material to be removed or preserved, as specified herein. Preserve, in place, trees that are specifically shown on the Drawings and designated to be preserved.

3. EXECUTION

3.1. GENERAL

3.1.1. Clearing and Grubbing Limits: All excavation and embankment areas associated with new structures, slabs, and roadways shall be cleared and grubbed to the following depths:

- A. Building Site Areas: 3 feet below existing grade and replaced with compacted backfill.

B. All other areas: 2 foot below completed surface.

- 3.1.2. Disposal of Clearing and Grubbing Debris: Do not burn combustible materials. Remove all cleared and grubbed material from the work site and dispose of in accordance with all local laws, codes, and ordinances.
- 3.1.3. Areas to be Stripped: All excavation and embankment areas associated with new structures, slabs, walks, and roadways shall be stripped. Stockpile areas shall be stripped.
- 3.1.4. Disposal of Stripping's: Remove all stripped material and dispose off-site, unless otherwise directed to stockpile material.

END OF SECTION



SECTION 02240 DEWATERING (DURING CONSTRUCTION)

1. GENERAL

1.1. DESCRIPTION

1.1.1. Scope of Work: The work to be performed under this Section shall include the design and installation of a temporary wellpoint system to dewater subsurface waters from structures as required. The system shall remain in place until completion of construction.

1.1.2. Related Work Described Elsewhere:

A. Excavating, Backfilling and Compacting: Section 02315.

1.2. QUALITY ASSURANCE

1.2.1. Qualifications: The temporary dewatering system shall be designed by a firm who regularly engages in the design of dewatering systems and who is fully experienced, reputable and qualified in the design of such dewatering systems. The firm shall have a successful record of operation for a minimum of five (5) years prior to bid date.

1.2.2. In lieu of experience, the dewatering firm shall provide a Performance Bond for 1.5 times the total installed cost of the temporary dewatering system. This Bond shall be executed prior to award and/or contract execution.

1.2.3. Standards: The dewatering of any excavation areas and the disposal of water during construction shall be in strict accordance with all local and state government rules and regulations.

1.3. SUBMITTALS

1.3.1. Materials and Shop Drawings: Shop drawings required to establish compliance with the specifications shall be submitted in accordance with the provisions of Section 01310: Administrative Requirements. Submittals shall include at minimum the following:

- A. Design notes and drawings.
- B. Descriptive literature of the temporary dewatering system.
- C. Layout of all piping involved.
- D. Bill of materials.

1.4. CRITERIA

1.4.1. The wellpoint system shall be developed to the point that is capable of dewatering such that pipe can be laid and compacted satisfactorily as shown on the Drawings. Each wellpoint system shall be capable of dewatering and maintaining groundwater levels at the respective structures.

2. PRODUCTS

2.1. GENERAL

2.1.1. The equipment specified herein shall be standard wellpoint dewatering equipment of proven ability as designed and manufactured by firms having experience in the design and production of such equipment. The equipment furnished shall be designed, constructed and

installed in accordance with the best practices and methods.

2.1.2. The use of wrapped underdrains or "socks" for dewatering shall not be allowed unless approval is obtained by the OWNER.

2.1.3. The CONTRACTOR shall be required to monitor the performance of the dewatering system during the progress of the work and require such modifications as may be required to assure that the systems will perform satisfactorily. Dewatering system shall be designed in such a manner as to preserve the undisturbed bearing capacity of the subgrade soils and to preserve the integrity of adjacent structures.

3. EXECUTION

3.1. INSTALLATION

3.1.1. Dewatering: The CONTRACTOR shall install a temporary wellpoint dewatering system for the removal of subsurface water encountered during construction of the proposed structures and/or piping.

3.2. PROTECTION AND SITE CLEAN-UP

3.2.1. At all times during the progress of the Work the CONTRACTOR shall use all reasonable precautions to prevent either tampering with the wellpoints or the entrance of foreign material.

3.2.2. In the event that satisfactory dewatering cannot be accomplished due to subsurface conditions or where dewatering could damage existing structures, the CONTRACTOR shall obtain the Owner/Engineer's approval of wet trench.

3.2.3. Immediately upon completion of the wellpoint system, the CONTRACTOR shall remove all of his equipment, materials, and supplies from the site of the work, remove all surplus materials and debris, fill in all holes or excavations, and grade the site to elevations of the surface levels which existed before work started. The site shall be thoroughly cleaned and approved by the Owner/Engineer.

3.3. DISPOSAL

3.3.1. Water pumped from the trench or other excavation shall be disposed of in storm sewers having adequate capacity, canals or suitable disposal pits.

3.3.2. CONTRACTOR is responsible for acquiring all permits required to discharge the water and shall protect waterways from turbidity during the operation.

3.3.3. In areas where adequate disposal sites are not available, partially backfilled trenches may be used for water disposal only when the CONTRACTOR'S plan for trench disposal is approved in writing by the Owner/Engineer. The CONTRACTOR'S plan shall include temporary culverts, barricades and other protective measures to prevent damage to property or injury to any person or persons.

3.3.4. No flooding of streets, roadways, driveways or private property will be permitted. Engines driving dewatering pumps shall be equipped with residential type mufflers. Where practical and feasible, electrical "drops" should be used in lieu of portable generators.

END OF SECTION



SECTION 02300 EARTHWORK

1. GENERAL

1.1. DESCRIPTION

1.1.1. Scope of Work: This Section includes materials, testing, and earthwork for excavations, fills, and embankments.

1.1.2. Related Work Specified Elsewhere:

- A. Site Grading: Section 02310
- B. Excavating, Backfilling and Compacting: Section 02315
- C. Cast-in-Place Concrete: Section 03300

1.2. SUBMITTALS

1.2.1. Submit excavation and shoring drawings for worker protection in accordance with Section 01310: Administrative Requirements.

1.2.2. Submit six copies of a report from a testing laboratory verifying that the material conforms to the gradation specified.

1.3. TESTING FOR COMPACTION

1.3.1. Determine the density of soil in place in accordance with the sand cone method, ASTM D 1556, or rubber balloon method, ASTM D 2167.

1.3.2. Determine the laboratory moisture-density relationship and maximum density by ASTM D 1557 or D 2049.

1.3.3. Sample fill materials by ASTM D 75.

1.3.4. Compaction shall be deemed to comply with the specifications when no more than one test of any three consecutive tests falls below the specified relative compaction. The one test shall be no more than three percentage points below the specified compaction. The CONTRACTOR shall pay the costs of any re-testing of work not conforming to the specifications.

1.3.5. "Relative compaction" is the ratio, expressed as a percentage, of the in-place density to the laboratory maximum density.

1.3.6. Density tests will be made for determination of specified compaction by an independent testing laboratory provided by the OWNER. Tests for pipeline backfill compaction will be made in locations reviewed by the Owner/Engineer, spaced not more than 300 feet apart with a minimum of three tests per compaction area in each vertical lift.

If any tests are unsatisfactory, re-excavate and re-compact the fill or backfill until the desired compaction is obtained. Additional compaction tests will be taken to each side of an unsatisfactory test at locations reviewed by the Owner/Engineer to determine the extent of re-excavation and re-compaction necessary.

1.3.7. CONTRACTOR will pay for each failing compaction test and for each additional test taken to determine extent of re-excavation and re-compaction as described previously.

2. PRODUCTS

2.1. FILL AND BACKFILL

2.1.1. Fill and backfill shall be clean, granular sand that is free from organic matter, roots, debris, and rocks larger than two inches in the greatest

dimension and having less than 10 percent passing the No. 200 U.S. sieve size.

- 2.1.2. Water for Compaction: Water shall be free of acid, alkali, or organic materials and shall have a pH of 7.0 to 9.0, a maximum chloride concentration of 500 mg/l, and a maximum sulfate concentration of 500 mg/l. Provide all water needed for earthwork. Provide temporary piping and valves to convey water from the source to the point of use. Provide any meters if the water is taken from a water district or agency pipeline.

3. EXECUTION

3.1. COMPACTION REQUIREMENTS

- 3.1.1. Unless otherwise specified or shown on the Drawings, compact fill, embankments, and backfills under non-paved areas to 95 percent relative compaction.
- 3.1.2. Dewatering: Provide and operate equipment adequately to keep excavations and trenches free of water. Remove water during period when concrete is being deposited, when pipe is being laid, during the placing of structural fill and backfill, and for inspection/testing of the structural subgrade. Avoid settlement or damage to adjacent property. Dispose of water to an on-site drainage system. When dewatering open excavations, dewater from outside the structural limits and from a point below the bottom of the excavation. Comply with discharge permit.
- 3.1.3. Excavation is unclassified. Perform all excavation regardless of the type, nature, or condition of the material encountered to accomplish the construction.
- 3.1.4. Placing and Compacting Fill Material:
- A. Excavated material which conforms to the specifications may be used for fill or backfill.
 - B. Place all material at optimum moisture content.
 - C. Place fill in maximum 12-inch lifts and compact each lift to the extent specified.
- 3.1.5. Moisture Control of Earth Material: During the compaction operations, maintain optimum practicable moisture content required for compaction purposes in each lift of the material. Maintain moisture content uniform throughout the lift. Insofar as practicable, add water to the material at the site of excavation. Supplement by sprinkling the material. At the time of compaction, the water content of the material shall be at optimum water content or within two percentage points above optimum. Aerate material containing excessive moisture by blading, disking, or harrowing to hasten the drying process.
- 3.1.6. Site Grading:
- A. Perform earthwork to the lines and grades shown on the Drawings. Shape, trim and finish slopes to conform to the lines, grades and cross-sections as shown. Make slopes free of exposed roots and loose rocks exceeding three inches in diameter. Round tops of banks to circular curves to not less than a six-foot radius.
 - B. Neatly and smoothly trim rounded surfaces. Do not over excavate and backfill to achieve the proper grade.
- 3.1.7. Disposal of Excess Excavation: Dispose of excess excavated suitable materials at designated on-site soil areas indicated on the Drawings or directed by the Owner/Engineer. If on-site disposal is not indicated or directed by the Owner/Engineer, dispose of excess excavated materials off-site. CONTRACTOR shall make his own arrangements for the disposal of all excess unsuitable material and bear all costs incidental to such disposal.

END OF SECTION



SECTION 02310 SITE GRADING

1. GENERAL

1.1. DESCRIPTION

1.1.1. Scope of Work: The work in this Section consists of furnishing all necessary labor, equipment, material and transportation necessary to bring the roads, drives, building sites, paved areas and open areas to the lines and grades shown on the Drawings. The work includes removal of existing pavement, slabs, walks, footings, structures and debris.

1.1.2. The CONTRACTOR must determine for himself the volume of material required for the site.

1.1.3. Definitions:

- A. Open Areas: Open areas shall be those areas that do not include building sites, paved areas, street right-of-way and parking areas.
- B. Maximum Density: Maximum weight in pounds per cubic foot of a specific material.
- C. Optimum Moisture: Percentage of water in a specific material at maximum density.
- D. Rock Excavation: Excavation of any hard natural substance which requires the use of explosives and/or special impact tools such as jack hammers, sledges, chisels or similar devices specifically designed for use in cutting or breaking rock, but exclusive of trench excavating machinery.

1.1.4. Related Work Described Elsewhere:

- A. Earthwork: Section 02300
- B. Excavating, Backfilling and Compacting: Section 02315

2. PRODUCTS

2.1. MATERIALS

2.1.1. Suitable: Suitable materials for fills shall be classified as A-1, A-3 or A-2-4 in accordance with AASHTO Designation M 145 and shall be free from vegetation and organic material. Not more than 10 percent by weight of fill material shall pass the No. 200 sieve. The CONTRACTOR shall furnish all additional fill material required.

2.1.2. Suitable Material to Be Placed in Water: Suitable material for fills to be placed in water shall be classified as A-1 or A-3 in accordance with AASHTO Designation A-145.

2.1.3. Unsuitable: Unsuitable materials are classified as A-2-5, A-2-6, A-2-7, A-4, A-5, A-6, A-7, and A-8 in accordance with AASHTO Designation M 145.

3. EXECUTION

3.1. PERFORMANCE

3.1.1. Excavation: Excavation shall conform to the limits indicated on the Drawings or specified herein. This work shall include shaping and sloping and other work necessary in bringing the earthwork to the required grade, alignment and cross section.

- A. All suitable materials removed from the excavation shall be used as far as practicable in the formation of the embankments, subgrades, shoulders, building sites and other places as directed. Unsuitable material shall be removed to the required depth and replaced with suitable material to the satisfaction of the Owner/Engineer and

the Construction Manager. Unsuitable material existing in open areas may remain, and these open areas may be used for disposal areas for the unsuitable material as directed by the Construction Manager.

- B. All waste excavated material shall be considered property of the CONTRACTOR. Excess unsuitable material shall be disposed of outside the limits of the project.

3.1.2. Fills:

- A. Fills shall be formed of suitable material placed in layers of not more than 8 inches in depth measured loose and rolled and/or vibrated with suitable equipment until compacted. Thickness of layers may be increased provided the equipment and methods used are proven by field density testing to be capable of compacting thicker layers to specified densities. Layer thickness shall be decreasing layers to specified densities.
- B. Rock that will not pass through a 6-inch diameter ring shall not be placed within the top 12 inches of the surface of the completed fill. Rock that will not pass through a 3-inch diameter ring shall not be placed within the top 4 inches of the completed fill. Broken concrete or asphaltic pavement shall not be used in fills.
- C. Fill within the roadways, walkways, parking areas, and building sites shall be compacted to a density of not less than 98 percent of its maximum density as determined by AASHTO Method T 180. Fill within other areas shall be compacted to a density of not less than 95 percent of its maximum density by AASHTO Method T 180.
- D. Final elevations shall be within 0.1 foot of the required elevation and surfaces shall be sloped to drain as shown on the Drawings.

3.1.3. Roadway/Paved Area Subgrades:

- A. The construction of roadway subgrades shall conform to the requirements set forth hereinafter and shall consist of bringing the top of the roadway subgrade between the outer limits of the base course, to a surface conforming to the grades, lines and cross section shown on the Drawings, of uniform density, ready to receive the base course.
- B. All material of the subgrades within the indicated limits shown on the Drawings which provide Lime rock Bearing Ratio of less than 40 shall be stabilized.
- C. After the subgrade has been properly shaped and stabilized, if required, it shall be brought to a firm, unyielding surface by rolling the entire area with an approved 3-wheel power roller weighing not less than 10 tons. All areas inaccessible to the roller shall be thoroughly compacted with hand tampers weighing not less than 50 pounds, the face of which shall not exceed 100 square inches in area. Unless the subgrade material at the time of the rolling contains sufficient moisture to insure proper compaction, it shall be watered as directed and then compacted. Subgrade material containing excess moisture, as determined by the Testing Laboratory, shall be dried to the proper consistency before being compacted.
- D. The top 12 inches of subgrade, including cut and fill sections, shall be compacted to a density of not less than 98 percent of the maximum density as determined by AASHTO Method T 180.
- E. After the roadway subgrade has been prepared, the CONTRACTOR shall maintain it free of ruts, depressions and damage resulting from the hauling and handling of any material, equipment, tools, etc. Ditches or drains shall be constructed and maintained along the completed subgrade section. Just before the base course is laid, the subgrade shall be checked for crown and elevation. The final elevation of the subgrade shall be within 0.1 foot of the required elevation.

END OF SECTION



SECTION 02315 EXCAVATING, BACKFILLING AND COMPACTING

1. GENERAL

1.1. DESCRIPTION

1.1.1. Scope of Work: The work included under this Section consists of clearing, excavating, grading, backfilling and compacting as required for the construction of the structures, piping and appurtenances as shown on the Drawings and specified herein.

1.1.2. Related Work Described Elsewhere:

- A. Clearing, Grubbing and Stripping: Section 02230
- B. Earthwork: Section 02300
- C. Site Grading: Section 02310

1.1.3. Definitions:

- A. Maximum Density: Maximum weight in pounds per cubic foot of a specific material.
- B. Optimum Moisture: Percentage of water in a specific material at maximum density.
- C. Rock Excavation: Excavation of any hard natural substance which requires the use of explosives and/or special impact tools such as jack hammers, sledges, chisels or similar devices specifically designed for use in cutting or breaking rock, but exclusive of trench excavating machinery.
- D. Suitable: Suitable materials for fills shall be non-cohesive, non-plastic granular local sand and shall be free from vegetation, organic material, marl, silt or muck. The CONTRACTOR shall furnish all additional fill material required.
- E. Unsuitable: Unsuitable materials are highly organic soil (peat or muck) classified as A-2-5, A-2-6, A-2-7, A-4, A-5, A-6, A-7 and A-8 in accordance with AASHTO Designation M-145.

1.1.4. Plan For Earthwork: The CONTRACTOR shall be responsible for having determined to his satisfaction, prior to the submission of his bid, the conformation of the ground, the character and quality of the substrata, the types and quantities of materials to be encountered, the nature of the groundwater conditions, the prosecution of the work, the general and local conditions and all other matters which can in any way affect the work under this Contract. Prior to commencing the excavation, the CONTRACTOR shall submit a plan of his proposed operations to the Owner/Engineer for review. The CONTRACTOR shall consider, and his plan for excavation shall reflect, the equipment and methods to be employed in the excavation. No claims for extras based on substrata or groundwater table conditions will be allowed.

1.2. SUBMITTALS

1.2.1. Submit six (6) copies of a report from a testing laboratory verifying that any off-site borrow material conforms to the gradation specified.

1.3. QUALITY ASSURANCE

1.3.1. A Testing Laboratory employed by the OWNER will make such tests as are specified. The CONTRACTOR shall schedule his work so as to permit a reasonable time for testing before placing succeeding lifts and shall keep the laboratory informed of his progress. CONTRACTOR shall keep a complete record and provide a map of all test locations.

1.3.2. Determination of laboratory moisture-density relationship and maximum density shall be by modified Proctor method of ASTM D-1557. At least one (1) test per soil type shall be made.

1.3.3. Compaction shall be deemed to comply with the Specifications when no tests are below the specified relative compaction.

1.3.4. Tests will be made in locations reviewed and approved by the Owner/Engineer. If any tests are unsatisfactory, re-excavate and recompact the fill or backfill until the specific compaction is obtained. CONTRACTOR shall make additional compaction tests on each side of unsatisfactory test, at locations approved by the Owner/Engineer, to determine the extent of re-excavation and recompactment necessary.

1.4. JOB CONDITIONS

1.4.1. Site Information: Subsurface exploration and geotechnical engineering evaluation where provided is for the CONTRACTOR'S information only. Data on indicated subsurface conditions are not intended as representations or warranties of accuracy or continuity between soil bearings. It is expressly understood that OWNER will not be responsible for interpretations or conclusions drawn therefrom by CONTRACTOR. Data, where provided, are made available for convenience of CONTRACTOR.

A. Test borings and other exploratory operations may be made by CONTRACTOR at no cost to OWNER.

1.4.2. If, in the opinion of the Owner/Engineer, conditions encountered during construction warrant a change in the footing elevation, or in the depth of removal of unsuitable material from that indicated on the Drawings, an adjustment will be made in the Contract price, as provided in the Schedule of Cost for Changes in Quantities.

1.5. PROTECTION

1.5.1. Sheeting and Bracing (if required):

A. Furnish, install in place, and maintain such sheeting and bracing as may be required to support the sides of excavations, to prevent any movement which could in any way diminish the width of the excavation below that necessary for proper construction, and to protect adjacent structures, power poles, etc. from undermining, and to protect workers from hazardous conditions of other damage. Such support shall consist of braced steel sheet piling, braced wood lagging and soldier beams or other methods. Care shall be taken to prevent voids outside of the sheeting, but if voids are formed, they shall be immediately filled and rammed. Where soil cannot be properly compacted to fill a void, lean concrete shall be used as backfill at no additional expense to the OWNER.

B. The CONTRACTOR shall construct the sheeting outside the neat lines of the foundation unless indicated otherwise to the extent he deems is desirable for his method of operation. Sheeting shall be plumb and securely braced and tied in position. Sheeting and bracing shall be adequate to withstand all pressure to which the structure or trench will be subjected. Any movement or bulging which may occur shall be corrected by the CONTRACTOR at his own expense so as to provide the necessary clearances and dimensions.

C. Where sheeting and bracing is required to support the sides of excavations of structures, the CONTRACTOR shall engage a Geotechnical Professional Engineer, registered in the State of Florida, to design the sheeting and bracing.

D. The installation of sheeting, particularly by driving or vibrating, may cause distress to existing structures. The CONTRACTOR shall evaluate the potential for such distress and, if necessary, take all precautions to prevent distress of existing structures due to sheeting installation.

E. The CONTRACTOR shall leave in place to be embedded in the backfill all sheeting and bracing not shown on the Drawings for the purpose of preventing injury to structures, utilities, or property, whether public or private. The Owner/Engineer may direct that timber used for sheeting and bracing be cut off at any specified elevation.

F. All sheeting and bracing not left in place shall be carefully removed in such manner as not to endanger the construction or other structures, utilities, or property. All voids left or caused by withdrawal of sheeting shall be immediately refilled with sand by ramming with tools especially adapted to that purpose, or otherwise as may be directed by the Owner/Engineer.

G. No wood sheeting is to be withdrawn if driven below mid-diameter of any pipe, and under no circumstances shall any wood sheeting be cut off at a level lower than 1 foot above the top of any pipe.

1.5.2. Pumping and Drainage:

A. The CONTRACTOR shall at all times during construction provide and maintain proper equipment and facilities to remove all water entering excavations, and shall keep such excavations dry so as to obtain a satisfactory undisturbed suborder foundation. This condition shall continue until the fills, structures or pipes to be built thereon have been completed to such extent that they will not be floated or otherwise damaged by allowing water

levels to return to natural levels. The CONTRACTOR shall engage a Geotechnical Professional Engineer registered in the State of Florida, to design the temporary dewatering systems for all structures. The dewatering system installed shall be in conformity with the overall construction plan, and certification of this shall be provided by the Geotechnical Professional Engineer. The CONTRACTOR shall be required to monitor the performance of the dewatering systems during the progress of the work and require such modifications as may be required to assure that the systems are performing satisfactorily.

- B. Dewatering shall at all times be conducted in such a manner as to preserve the undisturbed bearing capacity of the suborder soils at proposed bottom of excavation and to preserve the integrity of adjacent structures. Well or sump installation shall be constructed with proper sand filters to prevent drawing of finer grained soil from the surrounding ground.
- C. Water entering the excavation from surface runoff shall be collected in shallow ditches around the perimeter of the excavation, drained to sumps, and pumped from the excavation to maintain a pit bottom free from standing water.
- D. The CONTRACTOR shall take all additional precautions to prevent uplift of any structure during construction.
- E. The conveying of water in open ditches or trenches will not be allowed. Permission to use any storm sewers, or drains, for water disposal purposes shall be obtained from the authority having jurisdiction. Any requirements and costs for such use shall be the responsibility of the CONTRACTOR. However, the CONTRACTOR shall not cause flooding by overloading or blocking up the flow in the drainage facilities, and he shall leave the facilities unrestricted and as clean as originally found. Any damage to facilities shall be repaired or restored as directed by the Owner/Engineer or the authority having jurisdiction, at no cost to the OWNER.
- F. Flotation shall be prevented by the CONTRACTOR by maintaining a positive and continuous operation of the dewatering system. The CONTRACTOR shall be fully responsible and liable for all damages which may result from failure of this system.
- G. Removal of dewatering equipment shall be accomplished after the system is no longer required; the material and equipment constituting the system shall be removed by the CONTRACTOR.
- H. The CONTRACTOR shall take all necessary precautions to preclude the accidental discharge of fuel, oil, etc. in order to prevent adverse effects on groundwater quality.

2. PRODUCTS

2.1. MATERIALS

2.1.1. General:

- A. All fill and backfill material shall be subject to the approval of the Owner/Engineer.
- B. All fill and backfill material shall be free of organic material, trash, or other objectionable material. Excess or unsuitable material shall be removed from the job site by the CONTRACTOR.

2.1.2. Common Fill Material: Common fill shall be sand and shall not contain stones, rock, concrete or other rubble larger than 2 inches in diameter. It shall have physical properties which allow it to be easily spread and compacted.

2.1.3. Structural Fill: Structural fill shall be reasonably well graded sand to gravelly sand having the following gradation:

U.S. Sieve Size	Percent Passing by Weight
1 inch	100
No. 4	75-100
No. 40	15-80
No. 100	0-30
No. 200	0-12

2.1.4. Class I Soils: Manufactured angular, granular material, 3/8 to 3/64 inches (9.5 mm to 1 mm) size, including materials having significance such as crushed stone or rock, broken coral, crushed slag, cinders, or crushed shells. Sieve analysis for crushed stone is given below separately:

- A. Crushed Stone: Crushed stone shall consist of clean mineral aggregate free from clay, loam or organic matter, conforming with ASTM C-33 stone size No. 89 and with particle size limits as follows:

U.S. Sieve Size	Percent Passing by Weight
1/2	100
3/8	90-100
No. 4	20-55
No. 8	5-30
No. 16	0-10
No. 50	0-5

- B. Soils defined as Class I materials are not defined in ASTM D-2487.

2.1.5. Class II Soils:

- A. GW: Well-graded gravels and gravel-sand mixtures, little or no fines. 50 percent or more retained on No. 4 sieve. More than 95 percent (95%) retained on No. 200 sieve. Clean.
- B. GP: Poorly graded gravels and gravel-sand mixtures, little or no fines. 50 percent or more retained on No. 4 sieve. More than 95 percent (95%) retained on No. 200 sieve. Clean.
- C. SW: Well-graded sands and gravelly sands, little or no fines. More than 50 percent passes No. 4 sieve. More than 95 percent (95%) retained on No. 200 sieve. Clean.
- D. SP: Poorly graded sands and gravelly sands, little or no fines. More than 50 percent passes No. 4 sieve. More than 95 percent (95%) retained on No. 200 sieve. Clean.
- E. In accordance with ASTM D-2487, less than 5 percent (5%) pass No. 200 sieve.

2.1.6. Coarse Sand: Sand shall consist of clean mineral aggregate with particle size limits as follows:

U.S. Sieve Size	Percent Passing by Weight
3/8	100
No. 10	85-100
No. 40	20-40
No. 200	0-12

- 2.1.7. Other Material: All other material, not specifically described, but required for proper completion of the work shall be selected by the CONTRACTOR and approved by the Owner/Engineer.

3. EXECUTION

3.1. PREPARATION

3.1.1. Clearing:

- A. The construction areas shall be cleared of all obstructions and vegetation including large roots and undergrowth, within 10 feet of the lines of the excavation.
- B. Strip and stockpile topsoil on the site at the location to be determined by the Owner/Engineer.

3.2. EXCAVATION

3.2.1. General: Excavations for roadways, structures and utilities must be carefully executed in order to avoid interruption of existing utilities.

3.2.2. Excavating for Roadways/Structures/Utilities:

- A. Excavation shall be made to such dimensions as will give suitable room for building the foundations and the structures, for bracing and supporting, for pumping and draining, and for all other work required.

- I. Excavation for precast or prefabricated structures shall be carried to an elevation 2 feet lower than the proposed outside bottom of the structure to provide space for the select backfill material. Prior to placing the select backfill, the excavation shall be sounded, if not dewatered, using a rigid pole to indicate the satisfaction of the OWNER that excavation has been carried to the proper depth and is reasonably uniform over the area to be occupied by the structure.
 - II. Excavation for structures constructed or cast in place in dewatered excavations shall be carried down to the bottom of the structure where dewatering methods are such that a dry excavation bottom is exposed and the naturally occurring material at this elevation leveled and left ready to receive construction. Material disturbed below the founding elevation in dewatered excavation shall be replaced with 3,000 psi concrete.
 - III. Footings: Cast-in-place concrete footing sides shall be formed immediately after excavation. Forming for footing sides is specified elsewhere.
- 3.2.3. Immediately document the location, elevation, size, material type and function of all new subsurface installation, and utilities encountered during the course of construction.
- 3.2.4. Excavation equipment operators and other concerned parties shall be familiar with subsurface obstructions as shown on the Drawings and should anticipate the encounter of unknown obstructions during the course of work.
- 3.2.5. Encounters with subsurface obstructions shall be hand excavated.
- 3.2.6. Excavation and dewatering shall be accomplished by methods which preserve the undisturbed state of suborder soils. Suborder soils which become soft, loose, "quick" or otherwise unsatisfactory for support of structures as a result of inadequate dewatering or other construction methods shall be removed and replaced by crushed stone as required by the Owner/Engineer at the CONTRACTOR'S expense.
- 3.2.7. The bottom of excavations shall be rendered firm and dry before placing any structure. Excavated material not suitable for backfill shall be removed from the site and disposed of by the CONTRACTOR.
- 3.2.8. All pavements shall be cut for removal, with saws and approved power tools.
- 3.2.9. Excavated material shall be stockpiled in such a manner as to prevent nuisance conditions. Surface drainage shall not be hindered.
- 3.2.10. All locations and elevations as required herein must be permanently documented by the CONTRACTOR, on the Record Drawings prior to the Owner/Engineer approval of the Application for Payment for that work.
- 3.2.11. When force main pipe or pipe conveying other than non-potable liquid is less than 10 feet from a potable water main, the depth of cover shall be increased to 5 feet or 18 inches below the water main, whichever is greater.

3.3. DRAINAGE

- 3.3.1. The CONTRACTOR shall at all times during construction provide and maintain proper equipment and facilities to remove promptly and dispose of properly all water entering excavations, and keep such excavations dry so as to obtain a satisfactory undisturbed suborder foundation condition. The dewatering method used shall prevent disturbance of earth below grade.
- 3.3.2. All water pumped or drained from the work shall be disposed of in a suitable manner without undue interference with other work, without damage to surrounding property, and in accordance with pertinent rules and regulations.
- 3.3.3. No construction, including pipe laying, shall be allowed in water. No water shall be allowed to contact masonry or concrete within 24 hours after being placed. The CONTRACTOR shall constantly guard against damage due to water and take full responsibility for all damage resulting from his failure to do so.
- 3.3.4. The CONTRACTOR will be required at his expense to excavate below grade and refill with approved fill material if the OWNER determines that adequate drainage has not been provided.

3.4. UNDERCUT

- 3.4.1. If the bottom of any excavation is below that shown on the Drawings or specified because of CONTRACTOR error, convenience, or unsuitable suborder due to the CONTRACTOR'S excavating method, he shall refill to normal grade with fill at his own cost. Fill material and compaction method shall be as directed by the OWNER.

3.5. FILL AND COMPACTION

3.5.1. Compact and backfill excavations and construct embankment according to the following schedule:

STRUCTURES AND ROADWORK

<u>Area</u>	<u>Material</u>	<u>Compaction</u>
Utility trenches, backfill beneath structures	Structural Fill	8 inch lifts, compacted backfill beneath to 95 percent (95%) by Modified Proctor Method.
Roadways	Common Fill	6 inch lifts, compacted backfill beneath to 98 percent (98%) by Modified Proctor Method.
Around structures	Structural Fill	8 inch lifts, 95 percent (95%) of Modified Proctor Method. Use light rubber-tired or vibratory plate compactors.
From cleared existing surface to subgrade for paved and gravel surfaces	Common Fill	12 inch lifts, 98 percent (98%) of Modified Proctor Method.

3.5.2. Pipe shall be laid in open trenches unless otherwise indicated on the Drawings or elsewhere in the Contract Documents.

3.5.3. Excavations shall be backfilled to the original grade or as indicated on the Drawings. Deviation from this grade because of settling shall be corrected. Backfill operation shall be performed to comply with all rules and regulations and in such a manner that it does not create a nuisance or safety hazard.

3.5.4. Embankments shall be constructed true to lines, grades and cross sections shown on the plans or ordered by the Owner/Engineer. Embankments shall be placed in successive layers of not more than 8 inches in thickness, loose measure, for the full width of the embankment. As far as practical, traffic over the work during the construction phase shall be distributed so as to cover the maximum surface area of each layer.

3.5.5. If the CONTRACTOR requests approval to backfill material utilizing lifts and/or methods other than those specified here, such request shall be in writing to the Owner/Engineer. Approval will be considered only after the CONTRACTOR has performed tests, at the CONTRACTOR'S expense, to identify the material used and density achieved throughout the backfill area utilizing the method of backfill requested. The OWNER'S approval will be in writing.

END OF SECTION



SECTION 02446 DIRECTIONAL DRILLING

1. GENERAL

1.1. DESCRIPTION

1.1.1. The work under this Section consists of furnishing all labor, equipment and materials necessary for the construction and testing of pressure mains by horizontal directional drilling as shown on the Drawings and specified herein.

1.1.2. Related Work:

- A. Administrative Requirements: Section 01310.
- B. Earthwork: Section 02300.
- C. Pressure Testing of Piping: Section 15044.
- D. High Density Polyethylene (HDPE) Pipe and Fittings: Section 15061.

1.2. STANDARDS

1.2.1. HDPE pipe 1/2 inches through 3 inches shall conform to AWWA C901 and the Specifications.

1.2.2. Pipe and fittings 4 inches through 63 inches shall conform to AWWA C906 and the Specifications.

1.2.3. PVC pipe shall conform to AWWA C900 and the Specifications.

1.3. SUBMITTALS

1.3.1. The CONTRACTOR shall submit shop drawings, work drawings and samples in accordance with the General Conditions. In addition, the requirements of each related section and the following shall apply.

1.3.2. Shop drawings for piping and appurtenances shall be prepared by the manufacturer and include, as a minimum, the following:

- A. Details of all fittings and other appurtenances.
- B. Provide detailed drawings of joints to be supplied.
- C. Calculations and/or test data demonstrating that the proposed joint arrangement can transmit the required forces.
- D. Copy of the manufacturer's quality control check of materials and production. Provide mill test certificates or certified test reports on pipe and fittings.
- E. Provide from the manufacturer an affidavit of compliance with AWWA standards referenced in the Specifications. Affidavit shall be included with Shop Drawings submittals.

1.3.3. Provide a tabulated layout schedule and line drawings including:

- A. Order of installation and closures.
- B. Pipe invert station and elevation at changes of grade and alignment.
- C. Elements of curves and bends, both in horizontal and vertical alignment, including elements of the resultant true angular deflections in cases of combined curvature.
- D. The limits of each reach of pipe thickness class.

- E. Locations of closures for length adjustment and for construction convenience.
- F. CONTRACTOR shall field verify dimensions, elevations, potential alignment obstructions and construction criteria prior to preparing the tabulated layout schedule and line drawings.
- G. Methods, details and schedule for connecting to piping.

1.3.4. Certification that the directional drilling contractor (or subcontractor) is licensed to perform the work specified including possession of a Florida State Underground Utility Builder's license, a Florida State General Builder's license (or local equivalent recognized by the appropriate licensing board). Certification shall also include information showing that the directional drilling contractor (or subcontractor) has a minimum of four years' experience with similar construction including pipelines of the same or larger diameter and the same or greater lengths.

- A. List of materials and equipment for directional drilling, including dimension ratio of HDPE pipe based on required pull back strength.
- B. Proposed pressure testing location for HDPE before directional boring.

1.4. QUALITY ASSURANCE

1.4.1. Standards: All pipe, fittings, and other appurtenances shall conform to the latest AWWA standards.

1.4.2. Qualifications: Directional drilling contractor (or subcontractor) shall have a minimum of four years' experience with similar construction including pipelines of the same or larger diameter and the same or greater lengths. All pipe and appurtenances of similar type and material shall be furnished by a single manufacturer who is fully experienced, reputable, and qualified in the manufacture of the items to be furnished. The materials shall be designed, constructed and installed in accordance with the best practices and methods and shall comply with these Specifications.

1.4.3. Pipe Inspection: 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 meet the requirements of the Specifications. All materials shall be subjected to visual inspection at time of delivery by rail or truck and just before being lowered into the trench. Materials that do not conform to the Specifications will be rejected and must be removed immediately from the job site by the CONTRACTOR. The entire product of any plant may be rejected when, in the opinion of the OWNER'S Representative, the methods of manufacture fail to secure uniform results, or where the materials used are such as to produce inferior pipe or fittings.

1.5. DELIVERY, STORAGE AND HANDLING

1.5.1. On site pipe storage shall meet AWWA standards and all manufacturers' requirements.

1.5.2. Transport individual pipe lengths to the job site on padded bunks with nylon tie-down straps or padded bonding to protect the pipe. Coiled pipe shall be stored in a manner to ensure safety. Protect the pipe from sharp objects. Anchor pipe securely to prevent slippage.

1.5.3. Store individual pipe lengths on earth berms or timber cradles in the numerical order of installation. Stack the heaviest series of pipe at the bottom. Do not stack pipe in excess of 20 rows high.

1.5.4. Protect the pipe from stones and sharp objects.

1.5.5. Store fittings in their original cartons.

1.5.6. Lift pipes with handling beams or wide belt slings near the middle of joints as recommended by the pipe manufacturer. Do not use cable slings, chains, or hooks.

1.5.7. Before installation, check pipe and fittings for cuts, scratches, gouges, buckling, kinking, or splitting. Remove any pipe section containing defects.

2. PRODUCTS

2.1. GENERAL

2.1.1. Drilling mud shall be bentonite clay slurry or equal approved by the ENGINEER.

2.2. PIPE

- 2.2.1. Pipe for directional drilling shall be HDPE. HDPE pipe shall have a nominal DIPS (ductile iron pipe size) as specified in Section 15061 and shown on the Drawings.
- 2.2.2. Pipes shall be marked in accordance with AWWA requirements.
- 2.2.3. The inside diameter (ID) of the HDPE pipe shall be equal to or slightly larger than the inside diameter of the PVC or ductile iron mains to which it is connected.

3. EXECUTION

3.1.1. GENERAL

- A. Plan joint completion to accommodate temporary test bulkheads for hydrostatic testing.
- B. Install metallic tracer wire with installation of piping.

3.1.2. INSTALLATION

- A. Erosion and sedimentation control measures and on-site containers shall be installed to prevent drilling mud from spilling out of entry and/or exit pits. Drilling mud will be disposed of off-site in accordance with local, state and federal requirements and/or permit conditions.
 - I. No other chemicals or polymer surfactant shall be used in the drilling fluid without written consent of the ENGINEER, and after a determination is made that the chemicals to be added are not harmful or corrosive to the facility and are environmentally safe.
- B. AS-BUILT VARIANCE FROM THE DESIGNED BORE PATH SHALL NOT EXCEED ± 1 FOOT IN THE VERTICAL PLANE AND ± 2 FEET IN THE HORIZONTAL PLANE. CONTRACTOR SHALL SUBMIT ANY PROPOSED DEVIATIONS FROM THE DESIGN BORE PATH WITH SHOP DRAWINGS. ANY DEVIATIONS GREATER THAN THE PRECEDING PARAMETERS MAY BE CAUSE FOR THE ABANDONMENT OF THE PIPELINE AND THE INSTALLATION OF A NEW MAIN.
- C. The pipe entry area shall be graded to provide support for the pipe to allow free movement into the bore hole. The pipe shall be guided into the bore hole to avoid deformation of, or damage to, the pipe.
- D. If unexpected subsurface conditions are encountered during the bore, the procedure shall be stopped. The installation shall not continue until the OWNER and ENGINEER have been consulted.
- E. The pipe shall be pulled back through the bore hole using the wet insertion construction technique. The pipe may be installed full of water or full of drilling mud using an open end drilling head.
- F. The pipe shall be installed in a manner that does not cause upheaval, settlement, cracking, movement or distortion of surface features.

3.1.3. DISINFECTION OF PIPE

- A. Flush and disinfect potable water mains and raw water mains in accordance with Section 15399.

3.1.4. FIELD TESTING

- A. Perform hydrostatic testing for leakage prior to installation and following installation in accordance with Section 15044 and Section 15061.
- B. Perform mandrel testing through the entire length of the installed pipe. The mandrel size shall be 80% of the inside diameter of the pipe.

END OF SECTION



SECTION 02536 MANHOLES

1. GENERAL

1.1. DESCRIPTION OF WORK

1.1.1. This Section includes furnishing and installing precast concrete manholes as shown on the Drawings and as specified.

1.2. QUALITY ASSURANCE

1.2.1. All materials shall be tested for conformance with the specified standards. Reports of tests performed by the Manufacturer or by an independent laboratory shall be furnished with each shipment.

2. PRODUCTS

2.1. MANHOLES

2.1.1. Precast Concrete

- A. Precast manholes shall be composed of precast reinforced concrete bases, risers, grade rings, and tops which have been designed and fabricated in accordance with the requirements of ASTM C478, with the exception that wall thickness shall be as shown on the Drawings. Materials used in fabrication shall conform to the requirements of the Standard Specifications. Cement used in construction of precast manhole components shall be Type II Portland cement conforming to the requirements of ASTM C150.

2.1.2. Joint Material

- A. Joint material for use between precast manhole sections shall be cold adhesive preformed plastic gaskets conforming to the requirements of Section 942, Pipe Gaskets, of the Standard Specifications.

2.1.3. Pipe Connections

- A. Pipe connections for 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 be a flexible neoprene boot with stainless steel clamps equivalent to KOR-N-SEAL System as manufactured by the Dukor Corporation. When the pipe is installed into the resilient connector the pipe shall be capable of 20° minimum deflection in any direction.

2.1.4. Brick for Invert Channels and Bench Walls

- A. Brick shall be solid conforming to the requirements of ASTM C-32, Grade MS or to the requirements of Federal Specification SS-B-656.

2.1.5. Precast Concrete Grade Rings

- A. Precast concrete grade rings shall be precast with steel reinforcement in conformance with ASTM C478 and concrete with a compressive strength of 4,000 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 2 inches thick with an annular width of 8 inches and an inside diameter of 24 inches.

2.1.6. Mortar

- A. Mortar for manhole construction shall consist of one part Type II Portland cement and two parts of fine sand with water added for proper consistency. Lime shall not be used in mortar for manholes.

- B. Portland cement for use in mortar and grout shall conform to the requirements of ASTM C150, Type II.
- C. Sand for use in mortar and grout shall conform to the requirements of ASTM C144.

2.1.7. Invert Construction

- A. Form with Type II cement and sand mortar and brick to provide a smooth flowing channel of similar shape and size of the sewer to which it connects.
- B. The drop from inlet to outlet shall be a minimum of one inch.
- C. Straight Run Manholes: Shape inverts while manholes are under construction. Cut off pipe at inside faces of manhole and construct invert to exact shape and size of pipe indicated.
- D. Junction Manholes: Shape inverts while manholes are under construction. Cut off pipe at inside faces of manhole and construct invert to shape and size of pipe indicated. All inverts shall follow grades of pipes entering manholes. Provide a true curve of the largest radius possible for changes in direction of sewer and entering branch or branches.

2.1.8. Manhole Frames and Covers

- A. Manhole frames and covers shall be gray iron castings conforming to the dimensions shown or equivalent foundry patterns. All mating surfaces shall be machined to prevent rocking or rattling of frames and covers. 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. Castings shall be free of cracks, blow holes or swells and shall have a smooth and workmanlike finish. Castings shall conform to the requirements of ASTM A48. Manhole covers shall be solid with two non-penetrating pick holes and shall have the use of the line on which it is installed cast in the cover.

2.1.9. Coating Materials

- A. Coating materials for use on the interior and exterior of manholes shall be water-based concrete epoxy equivalent to ConSeal CS-55 as manufactured by Concrete Sealants, Inc.
- B. The interior of manholes which receive force main flow shall receive a cast-in 2 mm liner equivalent to Agru Suregrip.

3. EXECUTION

3.1. MANHOLE CONSTRUCTION

3.1.1. Precast Concrete Units

- A. Precast manholes shall be tongue and groove joint and shall consist of a base unit with opening for the sewer pipe, riser units of various lengths to build the manholes up to the required depth and either concentric or eccentric cones providing the support for the manhole ring and cover. The minimum length of the support riser shall be 12 inches. Any modifications necessary to adapt the units to conform to the locations and grades shown or required shall be made without additional compensation.
- B. Fiberglass manhole liners shall be installed during construction of the manhole precast sections. The base shall be set on a pad of dry native sand to the thickness shown on the Drawings. The subbase shall be tamped and/or vibrated as necessary to secure adequate seating and bearing for the base.
- C. The base slab shall extend a minimum of 6-inches beyond the outside face of the manhole wall.
- D. All slabs for precast drop manholes shall be of sufficient size to adequately support the drop structure.
- E. The top of the cone shall be set between 2 inches and 12 inches below the bottom of the manhole cover frame so as to provide a minimum of 2 inches to accommodate future grade changes.

3.1.2. Invert Channels

- A. Invert channels shall be constructed smooth and semicircular in shape conforming to inside of adjacent sewer section. Changes in direction of flow shall be made in a smooth curve of as large a radius as practicable. Changes in size and grade of channels shall be made gradually and evenly. Invert channels shall be formed by one of the following methods: form directly into concrete manhole base; build-up with brick and mortar; lay half tile in concrete or lay full section of sewer pipe through manhole and break out top half. The manhole floor outside of channels shall be made smooth and sloped toward channels.
- B. The manhole floor (bench) shall be sloped towards the channel on a slope of 2 inches per foot.
- C. Free drop in manholes from inlet pipe invert to top of floor outside the channels shall not exceed twenty-four inches. Standard drop inlets shall be constructed of commercial pipe, fittings and specials in accordance with the details shown wherever free drop exceeds twenty-four inches unless otherwise shown or directed.
- D. All inside drops less than 24 inches shall have a flume constructed to channel flow into the invert.

3.1.3. Manhole Frames and Covers

- A. Manhole frames and covers shall be set in a full bed of mortar with the top of the cover flush with or higher than finished grade as directed.

3.1.4. Steps

- A. Manhole steps shall not be provided.

3.1.5. Interior and Exterior Coatings

- A. Interior surfaces of manholes shall be coated with three coats of the specified coating at 4 mils per coat applied in accordance with the manufacturer's recommendations.
- B. The exterior of manholes shall be coated with two coats of the specified coating of not at 4 mils per coat applied in accordance with the manufacturer's recommendations.

3.1.6. Connections to Existing Manholes

- A. Pipe connections to existing manholes shall be made so that finished work will conform as nearly as possible to essential requirements for new manhole construction as specified above.
- B. The annular space between the sewer pipe and the opening in the manhole shall be grouted with Portland cement mortar and wiped or collared to ensure a watertight joint.

3.2. INSPECTION OF LINES AND MANHOLES

- 3.2.1. Inspection of completed lines and manholes shall be scheduled within a reasonable time after construction or when required by the Engineer/Owner.
- 3.2.2. Before scheduling an inspection, the CONTRACTOR shall prepare the lines by cleaning and flushing. Manholes shall be clean, finished and free of leaks.
- 3.2.3. Infiltration of gravity sewers between successive manholes shall not exceed that specified. Where lines are laid above the water table, the ENGINEER may require the CONTRACTOR to perform exfiltration tests between manholes. The exfiltration tests will be conducted with a constant three feet of head at the upstream manhole. The exfiltration rate shall not exceed the allowable infiltration rate.
- 3.2.4. Manholes shall be on a true and uniform grade. The inverts shall have a smooth steel troweled finish. All benches shall be uniformly sloping. The frames shall be tight and properly set in mortar on solid masonry. The invert, benches and adjacent pipe shall be free of splattered mortar. All required interior lining or paint should be kept intact. Manhole frames shall be adjusted to grade with the covers and frames cleaned and free of mortar and asphaltic mixtures. All precast manhole seams shall be filled with an approved asphaltic compound.
- 3.2.5. Pipe between manholes shall be on-line and on-grade. Inspection shall be by mirror and sunlight, and, when required, will be followed by air testing and/or television inspection at the CONTRACTOR'S expense. CONTRACTOR shall provide personnel to assist

with inspections.

- 3.2.6. All known or indicated breaks shall be repaired by the CONTRACTOR regardless of the test allowances.
- 3.2.7. Faulty sections of sewer lines or manholes rejected by the ENGINEER shall be removed and re-laid by the CONTRACTOR. Sunken manholes will not be accepted.
- 3.2.8. All exposed interior surfaces and the tongue and groove ends of each unit shall be sand blasted and brushed clean and immediately thereafter completely coated with a protective coating of three coats, 4 mils per coat of ConSeal CS-55. The coating shall be applied in strict accordance with manufacturer's recommendations.
- 3.2.9. All exterior surfaces shall be brushed clean and immediately thereafter completely coated with a protective coating of two coats, 4 mils per coat of ConSeal CS-55. The coating shall be applied in strict accordance with the manufacturer's recommendations.
- 3.2.10. The interior and exterior paint shall be intact and continuous. Any chips or holidays shall be recoated according to manufacturer's instructions and with the knowledge of the Engineer / Owner.
- 3.2.11. Top and bottom ends of riser or sections shall be perfectly formed so that continuous and uniform contact is possible around the entire joint. Malformed joints shall be rejected.

END OF SECTION



SECTION 02537 REMOVAL AND REPLACEMENT OF MANHOLES

1. GENERAL

1.1. DESCRIPTION OF WORK

1.1.1. This Section includes the removal of aged, leaking, failing or poorly constructed manholes and replacing them with precast concrete structures which are detailed within this Specification.

1.2. QUALITY ASSURANCE

1.2.1. All materials shall be tested for conformance with the specified standards. Reports of tests performed by the Manufacturer or by an independent laboratory shall be furnished with each shipment.

1.2.2. Standards.

- A. Florida Department of Transportation, Standard Specifications for Road and Bridge Construction.
- B. American Society for Testing Materials.
 - I. ASTM A48, Standard Specification for Gray Iron Castings.
 - II. ASTM C144, Standard Specification for Aggregate for Masonry Mortar.
 - III. ASTM C150, Standard Specification for Portland Cement.
 - IV. ASTM C478, Standard Specification for Precast Reinforced Concrete Manhole Sections.
 - V. ASTM C923, Standard Specification for Resilient Connectors Between Concrete Manhole Structures, Pipes and Laterals.

1.3. SUBMITTALS

1.3.1. Submittals shall include the following:

- A. Name and location of plant producing manhole and casting.
- B. Shop Drawing of manhole, to include:
 - I. Depth.
 - II. Diameter
 - III. Base slab thickness and size
 - IV. Wall thickness
 - V. Coatings
 - VI. Manufacturer and model number of frame and cover.
- C. Site Dewatering
- D. Bypass Pumping
- E. Maintenance of Traffic

1.4. PRODUCT DELIVERY STORAGE AND HANDLING

1.4.1. Packaging:

- A. All material shall be suitably protected to facilitate handling and protect against damage during transit and storage.

1.4.2. Protection:

- A. All painted or coated surfaces which are damaged prior to acceptance of material shall be repainted to the satisfaction of Owner / Engineer.

1.4.3. Marking:

- A. Each item of equipment shall be tagged or marked as identified in the delivery schedule or on the Shop Drawings. Complete packing lists and bills of material shall be included with each shipment.
- B. Fabricated sub-assemblies, if any, shall be shipped in convenient sections as permitted by carrier regulations and shall be properly match-marked for ease of field erection.

1.4.4. Responsibility:

- A. The CONTRACTOR shall be responsible for all material, equipment and supplies sold and delivered to the site under this Contract until final inspection of the work and acceptance thereof by the OWNER. In the event any such material, equipment, and supplies are lost, stolen, damaged, or destroyed prior to final inspection and acceptance, the CONTRACTOR shall replace same without additional cost to the OWNER.
- B. Should the CONTRACTOR fail to take proper action on storage and handling of equipment supplied under this Contract within seven days after written notice to do so has been given, the OWNER retains the right to correct all deficiencies noted in previously transmitted written notice and deduct the cost associated with these corrections from the 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.

1.4.5. Delivery:

- A. The CONTRACTOR shall arrange deliveries of products in accordance with construction schedules and coordinate to avoid conflict with work and condition at the site.
- B. The CONTRACTOR shall deliver products in undamaged condition.
- C. Immediately on delivery, the CONTRACTOR shall inspect shipments to assure compliance with requirements of Contract Documents and accepted submittals, and that products are properly protected and undamaged.
- D. Under no circumstances shall the CONTRACTOR deliver equipment to the site more than one month prior to installation without written authorization from the OWNER.

1.4.6. Storage and Protection of Products:

- A. The CONTRACTOR shall store products subject to damage by the elements in weather tight enclosures.
- B. The CONTRACTOR shall store fabricated products above the ground, on blocking or skids, to prevent soiling or staining. The CONTRACTOR shall cover products which are subject to deterioration with impervious sheet coverings and provide adequate ventilation to avoid condensation.
- C. The CONTRACTOR shall store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter.
- D. All materials and equipment to be incorporated in the work shall be handled and stored by the CONTRACTOR before, during and after shipment in a manner to prevent breaking, chipping, rusting and any injury, theft, or damage of any kind whatsoever to the material or equipment.
- E. Cement, sand, 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 off the ground or otherwise to prevent accumulations of dirt or grease and in a position to prevent accumulations of 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.
- F. All materials which, in the opinion of the Construction Inspector, have become damaged and are unfit for the use

intended or specified, shall be promptly removed from the site of the work and the CONTRACTOR shall receive no compensation for the damaged material or its removal.

- G. The CONTRACTOR shall arrange storage in a manner to provide easy access for inspection. The CONTRACTOR shall make periodic inspections of stored products to assure products are maintained under specified conditions and free from damage or deterioration.

2. PRODUCTS

2.1. MANHOLES

2.1.1. Precast Concrete

- A. Precast manholes shall be composed of precast reinforced concrete bases, risers, grade rings, and tops which have been designed and fabricated in accordance with the requirements of ASTM C478, with the exception that wall thickness shall be as shown on the Drawings. Materials used in fabrication shall conform to the requirements of the FDOT Standard Specifications. Cement used in construction of precast manhole components shall be Type II Portland cement conforming to the requirements of ASTM C150.

2.1.2. Joint Material

- A. Joint material for use between precast manhole sections shall be cold adhesive preformed plastic gaskets conforming to the requirements of Section 942, Pipe Gaskets, of the FDOT Standard Specifications.

2.1.3. Pipe Connections

- A. Pipe connections for manholes shall be resilient, waterproof connections designed in accordance with ASTM C923 "Resilient Connectors between Concrete Manhole Structures, Pipe and Laterals." 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 be a flexible neoprene boot with stainless steel clamps equivalent to KOR-N-SEAL System as manufactured by the Dukor Corporation. When the pipe is installed into the resilient connector the pipe shall be capable of 20° minimum deflection in any direction.

2.1.4. Precast Concrete Spacer Rings for Leveling Courses

- A. Precast concrete for construction of spacer rings shall conform to the requirements of ASTM C-478, 4000 psi concrete with inside diameter equivalent to manhole opening. Rings shall have circumferential reinforcement, #3 minimum with trowel finish.

