

**THE CITY OF DAYTONA BEACH**  
**WILLIAMSON BLVD. - DUNN AVE TO MASON AVE, RECLAIMED WATER**  
**IMPROVEMENTS**

**INVITATION TO BID No. 19083**

**PROJECT SPECIFIC CONSTRUCTION SERVICES**



**THE CITY OF DAYTONA BEACH**  
**UTILITIES DEPARTMENT - ENGINEERING DIVISION**  
**P.O. BOX 2451**  
**DAYTONA BEACH, FLA. 32115**

**ISSUE DATE: October 11, 2018**

## INVITATION TO BID – PROJECT SPECIFIC CONSTRUCTION SERVICES

The City of Daytona Beach will receive bids for the “WILLIAMSON BLVD. - DUNN AVE TO MASON AVE, RECLAIMED WATER IMPROVEMENTS”, Invitation to Bid No. 19083, at the City of Daytona Beach Purchasing Division, City Hall Room 146, 301 S. Ridgewood Ave., Daytona Beach, Florida 32114, until **2:00 p.m., on November 13, 2018**, at which time bids will be opened publicly and read aloud. Bids received after said time will be returned unopened.

**Sealed bids** must be addressed to:

Joanne Flick, Purchasing Agent  
The City of Daytona Beach Purchasing Division  
301 S. Ridgewood Ave., Room 146  
Daytona Beach, Fl., 32114

with “Sealed Bid for WILLIAMSON BLVD. - DUNN AVE TO MASON AVE, RECLAIMED WATER IMPROVEMENTS , ITB No. 19083” plainly written on the outside of the envelope.

**The work:** Portions of the pipeline have been completed in the last ten years when development has occurred on Williamson Blvd. There is approximately 2200 linear feet of pipe line comprising two separate pipelines that are needed to fill in the gaps between the existing pipelines. The first section of pipe line comprises of a 24” High Density Polyethylene (HDPE) directional drill of approximately 1300 feet. This section is a directional drill due conflicts with a multitude of existing utility lines and fiber optic cable in the right of way. The second section of pipeline is an open cut 20” Polyvinyl Chloride (PVC) of approximately 900 feet.

**Bid Documents** may be obtained as pdf files on-line at <http://purchasing.codb.us>. There is no charge for downloading Bid Documents. The Bid Documents and all other Contract Documents, including Drawings and Technical Specifications if applicable, are also on file at the Daytona Beach Purchasing Division, 301 S. Ridgewood Avenue, Room 146, Daytona Beach, Florida, 32114. A complete set of these Documents may be obtained upon payment of \$75, NON-REFUNDABLE. Checks must be made payable to the City of Daytona Beach, Florida. All inquiries and checks pertaining to this project which are mailed should be directed to Post Office Box 2451, Daytona Beach, Florida 32115-2451.

**Each bid** must be accompanied by **Bid Security** in an amount not less than 10% of the total bid.

**A NON-MANDATORY PRE-PROPOSAL CONFERENCE** will be held at the Daytona Beach City Hall, 301 S. Ridgewood Ave., Room 149B, Daytona Beach, Florida 32114, on **October 24, 2018 at 2:00 pm.** Interested contractors are *urged* to attend.

**The successful contractor** will be required to furnish separate 100% Performance and Payment Bonds unless the Contract price is less than \$100,000.

**The City** reserves the right to reject any and all bids, or any portion of any bid, or to waive any informalities in the bidding.

**Bids may be held** by the City for a period not to exceed 60 days from the date of opening of bids for the purpose of reviewing the bid and investigating the qualifications of bidders prior to awarding the contract.

By: JOANNE FLICK, CPPO  
CITY OF DAYTONA BEACH  
Issue Date: October 11, 2018

## **INSTRUCTIONS TO BIDDERS – PROJECT SPECIFIC CONSTRUCTION SERVICES**

**THESE INSTRUCTIONS ARE STANDARD FOR ALL BID SOLICITATIONS FOR PROJECT SPECIFIC CONSTRUCTION SERVICES ISSUED BY THE CITY OF DAYTONA BEACH. THE CITY MAY DELETE, SUPERSEDE, OR MODIFY ANY OF THESE STANDARD INSTRUCTIONS FOR A PARTICULAR SOLICITATION BY USE OF SPECIAL INSTRUCTION SHEETS.**

**1. BID DOCUMENTS.** The Bid Documents consist of the Invitation to Bid; these Instructions; Special Instructions, if any; the Bid Proposal Letter, the Bid Schedule and all other Forms to be completed, signed, and submitted by the Bidder; and all additional documents required to be completed and submitted by the Bidder as part of the Bid.

In making copies of Bid Documents available, the City does so only for the purpose of obtaining Bids and does not confer a license or grant to use the Bid Documents for any other purpose.

**2. COMPLETING THE BID.** In order for the Bid to be considered complete:

A. The Bid Proposal Letter, the Bid Schedule, and all other required Forms must be completed. All blank spaces must be filled with dark ink or via typing. All corrections and erasures must be initialed by the party submitting the Bid on behalf of the Bidder.