2.1.5. Mortar

- A. Mortar for manhole construction shall consist of one part Type II Portland cement and two parts of fine sand with water added for proper consistency. Lime shall not be used in mortar for manholes.
- B. Portland cement for use in mortar and grout shall conform to the requirements of ASTM C150, Type II.
- C. Sand for use in mortar and grout shall conform to the requirements of ASTM C144.

2.1.6. Manhole Frames and Covers

- A. Manhole frames and covers shall be gray iron castings conforming to the dimensions shown or equivalent foundry patterns. All mating surfaces shall be machined to prevent rocking or rattling of frames and covers. 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. Castings shall be free of cracks, blow holes or swells and shall have a smooth and workmanlike finish. Castings shall conform to the requirements of ASTM A48. Manhole covers shall be solid with two non-penetrating pick holes and shall have the use of the line on which it is installed cast in the cover.

2.1.7. Coating Materials

- A. Coating materials for use on the interior and exterior of manholes shall be a water based concrete epoxy equivalent to ConSeal CS-55 as manufactured by Concrete Sealants, Inc.
- B. The interior of manholes which receive force main flow shall receive a cast-in 2 mm liner equivalent to Agru Suregrip.

3. EXECUTION

3.1. SITE DEWATERING

3.1.1. Scope of Work

- A. The work to be performed shall include the design and installation of a temporary wellpoint system to dewater subsurface waters from structures as required. The system shall remain in place until completion of construction.

3.1.2. Quality Assurance

- A. Qualifications: The temporary dewatering system shall be designed by a firm who regularly engages in the design of dewatering systems and who is fully experienced, reputable and qualified in the design of such dewatering systems. The firm shall have a successful record of operation for a minimum of five (5) years prior to bid date.
- B. In lieu of experience, the dewatering firm shall provide a Performance Bond for 1.5 times the total installed cost of the temporary dewatering system. This Bond shall be executed prior to award and / or contract execution.
- C. Standards: The dewatering of any excavation areas and the disposal of water during construction shall be in strict accordance with all local and state government rules and regulations.

3.1.3. Submittals

- A. Shop Drawings required to establish compliance with the specifications shall be submitted to include the following:
 - I. Design notes and drawings.
 - II. Descriptive literature of the temporary dewatering system.
 - III. Layout of all piping involved.
 - IV. Bill of materials.

3.1.4. Types of Systems

- A. The equipment specified herein shall be standard wellpoint dewatering equipment of proven ability as designed and manufactured by firms having experience in the design and production of such equipment. The equipment furnished shall be designed, constructed and installed in accordance with the best practices and methods.
- B. The use of wrapped underdrains or “socks” for dewatering shall not be allowed unless approval is obtained by the OWNER.
- C. The CONTRACTOR shall be required to monitor the performance of the dewatering system during the progress of the work and require such modifications as may be required to assure that the systems will perform satisfactorily. Dewatering system shall be designed in such a manner as to preserve the undisturbed bearing capacity of the subgrade soils and to preserve the integrity of adjacent structures.

3.1.5. Groundwater Disposal

- A. Water pumped from the trench or other excavation shall be disposed of in storm sewers having adequate capacity, canals or suitable disposal pits.
- B. CONTRACTOR is responsible for acquiring all permits required to discharge the water and shall protect waterways from turbidity during the operation.
- C. In areas where adequate disposal sites are not available, partially backfilled trenches may be used for water disposal only when the CONTRACTOR’S plan for trench disposal is approved in writing by the Owner / Engineer. The CONTRACTOR’S plan shall include temporary culverts, barricades and other protective measures to prevent

damage to property or injury to any person or persons.

- D. No flooding of streets, roadways, driveways or private property will be permitted. Engines driving dewatering pumps shall be equipped with residential type mufflers. Where practical and feasible, electrical "drops" should be used in lieu of portable generators.

3.1.6. Protection and Site Clean-up

- A. At all times during the progress of the Work, the CONTRACTOR shall use all reasonable precautions to prevent either tampering with the wellpoints or the entrance of foreign material.
- B. In the event that satisfactory dewatering cannot be accomplished due to subsurface conditions or where dewatering could damage existing structures, the CONTRACTOR shall consult with the Owner / Engineer to discuss alternate methods.
- C. Immediately upon completion of the wellpoint system, the CONTRACTOR shall remove all of his equipment, materials and supplies from the site of the work, remove all surplus materials and debris, fill in all holes or excavations and grade the site to elevations of the surface levels which existed before work started. The site shall be thoroughly cleaned and approved by the Owner / Engineer.

3.2. BYPASS PUMPING

3.2.1. Scope of Work

- A. Prior to commencing construction, the CONTRACTOR shall submit a plan for the transfer of flow around the manhole that is to be removed and replaced.

3.2.2. Submittals

- A. CONTRACTOR shall obtain from the OWNER an estimate of the flow which is tributary to the main to be plugged.
- B. CONTRACTOR shall submit a sketch showing the details of the proposed bypass system and calculations which establish the capacity of the bypass pump.
- C. CONTRACTOR shall submit a detailed plan on how to handle flow from service connections to the section of main which has been temporarily shut down.

3.2.3. Operation of System

- A. Sewage flow shall be maintained by means of plugging an existing upstream manhole and pumping the sewage into a downstream manhole or adjacent system.
- B. The pump and bypass shall be of adequate capacity and size to handle the sewage flow.
- C. The proposed bypassing system shall be approved in advance by the Owner / Engineer. The approval of the bypassing system in advance by the Owner / Engineer shall in no way relieve the CONTRACTOR of its responsibility and/or public liability.
- D. A second bypass pump, of the same capacity, shall be stored on site in the event the initial pump fails or ceases to operate.
- E. The bypass system shall incorporate a temporary control panel to operate the bypass pumps. The control system shall operate on a float system or such other system that will require the approval of the Engineer / Owner. As a minimum, the floats shall operate under the following conditions:
 - I. Low level (pump off).
 - II. Pump on level.
 - III. High level.

At the high level setting, an alarm shall activate an auto-dialer and transfer the signal to the CITY'S wastewater treatment plant or to an individual designated by the CITY. The CITY shall immediately notify the CONTRACTOR such that corrective actions may be initiated.

3.3. MAINTENANCE OF TRAFFIC (MOT)

3.3.1. General

- A. This Section covers procedures for developing and implementing traffic control and regulation measures and maintenance of traffic in and around the construction area to provide for safe and efficient protection and movement of vehicular and pedestrian traffic through and adjacent to the construction site areas.

3.3.2. Submittals

- A. Before closing or restricting traffic flow through any thoroughfare, the CONTRACTOR shall give written notice to and, if necessary, obtain a permit or permits from the duly constituted public authority having jurisdiction over the thoroughfare. CONTRACTOR shall also notify the applicable law enforcement, fire and emergency services having jurisdiction in the area. Notice shall be given no less than seventy-two (72) hours in advance of the time when it may be necessary in the process of construction to close or restrict traffic to such thoroughfare or as may be otherwise required by the governing authority.

3.3.3. Site Conditions

- A. The CONTRACTOR shall plan construction operations such that existing local traffic access can be maintained and shall maintain during the construction such barricades, lights, flagmen, and other protective devices as appropriate, whether specified for the project or required by the local governing authority. Traffic control devices and implementation used for maintenance of traffic shall comply with the FDOT Manuals.
- B. The CONTRACTOR shall conduct his work in such manner as not to unduly or unnecessarily restrict or impede normal traffic through the streets of the community. Insofar as it is practical, excavated material and spoil banks shall not be located in such manner as to obstruct traffic. The traveled way of all streets, roads and alleys shall be kept clear and unobstructed insofar as is possible and shall not be used for the storage of construction materials, equipment, supplies or excavated earth, except when and where necessary. Private driveways shall not be closed except when and where necessary and then only upon due advance notice to the City, property owner and applicable jurisdictional authority and shall be for the shortest practical period of time consistent with efficient and expeditious construction. The CONTRACTOR shall be liable for any damages to persons or property resulting from his work.
- C. The CONTRACTOR shall make provisions at cross streets for the free passage of vehicles and foot passengers, either by bridging or otherwise, and shall not obstruct the sidewalks, gutters or streets, nor prevent in any manner the flow of water in the latter, but shall use all proper and necessary means to permit the free passage of surface water along the gutters. The CONTRACTOR shall immediately cart away all offensive matter, exercising such precaution as may be directed by the City or applicable jurisdictional authority. All material excavated shall be so disposed of as to inconvenience the public and adjacent tenants as little as possible and to prevent injury to trees, sidewalks, fences and adjacent property of all kinds. The CONTRACTOR may be required to erect suitable barriers to prevent such inconvenience or injury.
- D. Unless otherwise required by the governing authority, maintenance of traffic in and around the construction zone shall conform to Section 102 of the FDOT Specification and 600 Series Roadway Design Standards drawings of the FDOT Standards, as applicable.

3.4. MANHOLE REMOVAL

3.4.1. Sheeting and Bracing (if required)

- A. Furnish, install in place and maintain such sheeting and bracing as may be required to support the sides of excavations, to prevent any movement which could in any way diminish the width of the excavation below that necessary for proper construction and to protect adjacent structures, power poles, etc. from undermining and to protect workers from hazardous conditions of other damage. Such support shall consist of braced steel sheet piling, braced wood lagging and soldier beams or other methods. Care shall be taken to prevent voids outside of the sheeting, but if voids are formed, they shall be immediately filled and rammed. Where soil cannot be properly compacted to fill a void, lean concrete or flowable fill shall be used as backfill at no additional expense to the OWNER.
- B. The CONTRACTOR shall construct the sheeting outside the neat lines of the manhole foundation unless indicated

otherwise to the extent he deems it desirable for his method of operation. Sheeting shall be plumb and securely braced and tied in position. Sheeting and bracing shall be adequate to withstand all pressure to which the structure or trench will be subjected. Any movement or bulging which may occur shall be corrected by the CONTRACTOR at his own expense so as to provide the necessary clearances and dimensions.

- C. Where sheeting and bracing is required to support the sides of excavations of structures, the CONTRACTOR shall engage a Geotechnical Professional Engineer, registered in the State of Florida, to design the sheeting and bracing.
- D. The installation of sheeting, particularly by driving or vibrating, may cause distress to existing structures. The CONTRACTOR shall evaluate the potential for such distress and, if necessary, take all precautions to prevent distress of existing structures due to sheeting installation.
- E. The CONTRACTOR shall leave in place, to be embedded in the backfill, all sheeting and bracing not shown on the Drawings for the purpose of preventing injury to structures, utilities or property, whether public or private. The Owner / Engineer may direct that timber used for sheeting and bracing be cut off at any specified elevation.
- F. All sheeting and bracing not left in place shall be carefully removed in such manner as not to endanger the construction or other structures, utilities, or property. All voids left or caused by withdrawal of sheeting shall be immediately refilled with sand by ramming with tools especially adapted to that purpose, or otherwise as may be directed by the Owner / Engineer.
- G. No wood sheeting is to be withdrawn if driven below mid-diameter of any pipe and under no circumstances shall any wood sheeting be cut off at a level lower than one foot above the top of any pipe.

3.4.2. Excavation

- A. The construction areas shall be cleared of all obstructions and undergrowth.
- B. Excavation shall be made to such dimensions as will give suitable room for the manhole foundation and connecting pipe, for bracing and supporting, for pumping and draining and for all other work required.
- C. Excavation for the precast manhole structure shall be carried to an elevation 1 foot lower than the proposed outside bottom of the structure to provide space for the rock bedding material.
- D. Excavation for structures constructed or cast-in-place in dewatered excavations shall be carried down to one foot below the bottom of the structure where dewatering methods are such that a dry excavation bottom is exposed and the naturally occurring material at this elevation is leveled and left ready to receive construction. One foot of #57 rock shall be placed in order to provide the manhole with an adequate foundation.
- E. Immediately document the location, elevation, size, material type and function of all new subsurface installations and utilities encountered during the course of construction.
- F. Excavation equipment operators and other concerned parties shall be familiar with subsurface obstructions and should anticipate the encounter of unknown obstructions during the course of work.
- G. Encounters with subsurface obstructions shall be hand excavated.
- H. The bottom of excavations shall be rendered firm and dry before placing any structure. Excavated material not suitable for backfill shall be removed from the site and disposed of by the CONTRACTOR.
- I. All pavements shall be cut for removal with saws and approved power tools.
- J. Excavated material shall be stockpiled in such a manner as to prevent nuisance conditions. Surface drainage shall not be hindered.
- K. All locations and elevations as required herein must be permanently documented by the CONTRACTOR on the Record Drawings prior to the Owner / Engineer approval of the Application for Payment for that work.

3.4.3. Manhole Removal

- A. Once the material around the structure has been removed, the CONTRACTOR shall remove the manhole. If manhole is precast concrete, remove each Section individually; if manhole is constructed of brick and mortar,

remove by acceptable methods.

- B. When removing the existing gravity sewer piping, CONTRACTOR shall remove the pipe back to an existing joint rather than cutting the pipe and installing a connecting sleeve.
- C. Once the structure has been completely removed, prepare the excavation for placement of the new manhole.

3.5. MANHOLE CONSTRUCTION

3.5.1. Precast Concrete Units

- A. Precast manholes shall be tongue and groove joint and shall consist of a base unit with opening for the sewer pipe, riser units of various lengths to build the manholes up to the required depth and either concentric or eccentric cones providing the support for the manhole ring and cover. The minimum length of the manhole support riser shall be 12 inches. Any modifications necessary to adapt the units to conform to the locations and grades shown or required shall be made without additional compensation.
- B. Fiberglass manhole liners shall be installed during construction of the manhole precast sections. The base shall be set on a pad of rock to the thickness shown on the Drawings. The subbase shall be tamped and / or vibrated as necessary to secure adequate seating and bearing for the base.
- C. The base slab shall extend a minimum of 6 inches beyond the outside face of the manhole wall.
- D. All slabs for precast drop manholes shall be of sufficient size to adequately support the drop structure.
- E. The top of the cone shall be set between 2 inches and 12 inches below the bottom of the manhole frame and cover so as to provide a minimum of 2 inches to accommodate future grade changes.
- F. The diameter of manholes shall be 4'-0" for pipe 24 inches and smaller and 5'-0" for 30-inch and 36-inch pipe.

3.5.2. Invert Channels

- A. Invert channels shall be constructed smooth and semicircular in shape conforming to inside of adjacent sewer section. Changes in direction of flow shall be made in a smooth curve of as large a radius as practical. Changes in size and grade of channels shall be made gradually and evenly. Invert channels shall be formed by one of the following methods: form directly into concrete manhole base; built-up with brick and mortar; lay half tile in concrete or lay full section of sewer pipe through manhole and break out top half. The manhole floor outside of channels shall be made smooth and sloped toward channels.
- B. Invert channels shall be constructed with a 0.1-foot drop through the manhole.
- C. The manhole floor (bench) shall be sloped towards the channel on a slope of 2 inches per foot.

3.5.3. Free Drop

- A. Free drop in manholes from inlet pipe invert to top of floor outside the channels shall not exceed twenty-four inches. Standard drop inlets shall be constructed of commercial pipe, fittings and specials in accordance with the details shown wherever free drop exceeds twenty-four inches unless otherwise shown or directed.
- B. All inside drops less than 24 inches shall have a flume constructed to channel flow into the invert.

3.5.4. Manhole Frames and Covers

- A. Manhole frames and covers shall be set in a full bed of mortar with the top of the cover flush with or higher than finished grade as directed.

3.5.5. Steps

- A. Manhole steps shall not be provided.

3.5.6. Interior and Exterior Coatings

- A. Interior surfaces of manholes shall be coated with three (3) coats of the specified coating at 4 mils per coat applied in accordance with the manufacturer's recommendations.
- B. The exterior of manholes shall be coated with two (2) coats of the specified coating of 4 mils per coat applied in accordance with the manufacturer's recommendations.

3.5.7. Fill and Compaction

- A. Compact and backfill excavations according to AASHTO T-180 and to the following schedule:

Area	Compaction
Utility trenches in non-paved areas	a) 95 percent for pipe bedding. b) 95 percent for cover material (6-inch lifts to 12-inches above pipe). c) 95 percent for backfill (12-inch lifts).
Utility trenches in paved areas	a) 95 percent for pipe bedding. b) 95 percent for cover material (6-inch lifts to 12-inches above pipe). c) 98 percent for backfill to bottom of base material (12-inch lifts).
Around Structures	a) 95 percent for backfill in non-paved areas (12-inch lifts). b) 98 percent for backfill to bottom of base material (12-inch lifts).

- I. Excavations shall be backfilled to the original grade or as indicated on the Drawings. Deviation from this grade because of settling shall be corrected. Backfill operation shall be performed to comply with all rules and regulations and in such a manner that it does not create a nuisance or safety hazard.
- II. If the CONTRACTOR requests approval to backfill material utilizing lifts and / or methods other than those specified here, such request shall be in writing to the Owner / Engineer. Approval will be considered only after the CONTRACTOR has performed tests, at the CONTRACTOR'S expense, to identify the material used and density achieved throughout the backfill area utilizing the method of backfill requested. The OWNER'S approval shall be in writing.

3.6. INSPECTION / TESTING OF MAINS AND MANHOLES

- 3.6.1. Inspection of completed lines and manholes shall be scheduled within a reasonable time after construction or when required by the Engineer / Owner.
- 3.6.2. Before scheduling an inspection, the CONTRACTOR shall prepare the lines by cleaning and flushing. Manholes shall be clean, finished and free of leaks.
- 3.6.3. Infiltration of gravity sewers between successive manholes shall not exceed 25 gallons per day per inch diameter per mile of pipe per 24 hours. If, in the opinion of the ENGINEER, infiltration appears excessive, it shall be measured with a weir. Duration of test shall be a minimum of 4 hours. Where lines are laid above the water table, the ENGINEER may require the CONTRACTOR to perform exfiltration tests between manholes. The exfiltration tests will be conducted for a minimum of 4 hours with a constant three feet of head at the upstream manhole. The exfiltration rate shall not exceed the allowable infiltration rate.
- 3.6.4. Pipe between manholes shall be on-line and on-grade. Inspection shall be by mirror and sunlight, and, when required, will be followed by air testing and / or television inspection at the CONTRACTOR'S expense. CONTRACTOR shall provide personnel to assist with inspections.
- 3.6.5. The allowable limits of infiltration or exfiltration for manholes shall not exceed a rate of 0.165 gallons per manhole per hour.
- 3.6.6. Manholes shall be on a true and uniform grade. The inverts shall have a smooth steel troweled finish. All benches shall be uniformly sloping. The cast iron frame shall be tight and property set in mortar on solid masonry. The invert, benches and adjacent pipe shall be free of splattered mortar. All required interior lining or paint should be kept intact. Manhole frames shall be adjusted to grade with the covers and frames cleaned and free of mortar and asphaltic mixtures. All precast manhole seams shall be filled with an approved asphaltic compound.
- 3.6.7. All known or indicated breaks shall be repaired by the CONTRACTOR regardless of the test allowances.
- 3.6.8. Faulty sections of sewer lines or manholes rejected by the ENGINEER shall be removed and re-laid by the CONTRACTOR. Sunken

manholes will not be accepted.

3.6.9. The interior and exterior paint shall be intact and continuous. Any chips or holidays shall be recoated according to manufacturer's instructions and with the knowledge of the Engineer / Owner.

3.6.10. Top and bottom ends of riser or sections shall be perfectly formed so that continuous and uniform contact is possible around the entire joint. Malformed joints shall be rejected.

3.7. SITE RESTORATION

3.7.1. General

- A. This Section includes the restoration of driveways, lawn areas, trees and plants, roadways, sprinkler systems, walks and any other existing improvement affected by the proposed work.

3.7.2. Sod

- A. The sod shall match the existing sod in the area. St. Augustine sod shall be replaced with St. Augustine Floratam. In areas without well-established sod, Argentine Bahia shall be used.
- B. The sod shall have well matted roots and 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.
- C. Immediately before sod is placed, 8-8-8 fertilizer shall be applied at the rate of approximately 500 pounds per acre, by broadcasting and raking into the planting area.
- D. Sod shall be firmly embedded by light tamping. Wherever necessary to prevent an erosion condition caused by vertical edges at the outer limits of the sodded area, the sod shall be tamped so as to produce a featheredge at the outer limits. The sod shall be kept in a moist condition after it is planted. Water shall not be applied between the hours of 8 A.M. and 4 P.M., nor when there is danger of freezing.
- E. CONTRACTOR shall maintain the planted areas in a satisfactory condition until final acceptance of the project. Such maintenance shall include watering, filling, leveling and repairing of any washed or eroded areas as may be necessary.

3.7.3. Plants

- A. 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.
- B. Existing plants may be removed, preserved and replaced at the CONTRACTOR'S option. Plants shall be handled by an approved nursery.
- C. 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 "Grades and Standards," Florida No. 1 or better.
- D. The planting mixture, when required, shall consist of a thorough mixture of 40 percent peat and 60 percent sand. The peat shall be Florihome peat or equivalent and the sand shall be clean and free from debris of any kind.

3.7.4. Pavement, Curb and Sidewalk Replacement

- A. Prior to installation of pavement or sidewalks, the entire depth of backfill shall have been fully compacted and tested for conformance with the specified density requirements. Subgrades shall be fully shaped to the necessary elevations and cross-sections to provide the required thickness of pavement. Provide adequate drainage at all times to prevent water from standing on subgrade, pavement or walks.
- B. Where base course materials are required, they shall be placed and compacted to the thickness and density as shown on the Drawings and as specified. Workmanship shall conform to the requirements of the FDOT Standard Specifications.

- C. Prime and tack coats shall be in conformance with Section 300 of the FDOT Specifications.
- D. Asphaltic surfaces shall be Type S-3 and shall be prepared, placed, finished and compacted in accordance with the requirements of the FDOT Standard Specifications.
- E. Sidewalks shall be constructed on a sub-base compacted to not less than 95 percent of maximum dry density as determined by ASTM D1557. Walks shall be a minimum of 4 inches thick of 3000 psi concrete and reinforced with welded wire fabric or fiber mesh. Placing, finishing, protecting and curing shall conform to the requirements of the FDOT Standard Specifications.
- F. Curbs shall be constructed on a subgrade or base compacted to not less than 98 percent of maximum dry density as determined by ASTM D1557. Construct curbs of 3000 psi concrete.
- G. Driveway pavement or concrete removed in conjunction with the project excavation shall be replaced or restored identical to roadway pavement, except the base material (asphalt driveways) shall equal the existing base course in thickness. Base course shall be a minimum of 6-inches and paved with 1-1/2 inches of Type S-3 asphalt. Concrete driveways shall be placed on a compacted subgrade (95 percent of ASTM D1557) and constructed of a minimum of 4 inches of 4000 psi concrete. Muck or unsuitable material found under existing driveway construction will not be removed and replaced.

3.7.5. 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. 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 02700 PAVEMENT REMOVAL AND REPLACEMENT

1. GENERAL

1.1. SUMMARY

1.1.1. Section Includes:

- A. All labor, materials, and equipment necessary to repair or replace existing streets, roads, drives, parking areas, curbs, gutters, sidewalks and other paved areas damaged or destroyed, either directly or indirectly, by construction of the work included in this Contract.
- B. All labor, materials, and equipment necessary to construct new streets, roads, drives, parking areas, curbs, gutters, sidewalks and other paved areas as shown on the Drawings.

1.1.2. Related Sections:

- A. Concrete Reinforcing: Section 03200
- B. Cast-In-Place Concrete: Section 03300

1.2. REFERENCES

1.2.1. Codes, Specifications, and Standards:

- A. Codes, specifications, and standards referred to by number or title shall form a part of this Specification to the extent required by the reference thereto. Latest revisions shall apply, unless otherwise shown or specified.
- B. Except as specifically modified in this Specification, perform paving and surfacing operations and provide materials which comply with applicable sections of the latest edition of the Florida Department of Transportation Specifications for Road and Bridge Construction (FDOT Specification).

1.2.2. American Association of State Highway and Transportation Officials (AASHTO).

AASHTO T180 Standard Test Methods for Moisture-Density Relationship of Soils and Soil-Aggregate Mixtures Using 10-lb. (4.54-kg.) Rammer and 18-in. (457-mm) Drop.

1.2.3. American Society for Testing and Materials (ASTM) Standards.

1.3. DEFINITIONS

1.3.1. Abbreviations:

- A. AASHTO: American Association of State Highway and Transportation Officials.
- B. ASTM: American Society for Testing and Materials.
- C. FDOT: Florida Department of Transportation.

1.3.2. Rock: Natural aggregate of mineral particles connected by strong and cohesive forces. Rock includes limestone, sandstone, dolomite, granite, marble and lava.

1.3.3. Subgrade: Prepared, stabilized and compacted soil immediately below the base and extending to such depth as will affect the structural

design.

1.3.4. Subbase: Prepared and compacted soil immediately below concrete pavement, drives and sidewalks.

1.3.5. Base Course: Layer of specified or selected material of designed thickness placed on stabilized subgrade to support a surface course.

1.3.6. Surface Course: Layer of specified or selected material of designed thickness, generally asphalt, placed on a base course to support the traffic load.

1.4. SUBMITTALS

1.4.1. Submittals shall be as specified in Section 01310: Administrative Requirements.

1.4.2. Submit the following:

- A. Name and location of bituminous mixing plant.
- B. Type and composition of proposed materials and mixes.
- C. Certified copies of reports of tests specified in this Section or required by referenced standards.
- D. Certificates of Compliance certifying compliance with the referenced and standards.

1.5. QUALITY ASSURANCE

1.5.1. Testing Laboratory Services: OWNER will provide the services of an independent testing laboratory to perform services and field density tests to demonstrate that proper compaction is obtained and CONTRACTOR provided asphalt and concrete mix designs are in compliance with the Specifications.

1.5.2. Mixing Plant: Prior to placing any hot asphalt concrete pavement, provide Owner / Engineer the location of bituminous mixing plant and type and composition of mixes proposed use in the Work.

1.5.3. Tolerances:

- A. Replace existing and construct new paving and surfacing in compliance with tolerances specified in this Section.
- B. Construct subgrade and subbase within 1/2 inch of dimensions specified shown on the Drawings.
- C. Construct bituminous base courses to vary no more than 1/4 inch along their longitudinal axis when checked with a 10 foot straight edge. Construct concrete surface courses to vary no more than 1/8 inch along their longitudinal or transverse axis when checked with a 10 foot straight edge.
- D. Construct finished surfaces within 1/4 inch of dimensions indicated on Drawings.
- E. Construct the face, top, and gutter of curbs with deviations or irregularities of no more than 1/4 inch when checked with a 10 foot straight edge.

1.6. DELIVERY, STORAGE AND HANDLING

1.6.1. Be responsible for delivery, storage and handling of products.

1.6.2. Promptly remove damaged, deteriorated, or unsuitable products from the site. Replace, deteriorated, or unsuitable products with undamaged, undeteriorated, suitable products.

1.7. SITE CONDITIONS

1.7.1. Do not place paving and surfacing materials on a wet surface or when conditions would prevent proper construction of paving and surfacing.

1.7.2. Place aggregates only when air temperature is above 35°F.

1.7.3. Place bituminous prime coat or tack coat only when air temperature is above 40°F in the. Do not place bituminous mixtures if any part of the roadbed from the subgrade to inches below the subgrade is 32°F or lower. Place bituminous mixtures only when the air temperature

is above 45°F.

1.7.4. Place paving and surfacing materials only when natural light is sufficient to properly observe work or operations.

2. PRODUCTS

2.1. AGGREGATE

2.1.1. Conform to Sections 901 and 902 of the FDOT Specification.

2.2. BITUMINOUS MATERIALS

2.2.1. Asphalt Cement: Conform to Section 916 of the FDOT Specification, Grade AC-20 or AC-30.

2.2.2. Cutback Asphalt and Asphalt Emulsions: Conform to Section 916 of the FDOT Specification.

2.3. ASPHALTIC CONCRETE

2.3.1. Type S-1 and S-III Asphaltic Concrete: Conform to Section 331 of the FDOT Specification.

2.3.2. Type III Asphaltic Concrete: Conform to Section 333 of the FDOT Specification, with minimum Marshall stability of 1,000 lbs.

2.4. SUBGRADE STABILIZATION MATERIAL

2.4.1. Type B stabilization material conforming to Section 914 of the FDOT Specification.

2.5. BASE COURSE

2.5.1. Soil-Cement Base Course: Conform to Section 270 of the FDOT Specification.

2.5.2. Lime rock Base Course: Conform to Section 200 of the FDOT Specification.

2.5.3. Asphalt Base Course: Conform to Section 280 of the FDOT Specification.

2.5.4. Shell Base Course: Conform to Section 250 of the FDOT Specification.

2.6. PRIME AND TACK COATS

2.6.1. Conform to Sections 300 and 916 of the FDOT Specification.

2.7. STRIPING

2.7.1. Paint: Conform to Section 971-12 or 971-13 of the FDOT Specification.

2.7.2. Glass Spheres: Conform to Section 971-14 of the FDOT Specification.

2.7.3. Thermoplastic: Conform to Section 711 of the FDOT Specification.

3. EXECUTION

3.1. REMOVAL

3.1.1. Pavement:

- A. Where existing pavement is to be removed, the surfacing shall be mechanically saw cut prior to trench excavation, leaving a uniform and straight edge, with minimum disturbance to the remaining adjacent surfacing. The width of cut for this phase of existing pavement removal shall be minimal.
- B. Immediately following the specified backfilling and compaction, a temporary sand seal coat surface shall be applied to the cut areas. This temporary surfacing shall provide a smooth traffic surface with the existing roadway and shall be maintained until final restoration. Said surfacing shall remain for 10 days in order to assure the stability of the backfill under normal traffic conditions. Following this period and prior to 15 days after application, the

temporary surfacing shall be removed and final roadway surface restoration accomplished.

- C. In advance of final restoration, the temporary surfacing shall be removed and the existing pavement mechanically sawed straight and clean to the stipulated dimensions. Following the above operation, the CONTRACTOR shall proceed immediately with final pavement restoration in accordance with these requirements.

3.1.2. Sidewalk, Drive & Curb:

- A. Concrete sidewalks, curbs, combination curb and gutter, walks, drive ribbons, or driveways shall be removed by initially sawing the structure, with a suitable power saw, as specified above for pavement. When a formed joint in the concrete exists within 3 feet of the proposed saw cut and parallels the proposed saw cut, the removal line shall be extended to the formed joint. After sawing, the material shall be removed.

3.2. REPLACEMENT

3.2.1. General

- A. Construct pavement, walks, and grades as indicated on the Drawings and specified in this Section.
- B. Use compaction equipment suitable to the material being placed. Include at least one piece of compacting equipment capable of providing a smooth even surface on pavement surface course.
- C. Prior to placing paving and surfacing materials, shape subgrade to grades and cross section required to produce finished pavement grades and cross sections shown on the Drawings.
- D. Place paving and surfacing material after subgrade is reviewed and accepted by Owner/Engineer. Do not place paving and surfacing materials on a wet or muddy subgrade.
- E. Provide adequate drainage at all times to prevent water from standing on subgrade, pavement, or walks.

3.2.2. Bituminous Paving:

- A. General: Construct bituminous paving, consisting of a stabilized subgrade, base course, prime and tack coats, and asphaltic concrete surface course in conformance with applicable requirements of the FDOT Specification.
- B. Subgrade: Construct Type B stabilized subgrade in conformance with Section 160 of the FDOT Specification, with minimum LBR of 40.
- C. Base Course: Construct base course of soil-cement, limerick, asphalt or shell in conformance with Sections 270, 200, 280, and 250 respectively of the FDOT Specification.
- D. Prime and Tack Coats: Apply prime and tack coats in conformance with Section 300 of the FDOT Specification.
- E. Surface Courses:
 - I. Construct bituminous surface courses of plant-mixed hot bituminous pavement in conformance with Section 330 of the FDOT Specification.
 - II. Where thickness of a bituminous surface course total compacted is 1-1/2 inch or more, construct of Type S-1, Type S-III or Type III asphaltic concrete in conformance with Section 330, 331 and 333 of the FDOT Specification. Construct bituminous surface courses less than 1-1/2 inches thick of Type S-III or Type III asphaltic concrete in conformance with Section 330, 331 and 333 of the FDOT Specification. Do not use Type S-1 for thicknesses less than 1-1/2 inches.

3.2.3. Traffic Striping:

- A. Stripe all streets, roads, and parking areas paved under this Contract by painting with reflectorized traffic stripes conforming to Section 710 of the FDOT Specification.

3.2.4. Walks:

- A. Construct walks of 2-inch thick coarse aggregate subbase and 4-inch thick reinforced concrete surface, unless otherwise shown. Construct walks of 3000 psi concrete, reinforced with 4-inch by 4-inch, #4/4 welded wire fabric, unless otherwise shown.

- B. Compact subbase to not less than 95% of maximum dry density as determined by ASTM D 1557.
- C. Proportion, mix, and place concrete as directed by ENGINEER. Provide walks with a broom finish. Edge all outside edges of walk and all joints with a 1/4 inch radius edging tool.
- D. Divide walks into sections not more than six feet in length, unless otherwise detailed on Drawings, by contraction (dummy) joints formed by a jointing tool with a 1/4 inch radius.
- E. Form expansion joints around all abutting structures and appurtenances such as manholes, utility poles, hatches, and hydrants. Install 1/2 inch thick premolded expansion joint filler in the joint and extend expansion joint material the full depth of the walk.

3.2.5. Curbs:

- A. Construct curbs, combination curb and gutter, and integral curb and gutter in accordance with these Specifications, as shown on the Drawings and in conformance with the lines and grades shown on the Drawings or as directed by Owner/Engineer.
- B. Excavate for curbs to the required depth, and compact the subgrade or base upon which the curb is to be constructed to a firm, even surface at not less than 98% of maximum dry density as determined by ASTM D 1557.
- C. Construct curbs of 3000 psi concrete.
- D. Construct curbs by the use of wood or metal forms; or, if approved by Owner/Engineer, construct curbs using a curb slip form machine. Use forms which are straight, free from warped or bent sections, and extend the entire depth of the curb. Hold forms securely in place and prevent deviation from alignment or grade during placement of concrete. Consolidate concrete by vibration or other acceptable methods. Float the top of the smooth and round the top outer corner to a 1/4 inch radius.
- E. Place construction joints at 10 foot intervals, unless otherwise shown or directed by Owner/Engineer. Make joints uniform, of 1/8 to 1/4 inch in width, and to a depth of approximately 2-1/2 inches. Saw cut or form the joint with approved removable strips providing a straight joint at right angles to the length of the curb. Fill joints with bituminous joint filler material. Form expansion joints around all abutting structures such as inlets.
- F. As soon as possible after placing and finishing of concrete, moisten the curbing and keep it moist for three days, or cure by the use of a membrane curing compound.
- G. If existing curb is to be removed and replaced with new curb or new curb extended from existing curb, remove the existing curb to the nearest joint of suitable existing curb or as directed by Owner/Engineer.

3.2.6. Asphalt Driveways: Driveway pavement with base cut and removed in connection with trench excavation shall be replaced or restored as specified above for street or roadway pavement, except the new base course shall equal the existing base course in thickness, except that in no case shall new driveway base course be less than 6 inches in thickness and the asphaltic concrete shall be Type S-III, 1½ inches thick. Muck or unsuitable material found under existing driveway construction will not be removed and replaced.

3.2.7. Protection:

- A. Maintain compacted subbase and surface true to line and grade and required density. Maintain surface until job is complete.
- B. Do not permit vehicular traffic of any kind on any bituminous course until the bituminous mixture has hardened sufficiently to prevent distortion beyond specified tolerances. Remove any foreign material which is on the surface of any course before the course is rolled or any subsequent course is placed.
- C. Repair or replace damaged pavement and walks.

3.2.8. Cleaning: Clean job site of rubbish, excess material, temporary buildings, structures, and equipment. Restore damaged property.

END OF SECTION



SECTION 02938 SODDING

1. GENERAL

1.1. SCOPE

- 1.1.1. Requirements specified in Conditions of Contract and Division 1 form a part of this Section. The work in this Section consists of furnishing all labor, materials and equipment to replace and maintain all areas disturbed during construction by establishing a stand of grass, within the areas called for, by furnishing and placing grass sod, seeding or seeding and mulching.

1.2. SECTION INCLUDES

- 1.2.1. Preparation of subsoil.
- 1.2.2. Placing topsoil.
- 1.2.3. Fertilizing.
- 1.2.4. Sod installation.
- 1.2.5. Maintenance.

1.3. RELATED SECTIONS

- 1.3.1. Section 02300: Earthwork
- 1.3.2. Section 02936: Seeding

1.4. REFERENCES

- 1.4.1. ASPA (American Sod Producers Association) - Guideline Specifications to Sodding.
- 1.4.2. Fertilizers, Mixed, Commercial.

1.5. DEFINITIONS

- 1.5.1. Weeds: Includes Dandelion, Jimsonweed, Quack grass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambs quarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Brome Grass.

1.6. MAINTENANCE DATA

- 1.6.1. Operation Data: Submit for continuing OWNER maintenance.
- 1.6.2. Maintenance Data: Include maintenance instructions, cutting method and maximum grass height; types, application frequency, and recommended coverage of fertilizer; and pesticides.

1.7. QUALITY ASSURANCE

- 1.7.1. Sod: Minimum age of 18 months, with root development that will support its own weight without tearing, when suspended vertically by holding the upper two corners.
- 1.7.2. Submit sod certification for grass species and location of sod source.

1.8. QUALIFICATIONS

1.8.1. Sod Producer: Company specializing in sod production and harvesting with minimum five years' experience, and certified by the State of Florida.

1.9. REGULATORY REQUIREMENTS

1.9.1. Comply with regulatory agencies for fertilizer and herbicide composition.

1.9.2. Provide certificate of compliance from State Dept. of Agriculture and Consumer Services indicating approval of fertilizer and herbicide mixture.

1.10. DELIVERY, STORAGE, AND HANDLING

1.10.1. Deliver, store, protect and handle products to site under provisions of General Conditions.

1.10.2. Deliver sod on pallets. Protect exposed roots from dehydration by water as necessary.

1.10.3. Do not deliver more sod than can and will be laid within 24 hours of delivery.

1.11. COORDINATION

1.11.1. Coordinate work under provisions of General Conditions of these Specifications.

1.12. MAINTENANCE SERVICE

1.12.1. Maintain sodded areas immediately after placement until grass is well established and exhibits a vigorous growing condition or until final completion.

2. PRODUCTS

2.1. MATERIALS

2.1.1. Sod: ASPA Certified cultivated grass sod matching the type being replaced with strong fibrous root system, free of stones, burned or bare spots; containing no more than 10 weeds per 1,000 sq ft.

2.1.2. Topsoil: Fertile, agricultural soil, typical for locality, capable of sustaining vigorous plant growth, taken from a well-drained site; free of subsoil, clay, or impurities, plants, weeds and roots; pH value of minimum 6.0 and maximum 7.0.

2.1.3. Fertilizer: as recommended for grass, with fifty percent of the elements derived from organic sources; of proportion necessary to eliminate any deficiencies of topsoil to the following proportions: nitrogen 6 percent, phosphoric acid 6 percent, soluble potash 6 percent.

2.1.4. Water: Clean, fresh and free of substances or matter which could inhibit vigorous growth of grass.

2.2. ACCESSORIES

2.2.1. Wood Pegs: Softwood, sufficient size and length to ensure anchorage of sod on slope.

2.2.2. Edging: As noted per plan.

2.2.3. Herbicide: Submit manufacturer's data.

2.3. HARVESTING SOD

2.3.1. Machine cut sod and load on pallets in accordance with ASPA Guidelines.

2.3.2. Cut sod in area not exceeding 1 sq. yd., with minimum 1/2 inch maximum 1 inch topsoil base.

2.4. TESTS

2.4.1. Provide analysis of topsoil fill under provisions of Division 1.

- 2.4.2. Analyze to ascertain percentage of nitrogen, phosphorus, potash, trace elements soluble salt content, organic matter content, and pH value.
- 2.4.3. Submit minimum 12 oz. sample of topsoil proposed. Forward sample to approved testing laboratory in sealed containers to prevent contamination.

3. EXECUTION

3.1. INSTALLATION

- 3.1.1. Sodding shall be provided in all areas requiring restoration due to construction activities which are as indicated on the Drawings.

3.2. PREPARATION OF SUBSOIL

- 3.2.1. Prepare sub-soil and eliminate uneven areas and low spots.
- 3.2.2. Maintain lines, levels, profiles and contours. Make changes in grade gradual. Blend slopes into level areas.
- 3.2.3. Remove foreign materials and undesirable plants and their roots. Do not bury foreign material beneath areas to be sodded.
- 3.2.4. Remove contaminated subsoil.
- 3.2.5. Scarify sub-soil to a depth of 4 inches where topsoil is to be placed.
- 3.2.6. Repeat cultivation in areas where equipment, used for hauling and spreading topsoil, has compacted subsoil.

3.3. PLACING TOPSOIL

- 3.3.1. Spread topsoil to a minimum depth of 4 inches over area to be sodded.
- 3.3.2. Place topsoil during dry weather and on dry subgrade.
- 3.3.3. Remove vegetative matter and foreign non-organic material from topsoil while spreading.
- 3.3.4. Grade topsoil to eliminate rough, low or soft areas, and to ensure positive drainage.
- 3.3.5. Install edging as noted on plans at periphery of sodded areas in straight lines to consistent depth.

3.4. FERTILIZING

- 3.4.1. Apply fertilizer at a rate of 700 pounds per acre or 16 pounds per 1,000 square feet.
- 3.4.2. Apply after smooth raking of topsoil and prior to installation of sod.
- 3.4.3. Apply fertilizer no more than 48 hours before laying sod, mix thoroughly into upper 4 inches of topsoil and lightly water to aid the dissipation of fertilizer.

3.5. LAYING SOD

- 3.5.1. Moisten prepared surface immediately prior to laying sod.
- 3.5.2. Lay sod within 24 hours after harvesting to prevent deterioration.
- 3.5.3. Lay sod tight with no open joints visible, and no overlapping; stagger end joints 12 inches minimum. Do not stretch or overlap sod pieces.
- 3.5.4. Lay smooth. Align with adjoining grass areas.
- 3.5.5. Place top elevation of sod 1/2 inch below adjoining paving.
- 3.5.6. On slopes 4 inches per foot and steeper, lay sod perpendicular to slope and secure every row with wooden pegs at maximum 8 feet

on center. Drive pegs flush with soil portion of sod.

3.5.7. Water sodded areas immediately after installation. Saturate sod to 4 inches of soil.

3.5.8. After sod and soil have dried, roll sodded areas to ensure good bond between sod and soil and to remove minor depressions and irregularities. Roll sodded areas with roller not exceeding 150 lbs.

3.6. MAINTENANCE

3.6.1. Mow grass at regular intervals to maintain at a maximum height of 2-1/2 inches. Do not cut more than 1/3 of grass blade at any one mowing. Maintain sod until final acceptance.

3.6.2. Neatly trim edges and hand clip where necessary.

3.6.3. Immediately remove clippings after mowing and trimming.

3.6.4. Water to prevent grass and soil from drying out.

3.6.5. Control growth of weeds. Apply herbicides in accordance with manufacturer's instructions. Remedy damage resulting from improper use of herbicides.

3.6.6. Immediately replace sod to areas which show deterioration or bare spots.

END OF SECTION



DIVISION 15 – TECHNICAL SPECIFICATIONS
SECTION 15000
MECHANICAL – GENERAL REQUIREMENTS

1. GENERAL

1.1. DESCRIPTION

1.1.1. Scope of Work:

- A. All equipment furnished and installed under this Contract shall conform to the general stipulations set forth in this Section except as otherwise specified in other Sections.
- B. CONTRACTOR shall coordinate all details of equipment with other related parts of the Work, including verification that all structures, piping, wiring, and equipment components are compatible. CONTRACTOR shall be responsible for all structural and other alterations in the Work required to accommodate equipment differing in dimensions or other characteristics from that contemplated in the Contract Drawings or Specifications.

1.1.2. Related Work Described Elsewhere: Other sections directly referenced in this section include the following:

- A. General Requirements: Division 1.
- B. Concrete: Division 3 (if applicable).
- C. Painting: Division 9 (if applicable).

1.1.3. Contract Drawings and Specifications: The Contract Drawings and Specifications shall be considered as complementary, one to the other, so that materials and work indicated, called for, or implied by the one and not by the other shall be supplied and installed as though specifically called for by both. The Contract Drawings are to be considered diagrammatic, not necessarily showing in detail or to scale all of the equipment or minor items. In the event of discrepancies between the Contract Drawings and Specifications, or between either of these and any regulations or ordinances governing work of these specifications, the bidder shall notify the Owner/Engineer in ample time to permit revisions.

1.2. QUALITY ASSURANCE

1.2.1. Materials and Equipment: Unless otherwise specified, all materials and equipment furnished for permanent installation in the work shall conform to applicable standards and specifications and shall be new, unused, and undamaged when installed or otherwise incorporated in the work. No such material or equipment shall be used by the CONTRACTOR for any purpose other than that intended or specified, unless such use is specifically authorized in writing by the OWNER. No material shall be delivered to the work site without prior acceptance of drawings and data by the Owner/Engineer.

1.2.2. Equivalent Materials and Equipment:

- A. Whenever a material or article is specified or described by using the name of a proprietary product or the name of a particular manufacturer or vendor, the specific item mentioned shall be understood as establishing the type, function, and quality desired. Other manufacturers' products will be accepted provided sufficient information is submitted to allow the Owner/Engineer to determine that the products proposed are equivalent to those named. Such items shall be submitted for review in accordance with the General Conditions.
- B. Requests for review of equivalency will not be accepted from anyone except the CONTRACTOR and such requests will not be considered until after the Contract has been awarded.

1.2.3. Governing Standards: Equipment and appurtenances shall be designed in conformity with ANSI, ASME, ASTM, IEEE, NEMA, OSHA, AGMA, and other generally accepted applicable standards. They shall be of rugged construction and of sufficient strength to withstand all stresses which may occur during fabrication, testing, transportation, installation, and all conditions or operations. All bearings and moving parts shall be adequately protected against wear by bushings or other acceptable means. Provisions shall be made for adequate lubrication

with readily accessible means.

1.2.4. Tolerances: Machinery parts shall conform to the dimensions indicated on the drawings within allowable tolerances. Protruding members such as joints, corners, and gear covers shall be finished in appearance. All exposed welds shall be ground smooth and the corners of structural shapes shall be rounded or chamfered.

1.2.5. Clearances: Ample clearances shall be provided for inspection and adjustment. All equipment shall fit the allotted space and shall leave reasonable access room for servicing and repairs. Greater space and room required by substituted equipment shall be provided by the CONTRACTOR and at his expense.

1.2.6. Testing:

- A. When the equipment is specified to be factory tested, the results of the tests shall be submitted to the Owner/Engineer and approval of the test results shall be obtained before shipment of the equipment.
- B. When an item of equipment, including controls and instrumentation, has been completely erected, the CONTRACTOR shall notify the Owner/Engineer, who will designate a time to make such tests as required, and operate the item to the satisfaction of the Construction Inspector. All testing shall be done in the presence of the Construction Inspector. "Completely erected" shall mean that the installation is erected, all necessary adjustments have been made, all required utility connections have been made, required lubricants and hydraulic fluid have been added and the unit has been cleaned and painted.

1.2.7. Pressure Test:

- A. After installation, all piping shall be pressure tested. Piping shall be tested in accordance with Section 15044: Pressure Testing of Piping.
- B. All tests shall be made in the presence of and to the satisfaction of the Construction Inspector and also, to the satisfaction of any local or state inspector having jurisdiction.
 - I. Provide not less than three days' notice to the Construction Inspector and the authority having jurisdiction when it is proposed to make the tests.
 - II. Any piping or equipment that has been left unprotected and subject to mechanical or other injury in the opinion of the Construction Inspector shall be retested in part or in whole as directed by the Construction Inspector.
 - III. The piping systems may be tested in sections as the work progresses but no joint or portion of the system shall be left untested.
- C. All elements within the system that may be damaged by the testing operation shall be removed or otherwise protected during the operation.
- D. All defects and leaks observed during the tests shall be corrected and made tight in an approved manner and the tests repeated until the system is proven tight.
- E. Repair all damage done to existing or adjacent work or materials due to or on account of the tests.
- F. Provide test pumps, gauges, or other instruments and equipment required for the performance of all tests. Provide all temporary bracing, test plugs, additional restraint, and thrust blocking which may be required for test pressures above normal working pressures.
- G. All tests shall be maintained for as long a time as required to detect all defects and leaks but not less than the duration specified for each type of pipe or piping system in this Division.

1.2.8. Failure of Test:

- A. Defects: Any defects in the equipment, or deviations from the guarantees or requirements of the Specifications, shall be promptly corrected by the CONTRACTOR by replacements or otherwise. The decision of the Owner/Engineer as to whether or not the CONTRACTOR has fulfilled his obligations under the Contract shall be final and conclusive. If the CONTRACTOR fails to correct any defects or deviations, or if the replaced equipment when tested shall fail again to meet the guarantees or specified requirements, the OWNER, notwithstanding his having made partial payment for work and materials which have entered into the manufacturer for such equipment, may reject that equipment and order the CONTRACTOR to remove it from the premises at the

CONTRACTOR'S expense.

- B. Rejection of Equipment: In case the OWNER rejects a particular item of equipment, then the CONTRACTOR hereby agrees to repay to the OWNER all sums of money paid to him to deliver to the CONTRACTOR a bill of sale of all his rights, title, and interest in and to the rejected equipment provided, however that the equipment shall not be removed from the premises until the OWNER obtains from other sources other equipment to take the place of that rejected. The bill of sale shall not abrogate the OWNER'S right to recover damages for delays, losses or other conditions arising out of the basic Contract. The OWNER hereby agrees to obtain the alternate equipment within a reasonable time and the CONTRACTOR agrees that the OWNER may use the original equipment furnished by him without rental or other charge until the other equipment is obtained.

1.2.9. Responsibility During Tests: The CONTRACTOR shall be fully responsible for the proper operation of equipment during tests 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.

1.2.10. Acceptance of Materials:

- A. Only new materials and equipment shall be incorporated in the work. All materials and equipment furnished by the CONTRACTOR shall be subject to the inspection and acceptance of the OWNER. No material shall be delivered to the work without prior submittal approval of the Owner/Engineer.
- B. The CONTRACTOR shall submit to the Owner/Engineer data relating to materials and equipment he proposes to furnish for the work. Such data shall be in sufficient detail to enable the Owner/Engineer to identify the particular product and 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 the CONTRACTOR. If the Owner/Engineer requires, either prior to beginning or during the progress of the work, the CONTRACTOR shall submit samples of materials for such special test as may be necessary to demonstrate that they conform to the Specification. Such sample shall be furnished, stored, packed, and shipped as directed at the CONTRACTOR'S expense. Except as otherwise noted, the OWNER will make arrangements for and pay for tests.
- D. The CONTRACTOR shall submit data and samples sufficiently early to permit consideration and acceptance before materials are necessary for incorporation in the work.

1.2.11. Safety Requirements:

- A. In addition to the components shown and specified, all machinery and equipment shall be safeguarded in accordance with the safety features required by the current codes and regulations of ANSI, OSHA, and local industrial codes.
- B. The CONTRACTOR shall provide for each V-belt drive or rotating shaft a protective guard which shall be securely bolted to the floor or apparatus. The guard shall completely enclose drives and pulleys and be constructed to comply with all safety requirements.
- C. For double inlet fans, the belt guard shall be arranged so as not to restrict the air flow into the fan inlet. Guards shall not interfere with lubrication of equipment.

1.3. SUBMITTALS (See Section 01310: Administrative Requirements)

1.4. PRODUCT DELIVERY, STORAGE AND HANDLING

1.4.1. Packaging: All equipment shall be suitably packaged to facilitate handling and protect against damage during transit and storage. All equipment shall be boxed, crated, or otherwise completely enclosed and protected during shipment, handling, and storage. All equipment shall be protected from exposure to the elements and shall be kept thoroughly dry at all times.

1.4.2. Protection: All machined surfaces and shafting shall be cleaned and protected from corrosion by the proper type and amount of coating necessary to assure protection during shipment and prior to installation. Painted surfaces shall be protected against impact, abrasion, discoloration, and other damage as specified in Sections 09900: Painting and Special Coatings and 09905: Piping and Equipment Identification System (if applicable). All painted surfaces which are damaged prior to acceptance of equipment shall be repainted to the satisfaction of Owner/Engineer.

1.4.3. Lubrication: Grease and lubricating oil shall be applied to all bearings and similar items as necessary to prevent damage during shipment

and storage.

1.4.4. Marking: Each item of equipment shall be tagged or marked as identified in the delivery schedule or on the Shop Drawings. Complete packing lists and bills of material shall be included with each shipment.

1.4.5. Fabricated sub-assemblies, if any, shall be shipped in convenient sections as permitted by carrier regulations and shall be properly match-marked for ease of field erection.

1.4.6. Responsibility:

A. The CONTRACTOR shall be responsible for all material, equipment, and supplies sold and delivered to the site under this Contract until final inspection of the work and acceptance thereof by the OWNER. In the event any such material, equipment, and supplies are lost, stolen, damaged, or destroyed prior to final inspection and acceptance, the CONTRACTOR shall replace same without additional cost to the OWNER.

B. Should the CONTRACTOR fail to take proper action on storage and handling of equipment supplied under this Contract within seven days after written notice to do so has been given, the OWNER retains the right to correct all deficiencies noted in previously transmitted written notice and deduct the cost associated with these corrections from the 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.

1.4.7. Delivery: The CONTRACTOR shall arrange deliveries of products in accordance with construction schedules and coordinate to avoid conflict with work and condition at the site.

A. The CONTRACTOR shall deliver products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.

B. Immediately on delivery, the CONTRACTOR shall inspect shipments to assure compliance with requirements of Contract Documents and accepted submittals, and that products are properly protected and undamaged.

C. Under no circumstances shall the CONTRACTOR deliver equipment to the site more than one month prior to installation without written authorization from the Construction Inspector. Operation and maintenance data shall be submitted to the Owner/Engineer for review prior to shipment of equipment as described in Section 01730: Operation and Maintenance Data.

1.4.8. Storage and Protection of Products:

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 space heaters, and placing of storage lubricants in equipment. 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.

I. The CONTRACTOR shall store products subject to damage by the elements in weather tight enclosures.

II. The CONTRACTOR shall maintain temperature and humidity within the ranges required by manufacturer's instructions.

III. The CONTRACTOR shall store fabricated products above the ground, on blocking or skids, to prevent soiling or staining. The CONTRACTOR shall cover products which are subject to deterioration with impervious sheet coverings and provide adequate ventilation to avoid condensation.

IV. The CONTRACTOR shall store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter.

B. All materials and equipment to be incorporated in the work shall be handled and stored by the 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.

C. Cement, sand, 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 off the ground or otherwise to prevent accumulations of dirt, or grease, and in a position to prevent accumulations of 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.

- D. All materials which, in the opinion of the Construction Inspector, have become damaged and are unfit for the use intended or specified, shall be promptly removed from the site of the work, and the CONTRACTOR shall receive no compensation for the damaged material or its removal.
- E. The CONTRACTOR shall arrange storage in a manner to provide easy access for inspection. The CONTRACTOR shall make periodic inspections of stored products to assure products are maintained under specified conditions, and free from damage or deterioration.
- F. Protection After Installation: The CONTRACTOR shall provide substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations. The CONTRACTOR shall remove covering when no longer needed.

1.4.9. Extended Storage Requirements for Equipment: Because of the long period allowed for construction, special attention shall be given to extended storage and handling of equipment onsite. As a minimum, the procedure specified herein shall be followed:

- A. If equipment will be stored onsite for more than one month prior to incorporation into the Work, the CONTRACTOR shall submit a written request to the Construction Inspector outlining any special provision to be made to protect and maintain the equipment while it is being stored. All such provisions shall be acceptable to the Construction Inspector. No equipment shall be stored onsite for more than one month without prior written authorization from the Construction Inspector.
- B. All equipment having moving parts including gears, electric motors, and/or instruments shall be stored in a temperature and humidity controlled building accepted by the Construction Inspector, until such time as the equipment is to be installed.
- C. All equipment shall be stored fully lubricated with oil and grease unless otherwise instructed by the manufacturer.
- D. Manufacturer's storage instructions shall be carefully studied by the CONTRACTOR and reviewed by him with the Construction Inspector. These instructions shall be carefully followed and a written record of this review kept by the CONTRACTOR.
- E. 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, the CONTRACTOR shall start the equipment, and operate weekly, loaded when possible, for an adequate period of time to ensure that the equipment does not deteriorate from lack of use.
- F. 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 days, shall have the bearings cleaned, flushed, and lubricated prior to testing and startup, at no extra cost to the OWNER.
- G. Prior to acceptance of the equipment, the 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, and it shall be removed and replaced at the CONTRACTOR'S expense.
- H. A maintenance log shall be maintained by the CONTRACTOR outlining the schedule of maintenance required for each piece of equipment as well as the date on which the maintenance was actually performed and the initials of the individual performing the work. Submit a copy of the maintenance log monthly with the progress pay application.

1.5. WARRANTY AND GUARANTEES

1.5.1. The manufacturer's written warranty shall be submitted for all major pieces of equipment, as specified in Section 01740: Warranties and Bonds. The manufacturer's warranty period shall be concurrent with the CONTRACTOR'S correction period for one year after the time of completion and acceptance.

1.6. SPARE PARTS

- 1.6.1. Spare parts for certain equipment provided under Division 13 - Special Construction; Division 15 - Mechanical; and Division 16 - Electrical have been specified in the pertinent sections of the Specifications. The CONTRACTOR shall collect and store all spare parts in an area to be designated by the Owner/Engineer. In addition, the CONTRACTOR shall furnish to the Owner/Engineer an inventory listing of all spare parts, the equipment they are associated with, and the name and address of the supplier.

1.7. MAINTENANCE MATERIALS

- 1.7.1. All grease, oil, and fuel required for testing of equipment shall be furnished with the respective equipment. The OWNER shall be furnished with a year's supply of required lubricants including grease and oil of the type recommended by the manufacturer with each item of equipment supplied.
- 1.7.2. The CONTRACTOR shall be responsible for changing the oil in all drives and intermediate drives of each mechanical piece of equipment after initial break-in of the equipment, which in no event shall be any longer than three weeks of operation.

2. PRODUCTS

2.1. FABRICATION AND MANUFACTURE

2.1.1. Workmanship and Materials:

- A. CONTRACTOR shall guarantee all equipment against faulty or inadequate design, improper assembly or erection, defective workmanship or materials, and leakage, breakage or other failure. Materials shall be suitable for service conditions.
- B. All equipment shall be designed, fabricated, and assembled in accordance with recognized and acceptable engineering and shop practice. Individual parts shall be manufactured to standard sizes and gages so that repair parts, furnished at any time, can be installed in the field. Like parts of duplicate units shall be interchangeable. Equipment shall not have been in service at any time prior to delivery, except as required by tests.
- C. Except where otherwise specified, structural and miscellaneous fabricated steel used in equipment shall conform to AISC standards. All structural members shall be designed for shock or vibratory loads. Unless otherwise specified, all steel which will be submerged, all or in part, during normal operation of the equipment shall be at least 1/4 inch thick.

2.1.2. Lubrication:

- A. Equipment shall be adequately lubricated by systems which require attention no more frequently than weekly during continuous operation. Lubrication systems shall not require attention during startup or shutdown and shall not waste lubricants.
- B. Lubricants of the type recommended by the equipment manufacturer shall be furnished by the CONTRACTOR in sufficient quantity to fill all lubricant reservoirs and to replace all consumption during testing, startup, and operation prior to acceptance of equipment by OWNER. Unless otherwise specified or permitted, the use of synthetic lubricants will not be acceptable.
- C. Lubrication facilities shall be convenient and accessible. Oil drains and fill openings shall be easily accessible from the normal operating area or platform. Drains shall allow for convenient collection of waste oil in containers from the normal operating area or platform without removing the unit from its normal installed position.

- 2.1.3. Safety Guards: All belt or chain drives, fan blades, couplings, and other moving or rotating parts shall be covered on all sides by a safety guard. Safety guards shall be fabricated from 16 USS gage or heavier galvanized or aluminum-clad sheet steel or 1/2-inch mesh galvanized expanded metal. Each guard shall be designed for easy installation and removal. All necessary supports and accessories shall be provided for each guard. Supports and accessories, including bolts, shall be galvanized. All safety guards in outdoor locations shall be designed to prevent the entrance of rain and dripping water.

2.1.4. Equipment Foundation Supports:

- A. All foundations, platforms and hangers required for the proper installation of equipment shall be furnished and installed by the CONTRACTOR.

- B. Unless otherwise indicated or specified, all equipment shall be installed on reinforced concrete bases at least 6 inches high and shall conform to Section 03300: Cast-In-Place Concrete. Cast iron or welded steel baseplates shall be provided for pumps, compressors, and other equipment. Each unit and its drive assembly shall be supported on a single baseplate of neat design. Baseplates shall have pads for anchoring all components and adequate grout holes. Baseplates for pumps shall have a means for collecting leakage and a threaded drain connection. Baseplates shall be anchored to the concrete base with suitable anchor bolts and the space beneath filled with grout as specified in Section 03600: Grout. All open equipment bases shall be filled with nonshrinking grout sloped to drain to the perimeter of the base.
- C. The CONTRACTOR shall furnish, install and protect all necessary guides, bearing plates, anchor and attachment bolts, and all other appurtenances required for the installation of equipment. These shall be of ample size and strength for the purpose intended.
- D. Equipment suppliers shall furnish suitable anchor bolts for each item of equipment. Anchor bolts, together with templates or setting drawings, shall be delivered sufficiently early to permit setting the anchor bolts when the structural concrete is placed. Anchor bolts shall comply with Section 05500: Miscellaneous Metals (if applicable) and, unless otherwise specified, shall have a minimum diameter of 3/4 inch. Unless otherwise indicated or specified, anchor bolts for items of equipment mounted on baseplates shall be long enough to permit 1-1/2 inches of grout beneath the baseplate and to provide adequate anchorage into structural concrete.
- E. Structural steel supports and miscellaneous steel required for supporting and/or hanging equipment and piping furnished under this Division shall be provided and installed by CONTRACTOR.
- F. All foundations, anchor pads, piers, thrust blocks, inertia blocks and structural steel supports shall be built to template and reinforced as required for loads imposed on them.
- G. The CONTRACTOR shall assume all responsibility for sizes, locations and design of all foundations, anchor pads, pier, thrust blocks, inertia blocks, curbs and structural steel supports.

2.1.5. Shop Painting:

- A. All steel and iron surfaces shall be protected by suitable paint or coatings applied in the shop. Surfaces which will be inaccessible after assembly shall be protected for the life of the equipment. Exposed surfaces shall be finished smooth, thoroughly cleaned, and filled as necessary to provide a smooth uniform base for painting. Electric motors, speed reducers, starters, and other self-contained or enclosed components shall be shop primed or finished with high-grade oil-resistant enamel suitable for coating in the field with an alkyd enamel. Coatings shall be suitable for the environment where the equipment is installed.
- B. Surfaces to be painted after installation shall be prepared for painting as recommended by the paint manufacturer for the intended service, and then shop painted with one or more coats of the specified primer. Unless otherwise specified, the shop primer for steel and iron surfaces shall be Cook "391-N-167 Barrier Coat", Kop-Coat "No. 10 Inhibitive Primer", or equal.
- C. Machined, polished, and nonferrous surfaces which are not to be painted shall be coated with rust-preventive compound, Houghton "Rust Veto 344", Rust-Oleum "R-9", or equal.

2.1.6. Nameplates: CONTRACTOR shall provide equipment identification nameplates for each item of equipment. Nameplates shall be 1/8 inch Type 304 stainless steel and shall be permanently fastened. Plates shall be fastened using round head metallic drive screws, or where metallic drive screws are impractical, with stainless steel pop rivets. Metallic drive screws shall be brass or stainless steel, Type V and No. 8 by 3/8 inch long. Names and/or equipment designations shall be engraved on the plates and the engraving painted with a primer and black paint system compatible with stainless steel. CONTRACTOR shall submit a list of proposed names and designations for review prior to fabrication of nameplates. At a minimum, each nameplate shall include equipment manufacturers name, year of manufacture, serial number and principal rating data.

2.1.7. Pipe Identification:

- A. All pipe (except underground) shall have code letters and flow arrows painted as per Specification Section 09905: Piping and Equipment Identification System (if applicable). The CONTRACTOR shall ensure that the pipes are properly marked.
- B. Underground pipe and tube: Pipe and tube shall be located by installing 10 gage wire under the pipe and by

installing 3 inch wide plastic tape continuously along the run of pipe or tube. The color of tape and wire shall be consistent with the color of the buried pipe and as approved by the Owner/Engineer.

- I. Location: Tape shall be installed approximately 12 inches above the pipe. Wire shall be placed under the pipe.
- II. Manufacturer: Tape shall be non-metallic and manufactured of inert polyethylene, highly resistant to alkaline, acids or other destructive chemical components likely to be encountered in soils. Tape shall be Terra Tape as manufactured by Reef Industries, Seton Name Plate Corporation, or equal. Wire shall be steel core, 10 gage, single strand THHN solid copper tracing wire with a 45 mil HDPE jacket, color coded to the installed pipe.

2.1.8. Valve Identification: On all valves, except shut-off valves located at a fixture or piece of equipment, the CONTRACTOR shall provide a coded and numbered tag attached with brass chain and/or brass "S" hooks.

A. Tag Types:

- I. Tags for valves on pipe and tube lines conducting hot medium (steam, condensate, hot water, etc.) shall be brass or anodized aluminum.
- II. Tags for all other valves shall be Type 304 stainless steel.
- III. Square tags shall be used to indicate normally closed valves and round tags shall indicate normally open valves.

B. Coding: In addition to the color coding, each tag shall be stamped or engraved with wording or abbreviations to indicate the line service. All color and letter coding shall be approved by the Owner/Engineer.

C. Valve Schedule: The CONTRACTOR shall provide a typewritten list of all tagged valves giving tag shape, letter code and number, the valve size, type, use and general location within building.

2.1.9. Noise Attenuation and Control:

- A. Unless otherwise specified, the maximum permissible noise level for a complete installed piece of equipment located within or outside a structure shall not exceed 85 dB at 3 feet. A complete piece of equipment includes the driver and driven equipment, plus any intermediate couplings, gears, and auxiliaries. All equipment provided herein that is specified to be factory and field tested shall be tested as specified herein for noise generation at the equipment manufacturer's expense.
- B. Maximum permissible noise (sound pressure) levels shall be in decibels as read on the "A" weighting scale of a standard sound level meter (dB); all measurements shall be made in relation to a reference pressure of 0.0002 microbar. Measurements of emitted noise levels shall be made on a sound level meter meeting at least the Type 2 requirements set forth in ANSI S1.4, Specification for Sound Level Meters. The sound level meter shall be set on the "A" scale and to slow response. Unless otherwise specified for a particular piece of equipment, the point of measurement of sound level shall be made at the specified distance from any major surface along the entire perimeter and at mid height of the piece of equipment, or at the specified distance from an outer major surface encompassing the sound source including inlets or outlets.

2.1.10. Fire Hazard Rating:

- A. All piping, duct work, and equipment insulation, fastener, and jacketing materials shall have a fire hazard rating not to exceed 25 for flame spread, 50 for fuel contributed, and 50 for smoke developed. Rating shall be determined by ASTM Designation E84, "Surface Burning Characteristics of Building Materials". Corresponding ratings determined by Underwriters' Laboratories, Inc., UL-723, "Test Method for Fire Hazard Classification of Building Materials", will also be acceptable.
- B. Flame proofing treatments will not be acceptable.

2.1.11. Heating, Ventilation and Domestic Plumbing Equipment

- A. Interchangeability: In all design and purchasing, interchangeability of items of equipment, subassemblies, parts, motors, starters, relays, and other items is essential. All similar items shall be of the same manufacturer, type, model, and dimensions.

2.2. ACCESSORIES

- 2.2.1. Special Tools and Accessories: Equipment requiring periodic repair and adjustment shall be furnished complete with all special tools, instruments, and accessories required for proper maintenance. Equipment requiring special devices for lifting or handling shall be furnished complete with those devices.

3. EXECUTION

3.1. INSTALLATION AND OPERATION

- 3.1.1. Installation: Equipment shall not be installed or operated except by, or with the guidance of, qualified personnel having the knowledge and experience necessary for proper results. When so specified, or when employees of CONTRACTOR or his subcontractors are not qualified, such personnel shall be field representatives of the manufacturer of the equipment or materials being installed.

- A. The CONTRACTOR shall have on site sufficient proper construction equipment and machinery of ample capacity to facilitate the work and to handle all emergencies normally encountered in work of this character. To minimize field erection problems, mechanical units shall be factory assembled when practical.
- B. Equipment shall be erected in a neat and workmanlike manner on the foundations and supports at the locations and elevations shown on the Drawings, unless otherwise directed by the Owner/Engineer during installation.
- C. All equipment shall be installed in such a manner as to provide access for routine maintenance including lubrication.
- D. For equipment such as pumping units, which require field alignment and connections, the CONTRACTOR 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.
- E. Equipment of a portable nature which requires no installation shall be delivered to a location designated by the OWNER.

- 3.1.2. Tolerances: 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 feet horizontal and vertically. All valves and operators shall be installed in the position shown on the Contract Drawings or as directed by the Owner/Engineer, if not shown.

- 3.1.3. Alignment and Level: The equipment shall be brought to proper level by shims (1/4 inch maximum). After the machine has been leveled and aligned, the nuts on the anchor bolts shall be tightened to bind the machine firmly into place against the wedges or shims. Grouting shall be as specified in Section 03600: Grout.

- 3.1.4. Grouting: The grout shall be tamped into position with a board, steel bar, or other tool. Tamping should not be so hard as to raise or otherwise displace the plate.

- 3.1.5. Contact of Dissimilar Metals: Where the contact of dissimilar metal may cause electrolysis and where aluminum will contact concrete, mortar, or plaster, the contact surface of the metals shall be separated using not less than one coat of zinc chromate primer and one heavy coat of aluminum pigmented asphalt paint on each surface.

- 3.1.6. Cutting and Patching: All cutting and patching necessary for the work shall be performed by the CONTRACTOR.

- 3.1.7. Operation: All equipment installed under this Contract, including that furnished by OWNER or others under separate contract, shall be placed into successful operation according to the written instructions of the manufacturer or the instructions of the manufacturer's field representative. All required adjustments, tests, operation checks, and other startup activity shall be provided.

3.2. OBSERVATION OF PERFORMANCE TESTS

- 3.2.1. Where the specifications require observation of performance tests by the Construction Inspector, such tests shall comply with the quality assurance paragraph in this section.

3.3. MANUFACTURER'S FIELD SERVICES

- 3.3.1. Services Furnished Under This Contract:

- A. An experienced, competent, and authorized representative of the manufacturer of each item of equipment shall visit the site of the Work and inspect, check, adjust if necessary, and approve the equipment installation. In each

case, the manufacturer's representative shall be present when the equipment is placed in operation. The manufacturer's representative shall revisit the jobsite as often as necessary until all trouble is corrected and the equipment installation and operation are satisfactory in the opinion of Construction Inspector.

- B. Each manufacturer's representative shall furnish to OWNER, Construction Inspector, a letter of certification stating that the equipment has been properly installed and lubricated; is in accurate alignment; is free from any undue stress imposed by connecting piping or anchor bolts; and has been operated under full load conditions and that it operated satisfactorily.
- C. All costs for field services shall be included in the Contract amount.

END OF SECTION



SECTION 15044 PRESSURE TESTING OF PIPING

1. GENERAL

1.1. DESCRIPTION

1.1.1. Scope of Work: This section specifies the leakage and pressure testing of piping.

1.1.2. Testing Records:

A. Provide record of each piping installation during the testing. These records shall include:

- I. Date of test.
- II. Identification of pipeline tested or re-tested.
- III. Identification of pipeline material.
- IV. Identification of pipe section tested.
- V. Test pressure
- VI. Remarks: Leaks identified (type and location), types of repairs, or corrections made.
- VII. Certification by CONTRACTOR that the leakage rate measured conformed to the Specifications.
- VIII. Signature of Project Manager witnessing pipe test.

1.2. SUBMITTALS

1.2.1. Submit five (5) copies of the test records to the Owner/Engineer upon completion of the testing.

2. PRODUCTS

2.1. GENERAL:

2.1.1. Testing fluid shall be water, unless specified otherwise.

2.1.2. All testing shall be performed in accordance with applicable AWWA Standards (C-600) latest edition.

2.2. MATERIALS AND EQUIPMENT

2.2.1. Provide pressure gauges, pipes, pipe fittings, bulkheads, hydraulic force pumps, meters and graduated containers to perform the hydrostatic testing.

2.2.2. Pressure gauges used shall have been calibrated just prior to their use.

3. EXECUTION

3.1. TESTING PREPARATION

3.1.1. Pipes shall be in place and anchored before commencing pressure testing.

3.1.2. 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.

3.1.3. Before conducting hydrostatic tests, flush pipes with water to remove dirt and debris.

3.1.4. 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

3.2.1. General

- A. 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.
- B. 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)

3.3.1. General

- A. 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 of Palm Coast. CONTRACTOR shall furnish all necessary equipment and material, make all taps, and furnish all closure pieces in the pipe as required.
- B. 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 of Palm Coast 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.

3.3.2. 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 of Palm Coast may require a 6-hour pressure test. The basic provisions of AWWA C-600 and C-605/M23 shall be applicable.

3.3.3. Procedure For Pressure Test: Each section of pipe to be tested, as determined by The City of Palm Coast, 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.

3.3.4. Procedure For Leakage Test

- A. 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.
- B. For DUCTILE IRON PIPE, allowable leakage in gallons per hour shall not be greater than that determined by the formula:

$$L = \frac{SD(P)^2}{133,200}$$

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)

3.4.1. General

- A. CONTRACTOR shall test pipelines installed under this Contract in accordance with these specifications prior to acceptance of the pipeline by The City of Palm Coast. All field tests shall be made in the presence of The City of Palm Coast. 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 of Palm Coast water main / valve, the new water main must be disinfected prior to connection to the City of Palm Coast line. The City of Palm Coast will not be responsible for failure of the pressure test due to the existing valve leaking. The City of Palm Coast 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.
- B. 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.

3.4.2. Testing Criteria

- A. 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 of Palm Coast. The pump, pipe connection and all necessary apparatus shall be furnished by the CONTRACTOR and shall be subject to the approval of The City of Palm Coast.
- B. 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.

3.4.3. Procedure For Pressure Test

- A. 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).

B. Final Phase of Pressure Testing:

- I. 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

- II. 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

3.5.1. 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.

3.5.2. 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.

- 3.5.3. 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.
- 3.5.4. 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.
- 3.5.5. Manhole Testing: The allowable limits of infiltration or exfiltration of manholes shall not exceed a rate of 0.165 gallons per manhole per hour.
- 3.5.6. 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 15061 HIGH DENSITY POLYETHYLENE (HDPE) PIPE AND FITTINGS

1. GENERAL

1.1. DESCRIPTION

1.1.1. Scope of Work: Provide and install high density, high molecular weight polyethylene (HDPE) pipe and fittings of the sizes and in the locations shown on the Drawings and as specified for use in directional drilling.

1.1.2. Related Work:

- A. General Conditions.
- B. Earthwork: Section 02300.
- C. Directional Drilling: Section 02446.
- D. Pressure Testing of Piping: Section 15044.

1.2. STANDARDS

1.2.1. Pipe ½ inches through 3 inches shall conform to AWWA C901 and the Specifications.

1.2.2. Pipe and fittings 4 inches through 63 inches shall conform to AWWA C906 and the Specifications.

1.3. SUBMITTALS

1.3.1. Submit shop drawings in accordance with Section 01310: Administrative Requirements.

1.3.2. Submit manufacturer's recommended method for butt-fusing joints.

1.3.3. The polyethylene pipe manufacturer shall provide certification that stress regression testing has been performed on the specific product. Certification shall include a stress life curve per ASTM D2837.

1.3.4. Provide certification that the material is listed by the Plastic Pipe Institute in PPI TR-3 with a hydrostatic design basis of 1600 psi at 73°F. The PPI listing shall be in the name of the pipe manufacturer and shall be based on ASTM D2837 and PPI TR-3 testing and validation of samples of the pipe manufacturer's production pipe.

1.3.5. The manufacturer's certification shall state that the pipe was manufactured from one specific resin in compliance with these Specifications. The certificate shall state the specific resin used, its source, and list its compliance to these specifications.

1.3.6. Submit certified lab data to verify specified physical properties. Certify that tests are representative of pipe supplied for this project.

1.3.7. Submit affidavit of compliance with referenced standards (e.g., AWWA C901, C906, etc.).

1.3.8. Submit qualification certificates for operators of heat fusion equipment.

1.3.9. Submit schedule for placement of and removal of test bulkheads.

1.3.10. Submit certification that materials intended to contact potable water are listed under NSF 61.

1.4. INSPECTION

1.4.1. All materials and installation furnished under this specification are subject to inspection by the OWNER'S Representative.

1.5. QUALITY AND WORKMANSHIP

1.5.1. The pipe and fitting manufacturer's production facilities shall be open for inspection by the OWNER or his designated agents. During inspection, the manufacturer shall demonstrate that the facilities are capable of manufacturing the pipe and fittings required by this specification, that a quality control program meeting the minimum requirements of ASTM D3035 and ASTM F714 is in use, and that facilities for performing the test required by this specification are in use.

1.6. QUALIFICATION OF FUSION OPERATORS

1.6.1. Each operator performing fusion joining shall be qualified in the use of the manufacturer's recommended fusion procedure(s) by the following:

- A. Appropriate training or experience in the use of the fusion procedure.
- B. Making a sample joint according to the procedure that passes the following inspection and tests:
 - I. The joint shall be visually examined during and after joining and found to have the same appearance as a photograph or sample of an acceptable joint that was joined in accordance with the procedure; and
 - II. The joint shall be tested or examined by one of the following methods:
 - a) Pressure and tensile test as described in 49 CFR 192.283; or
 - b) Ultrasonic inspection and found to be free of flaws that would cause failure; or
 - c) Cut into at least three longitudinal straps, each of which is:
 - 1. Visually examined and found to be free of voids or unbonded areas on the cut surface of the joint, and
 - 2. Deformed by bending, torque, or impact and if failure occurs, it must not initiate in the joint area.
 - III. Each operator shall be requalified under the procedure, if, during any 12-month period he:
 - a) Does not make any joints under the procedure; or
 - b) Has three joints or three percent of the joints he has made, whichever is greater, that are found unacceptable by testing under 49 CFR 192.513.

1.7. DELIVERY, STORAGE AND HANDLING

- 1.7.1. On site pipe storage shall meet all manufacturers' requirements.
- 1.7.2. Transport individual pipe lengths to the job site on padded bunks with nylon tie-down straps or padded bonding to protect the pipe. Coiled HDPE pipe shall be stored in a manner to ensure safety. Protect the pipe from sharp objects. Anchor pipe securely to prevent slippage.
- 1.7.3. Store individual pipe lengths on earth berms or timber cradles in the numerical order of installation. Stack the heaviest series of pipe at the bottom. Do not stack pipe in excess of 20 rows high.
- 1.7.4. Protect the pipe from stones and sharp objects.
- 1.7.5. Store fittings in their original cartons.
- 1.7.6. Lift pipes with handling beams or wide belt slings near the middle of joints as recommended by the pipe manufacturer. Do not use cable slings, chains, or hooks.
- 1.7.7. Before installation, check pipe and fittings for cuts, scratches, gouges, buckling, kinking, or splitting. Remove any pipe section containing defects by cutting out the damaged section in a complete cylinder.

2. PRODUCTS

2.1. PIPE

2.1.1. Four-inch (4") pipe and larger shall have a ductile iron pipe OD with a minimum dimension ratio (DR) of 11. The dimension ratio

shall be verified by the CONTRACTOR based on the pipe pull strength and the pressure rating of the pipe supplied shall be pressure class 200 for water main, in accordance with Table 5 of AWWA C906. The pipe shall be homogenous throughout and free of visible cracks, holes, voids, foreign inclusions, or other deleterious defects and shall be identical in color, density, melt index, and other physical properties throughout.

2.1.2. Pipe shall have a minimum hydrostatic design basis (HDB) of 1,600 psi, as determined in accordance with ASTM D2837.

2.1.3. The inside diameter (ID) of the HDPE pipe shall be equal to or slightly larger than the inside diameter of the PVC or ductile iron mains to which it is connected.

2.1.4. Pipe Material:

A. Pipes shall be marked in accordance with AWWA requirements (C901 Section 2.4 or C906 Section 3.1, as appropriate).

B. All HDPE pipe shall be manufactured with a continuous stripe representing the following:

- I. Raw Water Main – white
- II. Water Main – blue
- III. Force Main – green
- IV. Reuse Main – lavender

The stripe shall appear on three sides of the pipe running the entire length and shall be 3/4" in height.

C. Materials used for the manufacture of polyethylene pipe and fittings shall be very high molecular weight, high density ethylene / hexene copolymer PE 3408 polyethylene resin meeting the physical property and pipe performance requirements listed below:

Property	Specification	Units	Minimum Values
Material Designation	PPI/ASTM	—	PE 3408
Material Classification	ASTM D1248	—	III C 5 P34
Cell Classification	ASTM D3350	—	345434C
Hardness	ASTM 32240	Shore "D"	64
Compressive Strength (Yield)	ASTM D695	psi	1,600
Tensile Strength @ Yield (Type IV Spec.)	ASTM D638 (2"/min)	psi	3,200
Elongation @ Yield	ASTM D638	%, min.	8
Tensile Strength @ Break (Type IV Spec.)	ASTM D638	psi	3,500
Elongation @ Break	ASTM D638	%, min.	600
Modulus of Elasticity	ASTM D638	psi	110,000
ESCR:			Fo>5,000
(Cond A, B, C: Mold. Slab)	ASTM D1693	Fo, Hrs.	F50>1,000
(Compressed Ring)	ASTM F1248	F50, Hrs.	
Slow Crack Growth	Battelle Method	Days to Failure	Fo>32
Impact Strength (IZOD) (.125" THK)	ASTM D256 (Method A)	in-lb/in Notch	42
Linear Thermal Expansion Coef.	ASTM D696	in/in/°F	1.2 x 10-4
Thermal Conductivity	ASTM C177	BTU, in/Ft2/hrs/°F	2.7
Brittleness Temp.	ASTM D746	°F	<-180
Vicat Soft. Temp.	ASTM D1525	°F	+257
NSF Listing	Standard 61	---	"Listed"

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* Standard deviation 0.01

D. The pipe shall be extruded from pre-compounded resin. In-plant blending of resin is unacceptable.

2.2. NIPPLES AND FLANGED STUB ENDS

2.2.1. Short nipples and stub ends shall be of the same material as the HDPE pipe.

2.3. FITTINGS

2.3.1. Fittings shall be made from material meeting the same requirements as the pipe. Fittings shall be fabricated by the manufacturer of the pipe.

2.3.2. Fittings shall meet the appropriate AWWA standard for the size involved (C901 or C906) and shall be Pressure Class 200 for water main.

2.3.3. Molded Fittings shall be manufactured in accordance with ASTM D3261 and shall be so marked.

2.3.4. Mechanical fittings, when used, shall be specifically designed for, or tested and found to be acceptable for use with HDPE pipe.

2.4. JOINTS

2.4.1. Sections of polyethylene pipe shall be joined into continuous lengths on the job site above ground. The joining method shall be the butt fusion method and shall be performed in strict accordance with the pipe manufacturer's recommendations. The butt fusion equipment used in the joining procedures shall be capable of meeting all conditions recommended by the pipe manufacturer.

2.4.2. Butt fusion joining shall result in a joint weld strength equal to or greater than the tensile strength of the pipe. Socket fusion shall not be used. Extrusion welding or hot gas welding of HDPE shall not be used. Flanges, unions, grooved-couplers, transition fittings, and some mechanical couplers may be used to connect HDPE pipe mechanically without butt fusion only where shown in the Drawings.

2.4.3. Ductile Iron to HDPE Connections:

- A. Flanged connections between ductile iron pipe or fittings and HDPE pipe or fittings shall meet all requirements of Section 15062: Ductile Iron Pipe.
- B. Mechanical joint connections between ductile iron pipe or fittings and HDPE pipe or fittings shall use ductile iron mechanical joint glands conforming to AWWA C111 and AWWA C153. Mechanical joints shall be fully thrust restrained. Gaskets, bolts and hexagonal nuts shall be standard rubber gaskets conforming to AWWA C111. Follower gland shall match class 350 "compact" fittings.
- C. HDPE pipe stiffeners shall be constructed of stainless steel and shall be flanged on one end to prevent over-insertion into the receiving pipe.

3. EXECUTION

3.1. HEAT FUSION

3.1.1. Use fusion equipment specially designed for heat fusion of HDPE. The equipment utilized shall be regulated for the different melt strength materials. Compatibility fusion techniques shall be used when polyethylenes of different melt indexes are fused together.

3.1.2. Use the following procedure to butt fuse HDPE pipe. If an operation contradicts manufacturer's directions, follow the manufacturer's recommendation.

- A. Maintain the proper temperature of the heater plate as recommended by the pipe manufacturer. Check it with a tempilstik or pyrometer for correct surface temperature.
- B. Clean pipe ends inside and outside with a clean cotton cloth to remove dirt, water, grease, and other foreign

materials.

- C. Square (face) the pipe ends using facing tools of the fusion machine. Remove all burrs, chips and filings before joining pipe or fittings.
- D. Check line-up of pipe ends in fusion machine to see that pipe ends meet squarely and completely over the entire surface to be fused. Make sure the clamps are tight so that the pipe does not slip during the fusion process.
- E. Insert clean heater plate between aligned ends and bring ends firmly in contact with plate but do not apply pressure while achieving melt pattern. Allow pipe ends to heat and soften. Softening depths per manufacturer's recommendation.
- F. Carefully move the pipe ends away from the heater plate and remove the plate (if the softened material sticks to the heater plate, discontinue the joint, clean heater plate, re-square pipe ends, and start over).
- G. Bring melted ends together rapidly. Do not slam. Apply enough pressure to form a double roll-back bead to the body of the pipe around the entire circumference of the pipe about 1/8-inch to 3/16-inch wide. Pressure is necessary to cause the heated material to flow together.
- H. Allow the joint to cool and solidify properly. Remove the pipe from the clamps and inspect the joint appearance.

3.2. OPERATIONS INCIDENTAL TO JOINT COMPLETION

3.2.1. Plan joint completion to accommodate temporary test bulkheads for hydrostatic testing on the day of installation.

3.3. ASSEMBLING JOINTS

3.3.1. Flanged Joints:

- A. Flange adapters shall be pressure rated the same as the pipe. Flange adapters shall be heat fused to the pipe as outlined in the heat fusion section.
- B. Gaskets shall be used between the polyethylene flange adapters when recommended by the HDPE pipe manufacturer. Sufficient torque shall be applied evenly to the bolts to prevent leaks. After initial installation and tightening of flanged connections, allow the connections to set for a few hours. Then conduct a final tightening of the bolts.
- C. Lubricate nuts and bolts with oil or graphite prior to installation.
- D. Check operation of valves connected to molded stub end flange adapters. Insert polyethylene spacer if recommended by pipe manufacturer for clearance.

3.3.2. Mechanical Joints:

- A. Wipe clean the socket and the plain end. Lubrication and additional cleaning should be provided by brushing both the gasket and plain end with an approved pipe lubricant just prior to slipping the gasket onto the plain end for joint assembly. Place the gland on the plain end with the lip extension toward the plain end, followed by the gasket with the narrow edge of the gasket toward the plain end.
- B. Insert the pipe into the socket and press the gasket firmly and evenly into the gasket recess. Keep the joint straight during assembly.
- C. Push the gland toward the socket and center it around the pipe with the gland lip against the gasket. Insert bolts and hand tighten nuts. Make deflection after assembly but before tightening bolts.
- D. Tighten the bolts to the normal range of bolt torque as indicated in AWWA C-600 while maintaining approximately the same distance between the gland and the face of the flange at all points around the socket.
- E. When connection is being made to HDPE pipe or fittings, insert pipe stiffener into connection end of HDPE pipe until flared end seats against cut face.

3.4. INSTALLATION

3.4.1. Installation of High Density Polyethylene Pipe:

- A. All high density polyethylene (HDPE) pipe shall be handled, stored, assembled and installed in accordance with AWWA C-906, manufacturer's recommendations and these Specifications.
- B. HDPE pipe shall be installed using directional drilling method of construction in accordance with Section 02446.

3.5. DISINFECTION OF PIPE

3.5.1. Flush and disinfect potable water and raw water mains in accordance with Section 15399 (if applicable).

3.6. HYDROSTATIC TESTING

3.6.1. Perform hydrostatic testing for leakage prior to installation and following installation in accordance with Section 15044.

3.7. MANDREL TESTING

3.7.1. Perform mandrel testing through the entire length of the installed HDPE pipe. The mandrel size shall be 80% of the inside diameter of the pipe.

END OF SECTION



SECTION 15064

PVC PIPE AND FITTINGS - POTABLE WATER MAINS

1. GENERAL

1.1. DESCRIPTION

1.1.1. SCOPE: The CONTRACTOR shall furnish and install the potable water piping system, complete, tested and ready for operation. This section contains standard specifications for use in general procedures as specified herein or as otherwise shown on the Drawings.

1.2. GENERAL REQUIREMENTS

1.2.1. As required by the General Conditions, the CONTRACTOR shall submit, for approval, shop drawings including manufacturer's certifications of all pipe and fittings for use on this project.

1.2.2. The CONTRACTOR shall submit to the Owner/Engineer for approval before work begins, certificates of inspection in triplicate from the pipe manufacturer that the pipe and fittings supplied have been inspected at the plant and meet the requirements of these specifications.

2. PRODUCTS

2.1. POLYVINYL CHLORIDE PIPE

2.1.1. General: Pipe shall be virgin polyvinyl chloride (PVC) pipe for potable water and shall have a bell type coupling with a thickened wall section integral with the pipe barrel. The pipe material shall be clean, virgin, NSF approved Class 12454-A or 12454-B PVC compound conforming to ASTM resin specification D-1784. The pipe shall be tested at levels meeting the requirements of the U.S. Department of Commerce Public Standard 22-70, and shall conform to the physical standards specifications of the Plastic Pipe Institute. Pipe shall be approved for potable water by the National Sanitation Foundation. All herein referenced standards shall be of the latest edition or revision.

2.1.2. PVC 1120 Pipe, Class 150, DR18: Pipe shall conform to ANSI/AWWA Standard C-900 latest edition for use in sizes 4 inches up to and including 12 inches in diameter. Pipe 14 inches through 48 inches shall conform to ANSI/AWWA C-905 latest edition. Pipe is to be manufactured to cast iron pipe equivalent outside diameters and may be used in lieu of cast iron and ductile iron pipe.

2.1.3. The pipe shall be designed to pass without failure a sustained pressure test of 500 psi in conformance with ASTM D1598 and for a quick burst test of 755 psi in conformance with ASTM D1599. In any case of conflict with standards specified herein, the requirements of AWWA Standard C-900 and or C-905 shall prevail. The pipe shall be "Ring-Tite", Class 150, DR18, as manufactured by JM, or approved equal.

2.1.4. PVC 1120 Pipe, PR200, SDR21: Pipe shall conform to ASTM D-2241-latest, for use in sizes less than 4 inches to 2 inches. Pipe is to be manufactured in I.P.S. (steel) standard pipe equivalent outside diameters. The pipe shall be designed for a hydrostatic working pressure of 200 psi at 73.4 degrees Fahrenheit and to pass without failure sustained pressure test of 420 psi minimum when tested in accordance with ASTM D-1598 and for a quick burst test of 630 psi minimum when tested in accordance with ASTM D-159a. The pipe shall be "Bell Ring" as manufactured by Ethyl Corporation, "Ring-Tite" as manufactured by JM, Carlon "Z" Joint as manufactured by Carlon - an Indian Head Company, or approved equal.

2.1.5. PVC 1120, Schedule 40: Pipe shall conform to ASTM D-1785-latest, for use in sizes smaller than 2 inches. The sustained pressure test shall be conducted in accordance with ASTM D-1598 at test pressures given in ASTM 1785 when tested in accordance with ASTM D-2672 (Section 6.5). The burst pressure test shall be conducted in accordance with ASTM D-1599 at test pressures given in ASTM 1785, when determined in accordance with ASTM D2672 (Section 6.6). The pipe shall be PVC 1120, Schedule 40, as manufactured by Ethyl Corporation or approved equal.

2.1.6. PVC 1120, Schedule 80: Where indicated on the drawings, Schedule 80 PVC pipe conforming to ASTM D-1785-latest shall be used. The pipe shall be PVC 1120, Schedule 80, as manufactured by Ethyl Corporation or approved equal.

2.2. JOINTS

- 2.2.1. PVC pipe joints shall be the manufacturer's standard push-on bell type with rubber sealing ring for pipe sizes two inches and larger. Ductile iron fittings shall be used for PVC pipe three inches and larger.
- 2.2.2. PVC pipe joints for pipe sizes 2-1/2 inches and smaller shall be extra heavy PVC or CPVC fittings solvent welded with PVC or CPVC cement.
- 2.2.3. Restrained joints shall incorporate restraining rings, Mega-Lug, or approved equal.

2.3. COATINGS AND LININGS

2.3.1. Exterior of Fittings:

- A. Buried Fittings: Factory applied bituminous coating or coal tar varnish or asphalt base paint, one-mil thick in accordance with AWWA C-151.
- B. Exposed Fittings: Factory applied coating of a universal rust-inhibitive primer 2.0 mils dry film thickness in accordance with AWWA C-115.

2.3.2. Interior of Fittings (unless indicated otherwise on Drawings):

- A. Potable water and reuse water: cement lining in accordance with ANSI A21.4 and AWWA C-104.

2.4. FITTINGS

2.4.1. All fittings shall be Class 125 (ANSI B16.1) unless otherwise specifically noted. Determine the pressure rating of the fittings based on the test pressures as shown in Section 15044: Pressure Testing of Piping, as follows:

A. Cast Iron Fittings:

- I. 3-inch to 12-inch up to 200 psi.
- II. Greater than 12-inch up to 150 psi.
- III. Coatings and linings for fittings shall be the same as for pipe material for each type of service.

- B. Ductile Iron Fittings: For pressure ratings greater than shown for cast iron fittings, use ductile iron fittings of the pressure class rating required, i.e., 250 or 350 pressure rating.

2.4.2. Ductile Iron Fittings and special castings, shall conform to the type of pipe being installed and have a minimum working pressure of 150 psi. Fittings shall conform to ANSI Specification A21.10 (AWWA C110)-latest. Short body pattern fittings shall normally be installed. Long body fittings shall be used where the Drawings specifically call for long body fittings, or at the option of the CONTRACTOR when the laying length is not controlled by short body patterns. Fittings shall have joints that match the type of pipe furnished.

2.4.3. Grooved-end fittings shall conform to AWWA C110 and ANSI B16.1 with grooved ends conforming to AWWA C606, radius cut rigid joints. Fitting material shall conform to ASTM A 48, Class 30, or ASTM A 126, Class B.

3. EXECUTION

3.1. PIPE LAYING GENERAL REQUIREMENTS

3.1.1. Each section of the pipe shall rest upon the pipe bed for the full length of its barrel, with recesses excavated to accommodate bells and joints. Any pipe which has its grade or joint disturbed after laying shall be taken up and relaid. No pipe shall be laid when the trench conditions or the weather is unsuitable for such work, except by permission of the OWNER. Pipe fittings shall be carefully handled to avoid damage, and if feasible while they are suspended over the trench before lowering, they shall be inspected for defects and to detect cracks. Defective, damaged or unsound pipe or fittings shall be rejected. Any section of pipe already laid which is found to be defective or damaged shall be replaced with new pipe without additional cost to the OWNER.

3.1.2. The minimum cover over all piping shall be 36 inches except where specifically shown otherwise. Bedding details are specified on drawings; backfill and compaction in earthwork specification.

3.2. CLEANING AND FLUSHING

3.2.1. Prior to the pressure and leakage tests, all piping shall be thoroughly cleaned of all dirt, dust, oil, grease, and other foreign matter.

3.2.2. All lines shall be thoroughly flushed with clean water to clear all lines of foreign matter.

3.2.3. Refer to Section 15044: Pressure Testing of Piping, for flushing requirements.

3.3. FIELD TESTING

3.3.1. All field tests shall be made in the presence of the Owner/Engineer. Except as directed otherwise, all pipelines shall be tested. Pipelines laid in excavation (other than trench excavation) or embedded in concrete, shall be tested prior to backfilling of the excavation or placing of the concrete.

3.3.2. Pressure testing of pipe shall be performed in accordance with Section 15044: Pressure Testing of Piping, herein.

3.4. DISINFECTION

3.4.1. All water pipes and fittings at whatever size and wherever installed on potable water and raw water mains shall be thoroughly disinfected prior to being placed in service. Disinfection shall follow the applicable provisions of the procedure established for the disinfection of water mains in AWWA C-651 latest edition and shall be in accordance with both state and local requirements, and shall be in accordance with Section 15399: Disinfection of Water Mains.

END OF SECTION



SECTION 15065 PVC PIPE AND FITTINGS - SEWAGE FORCE MAINS

1. GENERAL

1.1. DESCRIPTION

1.1.1. Scope of Work: The CONTRACTOR shall furnish and install the sewage force main piping system, complete, tested and ready for operation. This section contains standard specifications for use in general procedures as specified herein or as otherwise shown on the Drawings.

1.1.2. Related Work Described Elsewhere:

- A. Mechanical – General Requirements: Section 15000
- B. Plug Valves and Appurtenances: Section 15102

1.2. GENERAL REQUIREMENTS

1.2.1. The CONTRACTOR shall submit, for approval, shop drawings including manufacturer's certifications of all pipe and fittings for use on this project in accordance with the provisions of the General Conditions and Section 01310: Administrative Requirements.

1.2.2. The CONTRACTOR shall submit to the Owner/Engineer for approval, before work begins, certificates of inspection in triplicate from the pipe manufacturer that the pipe and fittings supplied have been inspected at the plant and meet the requirements of these specifications.

2. PRODUCTS

2.1. POLYVINYL CHLORIDE PIPE

2.1.1. General: Pipe shall be virgin polyvinyl chloride (PVC) pipe and shall have a bell type coupling with a thickened wall section integral with the pipe barrel. The pipe material shall be clean, virgin, compound conforming to ASTM resin specification D-1784. The pipe shall be tested at levels meeting the requirements of the U.S. Department of Commerce Public Standard 22-70, and shall conform to the physical standards specifications of the Plastic Pipe Institute. All herein referenced standards shall be of the latest edition or revision.

2.1.2. PVC 1120 Pipe, Class 150, DR18: Pipe shall conform to ANSI/AWWA Standard C-900 latest edition for use in sizes 4 inches up to and including 12 inches in diameter. Pipe 14 inches through 48 inches shall conform to ANSI/AWWA C-905 latest edition. Pipe is to be manufactured to cast iron pipe equivalent outside diameters and may be used in lieu of cast iron and ductile iron pipe. The pipe shall be designed to pass without failure a sustained pressure test of 500 psi in conformance with ASTM D1598 and for a quick burst test of 755 psi in conformance with ASTM D1599. In any case of conflict with standards specified herein, the requirements of ANSI/AWWA Standard C-900 and/or C-905 shall prevail. The pipe shall be "Ring-Tite," Class 150, DR18, as manufactured by Johns-Manville, or approved equal.

2.1.3. PVC 1120 Pipe, PR200, SDR21: Pipe shall conform to ASTM D-2241-latest, for use in sizes less than 4 inches to 2 inches. Pipe is to be manufactured in I.P.S. (steel) standard pipe equivalent outside diameters. The pipe shall be designed for a hydrostatic working pressure of 200 psi at 73.4 degrees Fahrenheit and to pass without failure sustained pressure test of 420 psi minimum when tested in accordance with ASTM D-1598 and for a quick burst test of 630 psi minimum when tested in accordance with ASTM D-1599. The pipe shall be "Bell Ring" as manufactured by Ethyl Corporation, "Ring-Tite" as manufactured by Johns-Manville, Carlon "Z" Joint as manufactured by Carlon - an Indian Head Company, or approved equal.

2.1.4. PVC 1120, Schedule 40: Pipe shall conform to ASTM D-1785-latest, for use in sizes smaller than 2 inches. The sustained pressure test shall be conducted in accordance with ASTM D-1598 at test pressures given in ASTM 1785 when tested in accordance with ASTM D-2672 (Section 6.5). The burst pressure test shall be conducted in accordance with ASTM D-1599 at test pressures given in ASTM 1785, when determined in accordance with ASTM D2672 (Section 6.6). The pipe shall be PVC 1120, Schedule 40, as manufactured by Ethyl Corporation or approved equal.

2.1.5. PVC 1120, Schedule 80: Where indicated on the Drawings, Schedule 80 PVC pipe conforming to ASTM D-1785-latest shall be used. The pipe shall be PVC 1120, Schedule 80, as manufactured by Ethyl Corporation or approved equal.

2.2. JOINTS

- 2.2.1. PVC pipe joints shall be the manufacturer's standard push-on bell type with rubber sealing ring for pipe sizes two inches and larger. Ductile iron fittings shall be used for PVC pipe three inches and larger.
- 2.2.2. PVC pipe joints for pipe sizes 2-1/2 inches and smaller shall be extra heavy PVC or CPVC fittings solvent welded with PVC or CPVC cement.
- 2.2.3. In lieu of concrete thrust blocks, approved cast iron or ductile iron restrained joints shall be used.

2.3. COATINGS AND LININGS

2.3.1. Exterior of fittings:

- A. Buried fittings: Factory applied bituminous coating or coal tar varnish or asphalt base paint, one-mil thick in accordance with AWWA C-151.
- B. Exposed fittings: Factory applied coating of a universal rust-inhibitive primer 2.0 mils dry film thickness in accordance with AWWA C-115.

2.3.2. Interior of fittings (unless indicated otherwise of Drawings):

- A. Sewage Force Mains: Ceramic epoxy lining in accordance with the following Specification:
 - I. All ductile iron fittings shall be delivered to the application facility without asphalt, cement lining, or any other lining on the interior surface. The ceramic epoxy lining shall be an amine cured novalac epoxy containing at least 20% by volume of ceramic quartz pigment. The lining shall be a minimum 40 mils dry film thickness. Any request for substitution must be accompanied by a successful history of lining pipe and fittings for sewer service, a test report verifying the following properties and a certification of the test results.
 - II. A permeability rating of 0.00 when tested according to the procedure described in Method A of ASTM E96-93, Procedure A with a test duration of 30 days.
 - III. The following tests must be run on coupons from factory lined ductile iron fittings:
 - ASTM B 117-85 Salt Spray (scribed panel) – Results to equal 0.0 undercutting after two years.
 - ASTM G 95-87 Cathodic Disbondment (1.5 volts @ 77°F) – Results to equal no more than 0.5mm undercutting after 30 days.
 - Immersion Testing rated using ASTM D714-87
 - 20% Sulfuric Acid – No effect after two years.
 - 140°F – 25% Sodium Hydroxide – No effect after two years.
 - 160°F Distilled Water – No effect after two years.
 - 120°F Tap Water (scribed panel) – 0.0 undercutting after two years with no effect.
 - Abrasion Resistance – Less than 4 mils loss after one million cycles on a \pm 22.50 sliding aggregate slurry abrasion tester using a sharp natural siliceous gravel with a particle size between 2 mm and 10 mm.
 - IV. Application of the lining shall be done under the pipe manufacturer's recommendations.

2.4. FITTINGS

- 2.4.1. All fittings shall be Class 125 (ANSI B16.1) unless otherwise specifically noted. Determine the pressure rating of the fittings based on the test pressures as shown in Section 15044: Pressure Testing of Piping, as follows:

- A. Cast iron fittings:
 - I. 3-inch to 12-inch up to 200 psi.
 - II. Greater than 12-inch up to 150 psi.

III. Coatings and linings for fittings shall be the same as for pipe material for each type of service.

B. Ductile iron fittings: For pressure ratings greater than shown for cast iron fittings, use ductile iron fittings of the pressure class rating required, i.e., 250 or 350 pressure rating.

2.4.2. Ductile Iron Fittings and special castings shall conform to the type of pipe being installed and have a minimum working pressure of 150 psi. Fittings shall conform to ANSI Specification A21.10 (AWWA C110)-latest. Short body pattern fittings shall normally be installed. Long body fittings shall be used where the Drawings specifically call for long body fittings or at the option of the CONTRACTOR when the laying length is not controlled by short body patterns. Fittings shall have joints that match the type of pipe furnished.

2.4.3. Grooved-end fittings shall conform to AWWA C110 and ANSI B16.1 with grooved ends conforming to AWWA C606, radius cut rigid joints. Fitting material shall conform to ASTM A 48, Class 30, or ASTM A 126, Class B.

3. EXECUTION

3.1. PIPE LAYING GENERAL REQUIREMENTS

3.1.1. Each section of the pipe shall rest upon the pipe bed for the full length of its barrel, with recesses excavated to accommodate bells and joints. Any pipe which has its grade or joint disturbed after laying shall be taken up and relaid. No pipe shall be laid when the trench conditions or the weather is unsuitable for such work, except by permission of the OWNER. Pipe fittings shall be carefully handled to avoid damage, and if feasible while they are suspended over the trench before lowering, they shall be inspected for defects and to detect cracks. Defective, damaged or unsound pipe or fittings shall be rejected. Any section of pipe already laid which is found to be defective or damaged shall be replaced with new pipe without additional cost to the OWNER.

3.1.2. The minimum cover over all piping shall be 36 inches except where specifically shown otherwise. Bedding details are specified on Drawings; backfill and compaction in Specifications and on the Drawings.

3.2. CLEANING AND FLUSHING

3.2.1. Prior to the pressure and leakage tests, all piping shall be thoroughly cleaned of all dirt, dust, oil, grease, and other foreign matter.

3.2.2. All lines shall be thoroughly flushed with clean water to clear all lines of foreign matter.

3.3. FIELD TESTING

3.3.1. All field tests shall be made in the presence of the Owner/Engineer. Except as directed otherwise, all pipelines shall be tested. Pipelines laid in excavation (other than trench excavation) or embedded in concrete, shall be tested prior to backfilling of the excavation or placing of the concrete.

3.3.2. Pressure testing of pipe shall be performed in accordance with Section 15044: Pressure Testing of Piping, herein.

END OF SECTION



SECTION 15100 VALVES AND SPECIALTIES - GENERAL

1. GENERAL

1.1. DESCRIPTION

1.1.1. Scope of Work: Furnish, install, support, and test valves, gates, cocks, stops, and faucets, when applicable, (hereinafter referred to as ("valves")) in the location(s) and of the size(s) and quantities shown on the Drawings and/or as directed by the OWNER/ENGINEER.

1.1.2. Related Work Described Elsewhere:

- A. Mechanical - General Requirements: Section 15000
- B. Gate Valves and Appurtenances: Section 15101

1.2. QUALITY ASSURANCE

1.2.1. Qualifications:

- A. All equipment furnished under this Specification shall be new and unused and shall be a standard product which has a successful record of reliable service in similar installations for a minimum of five (5) years.
- B. All valves of same type and duty shall be furnished by a single manufacturer.

1.2.2. Standards:

- A. ANSI
- B. AISI
- C. SSPC
- D. AWWA

1.3. SUBMITTALS

1.3.1. Materials and Shop Drawings: Copies of all materials required to establish compliance with the Specification shall be submitted in accordance with the provisions of Section 01310: Administrative Requirements. Submittals shall include at least the following:

- A. Certified shop drawings showing all important details of construction, dimensions (including laying length), and weight.
- B. Descriptive literature, bulletins, and/or catalogs showing all valve parts, and describing material of construction by material and specification (e.g., AISI).
- C. Valve coatings and linings, if any.
- D. A complete total bill of materials for all equipment.
- E. See individual sections for additional requirements.

1.3.2. Operating Instructions: Copies of operating and maintenance instructions shall be furnished in accordance with Section 01730: Operation

and Maintenance Data. These shall include equipment lists, descriptions, and information necessary to instruct operating and maintenance personnel unfamiliar with the valves.

1.4. PRODUCT DELIVERY, STORAGE AND HANDLING

1.4.1. Shipping:

- A. All parts shall be properly protected so that no damage or deterioration will occur during a prolonged delay from the time of shipment until installation is completed.
- B. Factory assembled parts and components shall be dismantled for shipment unless permission is received in writing from the Owner/Engineer.
- C. Finished surfaces of all exposed openings shall be protected by wooden blanks, strongly built and securely bolted thereto.
- D. Finished iron or steel surfaces not painted shall be properly protected to prevent rust and corrosion.
- E. 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.
- F. Each box or package shall be properly marked to show its net weight in addition to its contents.

1.4.2. Storage:

- A. Store valves and accessories in an area on the construction site protected from weather, moisture, or possible damage.
- B. Do not store valves or accessories directly on the ground.

1.4.3. Handling:

- A. Handle valves and accessories to prevent damage of any nature.
- B. Carefully inspect all materials for:
 - I. Defects in workmanship and materials.
 - II. Removal of debris and foreign material in valve openings and seats.
 - III. Proper functioning of all operating mechanisms.
 - IV. Tightness of all nuts and bolts.

1.5. WARRANTY AND GUARANTEES (See Section 01740: Warranties and Bonds).

2. PRODUCTS

2.1. MATERIALS

- 2.1.1. Materials shall be as indicated in specific sections, or on the Drawings, and compatible with intended use.
- 2.1.2. Valves shall have the name of the manufacturer and the size of the valve cast or molded onto the valve body or bonnet or shown on a permanently stainless steel attached plate.
- 2.1.3. Bolts, washers, nuts, and gaskets for flanged valves shall be as described in the specific piping sections.
- 2.1.4. Coat metal valves located above grade or in vaults and structures the same as the adjacent piping. Apply the specified prime coat at the place of manufacture. Apply finish coat in field. Finish coat shall match color of the adjacent piping.

3. EXECUTION

3.1. PREPARATION

3.1.1. Apply a shop coat finish of asphalt varnish to:

- A. Interior surfaces of all valves except corrosion resistant or specially coated valves as specified.
- B. Exterior surfaces of buried or submerged valves.
- C. Miscellaneous piping appurtenances.

3.1.2. Apply coats of paint primer and enamel to parts customarily finished at the shop.

3.1.3. Apply a shop coat of grease or other suitable rust resistant coating to ferrous surfaces obviously not to be painted.

3.1.4. Do not apply any coatings to valves that have a factory-applied epoxy coating inside and out.

3.2. INSTALLATION

3.2.1. Install valves and accessories in strict accordance with manufacturer's instruction and recommendations, as shown on the Drawings and/or as directed by the Owner/Engineer.

3.2.2. Carefully erect all valves and support them in their respective positions free from distortion and strain.

3.2.3. Bolt holes of flanged valves shall straddle the horizontal and vertical centerlines of the pipe run to which the valves are attached. Clean flanges by wire brushing before installing flanged valves. Clean flange bolts and nuts by wire brushing, lubricate threads with oil and 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.

3.2.4. Support all valves connected to pumps and equipment, and in piping systems that cannot support valves.

3.2.5. Repair any scratches, marks and other types of surface damage etc., with original coating as supplied by the factory.

3.3. INSPECTION AND TESTING

3.3.1. Check and adjust all valves and accessories for smooth operation.

3.3.2. Test valves for leakage at the same time that connecting pipelines are tested. See Section 15044: Pressure Testing of Piping, for pressure testing requirements. Protect or isolate any parts of valves, operators, or control and instrument systems whose pressure rating is less than the pressure tests.

3.3.3. If flanges leak under pressure testing, loosen or remove the nuts and bolts, reseal or replace the gasket, reinstall or retighten the bolts and nuts, and retest the joints.

END OF SECTION



SECTION 15101 GATE VALVES AND APPURTENANCES

1. GENERAL

1.1. DESCRIPTION

1.1.1. Scope of Work: The CONTRACTOR shall furnish and install all gate valves and appurtenances as shown on the Drawings and specified herein.

1.2. GENERAL REQUIREMENTS

1.2.1. The CONTRACTOR'S attention is directed to the requirements of Section 15000 in regard to the general requirements for all equipment furnished and installed under this section of the specifications.

1.2.2. The valves shall be furnished with end connections as shown on the Drawings. Flanged valves shall be faced and drilled to the ANSI B16.1-latest, Class 125 Standard. Mechanical joint and bell ends shall conform to ANSI A21.11 latest Standard. Threaded ends shall conform to ANSI B2.1-latest NPT Standard.

1.2.3. All exposed nuts, bolts, springs, washers, etc., shall be zinc or cadmium plated on above ground service and 316 SS on buried or submerged service.

1.2.4. When extension stems are required, substantial, adjustable wall brackets and extension stems shall be furnished and located as directed. Extension stems shall be provided on all buried valves when the operating nut is deeper than 4 feet below the final grade.

2. PRODUCTS

2.1. GATE VALVES

2.1.1. Gate valves 2 to 48 inches in diameter shall be designed for 250 psi maximum working pressure. When full open, gate valves shall have a clear waterway equal to the nominal diameter of the pipe. Valves, 2-inch to 48-inch shall be iron body, resilient-wedge gate valves with non-rising stems. All valves shall open by turning in a counter-clockwise direction. Valves shall have O-ring seals. Valves 2-inch to 48-inch shall conform to ANSI/AWWA C515. The operating nut or wheel shall have an arrow cast in the metal indicating the direction of opening. Each valve shall have the manufacturer's name, pressure rating, and year of manufacture cast on the body. Prior to shipment from the factory, each valve shall be tested by applying to it a hydraulic pressure equal to twice the specified working pressure.

2.1.2. Gate valves smaller than 2 inches, unless otherwise noted on the Drawings, shall be all bronze/brass construction and shall conform to Federal Specification WW-V-54.

All gate valves smaller than 2 inches shall be hand wheel operated and if installed below ground shall have an adjustable valve box with cover. Minimum weight of valves shall be as follows:

VALVE SIZE IN INCHES	VALVE WEIGHT IN POUNDS
1/2	1.0
3/4	1.3
1	2.5
1-1/4	3.8
1-1/2	5.2

2.1.3. Buried Valves: Gate valves larger than 2" in size shall be mechanical joint and equipped with a two-inch operating nut and adjustable valve box and cover.

2.1.4. Above Grade Valves: Gate valves located above grade or inside structures shall be hand wheel operated, non-rising stem type with flanged ends.

2.1.5. Valve Joints: All gate valves shall have either mechanical joint ends, flanged ends, or screw joints to fit the pipe run in which they are to

be used, except valves installed on slip joint pipe shall have mechanical joint ends, unless otherwise specified.

2.1.6. Gate valves shall be limited to the following manufacturers:

- A. Mueller Model A-2360, A-2361
- B. M&H Model 4067, 7000
- C. Kennedy KS-FW, KS-RW, R/W
- D. American Flow Control Series 2500

2.2. ACCESSORIES

2.2.1. Valve Boxes

- A. General: The CONTRACTOR shall furnish, assemble and place a valve box for each buried valve.
- B. Valve Boxes: Adjustable screw type valve boxes of suitable length shall be used, having cast iron base, 5-1/4" shaft, center section and top section with cover. Cover shall be marked "Water" or "Sewer" as appropriate. The top section shall be adjustable for elevation and shall be set to allow equal movement above and below finished grade. The base shall be centered over the valve and shall be approximately on line with nut at top of valve stem and the entire assembly shall be plumb. The castings shall be manufactured of clean, even grain, gray cast iron conforming to ASTM Designation A48, Class 20B, Gray Iron Castings. The casting shall be smooth, true to pattern, free from blow holes, sand holes, projections, or other harmful defects. The valve boxes shall be coated with a single thin coat of coal tar pitch varnish before machining, so that machined seating surfaces will be free of any coating. The seating surfaces of both the cover and the jacket shall be machined to fit so that the cover will not rock after it has been seated in any position in its associated jacket.
- C. The CONTRACTOR shall mount the valve box in a concrete collar with bronze disc giving the nomenclature of the valve. Refer to detail Drawings.

2.2.2. Valve Coatings: All interior and exterior surfaces of valves for buried service shall have a factory-applied epoxy coating. The exterior of all above ground valves shall be shop painted with two coats of a primer compatible with the finish paint schedule.

3. EXECUTION

3.1. CLEANING AND FLUSHING

- 3.1.1. All gate valves shall be thoroughly cleaned of all dirt, dust, oil, grease, and other foreign matter. This work shall be done with care to avoid damage to any inside coating.
- 3.1.2. All gate valves shall be thoroughly flushed with clean water to clear the lines of foreign matter.
- 3.1.3. After cleaning, gate valves shall be tested for pressure and leakage.

3.2. FIELD TESTING

3.2.1. All gate valves shall be tested in accordance with the requirements of AWWA Standard C-515 and C-600.

3.3. DISINFECTION

3.3.1. All gate valves within the potable water and raw water system(s) shall be disinfected in accordance with AWWA Standard C-651, and Section 15399: Disinfection of Water Mains.

END OF SECTION



SECTION 15102 PLUG VALVES AND APPURTENANCES

1. GENERAL

1.1. DESCRIPTION

1.1.1. Scope of Work: The CONTRACTOR shall furnish and install all plug valves and appurtenances as shown on the Drawings and specified herein.

1.2. GENERAL REQUIREMENTS:

1.2.1. The CONTRACTOR'S attention is directed to the requirements of Section 15000 in regard to the general requirements for all equipment furnished and installed under this section of the Specifications.

1.2.2. The valves shall be furnished with end connections as shown on the Drawings. Flanged valves shall be faced and drilled to the ANSI B16.1-latest, Class 125 Standard. Mechanical joint and bell ends shall conform to ANSI A21.11 latest Standard. Threaded ends shall conform to ANSI B2.1-latest NPT Standard.

1.2.3. All exposed nuts, bolts, springs, washers, etc., shall be zinc or cadmium plated on above grade service and 316 SS on buried or submerged service.

1.2.4. Plug valves shall open by turning counterclockwise when viewed from the stem. The operating nut or 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 on the body. Prior to shipment from the factory, each valve shall be tested by applying to it a hydraulic pressure equal to twice the specified working pressure.

1.2.5. When extension stems are required, substantial, adjustable wall brackets and extension stems shall be furnished and located as directed. Extension stems shall be provided on all buried valves when the operating nut is deeper than 4 feet below the final grade.

1.2.6. Valves shall be eccentric plug type for four and six inch. Valves larger than six inch shall be ball centric type.

2. PRODUCTS

2.1. PLUG VALVES

2.1.1. Plug valves shall be non-lubricated eccentric or ball centric with a resilient sealing surface on the plug or seat. The resilient sealing surface shall be neoprene or Buna-N for valves in wastewater, mixed liquor, or sludge service. The valves shall provide drip-tight shutoff in either direction up to the valves' rated operating pressure. Valves shall have permanently lubricated stainless steel or other inherently lubricated type bearings in the upper and lower stem journals. Bonnet shaft seals shall be capable of being replaced while line and valve remain in service. Port areas for the four-inch and six-inch eccentric shall not be less than 80 percent of full pipe area. Port areas for eight-inch and larger ball centric valves shall be 100% of full pipe area. Plug valves 8 inches and larger shall be gear operated and be of the ball centric design with a full 100 percent port opening.

2.1.2. Valves shall have screwed, flanged, or mechanical joint ends as indicated on the Drawings or listed in the Valve Schedule. Screwed ends shall meet the requirements of ANSI B16.3. Flange drilling and facing shall meet the requirements of ANSI B16.1. Mechanical joints shall meet the requirements of ANSI/AWWA C111/A21.11.

2.1.3. Each valve shall be furnished with an actuator. Means of actuation shall be by hand lever, chain lever, or worm gear operator, pneumatic cylinder, hydraulic cylinder, electric motor, or air motor as indicated on the Drawings, specified in this Article, or listed in the Valve Schedule. Operator accessories such as hand wheels, chain wheels and chains, 2" operating nuts, extension stems, floor stands and bonnet extensions shall be provided as indicated on the Drawings or listed in the Valve Schedule. All buried plug valves shall have gear operators. All plug valves, 8" and larger, shall have gear operators. Eccentric plug valves, 6" and smaller, exposed or in structures shall be wrench

operated if so indicated on the Drawings or listed in the Valve Schedule.

- 2.1.4. Gear operators shall be totally enclosed-type, oil or grease lubricated, and sealed for water tightness. Each operator shall have self-lubricating bronze or stainless steel bearings, thrust bearings, ductile iron or steel gears, built-in adjustable opening and closing stops, and valve position indicators. Each actuator or operator shall be capable of seating and unseating the valve. The torque required to turn the operator shaft shall not be more than 80 foot-pounds for operators with hand wheels and chain wheels and 150 foot-pounds for operators with operating nuts. The actuators for 3-way plug valves shall include a separate wheel to seat and unseat the plug. Construction of actuator housings shall be semi-steel.
- 2.1.5. Valves and actuators for submerged and buried services shall have seals on all shafts and shall have gaskets on valve and actuator covers, which prevent the entry of fluids. Actuator-mounting brackets for submerged service shall be totally enclosed and shall have gasket seals.
- 2.1.6. For submerged and buried service, all exposed nuts, bolts, springs, and washers shall be 316 stainless steel. For exposed service, all exposed nuts, bolts, springs, and washers shall be 316 stainless steel.
- 2.1.7. Plug valves shall be limited to the following:
 - A. DeZurik PEF 100% Port
 - B. Pratt Ballcentric (up to 12")
 - C. Milliken Millcentric (up to 12")
 - D. No other equals.

2.2. ELECTRIC ACTUATOR

- 2.2.1. The electric actuator shall be installed above grade for on/off control of low-head gravity flows. The actuator shall be manufactured or supplied by the valve manufacturer.
- 2.2.2. Each actuator shall consist of a high-torque, reversible electric motor, reduction gearbox, and output shaft "open-" and "close-" end travel limit switches, all contained in a NEMA 4 watertight enclosure. Actuator shall be sized to operate the valve from full-open to full-closed in not less than eight seconds, nor more than 30 seconds and not more than 60 seconds for modulating service.
- 2.2.3. Actuator shall be suited to deliver not less than two times the required torque based upon maximum dynamic flow conditions.
- 2.2.4. The actuator shall be suitable for operation in ambient temperatures ranging from 40 degrees F to +150 degrees F. Where the actuator is exposed to temperature variations of 35 degrees F or more, a space heater and thermostat shall be provided.
- 2.2.5. Actuator shall be complete with disengageable manual override which permits operation of the valve in the event of electric power failure or system malfunction. Actuator shall be furnished with a disengageable shaft as manual override with top of shaft including direction of travel. The valve shall not be capable of being operated electrically when manual override is engaged.
- 2.2.6. A mechanical type valve position indicator shall be furnished to show valve position at all times. The indicator shall be part of an intermediate gear head or the electric motor actuator.
- 2.2.7. A cam actuated and travel limit switch shall be provided for each direction of travel. Each switch shall be independently adjustable and capable of being set to operate at any point. Travel limit and auxiliary switches shall be single pole, double throw, snap acting, totally enclosed, and rated 15 amps at 250 VAC. Clearly marked terminal strips shall be provided in actuator housings for ease of field installations. Auxiliary NO/NC independently adjustable contacts shall be furnished at the open and closed limits for remote monitoring when specified in the Valve Schedule or shown on the Drawings. Auxiliary position potentiometer rating 0 to 10K ohms shall be furnished when specified in the Valve Schedule or shown on the Drawings.
- 2.2.8. Provision shall be made for an electromechanical brake to minimize overrun and prevent back driving of valve disc or plug.
- 2.2.9. The motor shall be a permanent split capacitor type designed for operation on a 120 VAC, single phase, 60 Hertz power supply. The motor winding insulation shall be Class B. A self-resetting thermal overload switch shall be provided to prevent motor overheating. The motor shall be rated for 25 percent duty cycle at maximum rated output for non-modulating service. Extended duty motor shall be furnished for modulating service and shall be designed for a minimum of 20 starts per minute.
- 2.2.10. Built-in control shall consist of local pushbuttons, selector switches, and indicating lights as specified in the Valve Schedule or shown on

the Drawings.

- 2.2.11. Actuators for modulating service shall be furnished with a solid state position controller capable of receiving a 4 to 20 MVDC control signal. Positioner shall consist of an error detection circuit, amplifier, and either solid state or electromechanical relays. By means of a solid state approach module, the positioner shall provide proportional speed action to the motor actuator with adjustments for a 5:1 turn down ratio on an error signal of 10 percent to 1 percent. The main printed circuit board shall have adjustments for zero, span, sensitivity, and input trim. Enclosure shall be of NEMA 4 construction, suitable for surface mounting or mounted to the actuator.

2.3. VALVE BOXES

- 2.3.1. General - The CONTRACTOR shall furnish, assemble and place a valve box for each buried valve.
- 2.3.2. Valve Boxes - Adjustable screw type valve boxes of suitable length shall be used, having cast iron base, 5-1/4" shaft, center section and top section with cover. Cover shall be marked "Water" or "Sewer" as appropriate. The top section shall be adjustable for elevation and shall be set to allow equal movement above and below finished grade. The base shall be centered over the valve and shall be approximately on line with nut at top of valve stem and the entire assembly shall be plumb. The castings shall be manufactured of clean, even grain, gray cast iron conforming to ASTM Designation A48, Class 20B, Gray Iron Castings; and shall be smooth, true to pattern, free from blow holes, sand holes, projections, or other harmful defects. The valve boxes shall be coated with a single thin coat of coal tar pitch varnish before machining, so that machined seating surfaces will be free of any coating. The seating surfaces of both the cover and the jacket shall be machined to fit so that the cover will not rock after it has been seated in any position in its associated jacket.
- 2.3.3. The CONTRACTOR shall mount the valve box in a concrete collar with bronze disc giving the nomenclature of the valve.

2.4. PAINTING OF VALVES

- 2.4.1. All surfaces of the valve shall be clean, dry and free from grease before painting. The valve interior and exterior surfaces, except for seating surfaces, shall be evenly coated with black asphalt varnish in accordance with AWWA C500, C509, and C550 - latest edition. The exterior of all above ground valves shall be shop painted with two coats compatible with the finish paint schedule.

3. EXECUTION

3.1. CLEANING AND FLUSHING

- 3.1.1. All plug valves shall be thoroughly cleaned of all dirt, dust, oil, grease, and other foreign matter. This work shall be done with care to avoid damage to any inside coating.
- 3.1.2. All plug valves shall be thoroughly flushed with clean water to clear the lines of foreign matter.
- 3.1.3. After cleaning, plug valves shall be tested for pressure and leakage.

3.2. FIELD TESTING

- 3.2.1. All plug valves shall be tested in accordance with the requirements of AWWA Standard C-600.

END OF SECTION



SECTION 15120 PIPING SPECIALTIES

1. GENERAL

1.1. DESCRIPTION OF WORK

1.1.1. This Section includes the piping specifications required for this project as shown on the Drawings and as specified.

1.1.2. Type of piping specialties specified in this section includes the following:

- A. Pipe Escutcheons
- B. Dielectric Unions
- C. Mechanical Sleeve Seals
- D. Fire Barrier Penetration Seals
- E. Water Hammer Arresters
- F. Drip Pans
- G. Pipe Sleeves
- H. Sleeve Seals

1.1.3. Piping specialties furnished as part of factory-fabricated equipment, are specified as part of equipment assembly in other Division 15 sections.

1.2. QUALITY ASSURANCE

1.2.1. Manufacturer's Qualifications: Firms regularly engaged in manufacture of piping specialties of types and sizes required, whose products have been in satisfactory use in similar service for not less than 5 years.

1.3. SUBMITTALS

1.3.1. Submit manufacturer's Certificate of Compliance certifying compliance with the referenced specifications and standards. Submit manufacturer's technical product data, including installation instructions, and dimensioned drawings for each type of manufactured piping specialty. Include pressure drop curve or chart for each type and size of pipeline strainer. Submit schedule showing manufacturer's figure number, size, location, and features for each required piping specialty.

2. PRODUCTS

2.1. PIPING SPECIALTIES

2.1.1. Provide factory-fabricated piping specialties recommended by manufacturer for use in service indicated. Provide piping specialties of types and pressure ratings indicated for each service, or if not indicated, provide proper selection as determined by Installer to comply with installation requirements. Provide sizes as indicated, and connections, which properly mate with pipe, tube, and equipment connections. Where more than one type is indicated, selection is Installer's option.

2.2. PIPE ESCUTCHEONS

- 2.2.1. Provide pipe escutcheons as specified with inside diameter closely fitting pipe outside diameter, or outside of pipe insulation where pipe is insulated. Select outside diameter of escutcheon to completely cover pipe penetration hole in floors, walls, or ceilings; and pipe sleeve extension, if any. Furnish pipe escutcheons with nickel or chrome finish for occupied areas, prime paint finish for unoccupied areas.
- 2.2.2. Pipe Escutcheons for Moist Areas: For waterproof floors, and areas where water and condensation can be expected to accumulate, provide cast brass or sheet brass escutcheons, solid or split hinged.
- 2.2.3. Pipe Escutcheons for Dry Areas: Provide sheet steel escutcheons, solid or split hinged.
- 2.2.4. Available Manufacturers: Subject to compliance with requirements, manufacturers offering pipe escutcheons which may be incorporated in the work include; but are not limited to, the following:
 - A. Chicago Specialty Mfg. Co.
 - B. Producers Specialty & Mfg. Co.
 - C. Sanitary-Dash Mfg. Co.

2.3. DIELECTRIC UNIONS

- 2.3.1. Provide standard products recommended by manufacturer for use in service indicated, which effectively isolate ferrous from non-ferrous piping (electrical conductance)# prevent galvanic action, and stop corrosion.
- 2.3.2. Available Manufacturers: Subject to compliance with requirements, manufacturers offering dielectric unions which may be incorporated in the work include; but are not limited to, the following:
 - A. B & K Industries, Inc.
 - B. Capital Mfg. Co.; Div. of Harsco Corp.
 - C. Eclipse, Inc.
 - D. Epco Sales, Inc.
 - E. Perfection Corp.
 - F. Rockford-Eclipse Div.

2.4. MECHANICAL SLEEVE SEALS

- 2.4.1. Modular mechanical type, consisting of interlocking synthetic rubber links shaped to continuously fill annular space between pipe and sleeve, connected with bolts and pressure plates which cause rubber sealing and elements to expand when tightened, providing watertight seal and electrical insulation.
- 2.4.2. Available Manufacturers: Subject to compliance with requirements, manufacturers offering mechanical sleeve seals which may be incorporated in the work include; but are not limited to, the following:
 - A. Thunderline Corp.

2.5. FIRE BARRIER PENETRATION SEALS

- 2.5.1. Provide seals for any opening through fire-rated walls, floors, or ceilings used as passage for mechanical components such as piping or ductwork.
 - A. Cracks, Voids, or Holes Up to 4-inch Diameter: Use putty or calking, one-piece intumescent elastomer, non-corrosive to metal, compatible with synthetic cable jackets, and capable of expanding 10 times when exposed to flame or heat, UL-listed.

- B. Openings 4-inches or Greater: Use sealing system capable of passing 3-hour fire test in accordance with ASTM E-814, consisting of wall wrap or liner, partitions, and end caps capable of expanding when exposed to temperatures of 250 to 350°F (121 to 177°C), UL-listed.

2.5.2. Available Manufacturers: Subject to compliance with requirements, manufacturers offering fire barrier penetration seals which may be incorporated in the work include; but are not limited to, the following:

- A. Electro Products Div./3M
- B. Nelson; Unit of General Signal

2.6. WATER HAMMER ARRESTERS

2.6.1. Provide bellows type water hammer arresters, stainless steel casing and bellows, pressure rated for 250 psi, tested and certified in accordance with PDI Standard WH-201.

2.6.2. Available Manufacturers: Subject to compliance with requirements, manufacturers offering water hammer arresters which may be incorporated in the work include; but are not limited to, the following:

- A. Amtrol, Inc.
- B. Smith (Jay R.) Mfg. Co.
- C. Tyler Pipe; Sub. of Tyler Corp.
- D. Zurn Industries, Inc.; Hydromechanics Div.
- E. Josam

2.7. FABRICATED PIPING SPECIALTIES

2.7.1. Drip Pans: Provide drip pans fabricated from corrosion-resistant sheet metal with watertight joints, and with edges turned up 2-1/2-inches. Reinforce top, either by structural angles or by rolling top over 1/4-inch steel rod. Provide hole, gasket, and flange at low point for watertight joint and 1-inch drain line connection.

2.7.2. Pipe Sleeves: Provide pipe sleeves of one of the following:

- A. Sheet-Metal: Fabricate from galvanized sheet metal; round tube closed with snap lock joint, welded spiral seams, or welded longitudinal joint. Fabricate from the following gages; 3-inches and smaller, 20 gage; 4-inches to 6-inches 16 gage, over 6-inches, 1 gage.
- B. Steel-Pipe: Fabricate from Schedule 40 galvanized steel pipe; remove burrs.
- C. Iron-Pipe: Fabricate from cast-iron or ductile-iron pipe; remove burrs.
- D. Plastic Pipe: Fabricate from Schedule 80 PVC plastic pipe; remove burrs.

2.7.3. Sleeve Seals: Provide sleeve seals for sleeves located in foundation walls below grade, or in exterior walls, of one of the following:

- A. Lead and Oakum: Calked between sleeve and pipe.
- B. Mechanical Sleeve Seals: Installed between sleeve and pipe.

3. EXECUTION

3.1. INSTALLATION OF PIPING SPECIALTIES

- 3.1.1. Pipe Escutcheons: Install pipe escutcheons on each pipe penetration thru floors, walls, partitions, and ceilings where penetration is exposed to view; and on exterior of building. Secure escutcheon to pipe or insulation so escutcheon covers penetration hole, and is flush with adjoining surface.
- 3.1.2. Dielectric Unions: Install at each piping joint between ferrous and non-ferrous piping. Comply with manufacturer's installation instructions.
- 3.1.3. Mechanical Sleeve Seals: Loosely assemble rubber links around pipe with bolts and pressure plates located under each bolt head and nut. Push into sleeve and center. Tighten bolts until links have expanded to form watertight seal.
- 3.1.4. Fire Barrier Penetration Seals: Fill entire opening with sealing compound. Adhere to manufacturer's installation instructions.
- 3.1.5. Water Hammer Arresters: Install in upright position, in locations and of sizes in accordance with PDI Standard WH-201, and elsewhere as indicated.

3.2. INSTALLATION OF FABRICATED PIPING SPECIALTIES

- 3.2.1. Drip Pans: Locate drip pans under piping passing over or within 3-feet horizontally of electrical equipment, and elsewhere as indicated. Hang from structure with rods and building attachments, weld rods to sides of drip pan. Brace to prevent sagging or swaying. Connect 1-inch drain line to drain connection, and run to nearest plumbing drain or elsewhere as indicated.
- 3.2.2. Pipe Sleeves: Install pipe sleeves of types indicated where piping passes through walls, floors, ceilings, and roofs. Do not install sleeves through structural members of work, except as detailed on drawings, or as reviewed by Engineer. Install sleeves accurately centered on pipe runs. Size sleeves so that piping and insulation (if any) will have free movement in sleeve, including allowance for thermal expansion; but not less than 2 pipe sizes larger than piping run. Where insulation includes vapor-barrier jacket, provide sleeve with sufficient clearance for installation. Install length of sleeve equal to thickness of construction penetrated, and finish flush to surface; except floor sleeves. Extend floor sleeves 1/2-inch above level floor finish, and 3/4-inch above floor finish sloped to drain. Provide temporary support of sleeves during placement of concrete and other work around sleeves, and provide temporary closure to prevent concrete and other material from entering sleeves.
 - A. Install sheet-metal sleeves at interior partitions and ceilings other than suspended ceilings.
 - B. Install iron-pipe sleeves at exterior penetrations; both above and below grade.
 - C. Install steel-pipe or plastic-pipe sleeves except as otherwise indicated.
- 3.2.3. Sleeve Seals: Install in accordance with the following:
 - A. Lead and Oakum: Fill and pack annular space between sleeve and pipe with oakum, caulk with lead, on both sides.

END OF SECTION



SECTION 15122 AIR RELEASE AND VACUUM RELIEF VALVES

1. GENERAL

1.1. DESCRIPTION

1.1.1. Scope of Work: This work under this Section includes materials and installation of air and vacuum valves, air release valves, combination air release valves, slow-closing air and vacuum valves, and slow-closing combination air release valves for wastewater service.

1.1.2. Related Work Described Elsewhere:

- A. Section 15000: Mechanical - General Requirements
- B. Section 15044: Pressure Testing of Piping

1.2. QUALITY ASSURANCE

1.2.1. Qualifications:

- A. The specified equipment shall be the standard product of manufacturers who regularly engage in the production of this type of equipment and who are fully experienced, reputable, and qualified in the manufacture of the equipment to be furnished. The equipment shall be designed, constructed, delivered, and installed in accordance with the best practices and methods.
- B. Each component and ancillary equipment item furnished under this specification shall be new and unused, and the product of manufacturer having a successful record of operation, manufacturing and servicing the equipment for a minimum of five years.

1.2.2. All air and vacuum release valves shall be manufactured by one (1) manufacturer.

1.2.3. Acceptable Manufacturers:

- A. Val-Matic
- B. APCO
- C. A.R.I.

1.3. SUBMITTALS

1.3.1. Materials and Shop Drawings: Copies of all materials required to establish compliance with the Specification shall be submitted in accordance with Section 01310: Administrative Requirements.

2. PRODUCTS

2.1. COMPONENTS

2.1.1. Clean Water Service:

- A. Air Release Valves:
 - I. 3/4 inch and smaller:
 - a) Simple-lever type.
 - b) Cast iron body ASTM A-48, Class 35, 316 stainless steel trim, viton orifice button.
 - c) Valves shall have a working pressure rating of at least 150 psi.

- d) Val-Matic No. 22, 25; APCO Model 55, 65 or equal.
- I. 1 inch or larger:
 - a) Valves to have heavy duty compound lever operating mechanism with stainless steel pivot pins and 316 stainless steel retaining rings.
 - b) Valves to be constructed of cast iron ASTM A-48, Class 35 with 316 stainless steel trim and float.
 - c) Valves to have an adjustable orifice button, constructed of 316 stainless steel with viton or Buna-N seating.
 - d) 1/2 inch threaded outlet and stainless steel plug for top cover and body drain.
 - e) Valves shall have a working pressure rating of at least 300 psi.
 - f) Val-Matic No. 38, 45; APCO Model 200; ARI D-040-C with one-way valve (for use on pipe exposed to atmosphere), D-040 with one-way valve (for use on pipe in valve vaults).
- B. Air and Vacuum Valves: (Do Not Use For Sewage Applications)
 - I. General: Valves designed to exhaust, or admit, large quantities of air.
 - a) Cast iron construction to ASTM A-48, Class 25 with 316 stainless steel trim and float with Buna-N seat.
 - b) Designs having levers and weights attached to floats will not be permitted.
 - c) Valves to be equipped with body drains as follows:
 - 1. Valves 3 inches and under to have 1/2 inch drain and 316 stainless steel pipe plug.
 - 2. Valves 4 inches and over to have 1 inch drain and 316 stainless steel plug.
 - a) Valves 3 inches and under to be NPT outlet. Valves 4 inches and larger to have steel protector hood.
 - b) Valves shall have a working pressure of at least 300 psi.
 - c) Val-Matic series 100; APCO Series 140, 150; or equal.
- C. Combination Air Release Valves (Do Not Use For Sewage Applications)
 - I. Combination of Paragraphs 2.01A.1 and 2.01A.2 of this Section. Valve to release and admit large quantities of air when the pipeline is filled or drained. Valve shall also function to release small, accumulated quantities of air from pipeline while system is pressurized and functioning.
 - II. Valves shall be Val-Matic Single-Body Series 200C; APCO Series 140C, 150; or Dual-Body Val-Matic Series 100/38; APCO Series 1100C; or equal.

2.1.2. Wastewater Service

- A. Air Release Valves:
 - I. 2-inch to 4-inch
 - a) Spring loaded joint between the stem and the upper float. Funnel-shaped lower body.
 - b) All inner metal parts made of stainless steel.
 - c) Available in either flange or threaded inlets.
 - d) Valve shall be constructed of rilsan with enamel coating.
 - e) Valve shall have a working pressure range to 360 psi.
 - f) A.R.I. D-025P with one-way valve on force main systems.
 - g) A.R.I. S-021 PN10 with one-way valve for PEP and reuse mains.

2.1.3. Valve End Connections:

- A. Valves smaller than 3 inches shall have threaded ends. Valves 3 inches or larger shall have flanged ends.
- B. Flanges for Class 150 valves shall comply with ANSI B-16.1, Class 125.
- C. Flanges for Class 300 valves shall comply with ANSI B-16.1, Class 250.

D. Threaded ends shall comply with ANSI B-2.1.

2.1.4. Bolts and Nuts for Flanged Valves:

A. Bolts and nuts for flanged valves located outdoors above ground shall be Type 316 stainless steel conforming to ASTM A-183, Grade B&M for bolts, and ASTM A-194, Grade 8M for nuts.

2.1.5. Gaskets: Gaskets for flanged end valves shall be described in the detail piping specifications.

2.2. ACCESSORIES

2.2.1. All air release and vacuum release valves shall be isolated from the service line with a stainless steel ball valve for valves up to 2 inches, and a flanged body butterfly valve for valves greater than 2 inches (provide a spacer plate if required to clear the rotation of the butterfly disc).

3. EXECUTION

3.1. INSTALLATION

3.1.1. Install valves in accordance with manufacturer's instructions and recommendations and as shown in the Drawings.

3.1.2. Install all valves in the vertical position and allow sufficient clearance around valve for proper maintenance and removal.

3.1.3. Clean flanges by wire brushing before installing flanged valves. Clean flange bolts and nuts by wire brushing, lubricate threads with oil and graphite, and tighten nuts uniformly and progressively. If flanges leak under pressure testing, loosen and remove the nuts and bolts, reseal or replace the gasket, reinstall or re-tighten the bolts and nuts, and retest the joints. Joints shall be watertight.

3.1.4. Clean threaded joints by wire brushing and swabbing. Apply Teflon joint compound or Teflon tape to pipe threads before installing threaded valves. Joints shall be watertight.

3.1.5. Valve Pressure Testing: Test valves at the same time that the connecting pipelines are pressure tested. Refer to Section 15044: Pressure Testing of Piping for pressure testing requirements. Protect or isolate any parts of valves, operators, or control and instrumentation systems whose pressure rating is less than the test pressure.

3.2. STARTUP

3.2.1. Check all air release valves for proper operation in the presence of the Owner/Engineer.

END OF SECTION



SECTION 15129 FLEXIBLE CONNECTORS

1. GENERAL

1.1. DESCRIPTION

- 1.1.1. Scope of Work: Furnish and install flexible connectors of the type(s) and size(s) in the location(s) shown on the Drawings and as specified herein.
- 1.1.2. Related Work Described Elsewhere:
 - A. Section 15000: Mechanical - General Requirements.
 - B. Section 15044: Pressure Testing of Piping.

1.2. QUALITY ASSURANCE

- 1.2.1. Minimum pressure rating equal to that of the pipeline in which they are to be installed.
- 1.2.2. Flexible connectors, other than those specified herein, are subject to the Owner/Engineer's approval.

1.3. SUBMITTALS

- 1.3.1. Submit Shop Drawings in accordance with Section 01310: Administrative Requirements, and the following.
- 1.3.2. Submit manufacturer's catalog data on flexible couplings. Show manufacturer's model or figure number for each type of coupling or joint for each type of pipe material for which couplings are used.
- 1.3.3. Submit manufacturer's recommended torques to which the coupling bolts shall be tightened for the flexible gasketed sleeve-type compression pipe couplings.
- 1.3.4. Show materials of construction by ASTM reference and grade. Show dimensions.
- 1.3.5. Show number, size, and material of construction of the rods and lugs for each thrust harness.

2. PRODUCTS

2.1. GENERAL

- 2.1.1. Provide flexible connectors as shown on the Drawings.
- 2.1.2. Materials shall be capable of withstanding the temperature, pressure, and type of material in the pipeline.
- 2.1.3. Supplied with control rods to restrict elongation and compression where shown on the Drawings.

2.2. FLEXIBLE RUBBER TYPE CONNECTOR

- 2.2.1. General:
 - A. General application for any size pipeline requiring the maximum compensation for expansion/contraction, vibration, and movement in minimal connecting space.
 - B. Shall be the filled arch type that will prevent sediment build up for all sludge, sewage, and other lines with similar service.

2.2.2. Materials:

- A. Expansion joints shall be manufactured of elastomer suitable for intended service and operating temperature, and shall be single or double arch as shown on the Drawings. Joints shall be reinforced with split steel retaining rings placed directly against the inside of the flanged to prevent damage to the rubber surface when the bolts are tightened. Retaining rings, control rods, washers and all metal parts shall be 316 stainless steel.
- B. Expansion joints shall be suitable for above ground outdoor service. Flanges shall be drilled to ANSI 125 lb.
- C. Expansion joints shall be as manufactured by the Red Valve Company, Metraflex, Holtz Rubber Company, General Rubber Corporation, or equal.

2.3. RIGID DUCTILE IRON CONNECTORS

- 2.3.1. To accommodate vertical differential settlements at tank perimeter, connectors shall be ductile iron double ball and socket units as manufactured by Ebaa Iron Sales, Inc., Eastland, Texas, Catalog No. 420M20 and 408M20, Class 250, mechanical joint connectors.

Internal surfaces shall be lined with a 15 mil fusion bonded epoxy, conforming to ANSI/AWWA C-213 for potable water usage. Exterior shall be coated with coal tar epoxy.

3. EXECUTION

3.1. INSTALLATION

3.1.1. Flexible Rubber Type Connectors:

- A. Remove dirt, rust, and burrs from metal flange faces. Bolt holes shall be aligned.
- B. Pipe lines shall be properly supported and guided to prevent excessive loads on flexible connectors. Also, vibration isolated anchors shall be installed on each side of the flexible connector. If this is not practical, control units shall be used.
- C. Pipe lines shall be properly aligned to within 1/8-inch maximum initial misalignment. Do not twist beyond their allowed torsional rating as shown on Table 15129-A.
- D. Make sure the flexible connector being installed meets with the service conditions anticipated. Attach to each flexible connector to card showing movement, pressure and temperature ratings.
- E. Apply a graphite/water solution or glycerin to the rubber flange faces. Never use a petroleum product or adhesive on the flange faces.
- F. Insert bolts from the arch side, behind the retaining ring, so that they do not interfere with the arch of the expansion joint. Use washers on all bolts at splits in the retaining ring.
- G. Tighten all bolts gradually and equally by alternating around the flange in a clockwise direction. The bolts will be properly torqued and the flange sealed when the edges of the rubber flanges bulge slightly.

3.1.2. Rigid Ductile Iron Type Connectors:

- A. Remove dirt, rust and burrs from metal flange faces.
- B. Piping shall be properly supported on well compacted select fill materials;
- C. Piping shall be properly located and aligned; and,
- D. Make certain the connector being installed meets with the service conditions anticipated.
- E. Make certain connecting pipe connections shall be restrained joint fittings.
- F. Ensure that the select backfill is mechanically compacted to equal bearing capacity as required by the tank specifications, Section 13220.

3.2. HYDROSTATIC TESTING

3.2.1. Hydrostatically test flexible pipe couplings and joints in place with the pipe being tested. Test in accordance with Section 15044: Pressure Testing of Piping.

TABLE 15129-A

PRESSURE AND MOTION CAPABILITY OF SINGLE ARCH
FLEXIBLE CONNECTORS

Size I.D. (Inches)	Working Pressure (PSIG)	Angular Movement (Degrees)	Torsional Movement (Degrees)	Axial Compression (Inches)	Axial Elongation (Inches)	Lateral Deflection (Inches)
2 - 4	165	19 - 10	3	7/16	1/4	1/2
5 - 12	140	8 - 5	3	7/16	1/4	1/2
14	85	4	2	11/16	3/8	1/2
16 - 24	65	3	1	13/16	7/16	1/2
26 - 66	55	2	1	15/16	1/2	1/2
68 - 96	45	1	1	1-1/16	9/16	1/2
102 - 108	40	3/4	3/4 - 1/2	1-1/16	9/16	1/2
120 - 144	30	2/3 - 1/2	1/2 - 1/3	1-1/16	9/16	1/2

TABLE 15129-B

CONTROL RODS AND GUSSETS
SIZE VS. PRESSURE RATING

Size (Inches)	Gusset Plate Thickness (Inches)	Rod Diameter (Inches)	NUMBER OF RODS					
			2	3	4	5	6	
			PRESSURE PSIG					
2	3/8	5/8	200					
2 1/2	3/8	5/8	200					
3	3/8	5/8	200					
4	3/8	5/8	200					
5	1/2	5/8	200					
6	1/2	5/8	140	200				
8	9/16	3/4	140	190				
10	3/4	1	140	190				
12	3/4	1	140	190				
14	3/4	1	85	130				
16	3/4	1-1/8	65	110				
18	3/4	1-1/8	65	110				
20	3/4	1-1/8	65	110				
22	1	1-1/4	65	100				
24	1	1-1/4	65	100				
26	1	1-1/4	55	85				
28	1 1/4	1-1/2	55	90				
30	1 1/4	1-1/2	55	90				
34	1 1/2	1-5/8	55	90				
36	1 1/2	1-5/8	55	90				
40	1 1/2	1-1/2	35	55	75	90		
42	1 1/2	1-5/8	40	55	80	90		
48	1 1/2	1-5/8	35	55	75	90		
50	1 1/2	2	45	65	90	90		
54	1 7/8	2	35	55	75	95		
56	1 7/8	2	35	55	70	90		
60	1 7/8	2	30	45	60	80		
62	1 7/8	2	30	45	60	75		
66	1 7/8	2	25	40	55	65	80	
72	1 7/8	2	20	35	45	55	70	
78	2	2-1/4	25	35	45	60	75	
84	2	2-1/4	20	30	45	55	65	
90	2 1/2	2-1/2	20	35	45	60	70	
96	2 1/2	2-3/4	25	35	45	65	75	

END OF SECTION



SECTION 15200 IDENTIFICATION TAPE FOR BURIED PIPE

1. GENERAL

1.1. DESCRIPTION

1.1.1. Furnish and install identification tape over the centerline of all buried potable water lines, wastewater force mains, gravity sewers and wastewater effluent mains.

1.2. SUBMITTALS

1.2.1. Submit manufacturer's descriptive literature, illustrations, specifications and other pertinent data.

2. PRODUCTS

2.1. IDENTIFICATION TAPE

2.1.1. Identification Tape for Ductile Iron and Steel Pipe: Identification tape shall be non-metallic, manufactured of inert polyethylene so as to be highly resistant to alkalis, 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.

2.1.2. Identification Tape for Polyvinyl Chloride Pipe: Identification tape shall be non-metallic and manufactured of polyethylene with a minimum thickness of 4 mils. The tape shall be highly resistant to alkalis, 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.

2.1.3. Tape background colors and imprints shall be as follows:

<u>Imprint</u>	<u>Background Color</u>
"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

2.1.4. Identification tape shall be "Terra Tape" as manufactured by Reef Industries, Inc., Houston, TX, (800) 231-6074; Seton, Branford, CT, (800) 571-2596; or approved equal.

3. EXECUTION

3.1. INSTALLATION OF IDENTIFICATION TAPE

3.1.1. Identification tape shall be installed for all buried pressure mains in accordance with the manufacturer's installation instructions and as specified herein.

3.1.2. For potable, raw, reuse water and force mains, identification tape shall be installed 12 inches above the pipe.

3.1.3. For wastewater or gravity sewers, identification tape shall be continuously spiral-wrapped around the pipe with the bands 12 to 18 inches apart.

END OF SECTION



Appendix "A"

City of Palm Coast Forms

<https://palmcoastgov.bonfirehub.com/portal>.

FORM 5

VENDOR REGISTRATION

VENDOR REGISTRATION

All Bidders awarded contracts, purchase orders, or work orders must register as a vendor with the City of Palm Coast.

Please indicate below if your company is currently registered as a vendor with the City of Palm Coast. If not already registered, please acknowledge that, if awarded this Bid, you will register your company with the City of Palm Coast upon receipt of Notice of Intent to Award.

I have already registered as a vendor with the City.

I have not registered as a vendor with the City, but plan to do so if awarded a contract, purchase order, or work order through this solicitation.

THIS FORM MUST BE COMPLETED AND RETURNED WITH YOUR SUBMITTAL

FORM 6

SUMMARY OF LITIGATION AND LICENSE SANCTIONS

SUMMARY OF LITIGATION AND LICENSE SANCTIONS

Litigation: Provide a summary of all litigation, claim(s), or contract dispute(s) filed by or against the Bidder in the past five (5) years that are related to the services the Bidder provides in the regular course of business. The summary shall state the nature of the litigation, claim or contract dispute, a brief description of the case, the outcome or projected outcome, and monetary amounts involved.

License Sanctions: List any regulatory or license agency sanctions within the past five (5) years.

SUMMARY

Check Appropriate Box

Not Applicable

Applicable, Summary Below (Printed or Typed)

Printed Name of Contractor

Signature

Printed Date

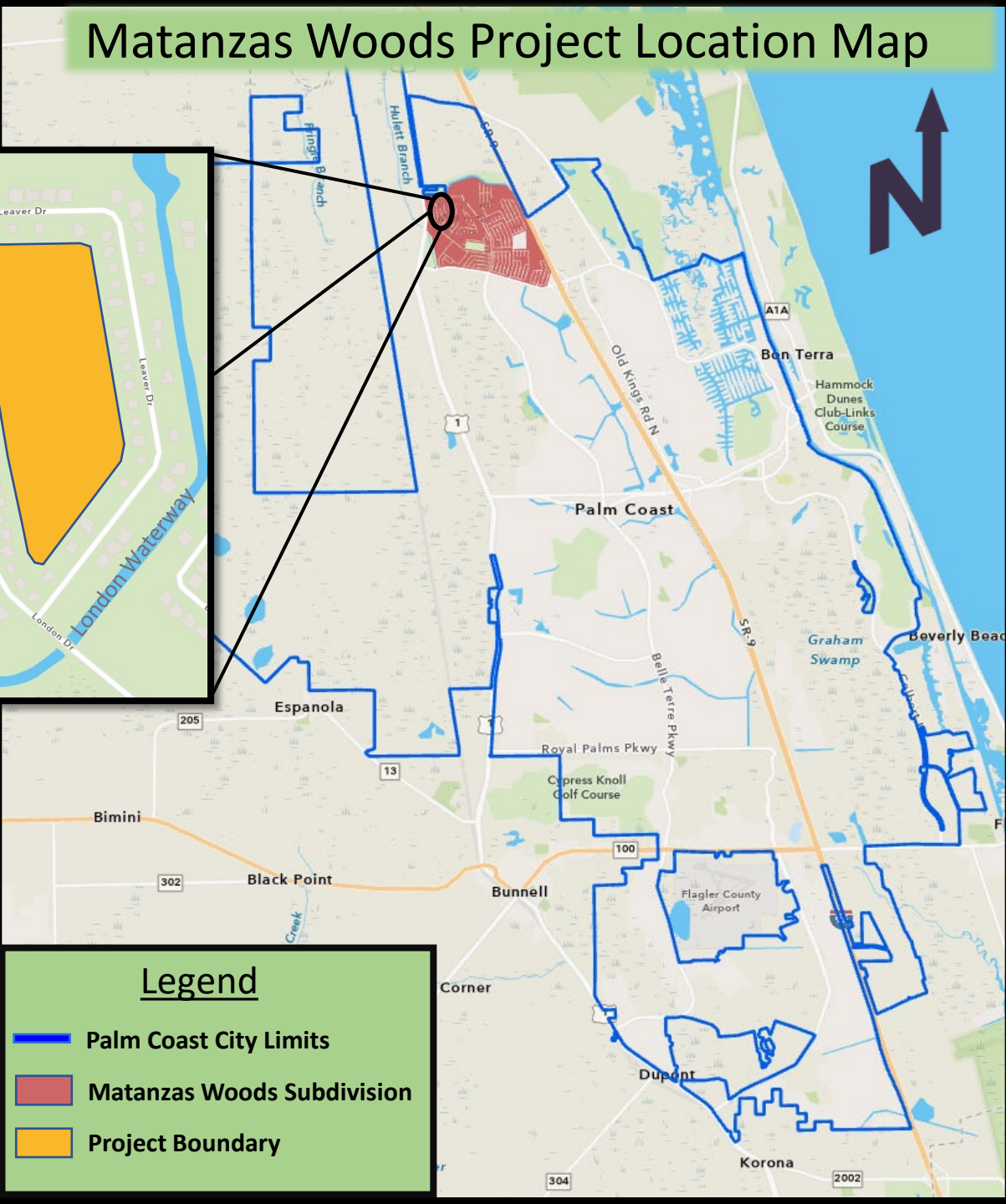
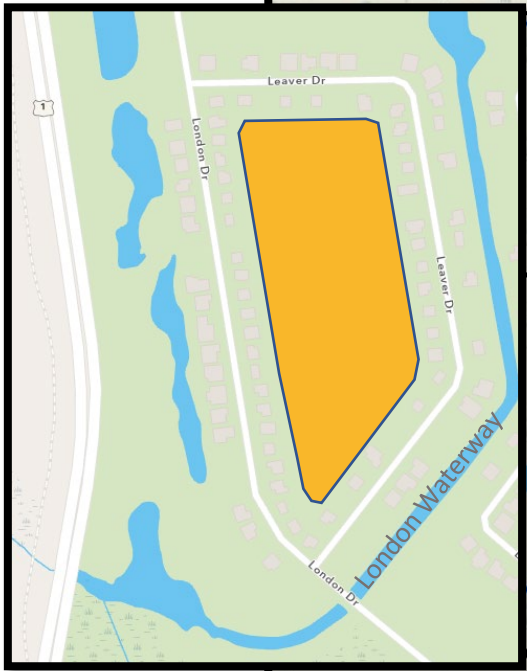
THIS FORM MUST BE COMPLETED AND RETURNED WITH YOUR SUBMITTAL






Appendix "B"

Location Maps

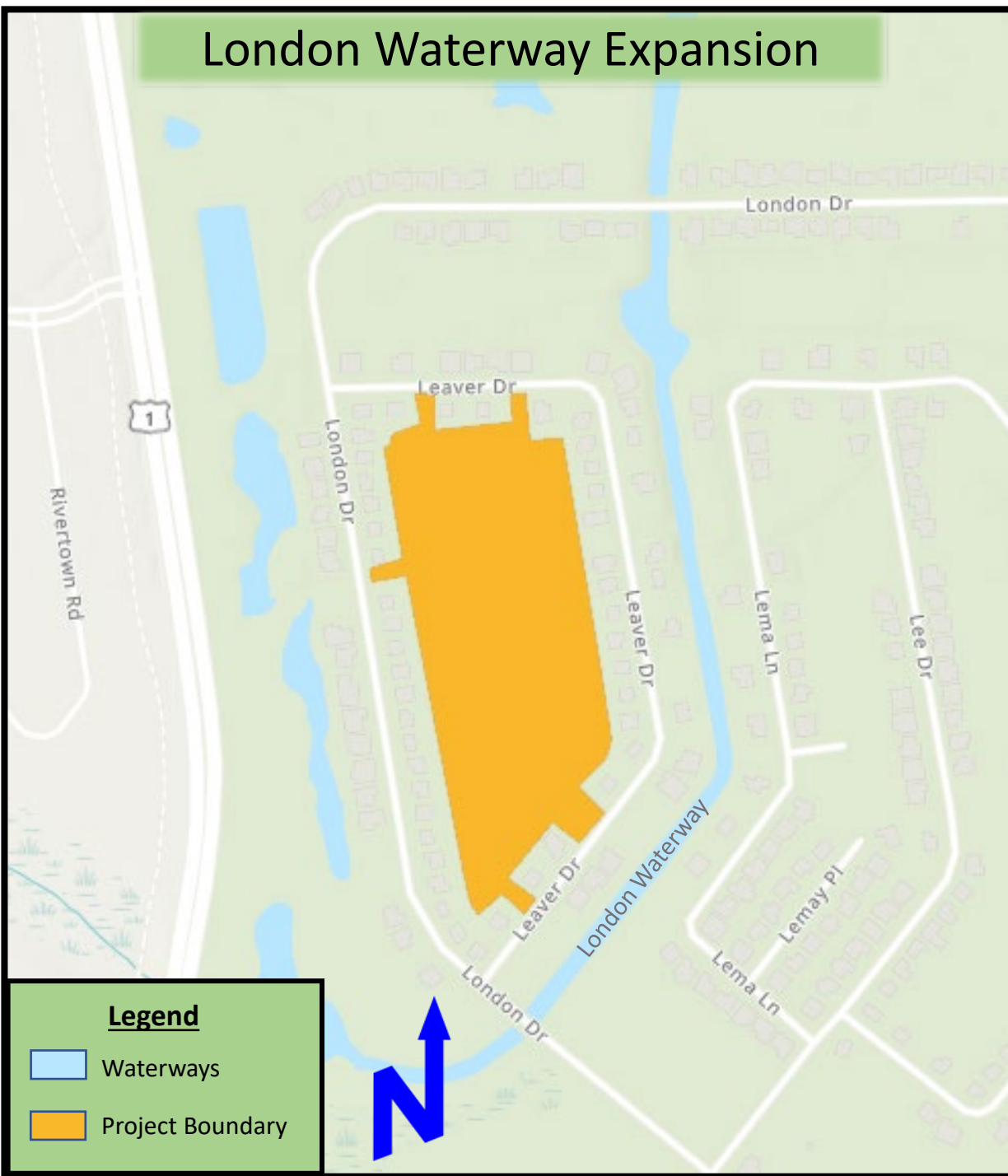
Matanzas Woods Project Location Map



Legend

-  Palm Coast City Limits
-  Matanzas Woods Subdivision
-  Project Boundary

London Waterway Expansion





Project Site

Dirt Disposal Site Location

Legend

- Dirt Disposal Site
- Disposal Route
- Project Boundary



Appendix "C"

Project Plans

CONTRACT PLANS COMPONENTS

DRAINAGE PLANS
STRUCTURAL PLANS

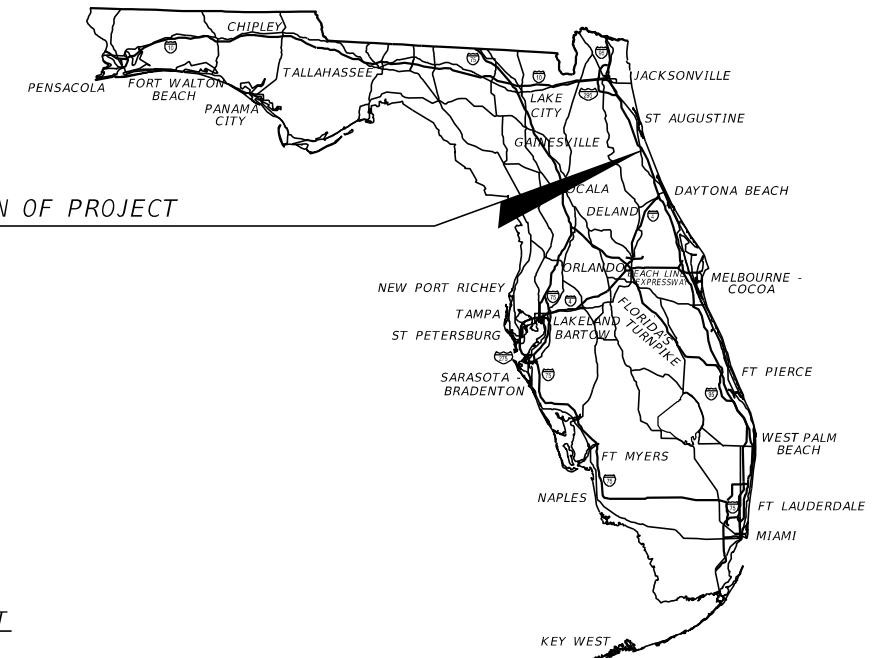
CITY OF PALM COAST

CONTRACT PLANS

CITY OF PALM COAST, PO #20211417

FLAGLER COUNTY

LONDON WATERWAY EXPANSION PROJECT



LOCATION OF PROJECT

INDEX OF DRAINAGE PLANS

SHEET NO.	SHEET DESCRIPTION
1	KEY SHEET
2	SIGNATURE SHEET
3	SUMMARY OF PAY ITEMS/GENERAL NOTES
4	TYPICAL SECTIONS
5	PROJECT LAYOUT/SURVEY DATA
6 - 8	LAKE PLAN
9 - 11	PLAN AND PROFILE
12	LAKE PLANTING PLAN
13 - 15	LAKE PLANTING SECTION
16 - 17	STORMWATER DETAILS
18 - 19	ENVIRONMENTAL CONSIDERATIONS
20	STORMWATER POLLUTION PREVENTION PLAN
21	DIRECTIONAL DRILL PLAN
22 - 23	DIRECTIONAL DRILL PROFILE
U-1 - U-3	PALM COAST UTILITY DETAILS

INDEX OF STRUCTURAL PLANS

SHEET NO.	SHEET DESCRIPTION
S1	STRUCTURAL NOTES & SPECIFICATIONS
S2	DECK LEVEL FRAMING PLAN
S3	LONGITUDINAL SECTION
S4	TRANSVERSE SECTIONS



END PROJECT
STA. 82+41.16
SURVEY 2

BEGIN PROJECT
STA. 10+91.46
SURVEY 1



**FINAL
SUBMITTAL
JULY 2022**

PLANS ENGINEER OF RECORD:

JOHN LEWIS MINTON, P.E. NO. 54657
DRMP, INC.
941 LAKE BALDWIN LANE
ORLANDO, FLORIDA 32814
(407) 896-0594
VENDOR NO. F59179117001

CITY OF PALM COAST

PROJECT MANAGER:

CARMELO MORALES, P.E.

GOVERNING STANDARD PLANS:

Florida Department of Transportation, FY 2021-22 Standard Plans for Road and Bridge Construction and applicable Interim Revisions (IRs), available at the following website:
<http://www.fdot.gov/design/standardplans>

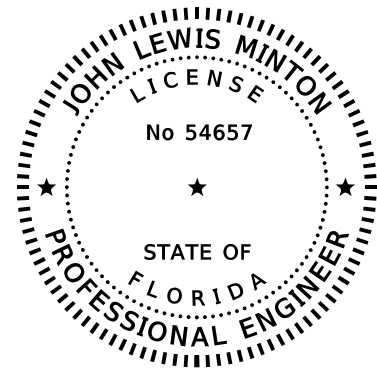
GOVERNING STANDARD SPECIFICATIONS:

Florida Department of Transportation, January 2021 Standard Specifications for Road and Bridge Construction, available at the following website:
<http://www.fdot.gov/programmanagement/Implemented/SpecBooks>

City of Palm Coast, March 8, 2021, Standards & Specifications for Water and Wastewater Construction, available at the following website:
<https://docs.palmcoastgov.com/departments/utility/design-standards/forms/Standard031021.pdf>

SHEET
NO.

1



THIS ITEM HAS BEEN DIGITALLY
SIGNED AND SEALED BY:

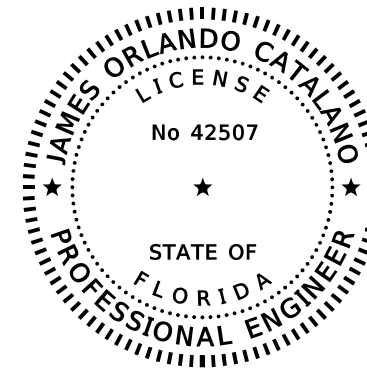
ON THE DATE ADJACENT TO THE SEAL

PRINTED COPIES OF THIS DOCUMENT ARE
NOT CONSIDERED SIGNED AND SEALED
AND THE SIGNATURE MUST BE VERIFIED
ON ANY ELECTRONIC COPIES.

DRMP, INC.
941 LAKE BALDWIN LANE
ORLANDO, FL 32814
JOHN LEWIS MINTON, P.E. NO. 54657

THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE
FOLLOWING SHEETS IN ACCORDANCE WITH RULE 61G15-23.004, F.A.C.

<u>SHEET NO.</u>	<u>SHEET DESCRIPTION</u>
1	KEY SHEET
2	SIGNATURE SHEET
3	SUMMARY OF PAY ITEMS/GENERAL NOTES
4	TYPICAL SECTIONS
5	PROJECT LAYOUT/SURVEY DATA
6 - 8	LAKE PLAN
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20	STORMWATER POLLUTION PREVENTION PLAN
21	DIRECTIONAL DRILL PLAN
22 - 23	DIRECTIONAL DRILL PROFILE
U-1 - U-3	PALM COAST UTILITY DETAILS



THIS ITEM HAS BEEN DIGITALLY
SIGNED AND SEALED BY:

ON THE DATE ADJACENT TO THE SEAL


PRINTED COPIES OF THIS DOCUMENT ARE
NOT CONSIDERED SIGNED AND SEALED
AND THE SIGNATURE MUST BE VERIFIED
ON ANY ELECTRONIC COPIES.

CATALANO ENGINEERING, INC.
2119 W CASS STREET
TAMPA, FL 33606
JAMES ORLANDO CATALANO, P.E. NO. 42507

THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE
FOLLOWING SHEETS IN ACCORDANCE WITH RULE 61G15-23.004, F.A.C.

<u>SHEET NO.</u>	<u>SHEET DESCRIPTION</u>
2	SIGNATURE SHEET
S1	STRUCTURAL NOTES & SPECIFICATIONS
S2	DECK LEVEL FRAMING PLAN
S3	LONGITUDINAL SECTION
S4	TRANSVERSE SECTIONS

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

REVISIONS				 DRMP <small>ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS</small> DRMP, INC. 941 LAKE BALDWIN LANE, ORLANDO, FLORIDA 32814 PHONE: (407) 896-0594 FAX: (407) 896-4836 JOHN L. MINTON JR., P.E. LICENSE NO. 54657	CITY OF PALM COAST LONDON WATERWAY EXPANSION			SIGNATURE SHEET	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		PROJECT LOCATION	COUNTY	PURCHASE ORDER #		2
					LONDON DR	FLAGLER	20211417		
				LEAVER DR					

CONSTRUCTION GENERAL NOTES:

- BENCHMARK ELEVATIONS SHOWN ON THE PLANS ARE BASED ON NORTH AMERICAN VERTICAL DATUM (NAVD 88) DATUM.
- THIS DESIGN HAS BEEN BASED UPON THE TOPOGRAPHICAL FIELD SURVEY BY DRMP DATED 08/04/2021.
- THE LOCATION(S) OF THE UTILITIES SHOWN IN THE PLANS ARE BASED ON LIMITED INVESTIGATION TECHNIQUES AND SHOULD BE CONSIDERED APPROXIMATE ONLY. THE VERIFIED LOCATIONS/ELEVATIONS APPLY ONLY AT THE POINTS SHOWN. INTERPOLATIONS BETWEEN POINTS HAVE NOT BEEN VERIFIED.
- UTILITY / AGENCY OWNERS:

COMPANY	CONTACT	TELEPHONE NUMBER(S)
CITY OF PALM COAST - WATER/SEWER	CHRIS JOHNSON	386-986-2384
AT&T DISTRIBUTION	DINO FARRUGGIO	561-997-0240
FLORIDA POWER & LIGHT (FP&L)	JOEL BRAY	386-586-6403
- THE CONTRACTOR SHALL USE EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES, INCLUDING TURBIDITY CURTAINS OR SIMILAR DEVICES, IN STRICT ADHERENCE TO THESE PRACTICES AS DESCRIBED IN CHAPTER 6, THE FLORIDA DEVELOPMENT MANUAL: A GUIDE TO SOUND LAND AND WATER MANAGEMENT (FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION, 1988) TO PREVENT VIOLATION OF STATE WATER QUALITY STANDARDS.
- TEMPORARY EROSION CONTROLS FOR ALL EXPOSED SOILS WITHIN WETLANDS AND OTHER SURFACE WATERS SHALL BE COMPLETED WITHIN SEVEN (7) CALENDAR DAYS OF THE MOST RECENT CONSTRUCTION ACTIVITY. PREVENTION OF EROSION OF EXPOSED EARTH INTO WETLANDS AND OTHER SURFACE WATERS IS A CONSTRUCTION PRIORITY AND COMPLETED SLOPES SHALL NOT REMAIN UNSTABILIZED WHILE OTHER CONSTRUCTION CONTINUES.
- CONTRACTOR FURTHER AGREES THAT CONTRACTOR AND ITS SUBCONTRACTORS SHALL NOT CAUSE THE DISCHARGE, RELEASE OR DISPOSAL OF ANY HAZARDOUS MATERIAL CREATED BY ITS WORK ON OR ABOUT THE JOB SITE. IN THE EVENT OF ANY SPILL, RELEASE, OR ANY OTHER REPORTABLE OCCURRENCE, CONTRACTOR SHALL NOTIFY THE APPROPRIATE GOVERNMENTAL AGENCY AND SHALL TAKE SUCH ACTION AS MAY BE NECESSARY TO MINIMIZE THE DELETERIOUS EFFECT OF SUCH A SPILL ON PERSONS OR PROPERTY.
- CONTRACTOR IS RESPONSIBLE FOR MANAGING AND MAINTAINING CANAL FLOWS THAT WILL FLUCTUATE FROM INCLEMENT WEATHER IN A WAY THAT DOES NOT CAUSE ADVERSE IMPACTS EITHER UPSTREAM OR DOWNSTREAM OF THE WORKSITE. THE CITY WILL NOT BE RESPONSIBLE FOR ANY DAMAGE OR DELAY CAUSED BY THE CONTRACTOR'S FAILURE TO ADEQUATELY HANDLE CANAL FLOWS DURING CONSTRUCTION.
- EXISTING DRAINAGE PIPES AND STRUCTURES TO REMAIN UNLESS OTHERWISE NOTED.
- FOR ADDITIONAL INFORMATION PLEASE REFER TO THE REPORTS TITLED "GEOTECHNICAL EVALUATION" BY UNIVERSAL ENGINEERING SCIENCES, DATED SEPTEMBER 28, 2020 AND OCTOBER 12, 2021.
- CONTRACTOR TO ATTEND A MANDATORY PRE-CONSTRUCTION MEETING WITH THE CITY STAFF PRIOR TO ANY DISTURBANCE OF THE PROPERTY.
- ALL UTILITIES SHALL BE LOCATED UNDERGROUND.

MAINTENANCE OF TRAFFIC (MOT) GENERAL NOTES:

- PRIOR TO PERFORMING ANY WORK WITHIN ANY PUBLIC RIGHT-OF-WAY, CONTRACTOR SHALL DEVELOP AND IMPLEMENT A TRAFFIC CONTROL PLAN (SIGNED & SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN FLORIDA) CONSISTENT WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" PUBLISHED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION, AND FDOT DESIGN STANDARDS INDEX 600 SERIES. THE TCP SHALL BE SUBMITTED TO THE CITY PRIOR TO THE PRE-CONSTRUCTION MEETING FOR REVIEW AND APPROVAL.
- ADEQUATE TRAFFIC CONTROL, BARRICADES AND FLAGMAN SERVICES SHALL BE FURNISHED AND MAINTAINED BY THE CONTRACTOR AT ALL POINTS WHERE CONVEYING EQUIPMENT ENGAGED ON THE WORK REGULARLY ENTERS ONTO OR CROSSES TRAFFIC-CARRYING ROADS.

UTILITY NOTES:

- CONTRACTOR TO VERIFY PIPE SIZES, TYPES, & LOCATIONS AT TIE-IN POINTS OF DIRECTIONAL DRILL OPERATIONS PRIOR TO ORDERING ANY EQUIPMENT OR MATERIALS.
- CONTRACTOR TO PERFORM DIRECTIONAL DRILL OPERATIONS IN COMPLIANCE WITH THE CITY OF PALM COAST STANDARDS & SPECIFICATIONS FOR WATER AND WASTEWATER CONSTRUCTION, SECTIONS 10, 11, 12, 20, 21, 22, & 35, AND STANDARD CONSTRUCTION DETAILS, W-1, W-2, SS-1, SS-2, SS-5, SS-19, & R-2 (DETAILS INCLUDED FOR REFERENCE).
- CONTRACTOR TO LOCATE WATER AND SEWER SERVICE LINES ALONG SEGMENTS OF MAINS TO BE ABANDONED AND RECONNECT LINES TO ACTIVE PORTIONS OF LINES, AS NEEDED.

SURVEY NOTES:

- THE BEARING AND COORDINATES SHOWN ARE BASED ON THE FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE (0901), 1983 NORTH AMERICAN DATUM, 2011 ADJUSTMENT, AS ESTABLISHED FROM A NETWORK OF GPS OBSERVATIONS ORIGINATING FROM AND ADJUSTED TO THE FLORIDA PERMANENT REFERENCE NETWORK, BASE STATIONS ORL1 AND PEDR, DERIVING A BEARING OF SOUTH 39° 10' 09" WEST ALONG A WELL ESTABLISHED AND MONUMENTED LINE AGPS1 TO AGPS2.
- ELEVATION DATA IS BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AS REFERENCED TO NGS BENCHMARKS Y 721 (ELEVATION = 33.96 FEET) AND Z 721 (ELEVATION = 26.54 FEET).
- NOT A BOUNDARY SURVEY - APPARENT PROPERTY LINES SHOWN HERE ON ARE BASED ON SUBDIVISION PLAT LAKEVIEW - SECTION 37 (PALM COAST PARK) (MAP BOOK 13 PAGE 24). NO PROPERTY BOUNDARIES WERE SET BY DRMP, INC.
- ALL RECORDED PLATS (P) AND OFFICIAL RECORD BOOKS (O.R.B.) REFERENCED HEREON ARE FOUND IN THE PUBLIC RECORDS OF FLAGLER COUNTY, FLORIDA, UNLESS OTHERWISE NOTED.
- TOPOGRAPHIC DATA IN WOODED AREA WAS COLLECTED ON A 75' X 75' GRID USING CONVENTIONAL SURVEYING METHODS DUE TO HEAVY VEGETATION.
- UNITS OF MEASURE ARE U.S. SURVEY FEET.
- DRMP PERFORMED TOPOGRAPHIC AND UTILITY SURVEY AT SPECIFIED AREAS OF LONDON DRIVE AND LEAVER DRIVE.
- LAST DAY OF FIELD SURVEY: 08/04/2021.

SUMMARY OF PAY ITEMS

PAY ITEM NO.	PAY ITEM DESCRIPTION	UNIT	QTY.
NS-1	EROSION CONTROL	LS	1
104-10-3	SEDIMENT BARRIER	LF	8,504
104-11	FLOATING TURBIDITY BARRIER	LF	313
104-12	STAKED TURBIDITY BARRIER	LF	262
104-15	SOIL TRACKING PREVENTION DEVICE	EA	4
110-1-1	CLEARING & GRUBBING	AC	15.8
120-1	REGULAR EXCAVATION	CY	267,211
160-4	TYPE B STABILIZATION, LBR 40	SY	276
285-711	OPTIONAL BASE, BASE GROUP 11 (12" LIMEROCK)	SY	147
334-1-12	SUPERPAVE ASPHALTIC CONC., TRAFFIC B (1.5")	TN	12
339-1	MISCELLANEOUS ASPHALT PAVEMENT, 1" (TRAIL)	TN	8
425-1-521	INLETS, DITCH BOTTOM, TYPE C, <10'	EA	3
425-1-551	INLETS, DITCH BOTTOM, TYPE E, <10'	EA	3
425-1-554	INLETS, DITCH BOTTOM, TYPE E, J-BOTTOM, >10'	EA	1
425-1-583	INLETS, DITCH BOTTOM, TYPE H, J-BOTTOM, <10'	EA	1
425-1-589	INLETS, DITCH BOTTOM, TYPE H, MODIFY	EA	2
425-2-71	MANHOLES, J-7, <10'	EA	1
425-2-91	MANHOLES, J-8, <10'	EA	1
430-175-118	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 18" S/CD	LF	302
430-175-148	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 48" S/CD	LF	684
430-175-160	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 60" S/CD	LF	374
430-560-100	STRAIGHT CONCRETE ENDWALLS	EA	1
430-982-125	MITERED END SECTION, OPTIONAL ROUND, 18" CD	EA	5
430-982-141	MITERED END SECTION, OPTIONAL ROUND, 48" CD	EA	2
530-4-6	ARTICULATING CONCRETE BLOCK REVETMENT SYSTEM, THICKNESS 6"	SY	54
570-1-2	PERFORMANCE TURF, SOD	SY	3,904
1050-31-211	UTILITY PIPE, PVC, FURNISH & INSTALL, WATER/SEWER, 1"	LF	331
1080-24-102	UTILITY FIXTURE, VALVE ASSEMBLY, FURNISH & INSTALL, AIR RELEASE VALVE, 2"	EA	4
1080-24-103	UTILITY FIXTURE, VALVE ASSEMBLY, FURNISH & INSTALL, PLUG VALVE, 3"	EA	4
1080-24-106	UTILITY FIXTURE, VALVE ASSEMBLY, FURNISH & INSTALL, GATE VALVE, 6"	EA	4
NS-2	BOARDWALK (WITH RAILINGS, BENCHES)	SF	980
NS-3	PLANTINGS	LS	1
NS-4	DIRECTIONAL DRILL, UTILITY PIPE, HDPE, DR11, 4"	LF	400
NS-5	DIRECTIONAL DRILL, UTILITY PIPE, HDPE, DR11, 8"	LF	513

PAY ITEM NOTES:

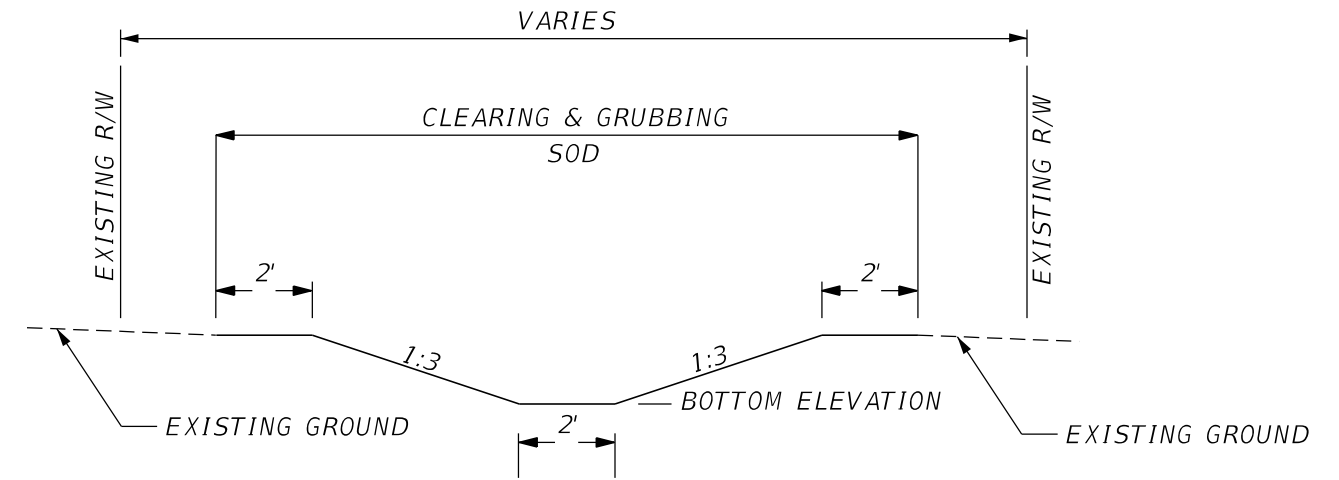
- 104-10-3 TO BE INSTALLED ALONG PERIMETER OF CLEARING AND GRUBBING AREAS FOR STORMWATER STRUCTURES, PIPING, AND LAKE CONSTRUCTION.
- 110-1-1 INCLUDES, BUT IS NOT LIMITED TO, THE COST OF REMOVAL AND DISPOSAL OF EXISTING PIPE, DRAINAGE STRUCTURES, AND FULL DEPTH ASPHALT AND BASE COURSE.
- 120-1 INCLUDES THE COST OF STRIPPING THE TOP SOIL, STOCKPILING THE TOP SOIL, AND PLACING 4-INCHES OF TOP SOIL OVER LAKE SLOPES AS DESCRIBED ON THE TYPICAL SECTION ON SHEET 4.
- 425-1-### INCLUDES THE COST OF CONCRETE APRON, BLEED-DOWN DEVICE, AND VERTICAL SLOT.
- 430-###-### INCLUDES THE COST OF ANY DEWATERING, DIVERSION OF STORMWATER, COFFERDAMS, AND OTHER RELATED ACTIVITIES NECESSARY FOR THE CONSTRUCTION OF THE PROJECT.
- 570-1-2 INCLUDES THE COST OF MOWING, WATERING, AND FERTILIZING.
- 1050-31-211 WATER SERVICE LINE EXTENDS FROM EXISTING WATER LINE TO BOARDWALK.
- NS-2 INCLUDES, BUT IS NOT LIMITED TO, THE COST OF TREX COMPOSITE DECKING (OR APPROVED EQUIVALENT), RAILING, BENCHES, PILES, AND FRAMING.
- NS-3 INCLUDES THE COST OF FURNISHING, INSTALLING, AND MAINTAINING PLANTS. REFER TO LAKE PLANTING SECTION (3) SHEET 15 FOR INDIVIDUAL QUANTITIES RELATED TO PLANTINGS.
- NS-4/NS-5 INCLUDES ALL FITTINGS, SLEEVES, AND CONNECTIONS NECESSARY FOR TIE-IN WITH EXISTING PIPES FOR DIRECTIONAL DRILL OPERATIONS.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

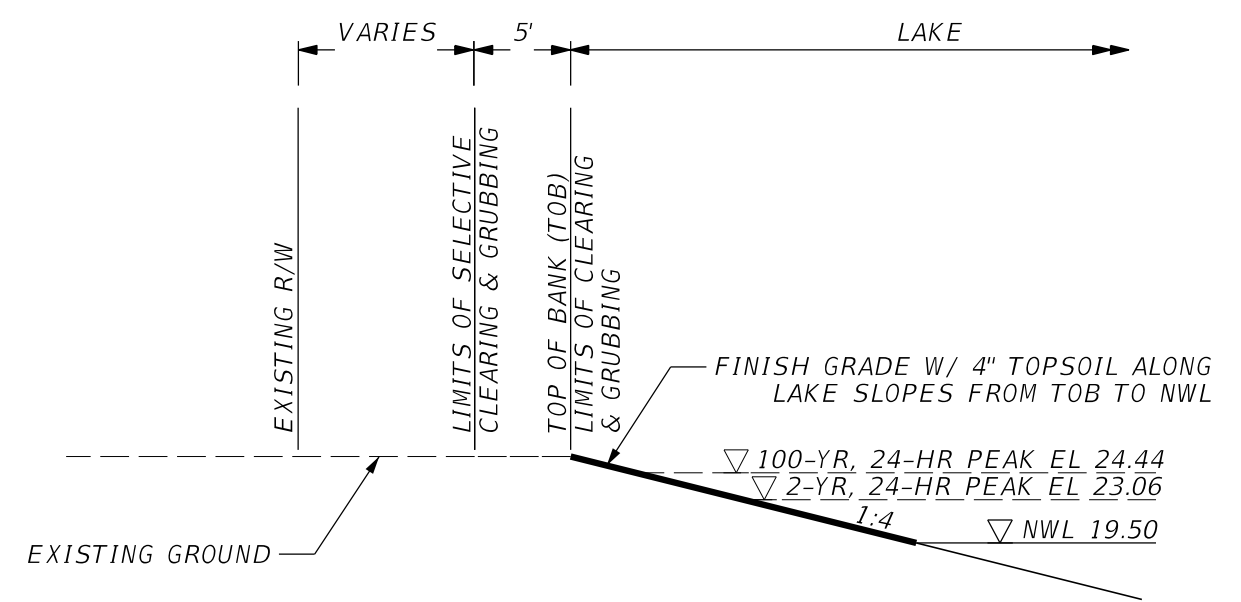


DRMP
 ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS
 DRMP, INC.
 94 LAKE BALDWIN LANE, ORLANDO, FLORIDA 32814
 PHONE: (407) 896-0594 FAX: (407) 896-4836
 JOHN L. MINTON JR., P.E. LICENSE NO. 54657

CITY OF PALM COAST LONDON WATERWAY EXPANSION			SUMMARY OF PAY ITEMS/ GENERAL NOTES	SHEET NO. 3
PROJECT LOCATION LONDON DR LEAVER DR	COUNTY FLAGLER	PURCHASE ORDER # 20211417		



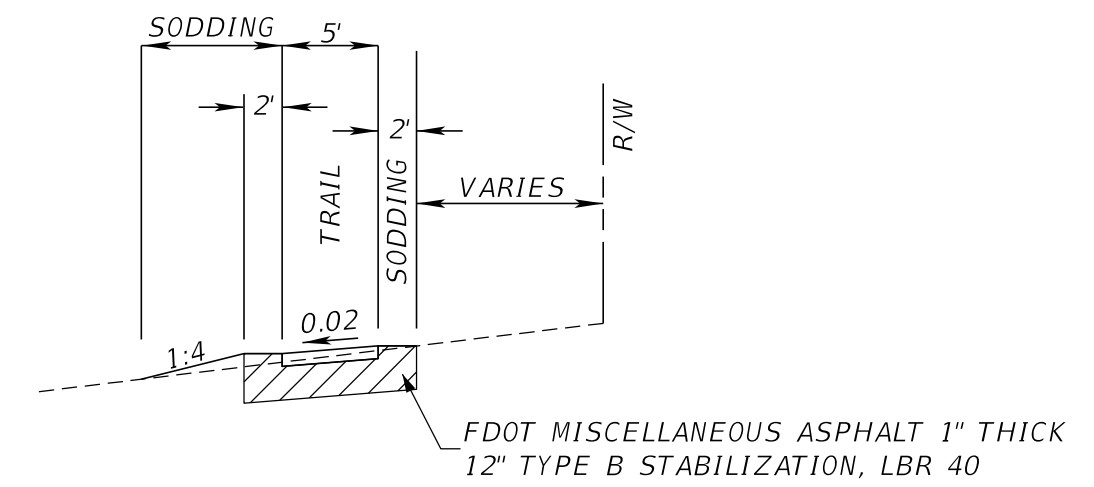
SWALE TYPICAL SECTION
N.T.S



LAKE SHORELINE TYPICAL SECTION
N.T.S

NOTES:

- 1) CONTRACTOR IS TO SELECTIVELY CLEAR AND GRUB A 5-FOOT BOUNDARY AT THE LAKE TOP OF BANK (TOB) AROUND THE PERIMETER AND ON THE ISLANDS. THE SELECTIVE CLEARING WILL INCLUDE REMOVAL OF ALL PINE TREES AND ANY OTHER TREES THAT WILL POTENTIALLY BE IMPACTED BY CONSTRUCTION OPERATIONS. TREES TO BE REMOVED MAY BE FLAGGED BY THE OWNER BASED ON STAKING OF THE TOP OF BANK BY THE CONTRACTOR.
- 2) CONTRACTOR IS TO STRIP THE TOPSOIL AND STOCKPILE FOR USE IN FINISHED GRADING OF THE LAKE SHORELINE. CONTRACTOR IS TO PLACE 4-INCHES OF TOPSOIL TO FINISH GRADING OF THE LAKE SHORELINES AROUND THE PERIMETER AND THE ISLANDS FROM THE TOP OF BANK (TOB) TO THE NORMAL WATER LEVEL (NWL) OF THE LAKE.



TRAIL TYPICAL SECTION
N.T.S

NOTES:

- 1) TRAIL SLOPED TOWARDS DIRECTION OF SWALE.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

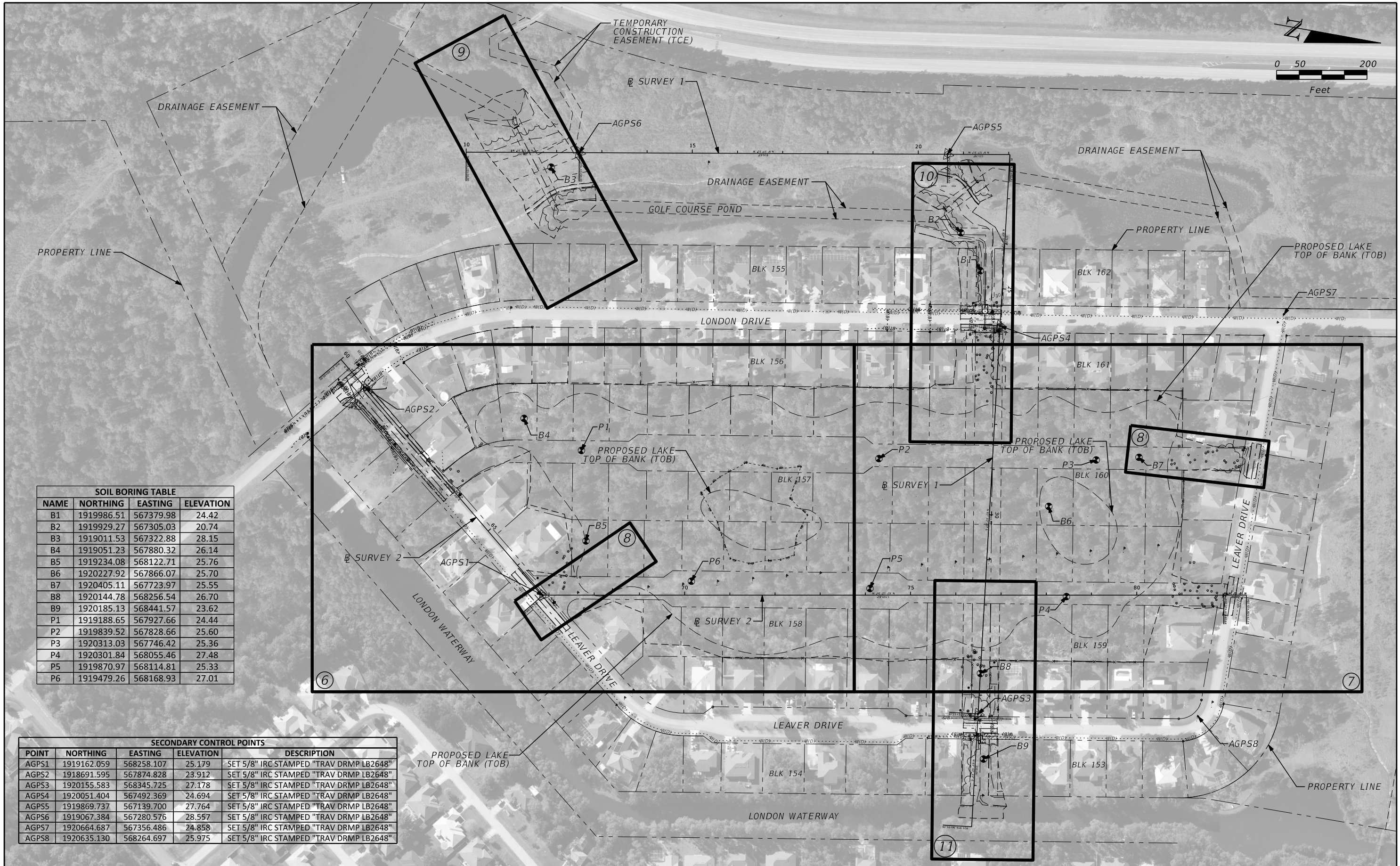
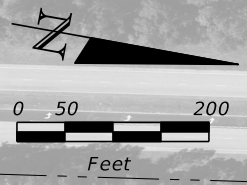
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JOHN L. MINTON JR., P.E. LICENSE NO. 54657

CITY OF PALM COAST LONDON WATERWAY EXPANSION		
PROJECT LOCATION	COUNTY	PURCHASE ORDER #
LONDON DR LEAVER DR	FLAGLER	20211417

TYPICAL SECTIONS	
4	

SHEET NO.
4

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SOIL BORING TABLE			
NAME	NORTHING	EASTING	ELEVATION
B1	1919986.51	567379.98	24.42
B2	1919929.27	567305.03	20.74
B3	1919011.53	567322.88	28.15
B4	1919051.23	567880.32	26.14
B5	1919234.08	568122.71	25.76
B6	1920227.92	567866.07	25.70
B7	1920405.11	567723.97	25.55
B8	1920144.78	568256.54	26.70
B9	1920185.13	568441.57	23.62
P1	1919188.65	567927.66	24.44
P2	1919839.52	567828.66	25.60
P3	1920313.03	567746.42	25.36
P4	1920301.84	568055.46	27.48
P5	1919870.97	568114.81	25.33
P6	1919479.26	568168.93	27.01

SECONDARY CONTROL POINTS				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
AGPS1	1919162.059	568258.107	25.179	SET 5/8" IRC STAMPED "TRAV DRMP LB2648"
AGPS2	1918691.595	567874.828	23.912	SET 5/8" IRC STAMPED "TRAV DRMP LB2648"
AGPS3	1920155.583	568345.725	27.178	SET 5/8" IRC STAMPED "TRAV DRMP LB2648"
AGPS4	1920051.404	567492.369	24.694	SET 5/8" IRC STAMPED "TRAV DRMP LB2648"
AGPS5	1919869.737	567139.700	27.764	SET 5/8" IRC STAMPED "TRAV DRMP LB2648"
AGPS6	1919067.384	567280.576	28.557	SET 5/8" IRC STAMPED "TRAV DRMP LB2648"
AGPS7	1920664.687	567356.486	24.858	SET 5/8" IRC STAMPED "TRAV DRMP LB2648"
AGPS8	1920635.130	568264.697	25.975	SET 5/8" IRC STAMPED "TRAV DRMP LB2648"

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION



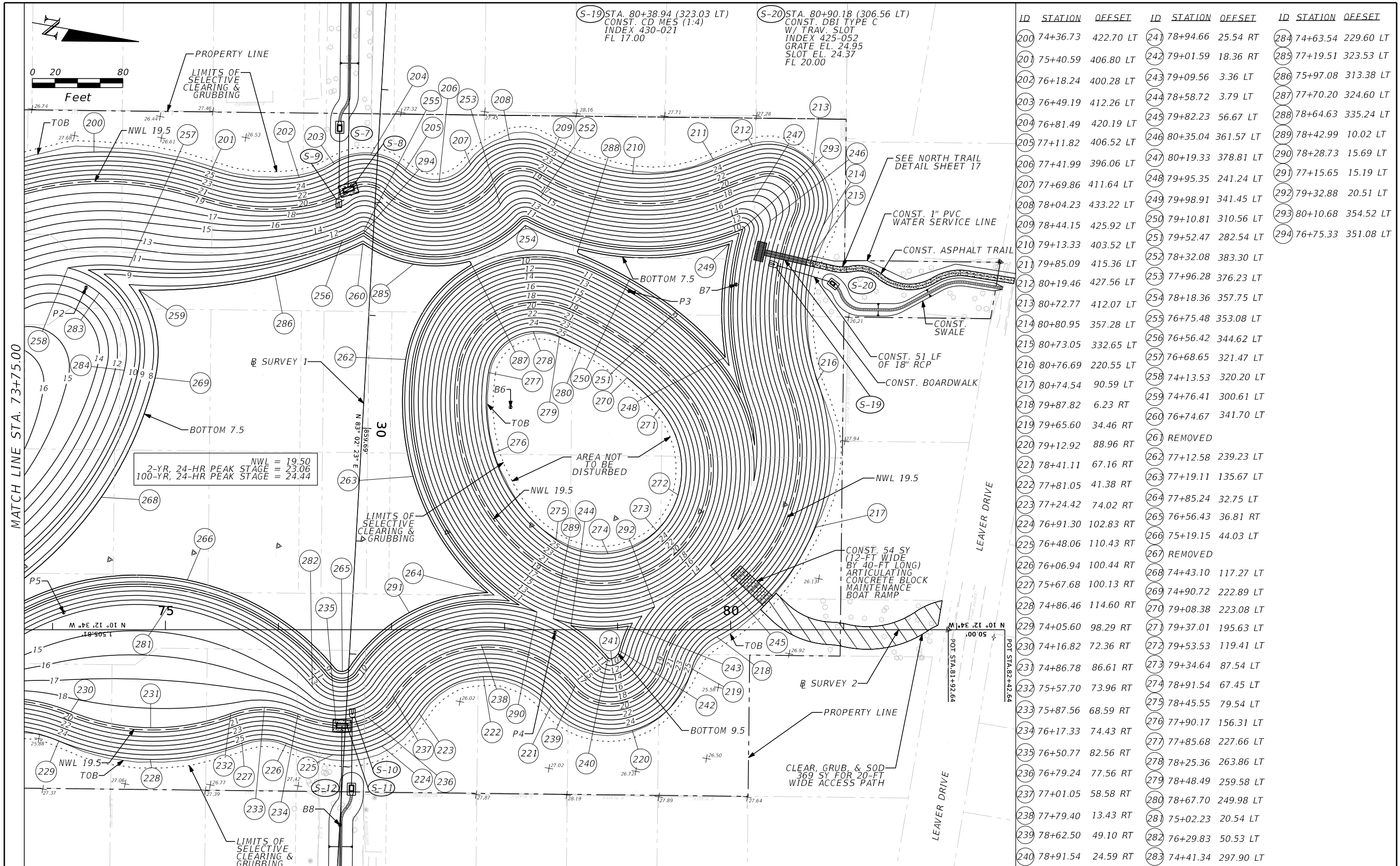
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CITY OF PALM COAST LONDON WATERWAY EXPANSION		
PROJECT LOCATION	COUNTY	PURCHASE ORDER #
LONDON DR LEAVER DR	FLAGLER	20211417

**PROJECT LAYOUT /
SURVEY DATA**


SHEET NO.
5

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ID	STATION	OFFSET	ID	STATION	OFFSET	ID	STATION	OFFSET
200	74+36.73	422.70 LT	241	78+94.66	25.54 RT	284	74+63.54	229.60 LT
201	75+40.59	406.80 LT	242	79+01.59	18.36 RT	285	77+19.51	323.53 LT
202	76+18.24	400.28 LT	243	79+09.56	3.36 LT	286	75+97.08	313.38 LT
203	76+49.19	412.26 LT	244	78+58.72	3.79 LT	287	77+70.20	324.60 LT
204	76+81.49	420.19 LT	245	79+82.23	56.67 LT	288	78+64.63	335.24 LT
205	77+11.82	406.52 LT	246	80+35.04	361.57 LT	289	78+42.99	10.02 LT
206	77+41.99	396.06 LT	247	80+19.33	378.81 LT	290	78+28.73	15.69 LT
207	77+69.86	411.64 LT	248	79+95.35	241.24 LT	291	77+15.65	15.19 LT
208	78+04.23	433.22 LT	249	79+98.91	341.45 LT	292	79+32.88	20.51 LT
209	78+44.15	425.92 LT	250	79+10.81	310.56 LT	293	80+10.68	354.52 LT
210	79+13.33	403.52 LT	251	79+52.47	282.54 LT	294	76+75.33	351.08 LT
211	79+85.09	415.36 LT	252	78+32.08	383.30 LT			
212	80+19.46	427.56 LT	253	77+96.28	376.23 LT			
213	80+72.77	412.07 LT	254	78+18.36	357.75 LT			
214	80+80.95	357.28 LT	255	76+75.48	353.08 LT			
215	80+73.05	332.65 LT	256	76+56.42	344.62 LT			
216	80+76.69	220.55 LT	257	76+68.65	321.47 LT			
217	80+74.54	90.59 LT	258	74+13.53	320.20 LT			
218	79+87.82	6.23 RT	259	74+76.41	300.61 LT			
219	79+65.60	34.46 RT	260	76+74.67	341.70 LT			
220	79+12.92	88.96 RT	261	REMOVED				
221	78+41.11	67.16 RT	262	77+12.58	239.23 LT			
222	77+81.05	41.38 RT	263	77+19.11	135.67 LT			
223	77+24.42	74.02 RT	264	77+85.24	32.75 LT			
224	76+91.30	102.83 RT	265	76+56.43	36.81 RT			
225	76+48.06	110.43 RT	266	75+19.15	44.03 LT			
226	76+06.94	100.44 RT	267	REMOVED				
227	75+67.68	100.13 RT	268	74+43.10	117.27 LT			
228	74+86.46	114.60 RT	269	74+90.72	222.89 LT			
229	74+05.60	98.29 RT	270	79+08.38	223.08 LT			
230	74+16.82	72.36 RT	271	79+37.01	195.63 LT			
231	74+86.78	86.61 RT	272	79+53.53	119.41 LT			
232	75+57.70	73.96 RT	273	79+34.64	87.54 LT			
233	75+87.56	68.59 RT	274	78+91.54	67.45 LT			
234	76+17.33	74.43 RT	275	78+45.55	79.54 LT			
235	76+50.77	82.56 RT	276	77+90.17	156.31 LT			
236	76+79.24	77.56 RT	277	77+85.68	227.66 LT			
237	77+01.05	58.58 RT	278	78+25.36	263.86 LT			
238	77+79.40	13.43 RT	279	78+48.49	259.58 LT			
239	78+62.50	49.10 RT	280	78+67.70	249.98 LT			
240	78+91.54	24.59 RT	281	75+02.23	20.54 LT			
			282	76+29.83	50.53 LT			
			283	74+41.34	297.90 LT			

REVISIONS			
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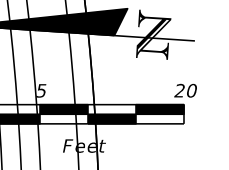
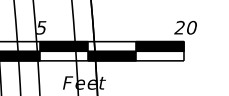
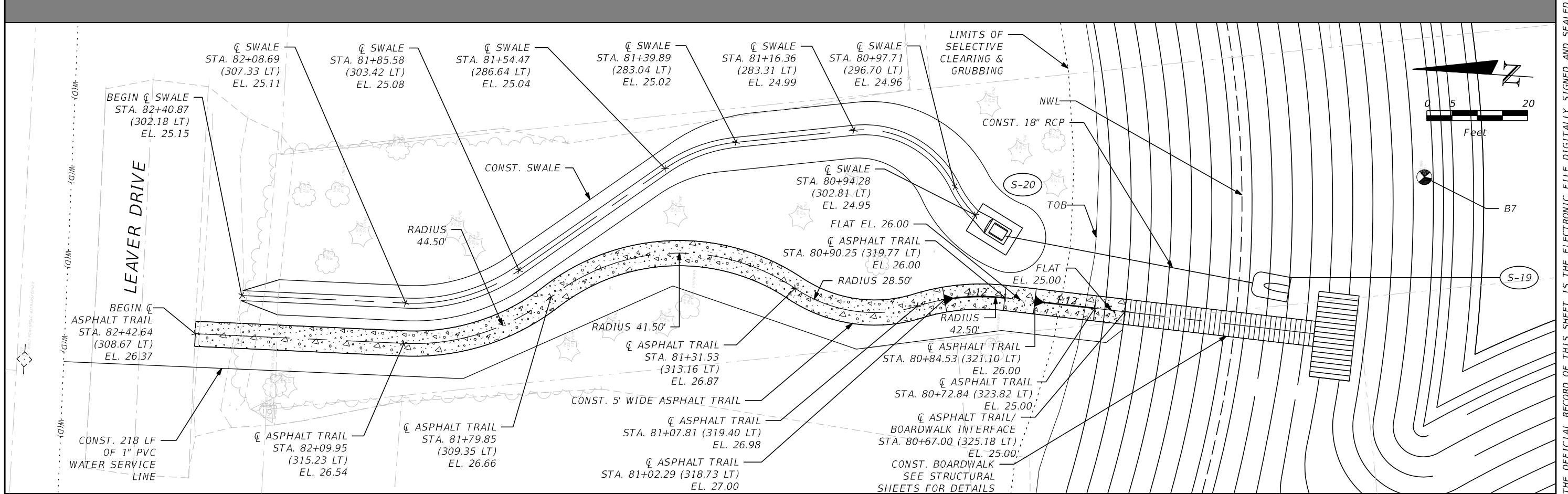
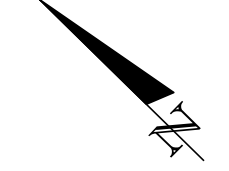
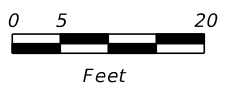
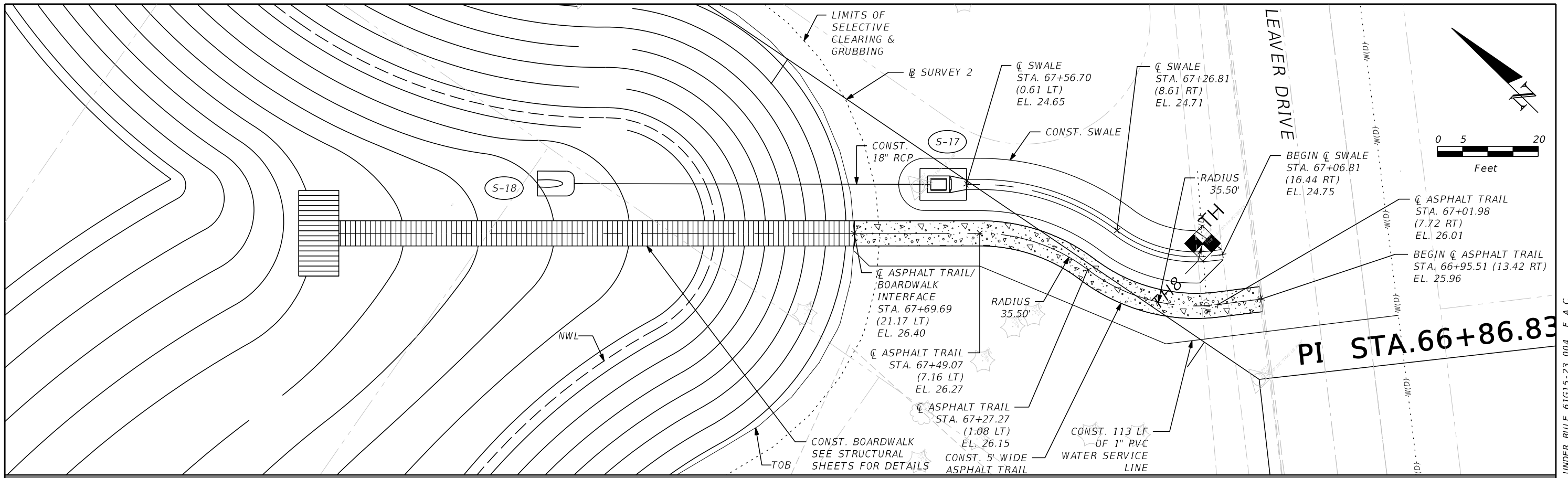
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CITY OF PALM COAST
LONDON WATERWAY EXPANSION

PROJECT LOCATION	COUNTY	PURCHASE ORDER #
LONDON DR LEAVER DR	FLAGLER	20211417

LAKE PLAN (2)	SHEET NO. 7
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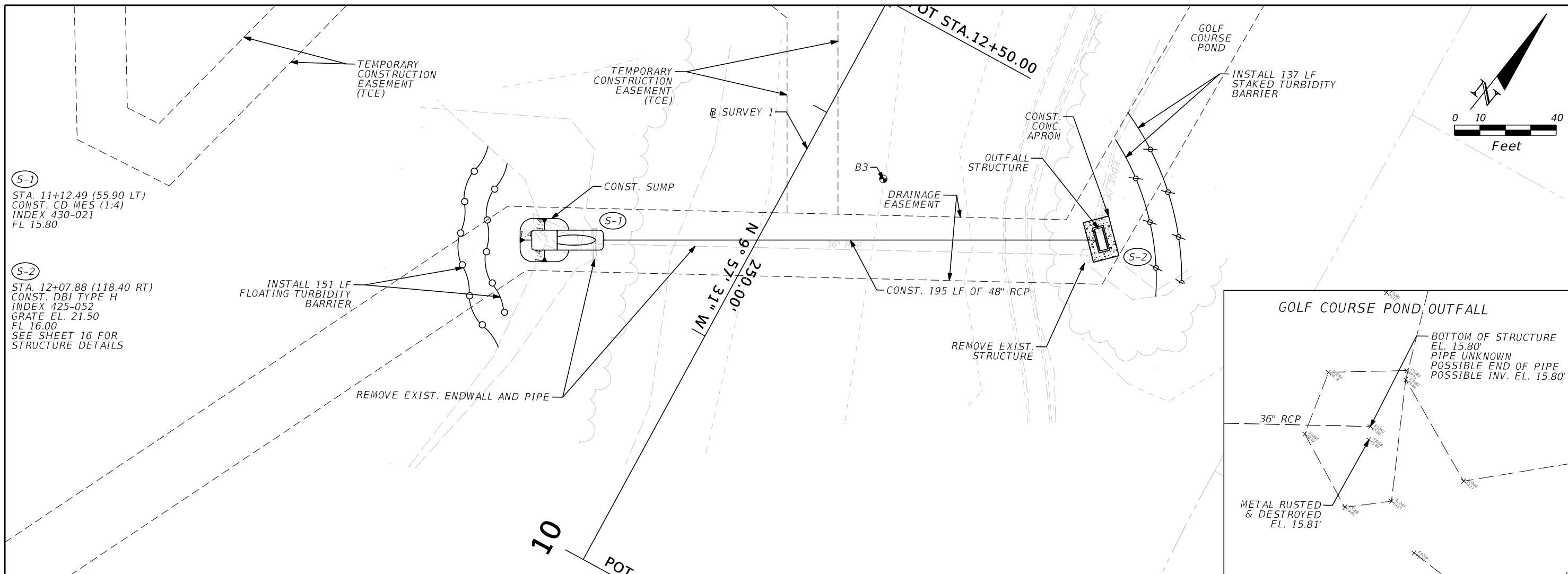
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PROJECT LOCATION	COUNTY	PURCHASE ORDER #
LONDON DR LEAVER DR	FLAGLER	20211417

LAKE PLAN (3)

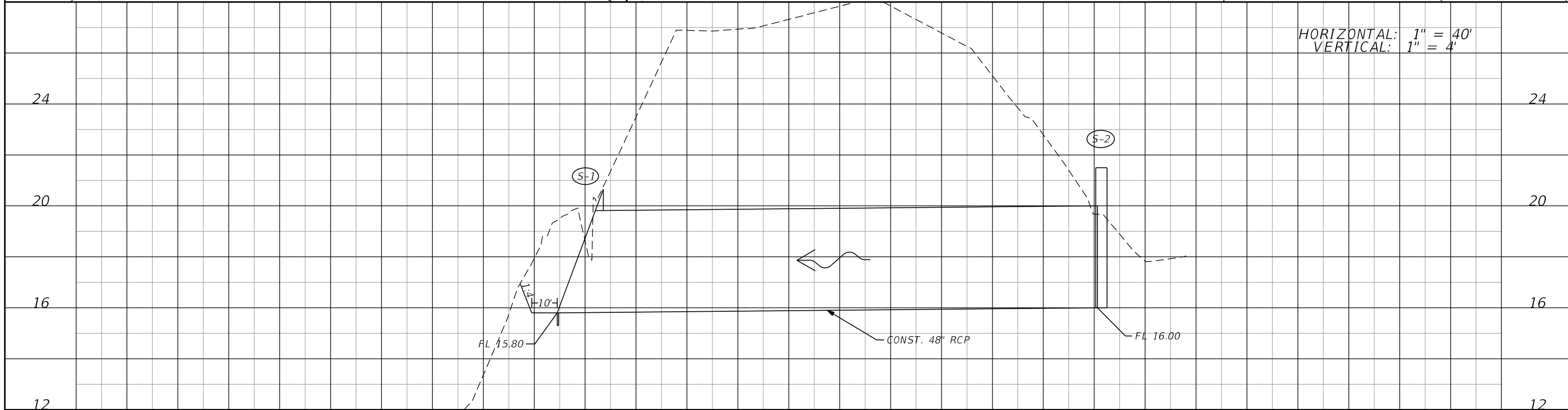
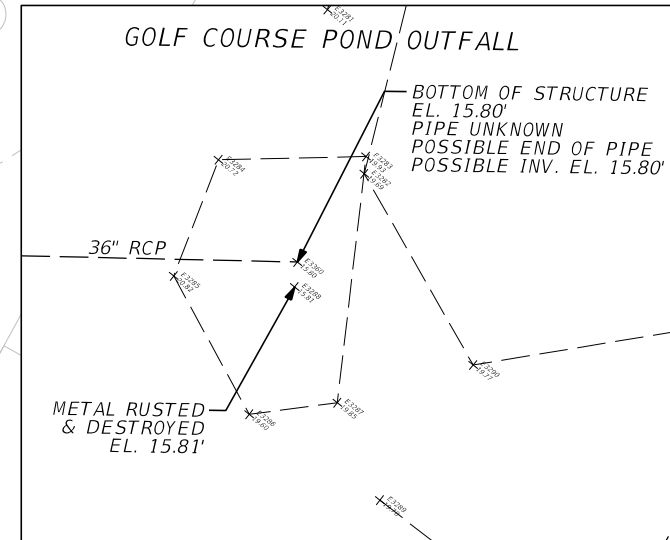
SHEET NO.
8

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(S-1)
 STA. 11+12.49 (55.90 LT)
 CONST. CD MES (1:4)
 INDEX 430-021
 FL 15.80

(S-2)
 STA. 12+07.88 (118.40 RT)
 CONST. DBI TYPE H
 INDEX 425-052
 GRATE EL. 21.50
 FL 16.00
 SEE SHEET 16 FOR
 STRUCTURE DETAILS



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

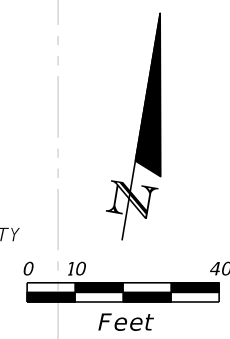
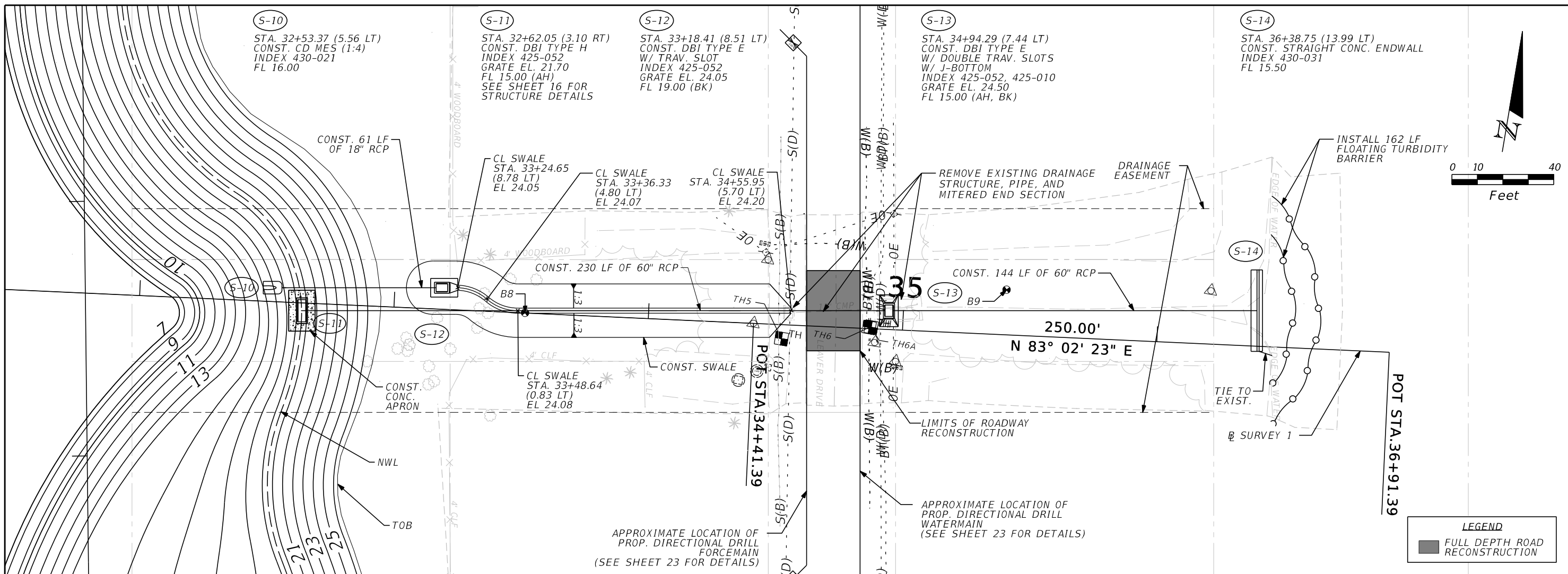
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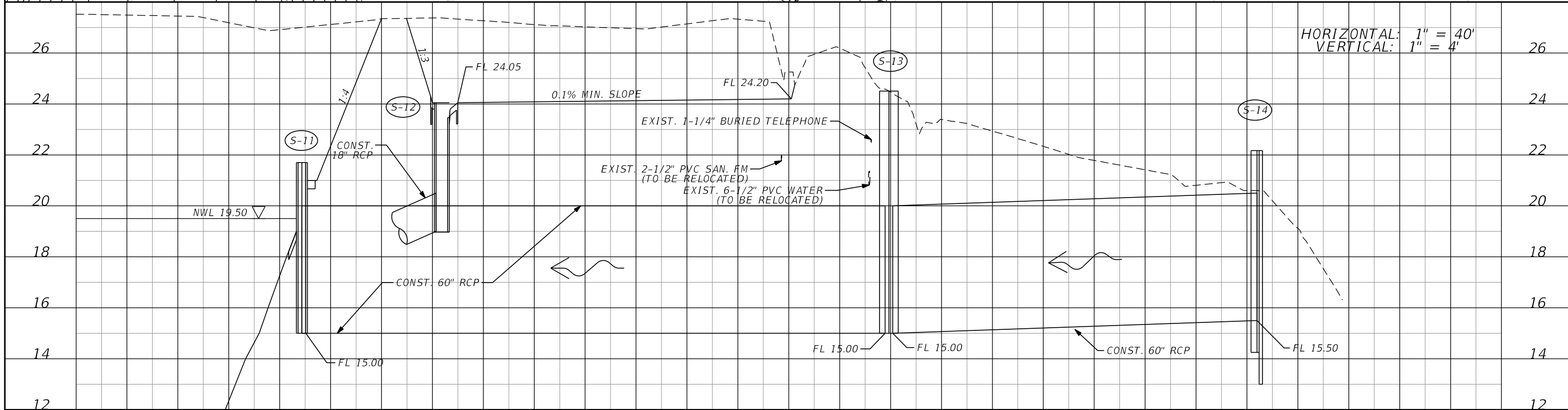
PLAN AND PROFILE (1)

SHEET NO.
9

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LEGEND
 ■ FULL DEPTH ROAD RECONSTRUCTION



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LONDON DR LEAVER DR	FLAGLER	20211417

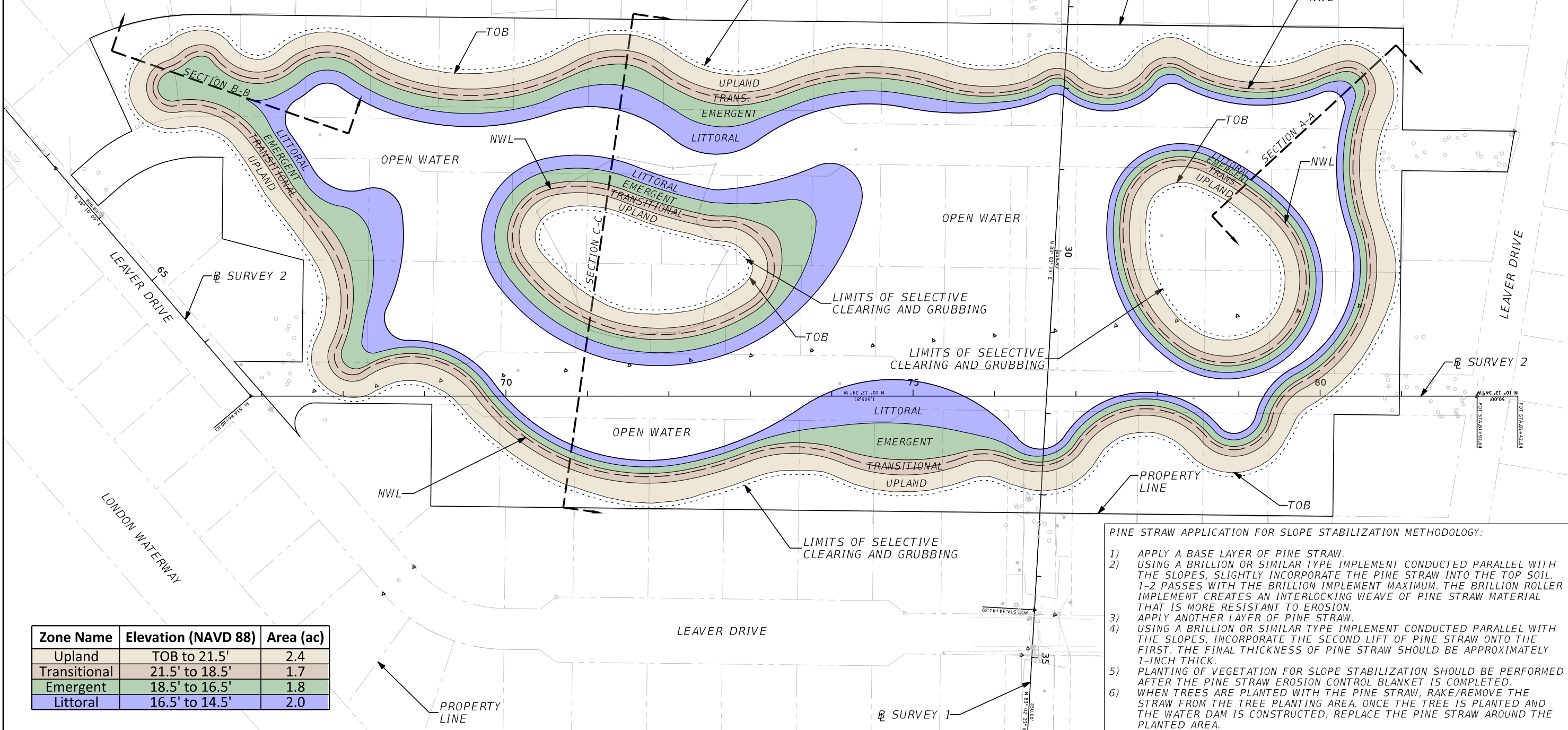
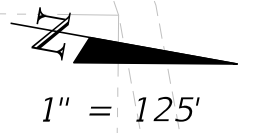
PLAN AND PROFILE (3)

SHEET NO.
11

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PLANTING NOTES:

- 1) CONTRACTOR TO INSTALL PINE STRAW MULCH OVER ALL BARE EARTH ALONG LAKE SHORE SLOPES FROM TOP OF BANK (TOB) TO NORMAL WATER LEVEL (NWL) IN TWO (2) LIFTS FOLLOWING SPECIFIC INSTRUCTIONS AS PROVIDED ON THIS SHEET AND IN THE CONTRACT DOCUMENTS. CONTRACTOR TO BROADCAST NATIVE GRASS SEED MIXTURE ON GROUND SURFACE PRIOR TO PINE STRAW MULCH INSTALLATION.
- 2) ALL VEGETATION TO BE PLANTED MUST BE APPROVED BY THE OWNER PRIOR TO PURCHASE AND INSTALLATION.
- 3) ANY PROPOSED ALTERATIONS OR ALTERNATIVES FOR PLANT SIZES AND TYPES MUST BE APPROVED BY THE OWNER IN ADVANCE OF PURCHASE.
- 4) PLANTS WILL BE INSPECTED BY THE OWNER PRIOR TO INSTALLATION FOR NON-NATIVE SPECIES, HEALTH, AND OTHER FACTORS TO ENSURE PLANTING SUCCESS.
- 5) PLANTS AND TREES WILL BE INSTALLED IN A CLUMPING ARRANGEMENT AND NOT IN ROWS OR A LINEAR ARRANGEMENT.
- 6) THE TOTAL PLANTING DENSITIES MAY BE INCREASED IN CERTAIN SECTIONS THAT MAY REQUIRE ADDITIONAL SLOPE STABILIZATION.
- 7) CONTRACTOR TO ADHERE TO LANDSCAPE INSTALLATION PRACTICES AS DESCRIBED IN THE FDOT STANDARD PLANS INDEX 580-001.
- 8) THE CONTRACTOR IS RESPONSIBLE FOR AT LEAST 90% SURVIVAL OF ALL PLANTINGS FOR THE FIRST ONE (1) YEAR AFTER PLANTINGS ARE COMPLETE. THE CONTRACTOR MAY ENSURE SURVIVAL WITH THE USE OF A TEMPORARY IRRIGATION SYSTEM AND/OR PERIODIC WATERING. REPLANTINGS WILL BE REQUIRED FOR ALL DEAD PLANTS IF THE 90% THRESHOLD IS NOT MET.



Zone Name	Elevation (NAVD 88)	Area (ac)
Upland	TOB to 21.5'	2.4
Transitional	21.5' to 18.5'	1.7
Emergent	18.5' to 16.5'	1.8
Littoral	16.5' to 14.5'	2.0

- PINE STRAW APPLICATION FOR SLOPE STABILIZATION METHODOLOGY:**
- 1) APPLY A BASE LAYER OF PINE STRAW.
 - 2) USING A BRILLION OR SIMILAR TYPE IMPLEMENT CONDUCTED PARALLEL WITH THE SLOPES, SLIGHTLY INCORPORATE THE PINE STRAW INTO THE TOP SOIL. 1-2 PASSES WITH THE BRILLION IMPLEMENT MAXIMUM. THE BRILLION ROLLER IMPLEMENT CREATES AN INTERLOCKING WEAVE OF PINE STRAW MATERIAL THAT IS MORE RESISTANT TO EROSION.
 - 3) APPLY ANOTHER LAYER OF PINE STRAW.
 - 4) USING A BRILLION OR SIMILAR TYPE IMPLEMENT CONDUCTED PARALLEL WITH THE SLOPES, INCORPORATE THE SECOND LIFT OF PINE STRAW ONTO THE FIRST. THE FINAL THICKNESS OF PINE STRAW SHOULD BE APPROXIMATELY 1-INCH THICK.
 - 5) PLANTING OF VEGETATION FOR SLOPE STABILIZATION SHOULD BE PERFORMED AFTER THE PINE STRAW EROSION CONTROL BLANKET IS COMPLETED.
 - 6) WHEN TREES ARE PLANTED WITH THE PINE STRAW, RAKE/REMOVE THE STRAW FROM THE TREE PLANTING AREA. ONCE THE TREE IS PLANTED AND THE WATER DAM IS CONSTRUCTED, REPLACE THE PINE STRAW AROUND THE PLANTED AREA.

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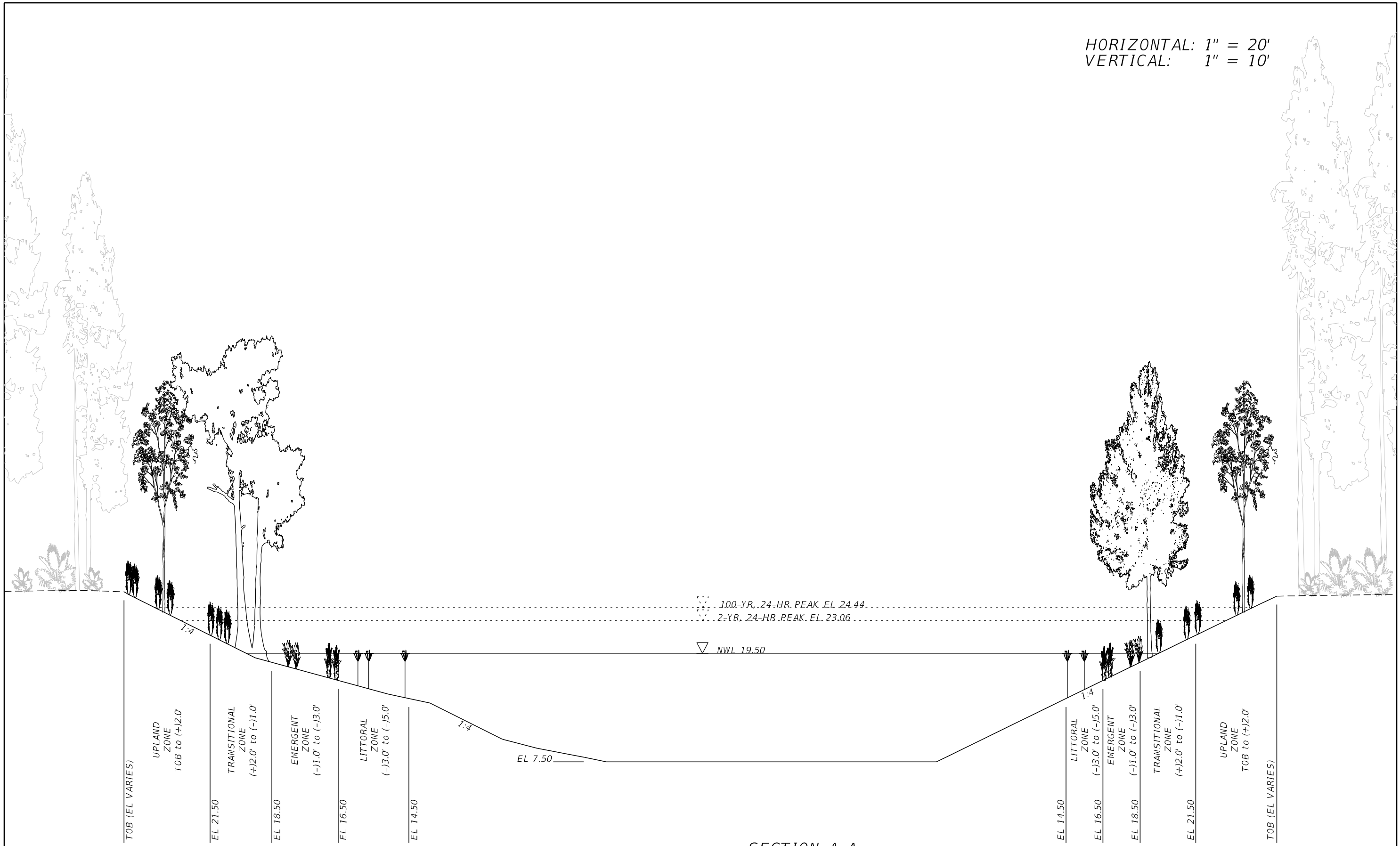
CITY OF PALM COAST LONDON WATERWAY EXPANSION		
PROJECT LOCATION	COUNTY	PURCHASE ORDER #
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LAKE PLANTING PLAN

SHEET NO.
12

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HORIZONTAL: 1" = 20'
 VERTICAL: 1" = 10'



SECTION A-A

REVISIONS			
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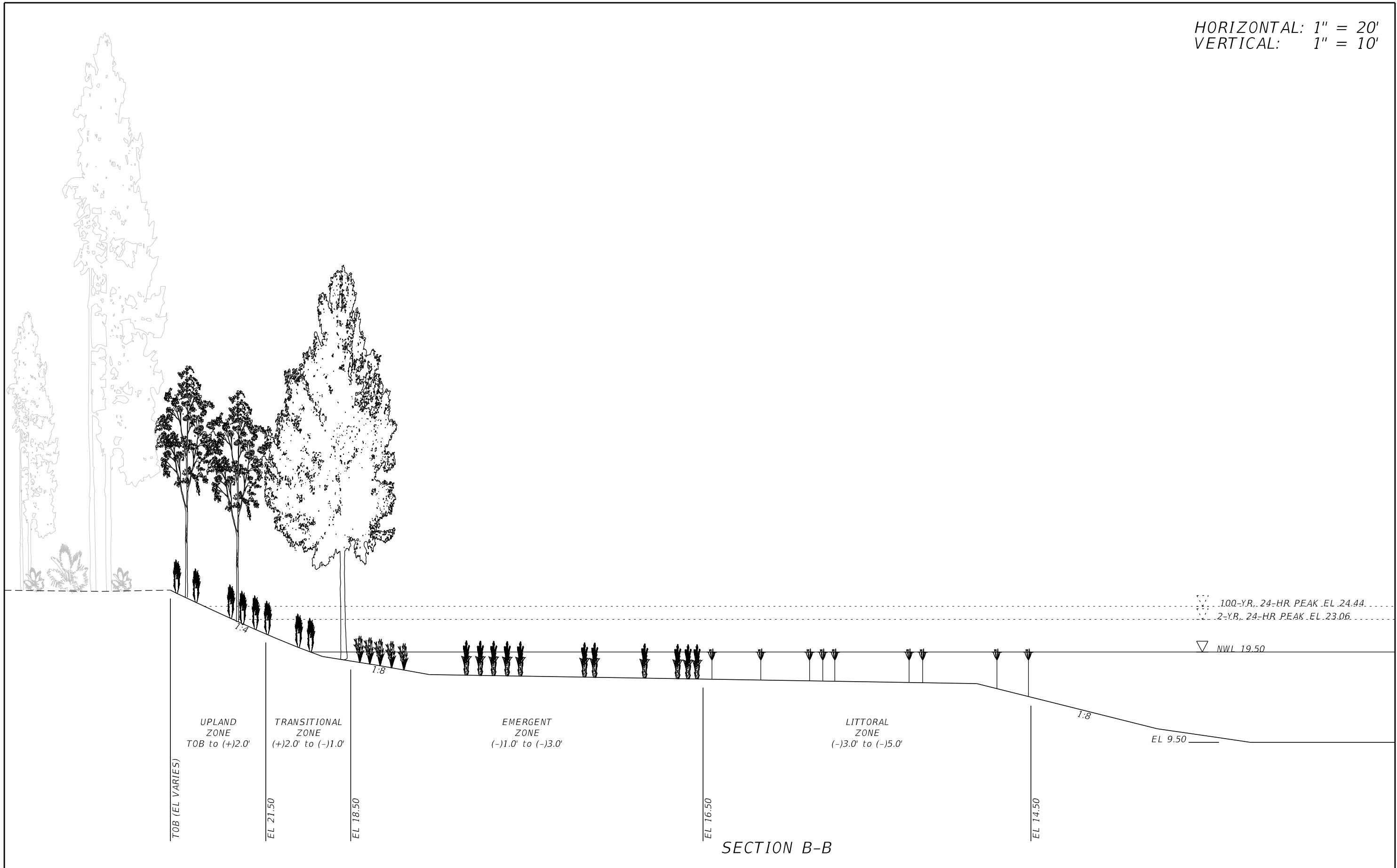
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LAKE PLANTING SECTION (1)

SHEET NO.
13

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HORIZONTAL: 1" = 20'
 VERTICAL: 1" = 10'



REVISIONS			
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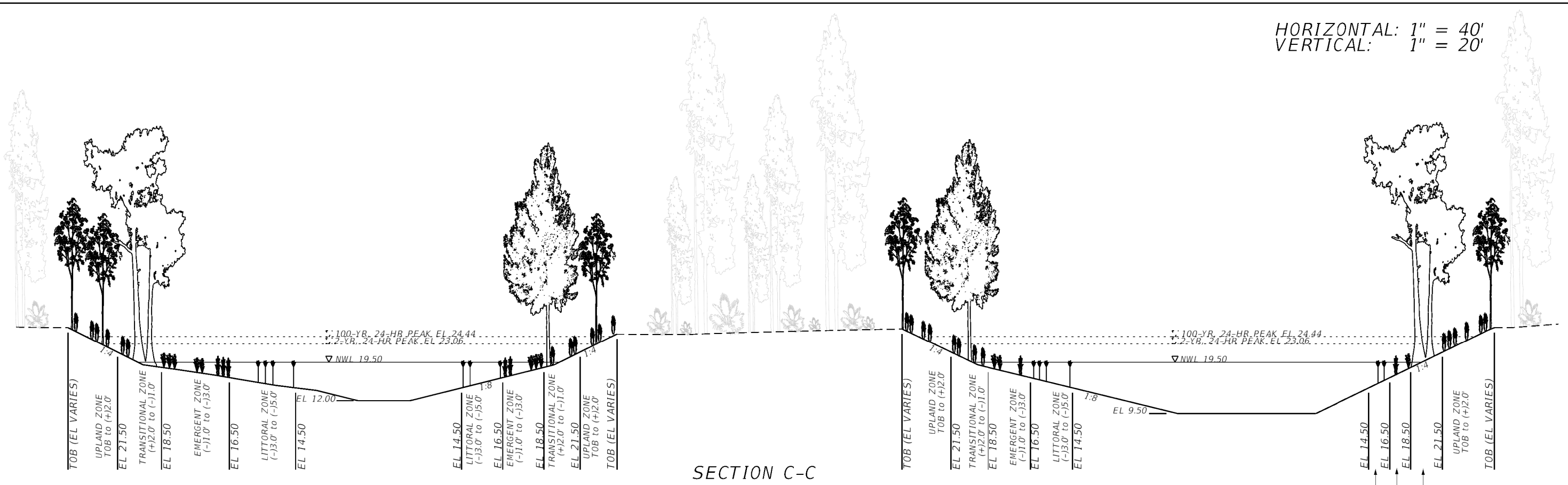
CITY OF PALM COAST LONDON WATERWAY EXPANSION		
PROJECT LOCATION	COUNTY	PURCHASE ORDER #
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LAKE PLANTING SECTION (2)

SHEET NO.
14

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HORIZONTAL: 1" = 40'
 VERTICAL: 1" = 20'



SECTION C-C

Zone Name	Area (acres)	Elevation (NAVD88)	Species (Common Name)	Species (Scientific Name)	Size	Quantity per Acre per Species	Total Quantity
Upland	2.4	TOB to 21.5'	Sand Cordgrass / Bunch Cordgrass	<i>Spartina bakeri</i>	Liner	150	360 ea
			Dahoon Holly	<i>Ilex cassine</i>	7-gallon	20	48 ea
			Southern Live Oak / Coastal Live Oak	<i>Quercus virginiana</i>	7-gallon	20	48 ea
			American Elm	<i>Ulmus americana</i>	7-gallon	20	48 ea
			Sweetbay Magnolia	<i>Magnolia virginiana</i>	7-gallon	20	48 ea
			Fakahatchee Grass / Eastern Gamagrass	<i>Tripsacum dactyloides</i>	Liner	100	240 ea
			Muhly Grass / Gulf Muhly	<i>Muhlenbergia capillaris</i>	Liner	100	240 ea
			Native grass seed mixture	various	N/A	6	15 lb
			Pine straw mulch	N/A	N/A	1	2.4 ac
			Transitional	1.7	21.5' to 18.5'	Sand Cordgrass / Bunch Cordgrass	<i>Spartina bakeri</i>
Sugarberry	<i>Celtis laevigata</i>	7-gallon				20	34 ea
Bald Cypress	<i>Taxodium distichum</i>	7-gallon				20	34 ea
Black Gum / Black Tupelo	<i>Nyssa sylvatica</i>	7-gallon				20	34 ea
Red Maple	<i>Acer rubrum</i>	7-gallon				20	34 ea
Sweetbay Magnolia	<i>Magnolia virginiana</i>	7-gallon				20	34 ea
Fakahatchee Grass / Eastern Gamagrass	<i>Tripsacum dactyloides</i>	Liner				100	170 ea
Muhly Grass / Gulf Muhly	<i>Muhlenbergia capillaris</i>	Liner				100	170 ea
Native grass seed mixture	various	N/A				6	11 lb
Pine straw mulch	N/A	N/A				1	1.7 ac
Emergent	1.8	18.5' to 16.5'	Pickerelweed	<i>Pontederia cordata</i>	Bare-root	100	180 ea
			Jointed Spikerush / Knotted Spikerush	<i>Eleocharis interstincta</i>	Bare-root	50	90 ea
			Bulltongue Arrowhead / Lance-leaf Arrowhead	<i>Sagittaria lancifolia</i>	Bare-root	100	180 ea
			Arrow Arum	<i>Peltandra virginica</i>	Bare-root	100	180 ea
			Horsetail Rush	<i>Equisetum hyemale</i>	Bare-root	50	90 ea
			Golden Canna	<i>Canna flaccida</i>	Bare-root	100	180 ea
			Broadleaf Arrowhead / Duck-Potato	<i>Sagittaria latifolia</i>	Bare-root	50	90 ea
			Blue Iris	<i>Iris spuria</i>	Bare-root	50	90 ea
			Common Rush / Soft Rush	<i>Juncus effusus</i>	Bare-root	50	90 ea
			Native grass seed mixture	various	N/A	6	11 lb
			Pine straw mulch	N/A	N/A	1	1.8 ac
			American White Water-Lily	<i>Nymphaea odorata</i>	Bare-root	25	50 ea
			American Lotus	<i>Nelumbo lutea</i>	Bare-root	25	50 ea
Littoral	2.0	16.5' to 14.5'					

LITTORAL ZONE (-13.0' to -15.0')
 EMERGENT ZONE (-11.0' to -13.0')
 TRANSITIONAL ZONE (+12.0' to -11.0')

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

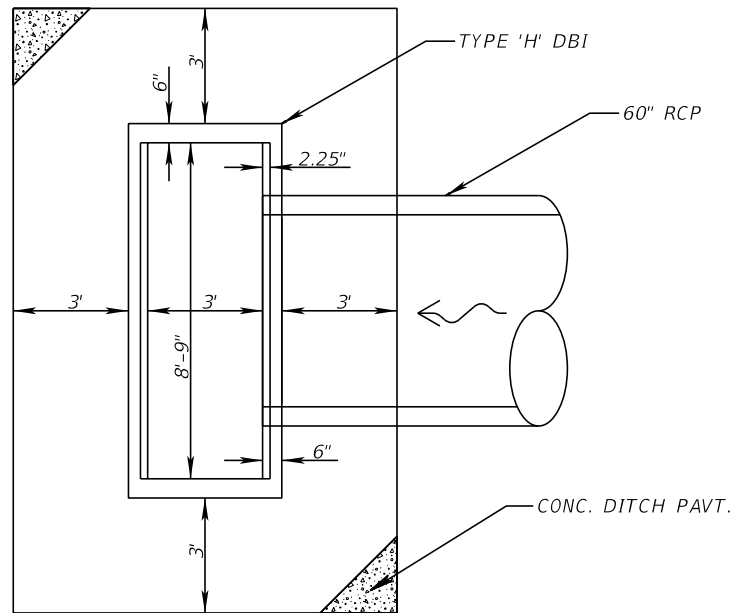
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 JOHN L. WINTON JR., P.E. LICENSE NO. 54657

CITY OF PALM COAST
 LONDON WATERWAY EXPANSION

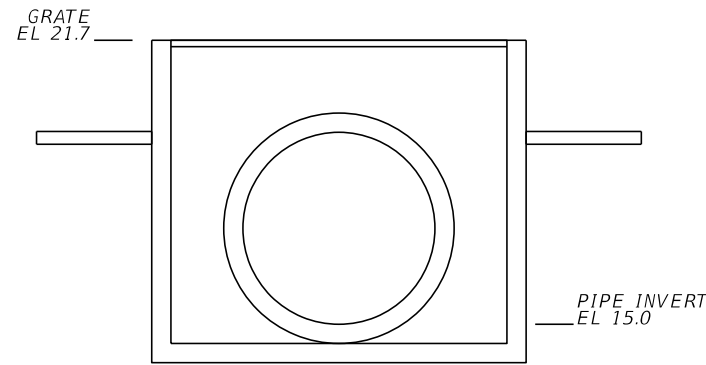
PROJECT LOCATION	COUNTY	PURCHASE ORDER #
LONDON DR LEAVER DR	FLAGLER	20211417

LAKE PLANTING SECTION (3)

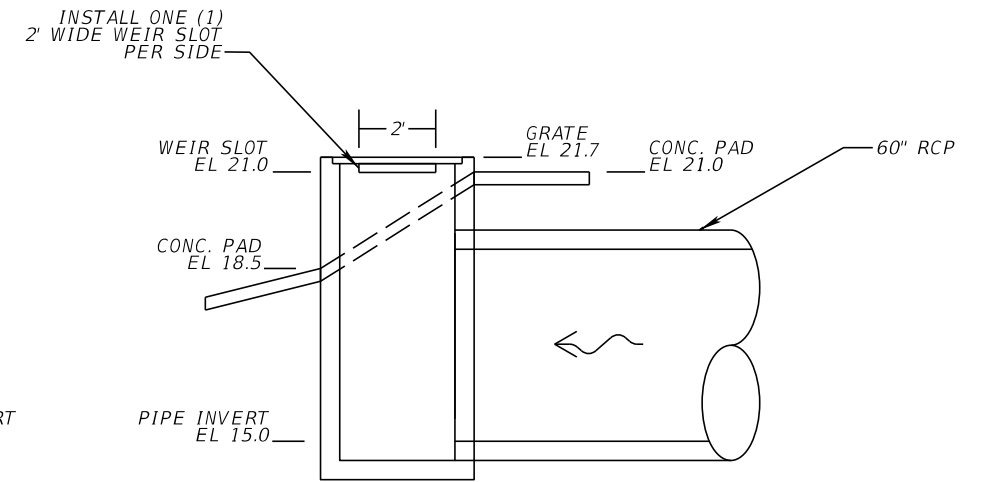
SHEET NO.
15



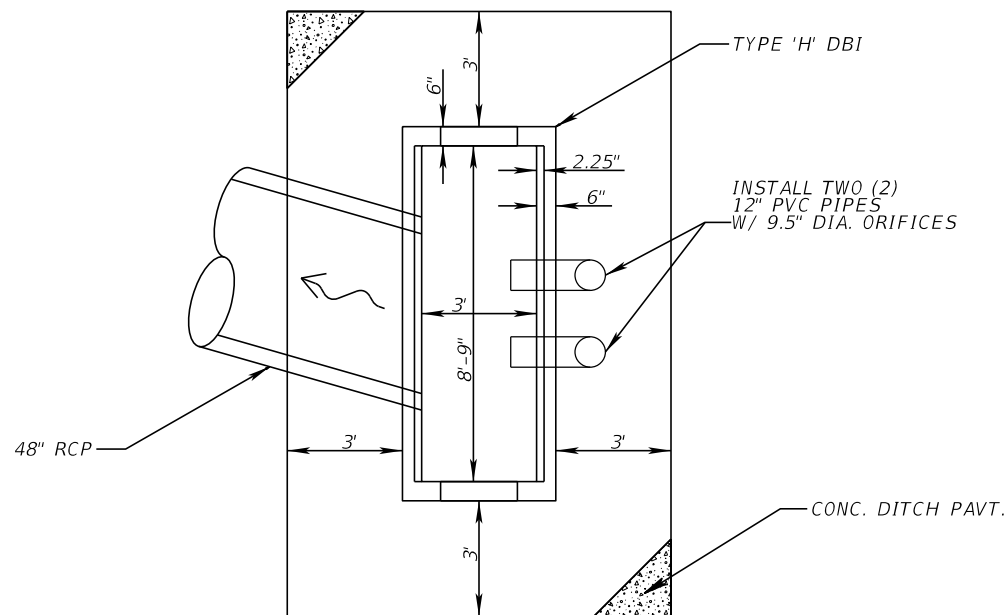
LAKE INFLOW (S-11)
TOP VIEW



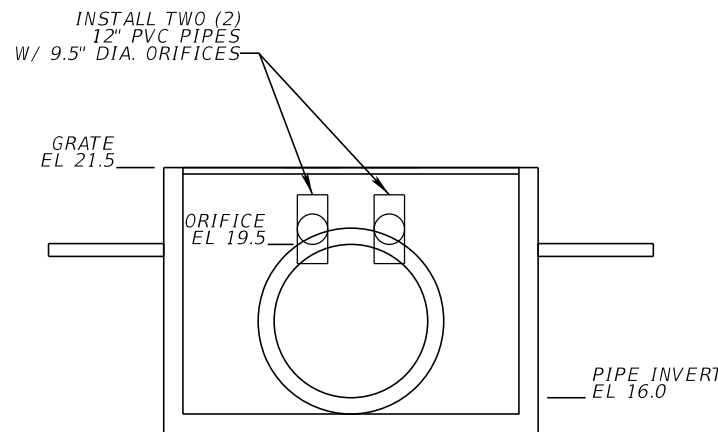
LAKE INFLOW (S-11)
FRONT VIEW



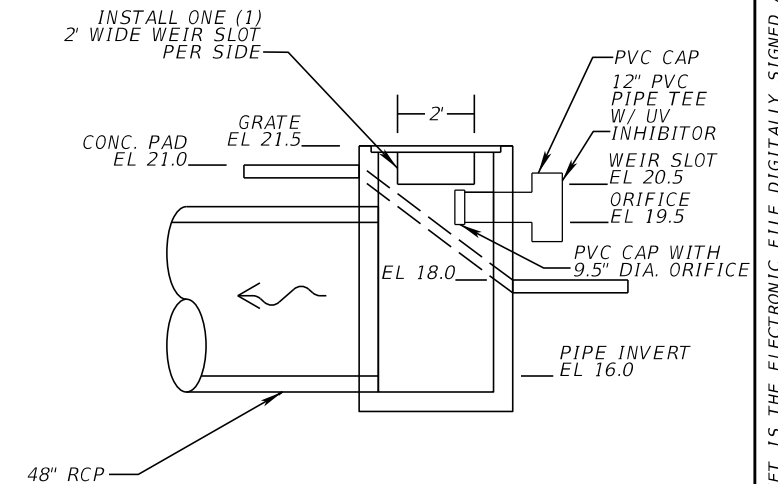
LAKE INFLOW (S-11)
SIDE VIEW



LAKE/POND OUTFALL (S-8/S-2)
TOP VIEW



LAKE/POND OUTFALL (S-8/S-2)
FRONT VIEW



LAKE/POND OUTFALL (S-8/S-2)
SIDE VIEW

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION



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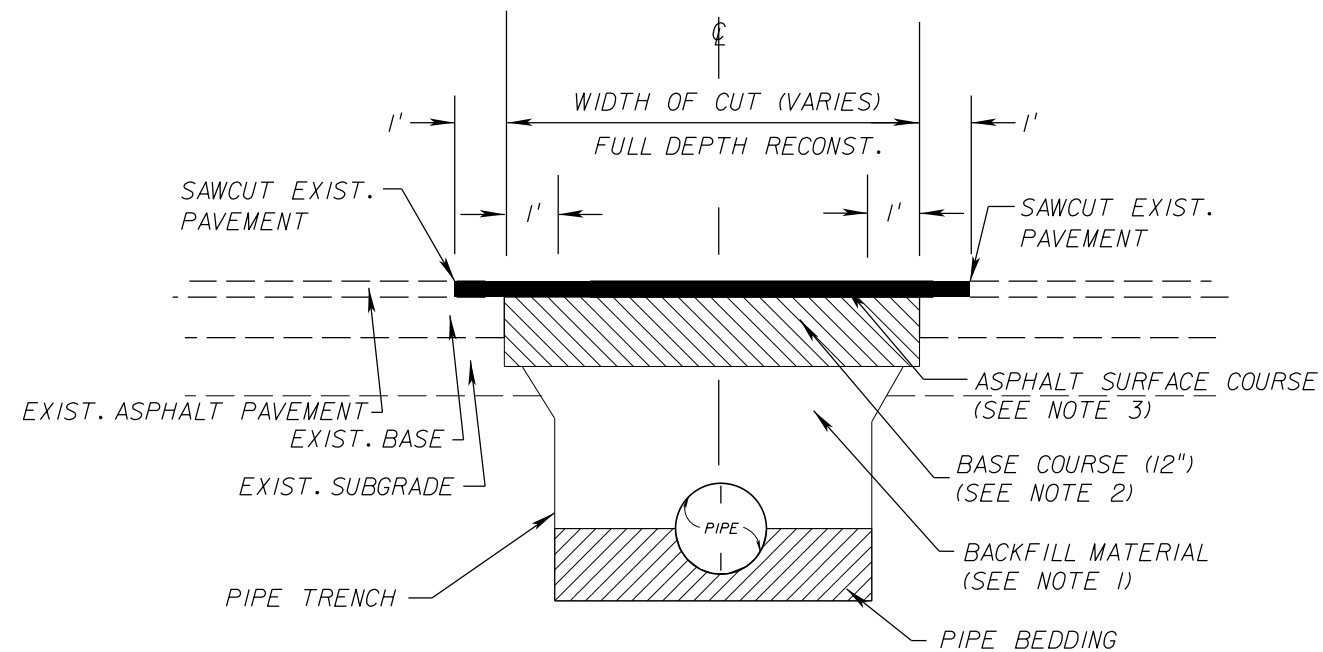
CITY OF PALM COAST
LONDON WATERWAY EXPANSION

PROJECT LOCATION	COUNTY	PURCHASE ORDER #
LONDON DR LEAVER DR	FLAGLER	20211417

STORMWATER DETAILS (1)

SHEET NO.

16



NOTES:

1) BACKFILL MATERIAL SHALL BE PLACED IN NO GREATER THAN 8" LIFTS UP TO 2' BELOW BASE. REMAINING LIFTS SHALL BE PLACED NO GREATER THAN 6" LIFTS. COMPACTION SHALL BE 98% OF MAXIMUM STANDARD PROCTOR DENSITY (T-180).

2) LIMEROCK BASE COURSE SHALL BE TWO TIMES THE EXISTING LIMEROCK THICKNESS OR 12 INCHES MINIMUM, COMPACTED IN NO GREATER THAN 6 INCH LIFTS AT A DENSITY OF NOT LESS THAN 98 PERCENT OF THE MAXIMUM DENSITY OBTAINED USING THE STANDARD PROCTOR METHOD ON EACH LAYER (T-180). MINIMUM BEARING SHALL BE BASED ON AN LBR OF 100.

3) ASPHALT SURFACE COURSE SHALL MATCH EXISTING PAVEMENT THICKNESS OR 1.5-INCH MINIMUM

PIPE TRENCH DETAIL
N.T.S

FULL DEPTH RECONSTRUCTION
ASPHALTIC CONCRETE (1-1/2") (TYPE-SP 9.5) (TRAFFIC B)
LIMEROCK BASE COURSE (12" MIN.)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION



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CITY OF PALM COAST LONDON WATERWAY EXPANSION		
PROJECT LOCATION	COUNTY	PURCHASE ORDER #
LONDON DR LEAVER DR	FLAGLER	20211417

STORMWATER DETAILS (2)

SHEET NO.

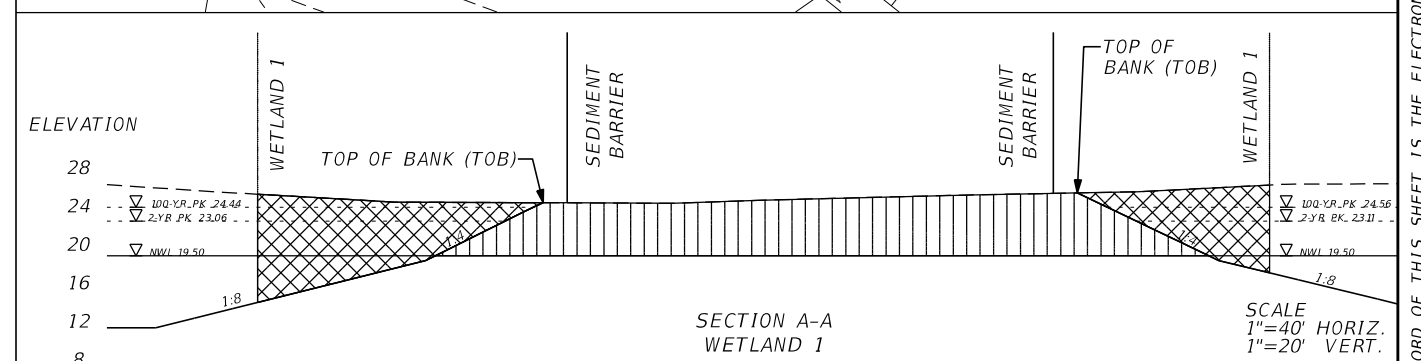
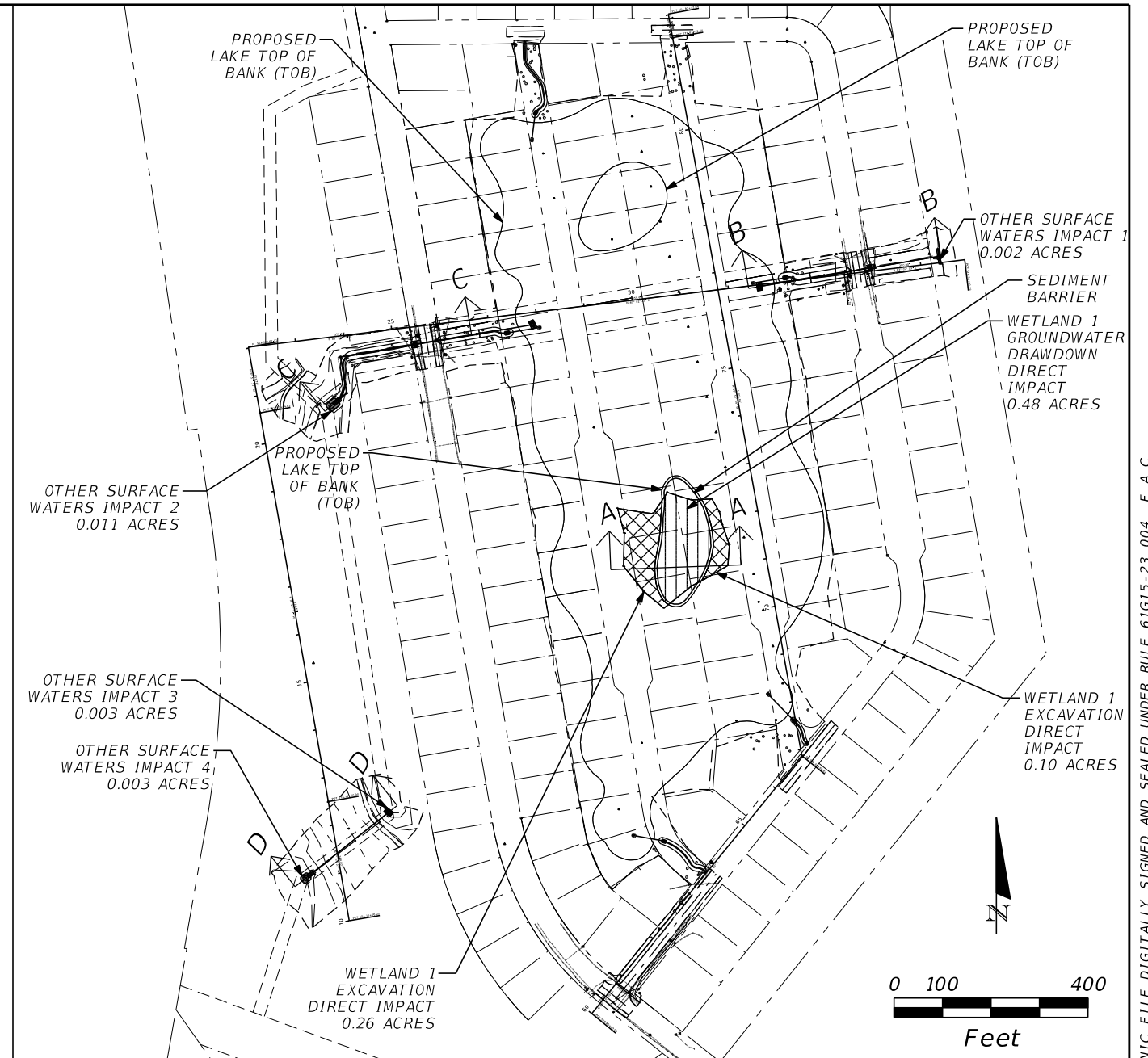
17

GENERAL NOTES

- The City of Palm Coast intends to expand the stormwater attenuation and treatment capacity of the London Waterway by utilization of City-owned property near the canal. A lake and upgraded stormwater system has been designed with the following objectives: provide flood storage to reduce peak stages in London Waterway; improve water quality in receiving waters with stormwater treatment; enhance the environment to support native fauna and flora; deliver an aesthetic project with potential as a neighborhood park; consider economics of access and maintenance requirements.
- Strict adherence to Section 104 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction will be used in conjunction with this application to provide reasonable assurance that State Water Quality Standards will not be violated.
- Types of equipment in the construction will include: gradeall, dump trucks, bulldozer, front end loader, and pumps. The equipment will be trucked or self-propelled to the site.
- Turbidity barriers, silt fences, sand bags, and hay bales or some combination of these items will be used as directed by the project engineer to maintain State Water Quality Standards.
- Excavated material that is suitable will be used in construction of side road shoulders. Unsuitable material will be disposed of and contained at sites provided by the contractor.
- Fill material shall be of satisfactory material that is clean and compactible into a suitable and enduring pond and maintenance berm.
- All elevations shown in this permit application are referenced to U.S.G.S. North American Vertical Datum of 1988.
- The following are impacted jurisdictional areas due to the proposed lake and corresponding inflow and outflow stormsewer system.

WETLAND ID	DIRECT WETLAND IMPACT: EXCAVATION (ACRES)	DIRECT WETLAND IMPACT: GROUNDWATER DRAWDOWN (ACRES)	TOTAL DIRECT WETLAND IMPACT (ACRES)	TOTAL DIRECT WETLAND IMPACT (CUBIC-YARD)
1	0.36	0.48	0.84	9409.0

OTHER SURFACE WATERS (OSW) ID	TOTAL IMPACT (ACRES)	TOTAL IMPACT (CUBIC-YARD)
1	0.002	7.7
2	0.011	54.2
3	0.003	4.1
4	0.003	12.9
TOTAL	0.019	78.9



PROJECT: LONDON WATERWAY EXPANSION FINAL DESIGN
 PURPOSE: WETLAND AND OTHER SURFACE WATER IMPACTS
 DATUM: NAVD 88
 FLAGLER COUNTY, FLORIDA, SECTIONS 21 AND 28, TOWNSHIP 10 S, RANGE 30 E

SHEET 1 OF 3

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 JOHN L. MINTON JR., P.E. LICENSE NO. 54657

PROJECT: LONDON WATERWAY EXPANSION FINAL DESIGN
 PURPOSE: WETLAND AND OTHER SURFACE WATER IMPACTS
 DATUM: NAVD 88
 FLAGLER COUNTY, FLORIDA, SECTIONS 21 AND 28, TOWNSHIP 10 S, RANGE 30 E

LEGEND

- DIRECT WETLAND IMPACT: EXCAVATION
- DIRECT WETLAND IMPACT: GROUNDWATER DRAWDOWN
- OTHER SURFACE WATERS IMPACT

SHEET 2 OF 3

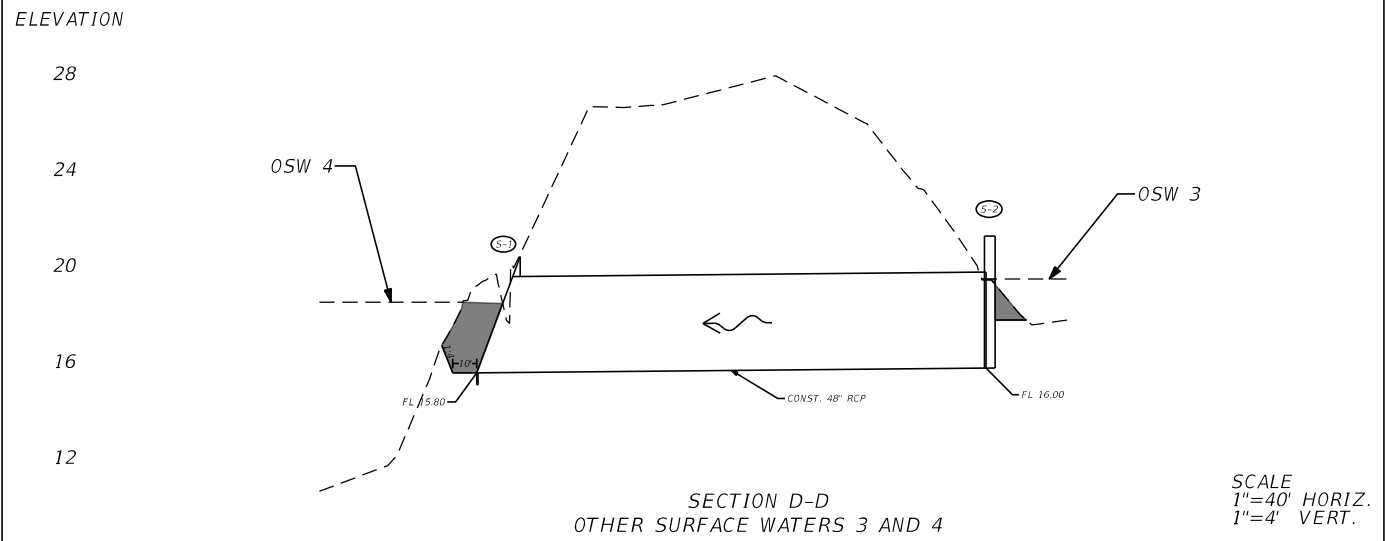
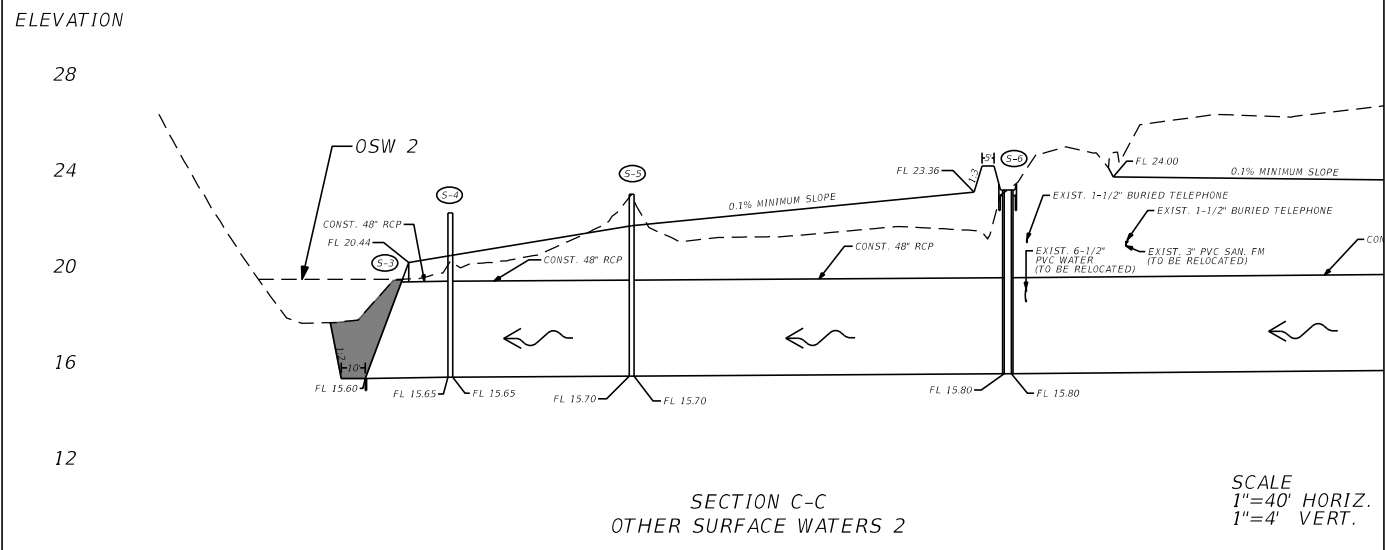
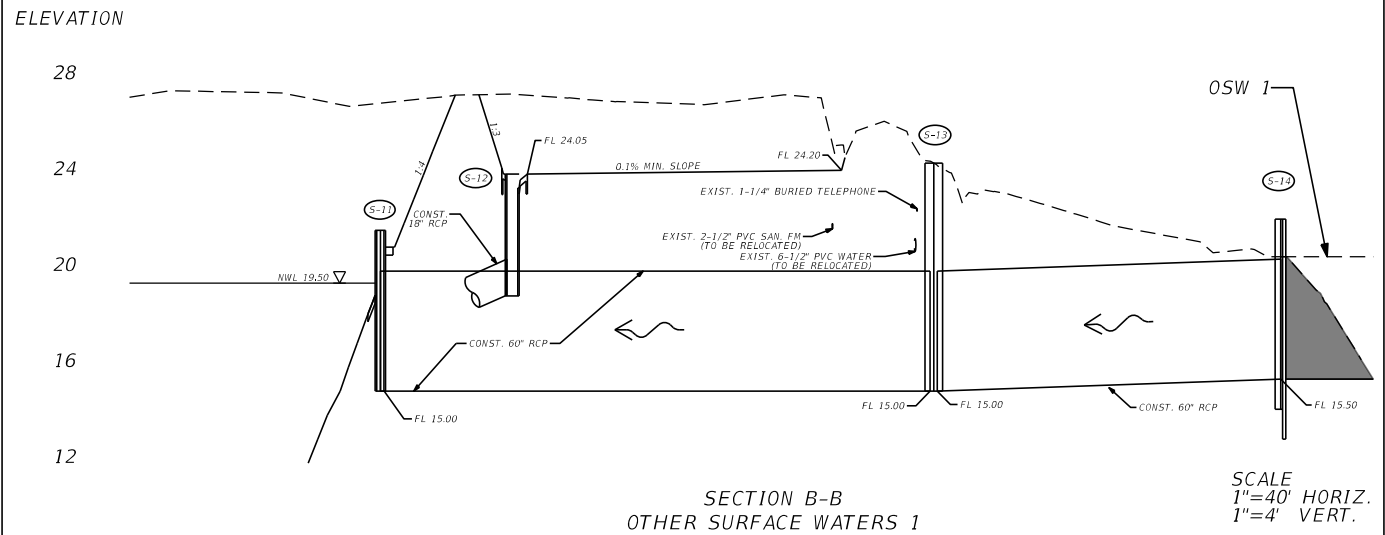
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

CITY OF PALM COAST LONDON WATERWAY EXPANSION		
PROJECT LOCATION	COUNTY	PURCHASE ORDER #
LONDON DR LEAVER DR	FLAGLER	20211417

**ENVIRONMENTAL
CONSIDERATIONS (1)**

SHEET NO.
18

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PROJECT: LONDON WATERWAY EXPANSION FINAL DESIGN
 PURPOSE: WETLAND AND OTHER SURFACE WATER IMPACTS
 DATUM: NAVD 88
 FLAGLER COUNTY, FLORIDA, SECTIONS 21 AND 28, TOWNSHIP 10 S, RANGE 30 E

LEGEND
 [Cross-hatched box] DIRECT WETLAND IMPACT: EXCAVATION
 [Hatched box] DIRECT WETLAND IMPACT: GROUNDWATER DRAWDOWN
 [Solid grey box] OTHER SURFACE WATERS IMPACT

SHEET 3 OF 3

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

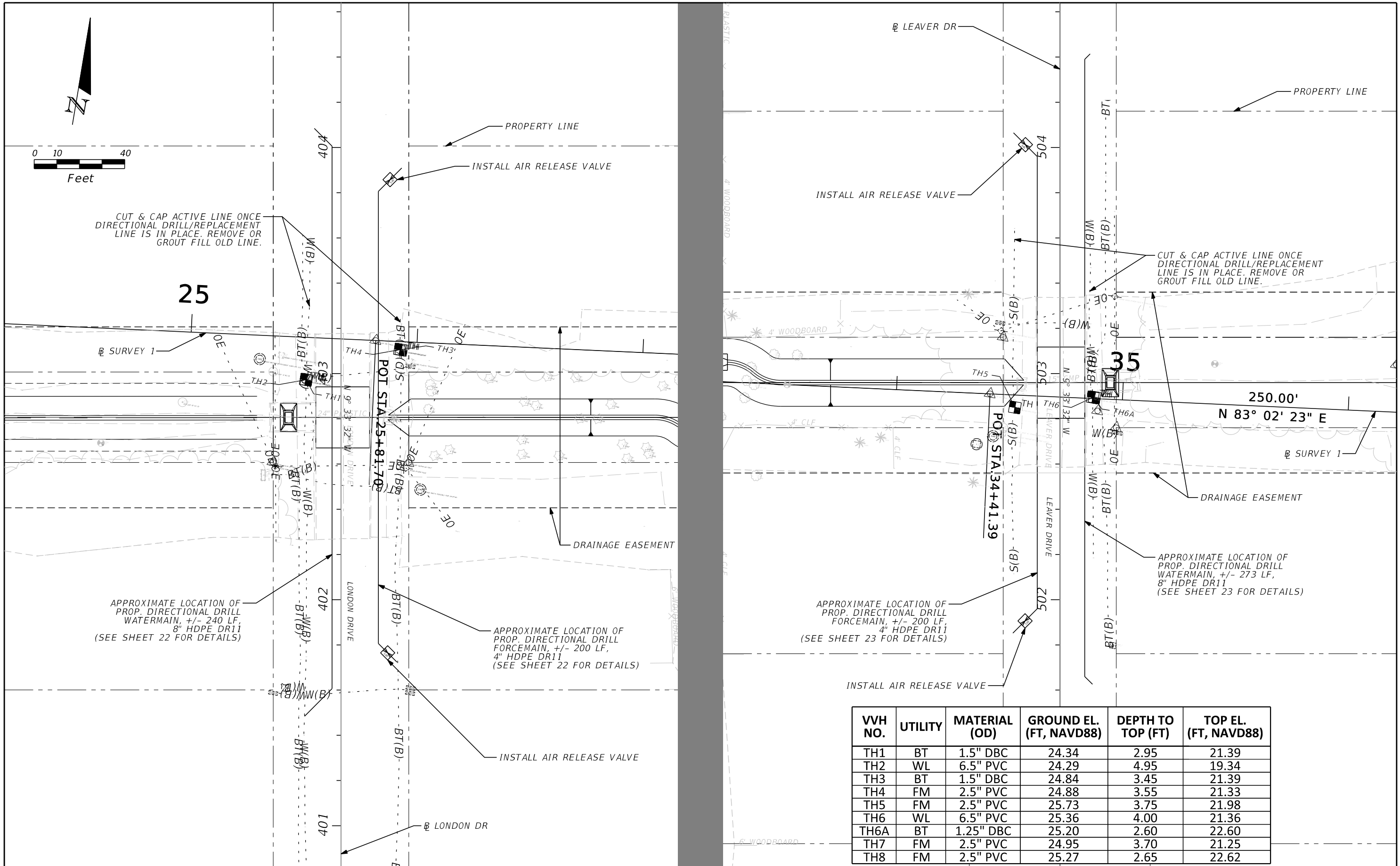
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CITY OF PALM COAST LONDON WATERWAY EXPANSION		
PROJECT LOCATION	COUNTY	PURCHASE ORDER #
LONDON DR LEAVER DR	FLAGLER	20211417

**ENVIRONMENTAL
 CONSIDERATIONS (2)**

SHEET NO.
19

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VVH NO.	UTILITY	MATERIAL (OD)	GROUND EL. (FT, NAVD88)	DEPTH TO TOP (FT)	TOP EL. (FT, NAVD88)
TH1	BT	1.5" DBC	24.34	2.95	21.39
TH2	WL	6.5" PVC	24.29	4.95	19.34
TH3	BT	1.5" DBC	24.84	3.45	21.39
TH4	FM	2.5" PVC	24.88	3.55	21.33
TH5	FM	2.5" PVC	25.73	3.75	21.98
TH6	WL	6.5" PVC	25.36	4.00	21.36
TH6A	BT	1.25" DBC	25.20	2.60	22.60
TH7	FM	2.5" PVC	24.95	3.70	21.25
TH8	FM	2.5" PVC	25.27	2.65	22.62

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DATE	DESCRIPTION	DATE	DESCRIPTION

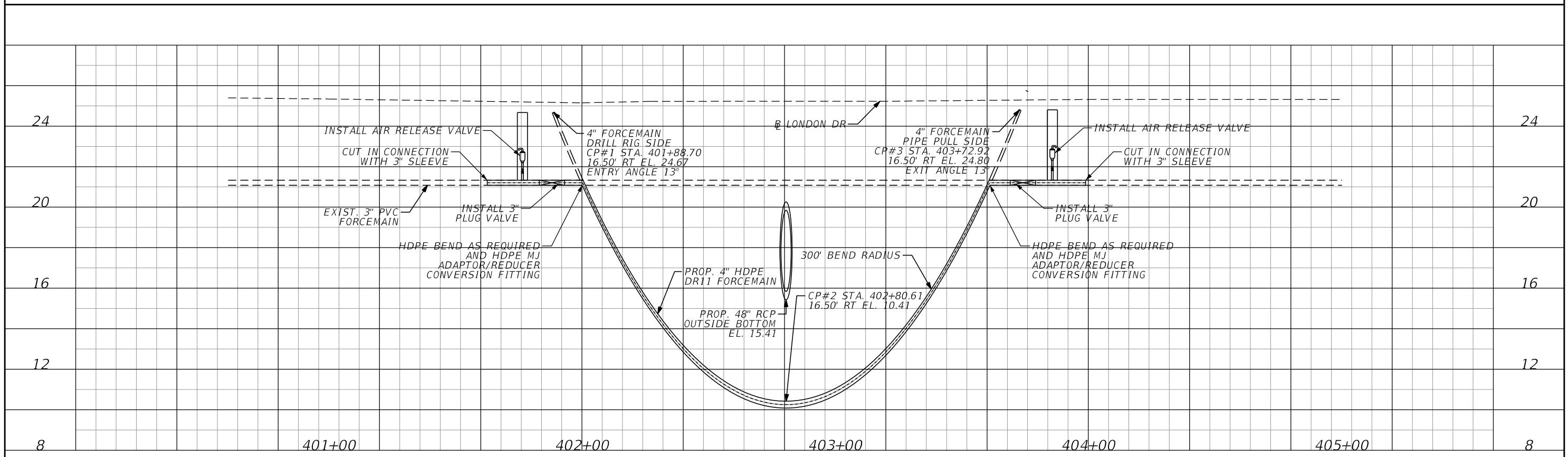
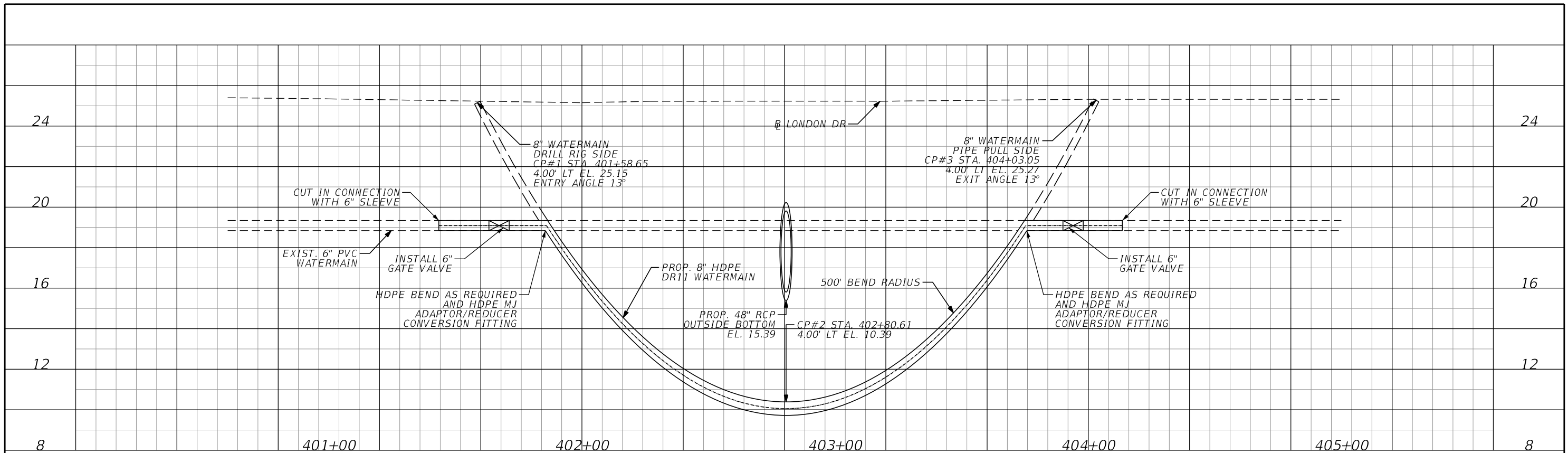
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CITY OF PALM COAST LONDON WATERWAY EXPANSION		
PROJECT LOCATION	COUNTY	PURCHASE ORDER #
LONDON DR LEAVER DR	FLAGLER	20211417

DIRECTIONAL DRILL PLAN
LONDON DR / LEAVER DR

SHEET NO.
21

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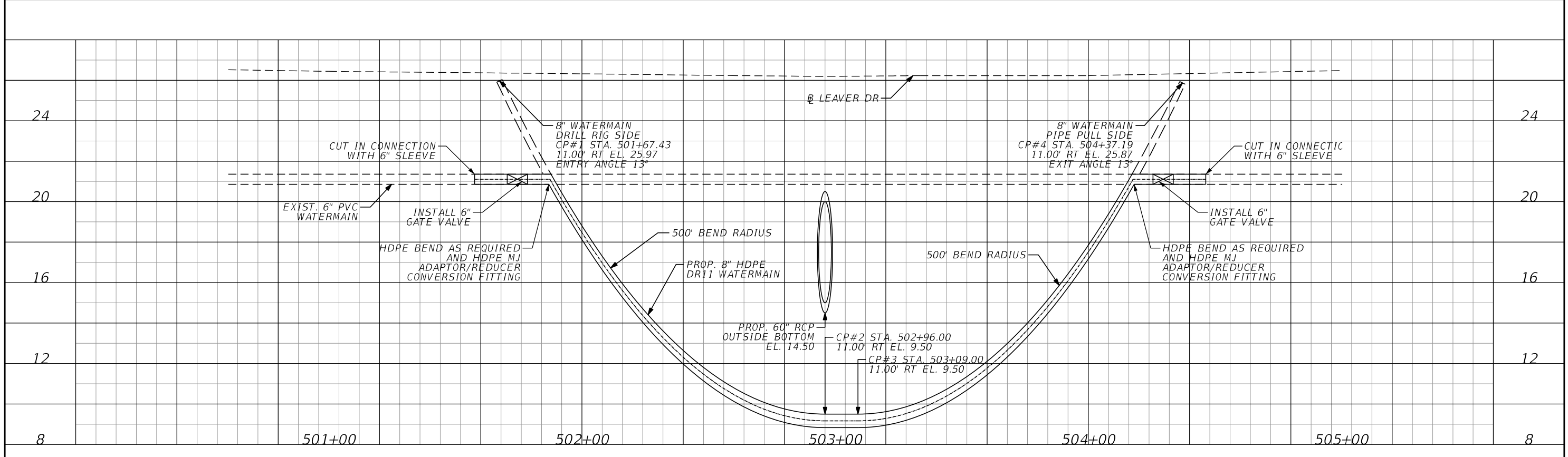
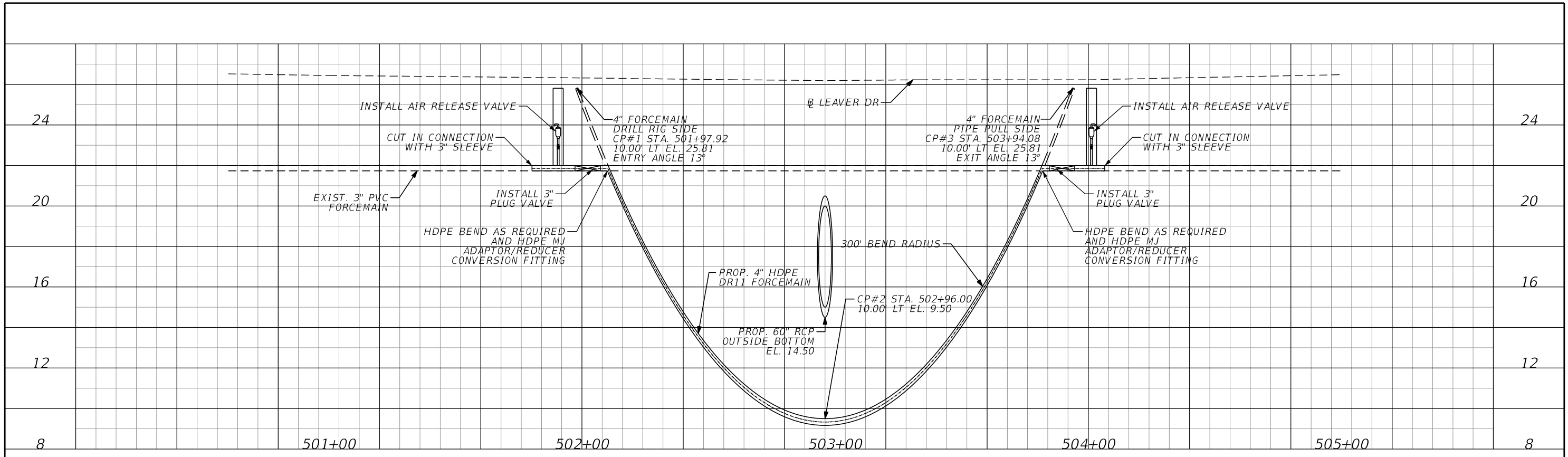
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CITY OF PALM COAST LONDON WATERWAY EXPANSION		
PROJECT LOCATION	COUNTY	PURCHASE ORDER #
LONDON DR LEAVER DR	FLAGLER	20211417

DIRECTIONAL DRILL PROFILE
LONDON DRIVE

SHEET NO. 22

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CITY OF PALM COAST LONDON WATERWAY EXPANSION		
PROJECT LOCATION	COUNTY	PURCHASE ORDER #
LONDON DR LEAVER DR	FLAGLER	20211417

DIRECTIONAL DRILL PROFILE
LEAVER DRIVE

SHEET NO. 23

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POTABLE AND RAW WATER MAINS GENERAL NOTES

SHEET 1 OF 2

1. ALL PIPELINE MATERIAL AND INSTALLATION SHALL CONFORM TO THE CITY OF PALM COAST STANDARDS (AUGUST, 2020), CONTRACT DOCUMENTS, TECHNICAL SPECIFICATIONS AND ALL APPLICABLE LOCAL AND STATE REQUIREMENTS.
2. THE CONTRACTOR SHALL ENSURE THAT ALL REQUIRED PERMITS ARE IN HAND BEFORE COMMENCEMENT OF CONSTRUCTION.
3. ALL UTILITY OWNERS AND SUNSHINE STATE ONE CALL (800) 432-4770 MUST BE NOTIFIED SEVENTY-TWO (72) HOURS PRIOR TO STARTING CONSTRUCTION.
4. THE CONTRACTOR SHALL NOTIFY FIBEROPTICS COMPANIES SEVEN (7) WORKING DAYS PRIOR TO ANY CONSTRUCTION ACTIVITY IN THEIR AREA. EXTREME CAUTION SHALL BE USED IN AREAS WHERE FIBEROPTIC CABLE IS LOCATED ADJACENT TO CONSTRUCTION ACTIVITY.
5. ALL PIPING AND/OR APPURTENANCES CONNECTING TO ADJACENT CONSTRUCTION SHALL BE PLUGGED IF ADJACENT WORK HAS NOT BEEN COMPLETED.
6. CONTRACTOR SHALL PROVIDE TEMPORARY THRUST RESTRAINTS, BRACING, TEST PLUGS AND/OR OTHER DEVICES NECESSARY TO SUCCESSFULLY COMPLETE PRESSURE TESTING OF ALL PRESSURE PIPING SYSTEMS.
7. ALL FITTINGS FOR BURIED PIPING 4-INCH AND LARGER, SHALL BE COMPACT DUCTILE IRON MECHANICAL JOINT (D.I.M.J) BITUMEN COATED EXTERIOR, APPLIED PER ANSI/AWWA A21.53/C153 UNLESS NOTED OTHERWISE. THESE FITTINGS SHALL INCORPORATE RESTRAINING RINGS, MEGA-LUGS OR OTHER APPROVED EQUIVALENT MECHANICAL DEVICES.
8. ALL BURIED PIPING SPECIFIED FOR PRESSURE SERVICE SHALL BE PROVIDED WITH RESTRAINING DEVICES AT ALL DIRECTIONAL CHANGES, UNLESS NOTED OTHERWISE.
9. ALL PROPOSED DUCTILE IRON PIPE, FITTINGS AND RESTRAINTS WITHIN FIFTY (50) FEET OF AN EXISTING GAS MAIN SHALL BE POLYETHYLENE ENCASED.
10. ALL FASTENERS SHALL BE MANUFACTURED OF NON-CORROSIVE MATERIALS. WHEN STAINLESS STEEL IS REQUIRED, 304 S.S. SHALL BE USED FOR ALL BURIED APPLICATIONS AND 316 S.S. SHALL BE USED FOR ABOVE GROUND OR CORROSIVE ENVIRONMENTS.
11. THE LOCATIONS OF EXISTING UTILITIES SHOWN ON THESE DRAWINGS HAVE BEEN DERIVED FROM EXISTING UTILITY RECORDS AND ACCURACY OF THIS INFORMATION IS NOT GUARANTEED. IT IS THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT LOCATION, DEPTH AND CHARACTER OF ALL UTILITIES PRIOR TO EXCAVATION IN ORDER TO PROTECT THEM DURING CONSTRUCTION.
12. WHERE MINIMUM SEPARATION BETWEEN UTILITIES IS REQUIRED, THE DISTANCE SHALL BE MEASURED FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE.
13. CONTRACTOR SHALL MAKE EXPLORATORY EXCAVATIONS AT ALL INTERSECTIONS OF PROPOSED WORK AND EXISTING UTILITIES. THE EXPLORATORY EXCAVATIONS SHALL BE MADE FORTY-EIGHT (48) HOURS IN ADVANCE OF THE PROPOSED WORK. IF THERE IS A CONFLICT THE CONTRACTOR SHALL NOTIFY THE CITY OF PALM COAST IMMEDIATELY. INFORMATION ON THE OBSTRUCTION SHALL BE FURNISHED BY THE CONTRACTOR AND SHALL INCLUDE: LOCATION, ELEVATION, UTILITY TYPE, MATERIAL AND SIZE.
14. LOCATIONS AND DIMENSIONS OF EXISTING RIGHTS-OF-WAY AND EASEMENTS ARE BASED ON THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL VERIFY ALL THE LIMITS OF RIGHTS-OF-WAY AND EASEMENTS IN ORDER TO AVOID ENCROACHMENTS.
15. THE CONTRACTOR SHALL REPLACE SOD 3 FEET FROM ALL DISTURBED AREAS: STRUCTURES, SIDEWALKS, ROADS, AND POND IMPROVEMENT AREAS. ALL OTHER DISTURBED AREAS SHALL BE SODDED OR SEEDED AND MULCHED AS SHOWN ON THE DRAWINGS.
16. THE CONTRACTOR SHALL REPLACE, BUT NOT BE LIMITED TO, PAVING, STABILIZED EARTH, DRIVEWAYS OR ANY ITEMS DISTURBED OR DAMAGED BY THE CONSTRUCTION OR IT'S RELATED ACTIVITIES. THE CONTRACTOR SHALL REPLACE WITH EQUAL MATERIAL OR AS DIRECTED BY THE CITY OF PALM COAST.
17. THE DISPOSAL OF ANY EXCESS EARTHWORK MATERIAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
18. ALL PRACTICAL AND NECESSARY EFFORT SHALL BE TAKEN DURING CONSTRUCTION TO PREVENT UNNECESSARY TREE REMOVAL.
19. ALL ELEVATIONS SHOWN ON THESE DRAWINGS REFER TO NORTH AMERICAN VERTICAL DATUM (NAVD), 1988.
20. IT IS THE CONTRACTORS RESPONSIBILITY TO COORDINATE HIS WORK WITH THE WORK SCHEDULE OF ADJACENT CONTRACTORS AS WELL AS THE OPERATIONS STAFF OF THE CITY OF PALM COAST.
21. THE CONTRACTOR SHALL NOTIFY THE CITY OF PALM COAST 72 HOURS BEFORE COMMENCING WITH CONSTRUCTION.
22. PIPE MEASUREMENTS SHALL BE CENTER TO CENTER OF FITTINGS OR VALVES.
23. PVC PIPE LESS THAN 2-INCHES SHALL CONFORM TO ASTM D1785. THREADED PIPE AND FITTINGS SHALL BE SCH. 80 AND CONFORM TO ASTM D2464. UNTHREADED PIPE AND FITTINGS SHALL BE SCH. 40 WITH SOLVENT CEMENTED JOINTS. CEMENTED JOINTS AND FITTINGS SHALL COMPLY WITH ASTM D2466 AND D2855.
24. 2", 2 1/2" AND 3" PVC PIPE SHALL CONFORM TO ASTM D2241. PIPE SHALL BE FURNISHED IN 20-FOOT LENGTHS, SHALL HAVE DIMENSION RATIO (DR21) AND A WATER PRESSURE RATING OF 200 PSI.
25. PVC PIPE 4-INCHES THROUGH 48-INCHES SHALL CONFORM TO AWWA STANDARD C900 (DR18)
26. DUCTILE IRON PIPE SHALL CONFORM TO AWWA STANDARD C151, PRESSURE CLASS 350 FOR 4-INCH THROUGH 12-INCH DIAMETER PIPE; PRESSURE CLASS 250 FOR PIPE LARGER THAN 12-INCHES IN DIAMETER UNLESS NOTED OTHERWISE.
27. VALVES FOR POTABLE WATER MAINS SHALL BE DUCTILE IRON (D.I.) EPOXY COATED GATE VALVES OR BUTTERFLY VALVES. VALVES FOR RAW WATER MAINS SHALL BE DUCTILE IRON (D.I.) EPOXY COATED GATE VALVES ONLY. SEE SPECIFICATIONS FOR DETAILS.
28. ALL POLYETHYLENE PRESSURE PIPE AND FITTINGS 4-INCH AND LARGER SHALL CONFORM TO AWWA STANDARD C906 (DR11) PRESSURE CLASS 160 AND ASTM STANDARD D3350, D2837 PE 3408.



POTABLE AND RAW WATER MAIN GENERAL NOTES

SCALE: NONE

FIG. W-1

REVISED 8/20



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POTABLE AND RAW WATER MAINS GENERAL NOTES

SHEET 2 OF 2

29. ALL POLYETHYLENE PIPE FOR SERVICE TUBING SHALL CONFORM TO AWWA STANDARD C901 (DR9) PRESSURE CLASS 200 AND STANDARD D2737 PE 3408.
30. ALL PIPE AND POLYETHYLENE SERVICE TUBING SHALL BEAR THE NATIONAL SANITATION FOUNDATION (NSF) SEAL OF APPROVAL FOR POTABLE WATER SERVICE.
31. FITTINGS FOR BOTH PVC AND DUCTILE IRON PIPE SHALL BE DUCTILE IRON COMPACT FITTINGS CONFORMING TO THE REQUIREMENTS OF ANSI/AWWA C153/A21.53.
32. DUCTILE IRON PIPE AND FITTINGS SHALL HAVE A CEMENT MORTAR INTERIOR LINING CONFORMING TO THE REQUIREMENTS OF ANSI/AWWA A21.4/C104. DUCTILE IRON PIPE AND FITTINGS FOR RAW WATER SHALL INCORPORATE A DOUBLE LINING OF THE CEMENT MORTAR ON THE INTERIOR SURFACE.
33. PROPER BACKFLOW PREVENTION ASSEMBLIES SHALL BE PROVIDED IN ACCORDANCE WITH RULE 62-555.360, F.A.C. AND AWWA MANUAL M14, "BACKFLOW PREVENTION AND CROSS CONNECTION CONTROL" AND THE CITY OF PALM COAST "CROSS CONNECTION CONTROL MANUAL" (LATEST EDITION).
34. ALL WATER MAINS SHALL BE HYDROSTATICALLY TESTED AND DISINFECTED IN ACCORDANCE WITH AWWA STANDARDS, LATEST REVISIONS. HYDROSTATIC TESTING FOR PVC MAINS SHALL BE 150 PSI FOR MINIMUM OF 2 HOURS AND MEET AWWA STANDARD C605. DUCTILE IRON MAINS SHALL BE TESTED AT 150 PSI FOR 2 HOURS PER AWWA C600. ALL NEW MAINS SHALL BE DISINFECTED PER AWWA STANDARD C651. BACTERIOLOGICAL TESTS FOR 2 CONSECUTIVE DAYS SHALL BE APPROVED PRIOR TO PLACING SYSTEM INTO SERVICE.
35. PVC POTABLE WATER MAINS SHALL BE SOLID BLUE IN COLOR. DUCTILE IRON WATER MAINS SHALL INCORPORATE 3 BLUE STRIPES, PAINTED AT THE TOP AND SIDES OF THE PIPE, ALONG IT'S ENTIRE LENGTH.
36. PVC RAW WATER MAINS SHALL BE SOLID BLUE IN COLOR. DUCTILE IRON RAW WATER MAINS SHALL INCORPORATE 3 WHITE STRIPES, PAINTED AT THE TOP AND SIDES OF THE PIPE, ALONG IT'S ENTIRE LENGTH.
37. ALL POTABLE AND RAW WATER MAINS SHALL BE INSTALLED WITH THE MINIMUM VERTICAL/HORIZONTAL SEPARATION FROM ALL EXISTING AND/OR PROPOSED SANITARY, STORM AND REUSE WATER PIPING AS REQUIRED BY FDEP RULES. CONFLICTS BETWEEN REUSE WATER MAINS, STORM AND SANITARY SEWER SYSTEMS, FORCE MAINS AND PROPOSED POTABLE OR RAW WATER MAINS SHALL BE RESOLVED BY ADJUSTING THE PROPOSED POTABLE/RAW WATER MAIN. SEE "UTILITY SEPARATION DETAIL" AND ACCOMPANYING NOTES AS SHOWN ON STANDARD DETAIL (SD) SHEETS OF THIS PLAN SET.
38. ALL WATER MAINS SHALL HAVE AN "EARLY WARNING" PROTECTION TAPE INSTALLED CONTINUOUSLY ALONG THE ENTIRE LENGTH. THE PROTECTION TAPE SHALL BE INSTALLED DURING THE BACKFILLING 12 INCHES ABOVE AND DIRECTLY OVER THE PIPE AND BE CONTINUOUSLY MARKED WITH "CAUTION - WATER MAIN BURIED BELOW". THE TAPE SHALL BE PLASTIC, NON-METALLIC AND BE BLUE IN COLOR FOR POTABLE WATER OR WHITE FOR RAW WATER.
39. ALL WATER MAINS INSTALLED BY OPEN CUT SHALL BE CONTINUOUSLY UNDERLAIN WITH 10 GAGE SINGLE STRAND, THWN SOLID COPPER CLAD STEEL MARKING WIRE. THE WIRE SHALL INCORPORATE A 30MIL HDPE JACKET AND SHALL BE BLUE INSULATION FOR POTABLE WATER OR WHITE INSULATION FOR RAW WATER; INSTALLATION SHALL CONFORM TO THE DETAIL DRAWINGS. TRACING WIRE SHALL HAVE A BREAK LOAD OF 513 LBS.
40. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND ACCOUNTING FOR AS WELL AS RECONNECTING ALL SERVICE CONNECTIONS AFFECTED BY THE PROPOSED WATER MAIN INSTALLATION.
41. RE-USE EXISTING VALVES AND FITTINGS WHERE CONDITIONS ALLOW AND WHICH HAVE BEEN DETERMINED TO BE IN GOOD CONDITION AND IN WORKING ORDER. THE CITY OF PALM COAST WILL MAKE THE DECISION REGARDING THE INCORPORATION OF USED MATERIAL INTO THE WORK.
42. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS ON ALL EQUIPMENT AND MATERIALS FOR APPROVAL TO THE CITY OF PALM COAST PRIOR TO PROCUREMENT.
43. ALL NEW WATER MAINS SHALL BE INSTALLED WITH A MINIMUM OF 3'-0" OF COVER, UNLESS NOTED OTHERWISE.
44. THE CONTRACTOR SHALL VIDEO THE ENTIRE WORK AREA PRIOR TO COMMENCEMENT OF CONSTRUCTION. ONE COPY OF THE PRE-CONSTRUCTION VIDEO SHALL BE SUBMITTED TO THE CITY OF PALM COAST.
45. IT IS THE INTENT OF THIS CONTRACT FOR THE CONTRACTOR TO MAINTAIN CONTINUOUS RESTORATION BEHIND THE UTILITY WORK ON A DAILY BASIS. NO MORE THAN FIFTY (50) LINEAR FEET OF UNRESTORED LINE WORK SHALL REMAIN AT THE END OF EACH WORK DAY.
46. THE CONTRACTOR SHALL SUBMIT TO THE CITY OF PALM COAST, A CONSTRUCTION SCHEDULE ADDRESSING THE INTERRUPTION OF SERVICE IN THE POTABLE WATER DISTRIBUTION SYSTEM. IT IS THE INTENT OF THE CONTRACT FOR THE CONTRACTOR TO FIELD INVESTIGATE ALL POSSIBLE METHODS TO ELIMINATE OR MINIMIZE INTERRUPTION OF SERVICE TO EXISTING CUSTOMERS. UNDER NO CIRCUMSTANCES SHALL THE CONSTRUCTION ACTIVITIES RESULT IN A SYSTEM PRESSURE OF LESS THAN 20 P.S.I.
47. ALL CONNECTIONS TO WATER MAINS SHALL BE MADE BY THE CONTRACTOR ONLY AFTER THE CONNECTION PROCEDURE AND HIS WORK SCHEDULE REGARDING THIS ACTIVITY ARE REVIEWED AND APPROVED BY THE CITY OF PALM COAST. THE CONTRACTOR SHALL SUBMIT A WRITTEN REQUEST TO THE OWNER A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO COMMENCEMENT OF CONNECTION ACTIVITIES. IN THE REQUEST, THE CONTRACTOR SHALL OUTLINE THE FOLLOWING:
 - A. POINTS OF CONNECTION, FITTINGS TO BE USED AND METHOD OF FLUSHING AND DISINFECTION.
 - B. ESTIMATED CONSTRUCTION TIME FOR SAID ACTIVITY.
 - C. POSSIBLE SYSTEM PRESSURE LOSS.
- THE CITY OF PALM COAST SHALL REVIEW THE SUBMITTAL AND INFORM THE CONTRACTOR REGARDING APPROVAL OR DENIAL OF THEIR REQUEST. IF THEIR REQUEST IS REJECTED BY THE CITY OF PALM COAST, THE CONTRACTOR MAY RESUBMIT THEIR REQUEST MODIFYING IT TO THE SATISFACTION OF THE OWNER. ALL CONNECTIONS SHALL ONLY BE MADE ON THE AGREED UPON TIME AND DATE OR RESCHEDULE. THE CONTRACTOR SHALL NOT OPERATE ANY VALVES IN THE SYSTEM.
48. THREE (3") INCH AND LARGER BURIED UTILITY MAINS TO BE ABANDONED IN PLACE, SHALL BE CUT, PLUGGED AND FILLED WITH GROUT.
49. TWO-INCH (2") AND SMALLER METER/BACKFLOW DEVICES WILL BE SUPPLIED BY THE CITY AND INSTALLED BY THE DEVELOPER. DEVICES LARGER THEN TWO INCH SHALL BE SUPPLIED AND INSTALLED BY THE DEVELOPER.

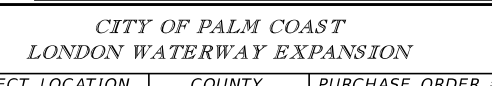


POTABLE AND RAW WATER MAIN GENERAL NOTES

SCALE: NONE

FIG. W-2

REVISED 8/19



CITY OF PALM COAST
 LONDON WATERWAY EXPANSION

PROJECT LOCATION COUNTY PURCHASE ORDER #

LONDON DR FLAGLER 20211417

PALM COAST UTILITY DETAILS (1)

SHEET NO.

U-1

FORCE MAIN GENERAL NOTES

SHEET 1 OF 2

1. ALL PIPELINE MATERIAL AND INSTALLATION SHALL CONFORM TO THE CITY OF PALM COAST STANDARDS (AUGUST, 2020), CONTRACT DOCUMENTS, TECHNICAL SPECIFICATIONS AND ALL APPLICABLE LOCAL AND STATE REQUIREMENTS.
2. THE CONTRACTOR SHALL ENSURE THAT ALL REQUIRED PERMITS ARE IN HAND BEFORE COMMENCEMENT OF CONSTRUCTION.
3. ALL UTILITY OWNERS AND SUNSHINE STATE ONE CALL (800) 432-4770 MUST BE NOTIFIED SEVENTY-TWO (72) HOURS PRIOR TO STARTING CONSTRUCTION.
4. THE CONTRACTOR SHALL NOTIFY FIBEROPTICS COMPANIES SEVEN (7) WORKING DAYS PRIOR TO ANY CONSTRUCTION ACTIVITY IN THEIR AREA. EXTREME CAUTION SHALL BE USED IN AREAS WHERE FIBEROPTIC CABLE IS LOCATED ADJACENT TO CONSTRUCTION ACTIVITY.
5. ALL NEW FORCE MAINS SHALL BE INSTALLED WITH A MINIMUM OF 3'-0" OF COVER, UNLESS NOTED OTHERWISE.
6. ALL PIPING AND/OR APPURTENANCES CONNECTING TO ADJACENT CONSTRUCTION SHALL BE PLUGGED IF ADJACENT WORK HAS NOT BEEN COMPLETED.
7. CONTRACTOR SHALL PROVIDE TEMPORARY THRUST RESTRAINTS, BRACING, TEST PLUGS AND/OR OTHER DEVICES NECESSARY TO SUCCESSFULLY COMPLETE PRESSURE TESTING OF ALL PRESSURE PIPING SYSTEMS.
8. ALL FITTINGS FOR BURIED PIPING 4-INCHES AND LARGER SHALL BE COMPACT DUCTILE IRON MECHANICAL JOINT (D.I.M.J.) BITUMEN COATED EXTERIOR APPLIED PER ANSI/AWWA A21.53/C153 UNLESS NOTED OTHERWISE. THESE FITTINGS SHALL INCORPORATE RESTRAINING RINGS, MEGA-LUGS OR OTHER APPROVED EQUIVALENT MECHANICAL DEVICES.
9. ALL PROPOSED DUCTILE IRON PIPE, FITTINGS AND RESTRAINTS WITHIN FIFTY (50) FEET OF AN EXISTING GAS MAIN SHALL BE POLYETHYLENE ENCASED.
10. ALL BURIED PIPING SPECIFIED FOR PRESSURE SERVICE SHALL BE PROVIDED WITH RESTRAINING DEVICES AT ALL DIRECTIONAL CHANGES, UNLESS NOTED OTHERWISE.
11. ALL FASTENERS SHALL BE MANUFACTURED OF NON-CORROSIVE MATERIALS. WHEN STAINLESS STEEL IS REQUIRED, 304 S.S. SHALL BE USED FOR ALL BURIED APPLICATIONS AND 316 S.S. SHALL BE USED FOR ABOVE GROUND OR CORROSIVE ENVIRONMENTS.
12. THE LOCATIONS OF EXISTING UTILITIES SHOWN ON THESE DRAWINGS HAVE BEEN DERIVED FROM EXISTING UTILITY RECORDS. ACCURACY OF THIS INFORMATION IS NOT GUARANTEED. IT IS THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT LOCATION, DEPTH AND CHARACTER OF ALL UTILITIES PRIOR TO EXCAVATION IN ORDER TO PROTECT THESE UTILITIES DURING CONSTRUCTION.
13. THE CONTRACTOR SHALL MAKE EXPLORATORY EXCAVATIONS AT ALL INTERSECTIONS OF PROPOSED WORK AND EXISTING UTILITIES. THE EXPLORATORY EXCAVATIONS SHALL BE MADE FORTY-EIGHT (48) HOURS IN ADVANCE OF THE PROPOSED WORK. IF THERE IS A CONFLICT THE CONTRACTOR SHALL NOTIFY THE CITY OF PALM COAST IMMEDIATELY. INFORMATION ON THE OBSTRUCTION SHALL BE FURNISHED BY THE CONTRACTOR AND SHALL INCLUDE: LOCATION, ELEVATION, UTILITY TYPE, MATERIAL AND SIZE.
14. LOCATIONS AND DIMENSIONS OF EXISTING RIGHTS-OF-WAY AND EASEMENTS ARE BASED ON THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL VERIFY ALL THE LIMITS OF RIGHTS-OF-WAY AND EASEMENTS IN ORDER TO AVOID ENCROACHMENTS.
15. THE CONTRACTOR SHALL REPLACE SOD 3 FEET FROM ALL DISTURBED AREAS; STRUCTURES, SIDEWALKS, ROADS, AND POND IMPROVEMENT AREAS. ALL OTHER DISTURBED AREAS SHALL BE SODDED OR SEEDED AND MULCHED AS SHOWN ON THE DRAWINGS.
16. THE CONTRACTOR SHALL REPLACE, BUT NOT BE LIMITED TO, PAVING, STABILIZED EARTH, DRIVEWAYS OR ANY ITEMS DISTURBED OR DAMAGED BY THE CONSTRUCTION OR IT'S RELATED ACTIVITIES. THE CONTRACTOR SHALL REPLACE WITH EQUAL MATERIAL OR AS DIRECTED BY THE CITY OF PALM COAST.
17. THE DISPOSAL OF ANY EXCESS EARTHWORK MATERIAL; CONCRETE, PIPE AND OTHER DEBRIS, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
18. IT IS THE CONTRACTORS RESPONSIBILITY TO COORDINATE HIS WORK WITH THE WORK SCHEDULE OF ADJACENT CONTRACTORS AS WELL AS THE STAFF OF THE CITY OF PALM COAST.
19. THE CONTRACTOR SHALL NOTIFY THE CITY OF PALM COAST UTILITY DEPARTMENT 72 HOURS BEFORE COMMENCING WITH CONSTRUCTION.
20. WHERE MINIMUM SEPARATION BETWEEN UTILITIES IS REQUIRED, THE DISTANCE SHALL BE MEASURED FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE.
21. PVC PIPE LESS THAN 2-INCHES SHALL CONFORM TO ASTM D1785. THREADED PIPE AND FITTINGS SHALL BE SCH. 80 AND CONFORM TO ASTM D2464. UNTHREADED PIPE AND FITTINGS SHALL BE SCH. 40 WITH SOLVENT CEMENTED JOINTS. CEMENTED JOINTS AND FITTINGS SHALL COMPLY WITH ASTM D2466 AND D2855.
22. 2", 2 1/2" AND 3" PVC PIPE SHALL CONFORM TO ASTM D2241. PIPE SHALL BE FURNISHED IN 20-FOOT LENGTHS, SHALL HAVE DIMENSION RATIO DR21 AND A WATER PRESSURE RATING OF 200 PSI.
23. PVC PIPE 4-INCHES THROUGH 48-INCHES SHALL CONFORM TO AWWA STANDARD C900 (DR18).
24. DUCTILE IRON PIPE SHALL CONFORM TO AWWA STANDARD C151, PRESSURE CLASS 350 FOR 4-INCH THROUGH 12-INCH DIAMETER PIPE; PRESSURE CLASS 250 FOR PIPE LARGER THAN 12-INCHES IN DIAMETER UNLESS NOTED OTHERWISE. DUCTILE IRON PIPE AND FITTINGS FOR PRESSURE SERVICE SHALL HAVE AN INTERIOR LINING CONSISTING OF A MINIMUM OF 40 MILS OF A CERAMIC EPOXY COATING. REFER TO SPECIFICATIONS FOR DETAILS.

FORCE MAIN GENERAL NOTES

SHEET 2 OF 2

25. PVC FORCE MAINS SHALL BE SOLID GREEN IN COLOR. DUCTILE IRON FORCE MAINS SHALL INCORPORATE 3 GREEN STRIPES, PAINTED AT THE TOP AND SIDES OF THE PIPE, ALONG IT'S ENTIRE LENGTH.
 26. FITTINGS FOR BOTH PVC AND DUCTILE IRON PIPE SHALL BE DUCTILE IRON CONFORMING TO ANSI/AWWA C153/A21.53, COMPACT DUCTILE IRON FITTINGS.
 27. VALVES FOR FORCE MAINS SHALL BE DUCTILE IRON, EPOXY COATED PLUG VALVES. REFER TO THE SPECIFICATIONS FOR DETAILS.
 28. ALL POLYETHYLENE PRESSURE PIPE AND FITTINGS 4-INCH AND LARGER SHALL CONFORM TO AWWA STANDARD C906-99 (DR11) PRESSURE CLASS 160 AND ASTM STANDARD D3350, D2837, PE 3408.
 29. ALL FORCE MAINS SHALL BE HYDROSTATICALLY TESTED IN ACCORDANCE WITH AWWA STANDARD C600 FOR DUCTILE IRON PIPE; C900 FOR PVC PIPE; ASME B31.1 POWER PIPING, SECTION 137 PRESSURE TESTS FOR HDPE PIPE; PP1TR-31 UNDERGROUND INSTALLATION OF POLYOLEFIN PIPING, SECTION 7. HYDROSTATIC TESTING FOR ALL PIPE MATERIAL SHALL BE 150 PSI FOR A MINIMUM OF 2 HOURS.
 30. IN AREAS WHERE CONSTRUCTION ACTIVITIES RESTRICT NORMAL ACCESS TO PROPERTIES, THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALTERNATE ACCESS ROUTES, WHICH ARE SUBJECT TO APPROVAL BY THE CITY OF PALM COAST.
 31. ALL PRACTICAL AND NECESSARY EFFORT SHALL BE TAKEN DURING CONSTRUCTION TO PREVENT UNNECESSARY TREE REMOVAL.
 32. ALL ELEVATIONS SHOWN ON THESE DRAWINGS REFER TO NORTH AMERICAN VERTICAL DATUM (NAVD), 1988.
 33. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS ON ALL EQUIPMENT AND MATERIALS FOR APPROVAL BY THE CITY OF PALM COAST PRIOR TO PROCUREMENT.
 34. THE CONTRACTOR SHALL VIDEO THE ENTIRE WORK AREA PRIOR TO COMMENCEMENT OF CONSTRUCTION. ONE COPY OF THE PRE-CONSTRUCTION VIDEO SHALL BE SUBMITTED TO THE CITY OF PALM COAST.
 35. PIPE MEASUREMENTS SHALL BE FROM CENTER TO CENTER OF FITTINGS OR VALVES, UNLESS OTHERWISE NOTED.
 36. CONFLICT BETWEEN WATER MAINS, STORM AND SANITARY SEWER SYSTEMS, REUSE WATER MAINS AND PROPOSED FORCE MAINS SHALL BE RESOLVED BY ADJUSTING PROPOSED FORCE MAINS AS NECESSARY. SEE "UTILITY SEPARATION DETAIL" AND ACCOMPANYING NOTES AS SHOWN ON THE CIVIL DETAIL (CD) SHEETS OF THE PLAN SET.
 37. ALL EXCAVATIONS SHALL BE BACKFILLED AT THE END OF EACH WORK DAY.
 38. FOR A SCHEDULED INTERRUPTION OF FORCE MAIN FLOW, THE CONTRACTOR SHALL NOTIFY THE CITY OF PALM COAST 72 HOURS IN ADVANCE.
 39. DURING NORMAL FORCE MAIN FLOW INTERRUPTION, THE CONTRACTOR SHALL PROVIDE UNINTERRUPTED BY-PASS FLOW AND SHALL PROVIDE ALL EQUIPMENT NECESSARY TO ACCOMPLISH THE SAME IN THE FORM OF, BUT NOT LIMITED TO THE FOLLOWING: POWER, PUMPS, PIPING, APPURTENANT VALVES AND FITTINGS AND / OR SEPTIC TANKER TRUCK PUMPING, HAULING AND DISPOSAL SERVICES.
 40. ALL CONNECTIONS TO EXISTING FORCE MAINS SHALL BE MADE BY THE CONTRACTOR ONLY AFTER THE CONNECTION PROCEDURE AND HIS WORK SCHEDULE REGARDING THIS ACTIVITY ARE REVIEWED AND APPROVED BY THE CITY OF PALM COAST. THE CONTRACTOR SHALL SUBMIT A WRITTEN REQUEST TO THE OWNER A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO COMMENCEMENT OF CONNECTION ACTIVITIES. IN THE REQUEST, THE CONTRACTOR SHALL OUTLINE THE FOLLOWING:
 - A. POINTS OF CONNECTION, FITTINGS TO BE USED AND METHOD OF FLUSHING.
 - B. ESTIMATED CONSTRUCTION TIME FOR SAID ACTIVITY.
 - C. PROPOSED BYPASS METHOD. (REF. NOTES 38 & 39.)
- THE CITY OF PALM COAST SHALL REVIEW THE SUBMITTAL AND SHALL INFORM THE CONTRACTOR REGARDING APPROVAL OR DENIAL OF THEIR REQUEST. IF THEIR REQUEST IS REJECTED BY THE CITY OF PALM COAST, THE CONTRACTOR MAY RESUBMIT THEIR REQUEST MODIFYING IT TO THE SATISFACTION OF THE OWNER. ALL CONNECTIONS SHALL BE MADE ONLY ON THE AGREED UPON TIME AND DATE ESTABLISHED IN THE PROCEDURE.
41. ALL FORCE MAINS SHALL HAVE AN "EARLY WARNING" PROTECTION TAPE INSTALLED CONTINUOUSLY ALONG THE ENTIRE LENGTH. THE PROTECTION TAPE SHALL BE INSTALLED DURING THE BACKFILLING 12 INCHES ABOVE AND DIRECTLY OVER THE PIPE AND BE CONTINUOUSLY MARKED WITH "CAUTION - FORCE MAIN BURIED BELOW". THE TAPE SHALL BE PLASTIC, NON-METALLIC AND BE GREEN IN COLOR.
 42. ALL PVC FORCE MAINS SHALL BE CONTINUOUSLY UNDERLAIN WITH 10 GAGE, SOLID STRAND, THNN MARKING WIRE. THE WIRE SHALL HAVE GREEN INSULATION AND INSTALLATION SHALL CONFORM TO THE DETAILED DRAWINGS.
 43. ALL BURIED UTILITY PIPES TO BE ABANDONED IN PLACE SHALL BE CUT, PLUGGED AND FILLED WITH GROUT.
 44. IT IS THE INTENT OF THIS CONTRACT FOR THE CONTRACTOR TO MAINTAIN CONTINUOUS RESTORATION BEHIND THE UTILITY WORK ON A DAILY BASIS. NO MORE THAN FIFTY (50) LINEAR FEET OF UNRESTORED LINE WORK SHALL REMAIN AT THE END OF EACH WORK DAY.



FORCE MAIN GENERAL NOTES

SCALE: NONE

FIG. SS-1

REVISED 8/20



FORCE MAIN GENERAL NOTES

SCALE: NONE

FIG. SS-2

REVISED 3/19

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION



ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS
DRMP, INC.
 94 LAKE BALDWIN LANE, ORLANDO, FLORIDA 32814
 PHONE: (407) 896-0594 FAX: (407) 896-4836

JOHN L. WINTON JR., P.E. LICENSE NO. 54657

CITY OF PALM COAST
 LONDON WATERWAY EXPANSION

PROJECT LOCATION	COUNTY	PURCHASE ORDER #
LONDON DR LEAVER DR	FLAGLER	20211417

PALM COAST
 UTILITY DETAILS (2)

SHEET NO.

U-2

GENERAL NOTES

- THE STRUCTURAL DRAWINGS COMPLY WITH THE FOLLOWING CODES AND STANDARDS:
 -FLORIDA BUILDING CODE, SEVENTH EDITION (2020)
 -FLORIDA STATUTES
- REFER TO DRAINAGE MASTER PLAN DRAWINGS FOR OTHER PERTINENT INFORMATION RELATED TO STRUCTURAL WORK.
- CONTRACTOR SHALL NOTIFY THE ENGINEER IN CASE OF CONFLICT WITHIN THE CONTRACT DRAWINGS OR BETWEEN THE STRUCTURAL DRAWINGS & THOSE OF THE DRAINAGE MASTER PLAN DRAWINGS, ETC.
- VERIFY DETAILS, DIMENSIONS AND WEIGHT OF PURCHASED EQUIPMENT AS IT RELATES TO INFORMATION GIVEN ON STRUCTURAL DRAWINGS RELATIVE TO SUCH EQUIPMENT.
- VERIFY DIMENSIONS AND CONDITIONS RELATING TO SITE INCLUDING EXISTING UTILITIES AND SERVICES PRIOR TO START OF CONSTRUCTION.
- ALL DRILLED HOLES, CUTS, ETC. ARE TO BE FIELD-TREATED WITH THREE (3) COATS OF COPPER NAPHTHANATE, 8% COPPER CONCENTRATE.
- ALL STEEL FASTENERS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION PER ASTM A153, CLASS C.

CHANGES AND MODIFICATIONS

- CONFORM TO INFORMATION/REQUIREMENTS GIVEN IN THE CONTRACT DRAWINGS AND TO CHANGES APPROVED IN WRITING BY THE ENGINEER.
- SUBMIT WRITTEN REQUEST TO THE ENGINEER FOR APPROVAL OF ANY PROPOSED CHANGE TO THE REQUIREMENTS OF THE CONTRACT DRAWINGS.
- SPlicing, CUTTING, NOTCHING AND OTHER ALTERATIONS TO STRUCTURAL MEMBERS ARE NOT PERMITTED WITHOUT WRITTEN AUTHORIZATION OF THE STRUCTURAL ENGINEERS.
- ANY UNAUTHORIZED DEVIATION FROM THE CONTRACT DRAWINGS, AND CORRECTION THEREOF, IS THE RESPONSIBILITY OF THE CONTRACTOR.

DESIGN DATA

- WALKWAY & PLATFORM = 65 PSF PEDESTRIAN LIVE LOAD
- WALKWAY & PLATFORM DEAD LOAD = 15 PSF
- LATERAL LOADS:
 STRENGTH DESIGN WIND VELOCITY (V_{ult}): 141 MPH (3 SECOND GUST)
 NOMINAL DESIGN WIND VELOCITY (V_{asd}): 109 MPH (3 SECOND GUST)
 WIND IMPORTANCE FACTOR: 1.00
 RISK CATEGORY: II (ASCE 7-10, TABLE 1.5-1)
 EXPOSURE CATEGORY: OPEN
 WIND EXPOSURE CATEGORY: D (FBC 1609.4.3)
 INTERNAL PRESSURE COEFFICIENTS (GC_{pi}): N/A
 ROOFING SYSTEM: METAL ROOF ON SHEATHING
 ROOF MATERIAL WIND RESISTANCE RATING: 141 MPH
 COMPONENTS & CLADDING (GC_p) (WALLS): N/A
 NOTE:
 REFERENCE IS MADE TO ASCE 7-10 CHAPTER 27
- GUARD/HANDRAIL LOADING:
 a. LOAD CASE I: 200 LBS. APPLIED AT ANY POINT AND IN ANY DIRECTION
 b. LOAD CASE II: 50 PLF APPLIED HORIZONTALLY ALONG TOP GUARDRAIL AND A SIMULTANEOUS LOAD OF 100 PLF APPLIED VERTICALLY DOWNWARD ALONG TOP GUARDRAIL

WOOD FRAMING & DECKING

- ALL REFERENCES HEREIN MADE TO "DECKING" OR "TREX" SPECIFIES 1x6, 1" SQUARE-EDGE, SYNTHETIC "TRANSCEND" BOARDS BY TREX OR EQUAL.
- EXCEPT AS NOTED OTHERWISE, ALL TREX BOARDS SHALL BE FASTENED TO DIMENSIONS LUMBER FRAMING MEMBERS USING (2) #10 x 2-1/2" 304 GRADE STAINLESS STEEL SCREWS.
- SCREWS SHALL BE INSTALLED FLUSH WITH DECK SURFACE AND SHALL NOT BE COUNTERSUNK.
- ALL STRUCTURAL LUMBER SHALL BE #2 (MINIMUM) SPF OR SYP.
- FASTEN RAIL COMPONENTS TO PILES USING (2) 4" x 0.276" SIMPSON STRONG-DRIVE SDWH TIMBER-HEX HDG SCREWS (HOT DIPPED GALVANIZED) OR EQUAL - SUBJECT TO ENGINEER'S APPROVAL.
- FRAMING TIMBER TO PILE CONNECTIONS SHALL TO BE 1/2"Ø GALVANIZED THRU-BOLTS WITH MALLEABLE WASHERS (TB-MW)

TIMBER PILE NOTES




DENOTES 6x6 TIMBER PILE.
 PILE CUT-OFF ELEVATION = 29.78 (NAVD) MAX - UNLESS NOTED OTHERWISE.
 MINIMUM EMBEDMENT = 6 FT BELOW POND BOTTOM ELEVATION
 REFERENCE IS MADE TO THE GEOTECHNICAL REPORTS #136675 (9/28/20) AND #138287 (10/12/21), PREPARED BY UNIVERSAL ENGINEERING SCIENCES, INC.
REFERENCE STANDARDS:
 AMERICAN WOOD PRESERVERS' ASSOCIATION (AWPA) C3 - PILES/PRESERVATIVE TREATMENT BY PRESSURE PROCESSES.
SUBMITTALS:
 CONTRACTOR SHALL MAINTAIN A PILE DRIVING RECORD VERTICAL LINEAR FOOT ADVANCED DURING PILE DRIVING AND TOTAL PILE EMBEDMENT AND SUBMIT IT TO THE ENGINEER OF RECORD UPON COMPLETION OF PILE DRIVING. ON THE RECORD INDICATE, FOR EACH PILE DRIVEN, THE INFORMATION SPECIFIED ABOVE, AND TYPE AND RATING OF DRIVING EQUIPMENT, AND ANY UNUSUAL CONDITIONS ENCOUNTERED DURING PILE DRIVING.
MATERIALS - TIMBER PILES:
 PILES SHALL BE 6x6 DIMENSIONAL LUMBER OF SOUTHERN PINE OR DOUGLASS FIR AND SHALL CONFORM TO ASTM D25, UNUSED, CLEAN, STRAIGHT AND ONE PIECE FROM TIP TO BUTT.
 PRESSURE TREATMENT SHALL BE IN ACCORDANCE WITH AWPA C3 - FOUNDATION PILES.
 PRESERVATIVES AND RETENTION:
 USE CATEGORY = FOUNDATION PILES
 SOUTHERN PINE = 2.5 CCA
 DOUGLAS FIR = 2.5 ACZA
EXECUTION:
 PILES SHALL BE IMPACT OR VIBRO DRIVEN TO THE REQUIRED MINIMUM EMBEDMENT. JETTING SHALL BE BY APPROVED IN ADVANCE OF CONSTRUCTION BY THE GEOTECHNICAL ENGINEER.
 PROVIDE PILES OF SUCH LENGTH AS REQUIRED TO DEVELOP THE SPECIFIED EMBEDMENT, TO OBTAIN THE SPECIFIED PENETRATION AND TO EXTEND 7.0 FT (MIN) ABOVE NORMAL WATER LEVEL (EL 19.5 NAVD).

FLORIDA PRODUCT APPROVAL INFORMATION				
PRODUCT CATEGORY	SUB-CATEGORY	MANUFACTURER	STATE OF FL APPROVAL NO.	VALIDATION DATE
STRUCTURAL COMPONENTS	WOOD CONNECTORS ANCHORS	SIMPSON STRONG-TIE	FL 11473.3	10/20/2017
STRUCTURAL COMPONENTS	WOOD CONNECTORS ANCHORS	SIMPSON STRONG-TIE	FL 10456.6	12/17/2017

REVISIONS			
NO.	DATE	DESCRIPTION	APPROVED

PREPARED BY:



Catalano Engineering, Inc.
 CIVIL - STRUCTURAL - MARINE
 120 SOUTH EDISON AVE.
 TAMPA, FL 33606
 (813) 254-1265
 CERTIFICATE NO. 6828

PREPARED FOR:

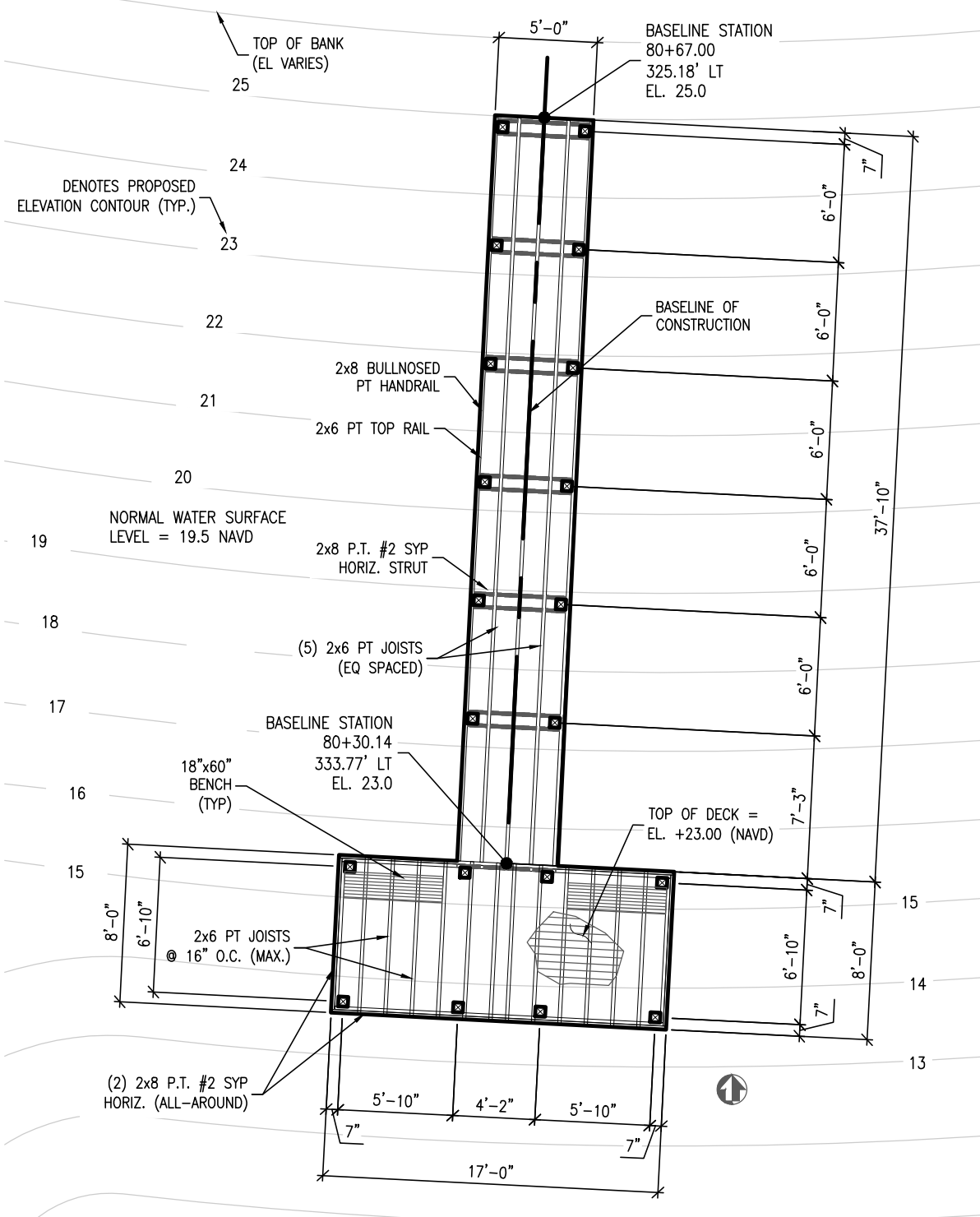
DRMP
 941 LAKE BALDWIN LANE
 ORLANDO, FL 32814

NAME	DATE	APPROVED BY:
DESIGNED BY: JR	9/12/21	JAMES CATALANO, PE PE No. 42507
DRAWN BY: CM	11/8/21	
CHECKED BY: JC		
SUPERVISED BY: JC		

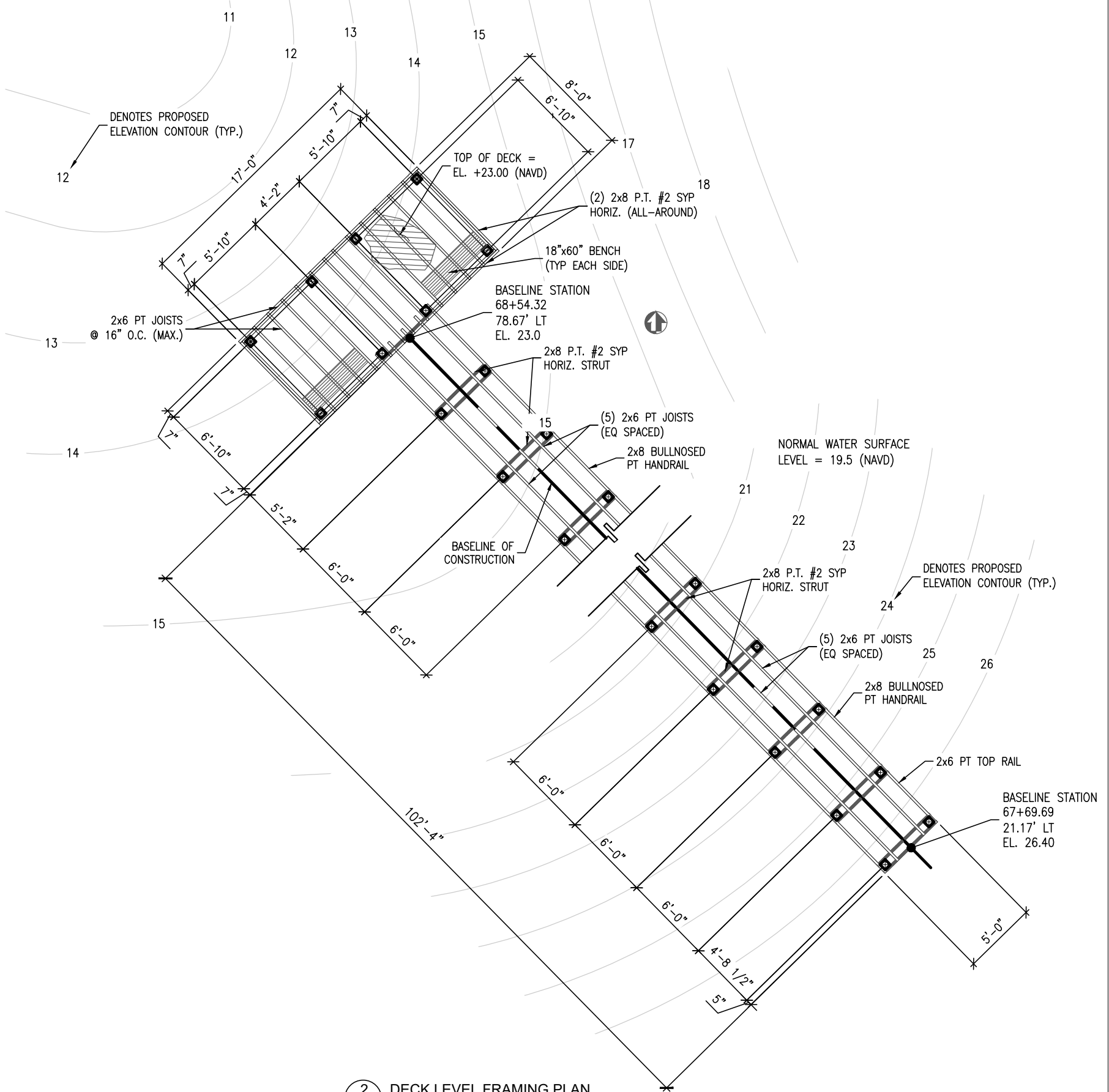
CITY OF PALM COAST
 LONDON WATERWAY STRUCTURES

STRUCTURAL NOTES & SPECIFICATIONS

CEI PROJECT NO.	SHEET NO.
19-011.03	S1




1 DECK LEVEL FRAMING PLAN
NORTH PAVILION
1/8" = 1 FT



2 DECK LEVEL FRAMING PLAN
SOUTH PAVILION
1/8" = 1 FT

REVISIONS			
NO.	DATE	DESCRIPTION	APPROVED

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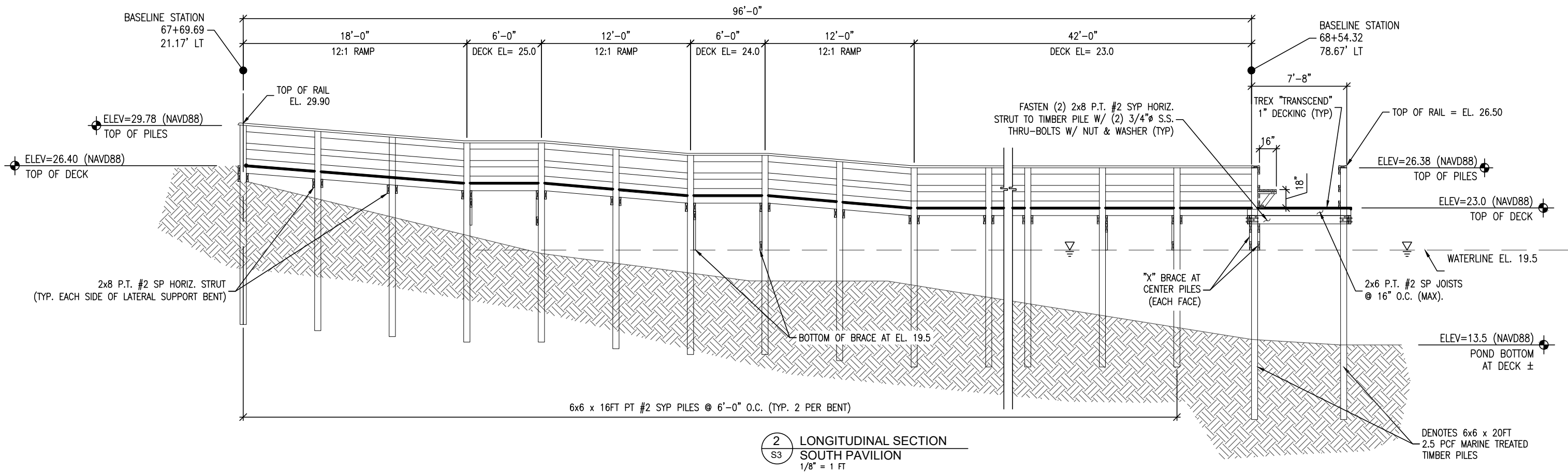
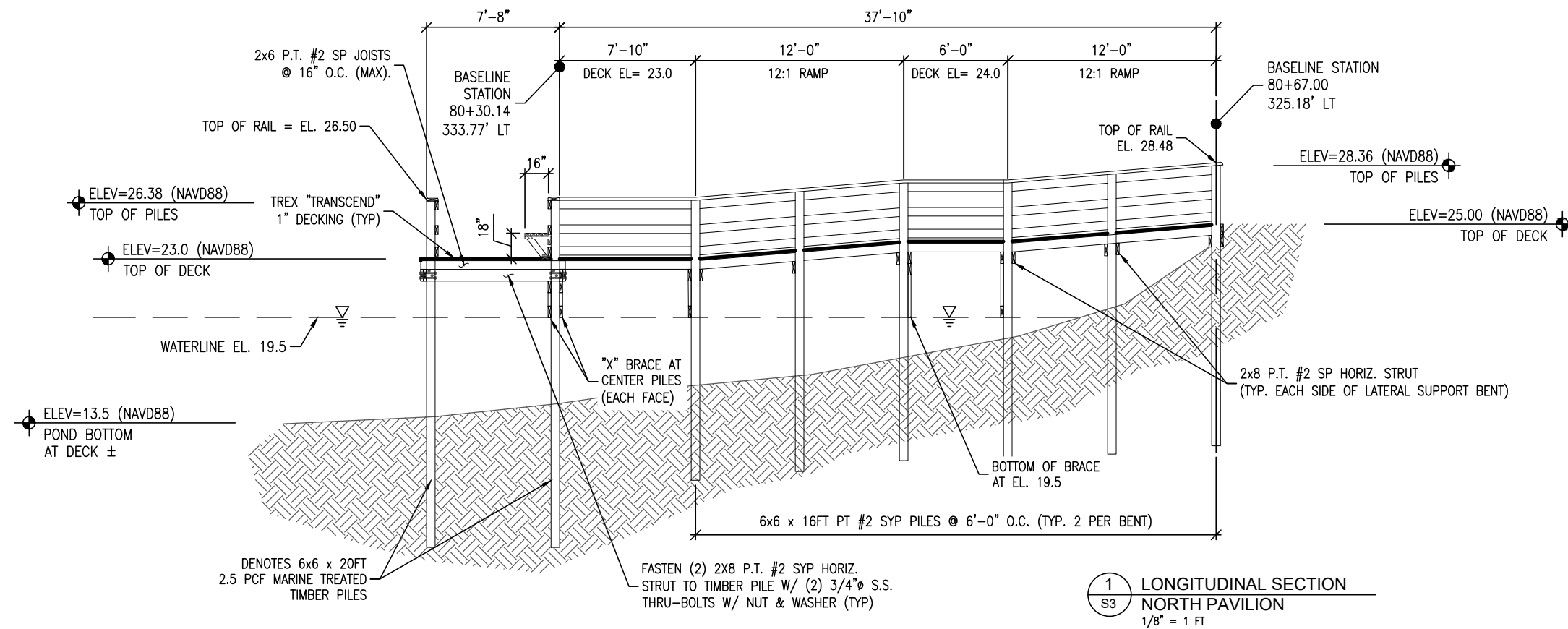
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
APPROVED BY:
 JAMES CATALANO, PE
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CITY OF PALM COAST
 LONDON WATERWAY STRUCTURES
 DECK LEVEL FRAMING PLAN

CEI PROJECT NO.	SHEET NO.
19-011.03	S2



REVISIONS			
NO.	DATE	DESCRIPTION	APPROVED

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 CERTIFICATE NO. 6828

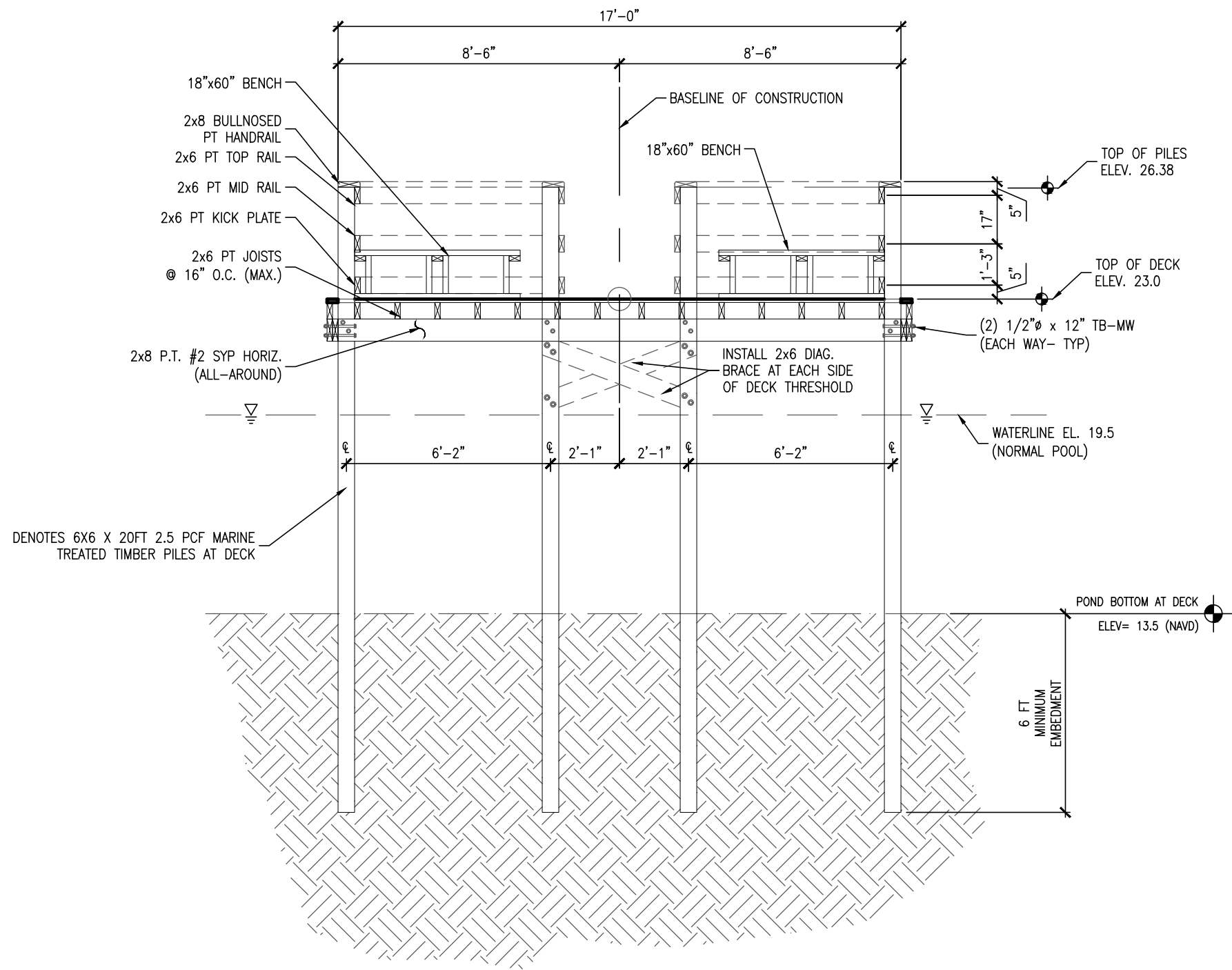
PREPARED FOR:
DRMP
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 ORLANDO, FL 32814

	NAME	DATE
DESIGNED BY:	JR	9/12/21
DRAWN BY:	CM	11/8/21
CHECKED BY:	JC	
SUPERVISED BY:	JC	

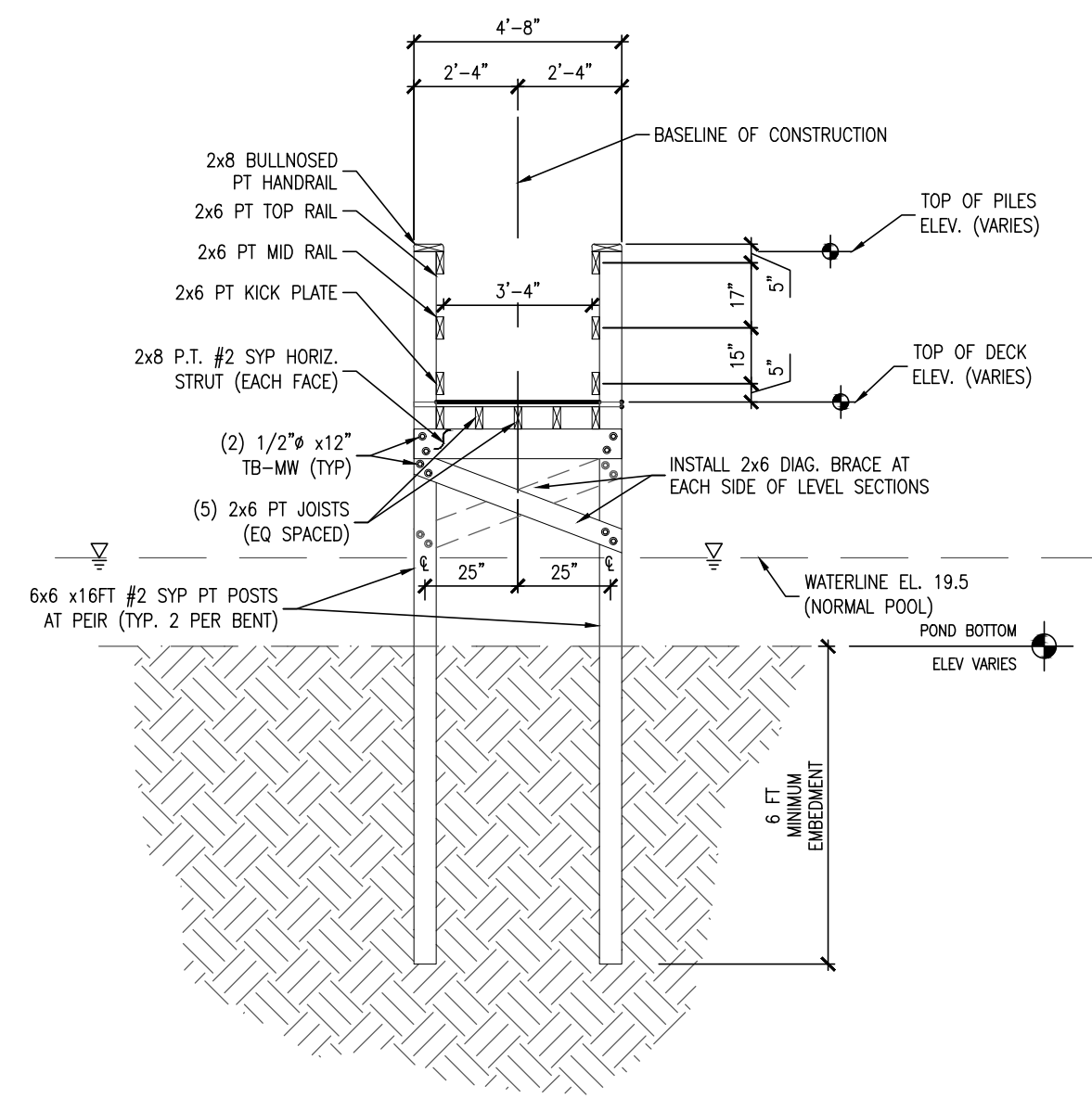
APPROVED BY:
JAMES CATALANO, PE
 PE No. 42507

CITY OF PALM COAST
 LONDON WATERWAY STRUCTURES
 LONGITUDINAL SECTION

CEI PROJECT NO.	SHEET NO.
19-011.03	S3



1 DECK SECTION
S4 1/4" = 1 FT



2 PIER SECTION
S4 1/4" = 1 FT


DECK AND JOIST FRAMING:
DECKS AND PLATFORMS SHALL BE FRAMED USING 2x6 PT JOISTS AT 16" O.C. (MAX) AND EQUALLY SPACED.

FASTEN JOISTS TO HORIZ. STRUT W/ (2) 4" X 0.276" SIMPSON STRONG-DRIVE SDWH TIMBER-HEX HDG SCREWS (HOT DIPPED GALVANIZED), TOE-NAILED (TYP EACH JOIST)

HORIZONTAL STRUT SHALL BE (2) 2x8 P.T. #2 SYP - TOP OF STRUT EL. = VARIES (TYP. (1) EACH SIDE OF PILES). FASTEN HORIZ. STRUT TO PILE W/ (2) 1/2" THRU-BOLTS W/ MALLEABLE WASHERS (TB-MW) (TYP)

HORIZONTAL DECK RIM BEAM SHALL BE (2) 2x8 P.T. #2 SYP - TOP OF BEAM EL. = 22.46. FASTEN HORIZ. BEAM TO PILES W/ (2) 1/2" THRU-BOLTS W/ MALLEABLE WASHERS (TB-MW) (TYP. EACH FACE)

REVISIONS			
NO.	DATE	DESCRIPTION	APPROVED

PREPARED BY:

Catalano Engineering, Inc.
 CIVIL - STRUCTURAL - MARINE
 120 SOUTH EDISON AVE.
 TAMPA, FL 33606
 (813) 254-1265
 CERTIFICATE NO. 6828

PREPARED FOR:
DRMP
 941 LAKE BALDWIN LANE
 ORLANDO, FL 32814

	NAME	DATE
DESIGNED BY:	JR	9/12/21
DRAWN BY:	CM	11/8/21
CHECKED BY:	JC	
SUPERVISED BY:	JC	

APPROVED BY:
JAMES CATALANO, PE
 PE No. 42507

CITY OF PALM COAST
 LONDON WATERWAY STRUCTURES
 TRANSVERSE SECTIONS

CEI PROJECT NO.	SHEET NO.
19-011.03	S4

MASTER PRICE AGREEMENT

THIS MASTER PRICE AGREEMENT ("Agreement") made and entered into this ____ day of _____, 20 ____ ("Effective Date"), between _____ whose primary place of business is _____ ("SUPPLIER") and the CITY OF PALM COAST, a municipal corporation of the State of Florida, holding tax exempt status, whose address is 160 Lake Avenue, Palm Coast, Florida 32164, ("CITY").

WITNESSETH:

WHEREAS, CITY desires to procure certain goods ("Goods") as set forth in Exhibit "A" Product/Price List, attached hereto and made a part hereof, from time to time from a competent and qualified supplier and has and has conducted a formal _____ () requesting bids/quotes for the Goods; and

WHEREAS, SUPPLIER is competent and qualified to provide the Goods to CITY and desires to provide said Goods to CITY at the firm prices established herein and in accordance with the terms and conditions stated herein;

NOW, THEREFORE, in consideration of the mutual understandings and covenants set forth herein, CITY and SUPPLIER agree as follows:

1. PURCHASE ORDERS. During the term of this Agreement and solely upon receipt of authorizations for delivery in the form of written purchase orders ("Purchase Orders"), executed by CITY and signed by SUPPLIER, SUPPLIER shall furnish and deliver those Goods as specified in the Purchase Order and in accordance with the quantities and date or dates for delivery set forth in the Purchase Order. Each Purchase Order shall describe the Goods and related services, if any, as well as the quantities, date or dates for delivery and the amount and method of payment. The Purchase Orders will be issued under and shall incorporate the terms of this Agreement regardless of their text. This Agreement standing alone does not authorize purchase or delivery of Goods or require CITY to place any orders. No claim for Goods furnished by the SUPPLIER not specifically provided for herein or not ordered by CITY shall be honored by CITY. CITY makes no promise that CITY will issue a Purchase Order to SUPPLIER, or as to the number of Purchase Orders during the life of this Agreement. CITY reserves the right to contract with other parties for the goods contemplated by this Agreement when it is determined by CITY to be in the best interest of CITY to do so. Whenever the terms of this Agreement conflict with any Purchase Order issued pursuant to it, this Agreement shall prevail.

2. DELIVERY- Time is of the essence in the performance of this Agreement. SUPPLIER will arrange each delivery by a carrier chosen by SUPPLIER, and delivery shall be completed in accordance with the date or dates set forth in the Purchase Order. Terms of shipping are F.O.B. Destination Freight Prepaid. Title and risk of loss shall pass when items have been received, inspected and accepted by City. All associated shipping, insurance and other related costs shall be borne by SUPPLIER. Extra charges for any purpose will not be allowed unless explicitly indicated on the Purchase Order. CITY reserves the right to conduct any inspection or investigation to verify compliance of the Goods and related services with the requirements of this Agreement and to reject any delivery not in compliance, and if the deficiency is not visible at the time of delivery, to take and/or require appropriate corrective action.

3. COMPENSATION.

A. Pricing. Pricing for the Goods set forth in any Purchase Order issued hereunder shall be in accordance with the rates, fees and discounts set forth in Exhibit A, Product/Price List.

B. Invoicing. Upon satisfactory delivery of the Goods required hereunder and, upon acceptance by the CITY, SUPPLIER may invoice the CITY for the amount of compensation provided for under the terms of this Agreement less any amount already paid by the CITY. SUPPLIER shall invoice CITY the amount due based on the Goods provided under the Purchase Order; but, in no event, shall the invoice amount exceed the amounts actually provided. Each Purchase Order shall be invoiced separately. SUPPLIER shall render to CITY, at the close of each calendar month, an itemized invoice properly dated, describing any Goods provided, the cost of the Goods, the name and address of SUPPLIER, the purchase order number, Agreement number (if applicable) and all other information required by this Agreement. The original invoice shall be emailed to ap@palmcoastgov.com.

C. Payment Terms. Payment shall be made after review and approval by CITY under the Prompt Payment Act., Fla. Stat. 218.73. Payments shall be made by CITY to SUPPLIER not more than once monthly.

4. TERM AND TERMINATION.

A. Term. This Agreement shall take effect on the Effective Date and shall terminate at the end of one (1) year. Following the initial term and at the sole option of CITY, this Agreement may be renewed for two (2) successive periods not to exceed one (1) year each. Expiration of the term of this Agreement shall have no effect upon Purchase Orders issued pursuant to this Agreement and prior to the expiration date. Purchase Orders shall remain in effect until delivery and acceptance of the goods authorized by the Purchase Order as well as during periods of warranty and guarantee.

B. Termination.

i. **Termination Without Cause.** CITY may terminate this Agreement or any Purchase Order in whole or in part for convenience upon written notice to SUPPLIER sent at least fourteen (14) calendar days prior to the delivery date specified. Upon receipt of such notice, SUPPLIER shall immediately cease all work and discontinue delivery of all Goods unless the notice directs otherwise. CITY shall have no liability to SUPPLIER beyond payment of any balance owing for Goods purchased and already delivered to and accepted by CITY prior to SUPPLIER'S receipt of the notice of termination.

ii. **Termination For Cause.** City may terminate this Agreement or any Purchase Order in whole or in part at any time for default by written notice to SUPPLIER. Upon receipt of such notice, SUPPLIER shall immediately cease all work and discontinue delivery of all Goods unless the notice directs otherwise. In the event of a breach by SUPPLIER, including failure to make available or to deliver the Goods in the time and or manner provided for in this Agreement or a Purchase Order, CITY reserves the right to purchase substitutions and to charge SUPPLIER for any loss incurred. If this Agreement or any Purchase Order is terminated by CITY for SUPPLIER'S default, then SUPPLIER will be liable for all incidental and consequential damages resulting from SUPPLIER'S breach, including all damages provided in the Uniform Commercial Code (UCC). In the event SUPPLIER is adjudged by a court to be in default, SUPPLIER will pay to CITY all costs and expenses incurred by CITY in connection with the suit, including reasonable attorney's fees.

5. INDEMNIFICATION AND INSURANCE.

A. Indemnification/Sovereign Immunity.

i. SUPPLIER shall indemnify, hold harmless and defend CITY: (1) from any liabilities, damages, losses and costs, including but not limited to, reasonable attorneys fees arising from any claim or action based on any acts or omissions of SUPPLIER, its employees, servants, agents or subcontractors in completing the work under this Agreement; (2) with respect to any and all claims, suits, actions, and proceedings of actual or alleged infringements of any letter, Patent, Industrial Design right, Trademark or Trade Name, Trade Secret, Copyright or other protected right in any country resulting from any sale, use or manufacture of any Goods delivered hereunder. CITY reserves its rights to be represented in any such action by its own counsel at its own expense.

ii. The indemnification obligations herein shall not be limited to the amount of insurance coverage required herein. In addition, in claims against any person or entity indemnified under this Section by an employee of SUPPLIER or its agents or subcontractors, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under this Section shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for SUPPLIER or its agents or subcontractors, under Workers Compensation acts, disability benefits acts, or other employee benefit acts.

iii. City expressly retains all rights, benefits and immunities of sovereign immunity and nothing herein shall be deemed to affect the rights, privileges, and immunities of City as set forth in Section 768.28, Florida Statutes.

B. Insurance. The SUPPLIER shall at SUPPLIER'S own cost, procure insurance in accordance with Exhibit "B" Insurance Requirementst, attached hereto and made a part hereof.

6. ALTERNATIVE DISPUTE/CONFLICT RESOLUTION.

A. In the event of a dispute related to any performance or payment obligation arising under this Agreement, the parties agree to exhaust the conflict resolution procedures reasonably imposed by CITY prior to filing suit or otherwise pursuing legal remedies.

B. SUPPLIER agrees that it will file no suit nor otherwise pursue legal remedies based on facts or evidentiary materials that were not presented for consideration in the dispute resolution procedures set forth in subsection (A) of this Section..

C. In the event that the CITY'S dispute resolution procedures are exhausted and a suit is filed or legal remedies are otherwise pursued, the parties shall exercise their best efforts to resolve disputes through voluntary mediation. Mediator selection and the procedures to be employed in voluntary mediation shall be reasonably imposed by CITY. The costs of voluntary mediation shall be shared equally among the parties participating in the mediation.

7. ASSIGNMENT. SUPPLIER shall not assign this Agreement, any rights hereunder, or any monies due or to become due, nor delegate or subcontract any obligations or work, without the prior written consent of CITY.

8. AUDIT OF BOOKS AND RECORDS. SUPPLIER shall maintain all books, documents, papers, accounting records and other evidence pertaining to this Agreement during the term of this Agreement and for five (5) years subsequent to the expiration or termination of this Agreement and/or final payment, whichever is later. CITY or CITY'S authorized representative may at all reasonable times during the term of this Agreement and for five (5) years thereafter and upon reasonable notice, inspect and audit the books, documents, papers, accounting records and other evidence pertaining to this Agreement, and SUPPLIER shall make such materials available at the SUPPLIER'S office upon CITY'S request. In the event any audit or inspection conducted after final payment reveals any overpayment by CITY under the terms of this Agreement, SUPPLIER shall refund such overpayment to CITY within thirty (30) days of notice by CITY.

9. CHOICE OF LAW/JURISDICTION. This Agreement shall be governed by and interpreted in accordance with the laws of the State of Florida. In any action or proceeding required to enforce or interpret the terms of this Agreement, venue shall be of the Seventh Judicial Circuit in and for Flagler County, Florida, or the Middle District of Florida in Orlando, FL., if in federal court.

10. COMPLIANCE WITH LAWS. SUPPLIER agrees to comply with all Federal, State, and City laws, ordinances, regulations, and codes, including but not limited to nondiscrimination, immigration and ethics laws. Violation of this section is grounds for debarment and termination of this Agreement.

11. CONTRACT DOCUMENTS. The ITB and all submissions prepared by SUPPLIER in response to the ITB are incorporated herein by reference to the extent not inconsistent with the terms and conditions as set forth herein. Each Exhibit referred to and attached to this Agreement is an essential part of this Agreement. The Exhibits and any amendments or revisions thereto, even if not physically attached hereto, shall be treated as if they are part of this Agreement.

12. ENFORCEABILITY. If any provision of this Agreement shall be held to be invalid or unenforceable for any reason, the remaining provisions shall continue to be valid and enforceable. 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. The waiver of a breach of any term or condition of this Agreement or Purchase Order hereunder shall not be deemed to constitute the waiver of any other breach of the same or any other term or condition hereunder. In addition, neither CITY'S review, approval or acceptance of, nor payment for, any Goods provided hereunder shall be construed to operate as a waiver of any rights under this Agreement or the Purchase Order.

13. ENTIRE AGREEMENT. This Agreement shall constitute the entire understanding of the parties and shall not be changed, amended, altered or modified except in writing and signed by authorized representatives of the parties with the same formality and equal dignity herewith. All prior agreements, whether written or oral between the parties relating to the subject matter hereof are superseded by this Agreement and are of no further force or effect. Accordingly, it is agreed that no deviation from the terms of this Agreement shall be predicated upon any prior representations or agreements, whether oral or written. Any amendments to this Agreement must be in writing signed by both parties. In the event of a conflict between this Agreement and a Purchase Order or any other writing, this Agreement controls over such inconsistent or additional terms.

14. E-VERIFY REGISTRATION AND USE

A. Pursuant to section 448.095, Florida Statutes, beginning January 1, 2021, SUPPLIER shall register with and use the U.S. Department of Homeland Security's E-Verify system, <https://e-verify.uscis.gov/emp>, to verify the work authorization status of all Contractor employees hired on and after January 1, 2021.

B. Subcontractors

i. SUPPLIER shall also require all subcontractors performing work under this Agreement to use the E-Verify system for any employees it may hire during the term of this Agreement.

- ii. SUPPLIER shall obtain from all such subcontractors an affidavit stating the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, as defined in section 448.095, Florida Statutes.
- iii. SUPPLIER shall maintain a copy of all subcontractor affidavits for the duration of this Agreement and provide it to CITY upon request.

C. SUPPLIER must provide evidence of compliance with section 448.095, Florida Statutes. Evidence shall consist of an affidavit from \ SUPPLIER stating all employees hired on and after January 1, 2021 have had their work authorization status verified through the E-Verify system and a copy of their proof of registration in the E-Verify system.

D. Failure to comply with this provision is a material breach of this Agreement, and shall result in the immediate termination of this Agreement without penalty to CITY. SUPPLIER shall be liable for all costs incurred by CITY to secure a replacement agreement, including but not limited to, any increased costs for the same services, any costs due to delay, and rebidding costs, if applicable.

15. INDEPENDENT CONTRACTOR. The relationship of the parties established by this Agreement and all Purchase Orders is that of independent contractors. It is agreed that nothing herein contained is intended or should be construed as in any manner creating or establishing a relationship of co-partners between the parties, or as making the SUPPLIER, (including its officers, employees, and agents), the agent, representative, or employee of CITY for any purpose, or in any manner, whatsoever. Persons employed by the SUPPLIER in the performance of services and functions pursuant to this Agreement shall have no claim to pension, workers' compensation, unemployment compensation, civil service or other employee rights or privileges granted to CITY'S officers and employees either by operation of law or by CITY.

16. NOTICES. Whenever either party desires to give notice to the other, it must be given by written notice, sent by registered or certified United States mail, with return receipt requested, addressed to the party for whom it is intended at the place last specified and the place for giving of notice shall remain such until it shall have been changed by written notice in compliance with the provisions of this Section. For the present, the parties designate the following as the respective places for giving of notice:

FOR CITY:

The City Manager
 City of Palm Coast
 160 Lake Avenue
 Palm Coast, Florida 32164

FOR SUPPLIER:

17. PUBLIC RECORDS LAW. The parties specifically acknowledge that this Agreement is subject to the laws of the State of Florida, including without limitation, Chapter 119, Florida Statutes, which generally makes public all records or other writings made or received by the parties. If SUPPLIER is either a "contractor" as defined in Section 119.0701(1)(a), Florida Statutes, or an "agency" as defined in Section 119.011(2), Florida Statutes, SUPPLIER shall:

1. Keep and maintain all public records required by CITY to perform the services herein; and
2. Upon request from CITY'S custodian of public records, provide 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, F.S. or as otherwise provided by law; and
3. 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 Agreement Term and following completion of the Agreement if SUPPLIER does not transfer the records to CITY; and
4. Upon completion of the Agreement, transfer, at no cost, to CITY all public records in possession of the SUPPLIER or keep and maintain public records required by CITY to perform the services herein. If the SUPPLIER transfers all public records to CITY upon completion of the Agreement, the SUPPLIER shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the SUPPLIER keeps and maintains public records upon completion of the Agreement, the SUPPLIER shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to CITY, upon request from CITY'S custodian of public records, in a format compatible with the information technology systems of CITY.

All requests to inspect or copy public records relating to the Agreement shall be made directly to CITY. Notwithstanding any other provision of this Agreement to the contrary, failure to comply with the requirements of this paragraph shall result in the immediate termination of the Agreement, without penalty to CITY. A contractor who fails to provide the public records to CITY within a reasonable time may be subject to penalties pursuant to Section 119.10, Florida Statutes. Further, the

SUPPLIER shall fully indemnify and hold harmless CITY, its officers, agents and employees from any liability and/or damages, including attorney's fees through any appeals, resulting from the SUPPLIER'S failure to comply with these requirements.

IF THE SUPPLIER HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE SUPPLIER'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS AGREEMENT, CONTACT THE CITY'S CUSTODIAN OF PUBLIC RECORDS, ATTN: VIRGINIA SMITH, CITY CLERK, AT 386-986-3713, VSMITH@PALMCOASTGOV.COM, 160 LAKE AVENUE, PALM COAST, FLORIDA 32164.

18. SUBCONTRACTORS. In the event that SUPPLIER, during the course of this Agreement, requires the services of any subcontractors or other professional associates in connection with performance of this Agreement or any Purchase Order, SUPPLIER must first secure CITY'S prior express written approval. If subcontractors or other professional associates are required, SUPPLIER shall remain fully responsible for the performance of subcontractors or other professional associates.

19. UCC. In addition to any rights or remedies contained in this Purchase Order, each party shall have rights, duties, and remedies available through the Uniform Commercial Code.

20. WARRANTY. SUPPLIER warrants that all Goods supplied are new, of good quality, and free from defects in title, workmanship, material, and in design, and are in full compliance with the specifications. In addition, SUPPLIER warrants that all work or services, if any, shall be performed in a good and competent workmanlike manner. The Goods and services hereunder are covered by the most favorable commercial warranties given any customer for such Goods and/or services, and the rights and remedies provided therein are in addition to and do not limit those available to CITY by any other clause of this Agreement. A copy of this warranty and all applicable manufacturer's warranties shall be furnished with the delivery of the Goods and, services if any. The equipment manufacturer's warranty must apply at a minimum, and must be honored by SUPPLIER.

IN WITNESS WHEREOF, the parties hereto have made and executed this Agreement on the date below written for execution by the CITY.

CITY OF PALM COAST

By: _____

By: _____
Authorized Corporate Officer

Print: _____

Print: _____

Title: City Manager

Title: _____

Date: _____

Date: _____

- Exhibits:
A: Product/Price List
B: Insurance Requirements

**Exhibit A
PRODUCT/PRICE LIST**

(See attached)

DRAFT
Template

Exhibit B
INSURANCE REQUIREMENTS

1. GENERAL.

- 1.1. Prior to performance under this Agreement, SUPPLIER shall furnish CITY with a Certificate of Insurance signed by an authorized representative of the insurer evidencing the insurance required by this Section (Workers' Compensation/Employer's Liability, Commercial General Liability, and Business Auto). The CITY, its officials, officers, and employees shall be named additional insured under the Commercial General Liability policy using CG 1185 or its equivalent, as well as additional insured under the business auto policy. The Certificate of Insurance shall provide that the CITY shall be given not less than thirty (30) days written notice prior to the cancellation or restriction of coverage. Except as otherwise specified in the Agreement, the insurance shall become effective prior to the commencement of work by the SUPPLIER and shall be maintained in force until the Agreement completion date. The insurance provided by SUPPLIER shall apply on a primary basis and any other insurance or self-insurance maintained by the CITY or the CITY'S officials, officers, or employees shall be in excess of and not contributing with the insurance provided by or on behalf of the SUPPLIER. The Workers' Compensation Policy and the Commercial General Liability required by this Agreement shall be provided on an occurrence rather than a claims-made basis.
- 1.2. SUPPLIER waives all rights against CITY for recovery of damages to the extent covered by Commercial General Liability, Commercial Umbrella Liability, Business Auto Liability or Workers Compensation and Employers Liability insurance maintained per requirements herein.
- 1.3. Until such time as the insurance is no longer required to be maintained by the SUPPLIER, the SUPPLIER shall provide the CITY with a renewal or replacement Certificate of Insurance not less than thirty (30) days before expiration or replacement of the insurance for which a previous certificate has been provided. In addition to providing the Certificate of Insurance, if required by the CITY, SUPPLIER shall, within thirty (30) days after receipt of the request, provide CITY with a certified copy of each of the policies of insurance providing the coverage required by this Section.
- 1.4. Neither approval by the CITY nor failure to disapprove the insurance furnished by a subcontractor or another supplier shall relieve the SUPPLIER of the SUPPLIER'S full responsibility for performance of any obligation including SUPPLIER indemnification of CITY under this Agreement.
- 1.5. It shall also be the responsibility of the SUPPLIER to ensure that all of its subcontractors performing services under this Agreement are in compliance with the insurance requirements of this Agreement as defined above.
- 1.6. Compliance with the insurance requirements set forth herein shall not relieve SUPPLIER, its employees or agents of liability from any indemnification obligation under this Agreement.

2. INSURANCE COMPANY REQUIREMENTS.

- 2.1. Companies issuing policies other than Workers' Compensation, must be authorized to conduct business in the State of Florida and prove same by maintaining Certificates of Authority issued to the companies by the Department of Insurance of the State of Florida. Policies for Workers' Compensation may be issued by companies authorized as a group self-insurer by Section 440.57, Florida Statutes.
- 2.2. In addition, such companies other than those authorized by Section 440.57, Florida Statutes, shall have and maintain a Best's Rating of "A" or better and a Financial Size Category of "VII" or better according to A.M. Best Company.
- 2.3. If, during the period which an insurance company is providing the insurance coverage required by this Agreement, an insurance company shall: 1) lose its Certificate of Authority, 2) no longer comply with Section 440.57, Florida Statutes, or 3) fail to maintain the requisite Best's Rating and Financial Size Category, the SUPPLIER shall, as soon as the SUPPLIER has knowledge of any such circumstance, immediately notify the CITY and immediately replace the insurance coverage provided by the insurance company with a different insurance company meeting the requirements of this Agreement. Until such time as the SUPPLIER has replaced the unacceptable insurer with an insurer acceptable to the CITY the SUPPLIER shall be deemed to be in default of this Agreement.

3. COVERAGE.

- 3.1. Without limiting any of the other obligations or liability of the SUPPLIER, the SUPPLIER shall, at the SUPPLIER'S sole expense, procure, maintain and keep in force amounts and types of insurance conforming to the minimum

requirements set forth in this subsection. The amounts and types of insurance shall conform to the following minimum requirements:

3.1.1. Workers' Compensation/Employer's Liability.

A. Workers Compensation Coverage SUPPLIER'S insurance shall cover SUPPLIER for liability which would be covered by the latest edition of the standard Workers' Compensation Policy, as filed for use in Florida by the National Council on Compensation Insurance, without restrictive endorsements. SUPPLIER will also be responsible for procuring proper proof of coverage from its subcontractors of every tier for liability which is a result of a Workers' Compensation injury to the subcontractor's employees. The minimum required limits to be provided by both the SUPPLIER and its subcontractors is outlined in subsection (b) below. In addition to coverage from the Florida Workers' Compensation Act, where appropriate, coverage is to be included for the Federal Employers' Liability Act and any other applicable Federal or State law. Subject to the restrictions of coverage found in the standard Workers' Compensation Policy, there shall be no maximum limit on the amount of coverage for liability imposed by the Florida Workers' Compensation Act, the United States Longshoremen's and Harbor Workers' Compensation Act, or any other coverage customarily insured under Part One of the standard Workers' Compensation Policy.

B. Employers Liability Coverage

\$500,000.00	(Each Accident)
\$500,000.00	(Disease-Each Employee)
\$500,000.00	(Disease-Policy Limit)

3.1.2. Commercial General Liability.

Using the latest edition of the standard Commercial General Liability Coverage Form (ISO Form CG 00 01), as filed for use in the State of Florida by the Insurance Services Office, without the attachment of restrictive endorsements other than the elimination of Coverage C, Medical Payment and the elimination of coverage for Fire Damage Legal Liability:

LIMITS	
General Aggregate (per project)	\$2,000,000.00 or 2x Per Occurrence (whichever is greater)
Personal & Advertising Injury Limit	\$1,000,000.00
Each Occurrence Limit	\$1,000,000.00

The CGL limits may be satisfied by a combination of primary CGL and Umbrella/Excess coverage. When Umbrella/Excess is provided it shall follow form.

3.1.3. Business Auto Policy.

The SUPPLIER'S insurance shall cover the SUPPLIER for those sources of liability which would be covered by Part IV of the latest edition of the standard Business Auto Policy (ISO Form CA 00 01), as filed for use in the State of Florida by the Insurance Services Office, without the attachment of restrictive endorsements. Coverage shall include owned, non-owned and hired autos.

The minimum limits to be maintained by the SUPPLIER (inclusive of any amounts provided by an Umbrella or Excess policy) shall be per accident combined single limit for bodily injury liability and property damage liability. If the coverage is subject to an aggregate, the SUPPLIER shall maintain separate aggregate limits of coverage applicable to claims arising out of or in connection with the work under this Agreement. The separate aggregate limits to be maintained by the SUPPLIER shall be a minimum of three (3) times the per accident limit required and shall apply separately to each policy year or part thereof.

The minimum amount of coverage under the Business Auto Policy shall be:

LIMITS	
Each Occurrence Bodily Injury and	\$1,000,000.00
Property Damage Liability Combined	