B. All information/documentation that is required to be submitted by this solicitation must be provided in the manner indicated.

C. The Bidder is requested to submit only the Bid Proposal Letter and other Forms, documents, and information specifically required. Any extraneous documents or information submitted by the Bidder will be discarded. The Bidder be asked to sign a written contract only if the City awards a contract to Bidder.

D. Unless Special Instructions are included in this solicitation specifically allowing for partial or lot-by-lot bids where the Bid Schedule only calls for unit prices, the Bidder must provide quotes for all unit prices and extended unit prices (if any) as set forth in the Bid Schedule. If this solicitation allows for partial or lot-by-lot bids, the Bidder must comply with the Special Instructions in completing filling out the unit prices and extended unit prices set forth in the Bid Schedule.

E. The Bid Price (including unit prices and extended prices if applicable), must be stated in numerals.

F. If this solicitation requires unit prices and there is a conflict between the unit prices and the extended totals, the unit price will take precedence. Likewise, discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

G. The Bidder must not submit alternative bids unless this solicitation specifically authorizes alternate bids. If this solicitation specifically allows the submission of alternate bids, the Bidder must submit the standard and the alternative bid in order to be considered responsive.

H. The Bid may not contain qualifications or exceptions of any kinds.

I. All other submittal requirements stated herein must be met.

**3. SIGNING THE BID.** The Bid Proposal Letter, the Bid Schedule and all other Forms and documents requiring Bidder's signature must contain the original signature of an individual authorized to bind the Bidder. The signature must be located in the space(s) marked for the Bidder's signature. In addition, the person signing the Bid must also sign all of the other Forms to be submitted.

Electronic signatures will not be accepted.

**4. REQUESTS FOR INTERPRETATIONS.** If the Bidder is in doubt as to the meaning of any of the Bid Documents or other Contract Documents included in this solicitation, the Bidder may submit a written request to the City for an interpretation, care of the Purchasing Agent at the address set forth in the Invitation for delivery of the completed bid. Such requests must be received 10 days prior to bid opening in order to be considered. The City is not obligated to respond to such requests. Any clarification or interpretation issued by the City in the form of a written addendum will be deemed to be a part of the Bid Documents.

No oral clarification or interpretation will be binding.

**5. ADDENDA TO BID DOCUMENTS.** Prior to bid opening, the City may on the City's own initiative or in response to a request for clarification, furnish addenda for additions or alterations to these Instructions, the Bid Documents, and to any or any Drawings, Specifications, or other Contract Documents previously supplied by the City. In addition, the City may by addenda extend the date scheduled for Bid Opening.

The Purchasing Agent will make reasonable efforts to notify all potential bidders of the issuance of an Addendum. The Purchasing Agent will also post Addenda on the Purchasing Division's web page, <http://purchasing.codb.us>.

**However, the Bidder is solely responsible for ensuring that the Bid submitted reflects all such Addenda.**

**6. BID SECURITY.** The Bidder must submit Bid Security equal to 10% of the Bid. The Bid Security will be in the form of a bid bond; or any of the following alternate forms: cashier's check, certified check, money order, notes at par value, U.S. Currency, or U.S. Government Bond. Any Bid Security provided must be in original form; copies are unacceptable. The City has the right to retain the bid security as liquidated damages should the Successful Bidder fail to comply with the terms of the bid. The City will return the bid security to unsuccessful Bidders after the contract award.

Any bid bond provided must be in a form approved or provided by the City, and must be accompanied by sufficient evidence of the issuing agent's authority. The surety company executing the bond must be authorized to do business in the State of Florida. If the bid bond is in an amount greater than \$5,000.00 the surety company executing the bond is listed by the United States Treasury Department as being approved for writing bonds for federal projects on its current list in an amount not less than the required bond amount.

**7. BID ENVELOPE.** The Bid, including the Bid Proposal Letter, all other required Bid documents, and required bid security, must be returned in an opaque, sealed envelope. The envelope must display the name and address of the Bidder, the bid number and name of the bid/contract as set forth on the Invitation to Bid, and the date and time scheduled for bid opening. The envelope must be addressed to:

Purchasing Agent  
City of Daytona Beach  
Room 146  
301 S. Ridgewood Avenue  
Daytona Beach, FL 32114

**8. SUBMISSION OF BID.** The Bidder must submit the Bid by mail or hand delivery at or prior to the time fixed for bid opening in the Invitation for Bids. A bid submitted after the time fixed for bid opening will not be accepted. The Bid must be delivered to the Purchasing Agent at the address above. A bid submitted to any other location will not be considered. Telephonic, electronic, and faxed bids will not be considered.



**9. AMENDMENT AND WITHDRAWAL OF BID.** The Bidder may amend or withdraw the Bid at any time prior to bid opening, but only with prior written notice to the Purchasing Agent, submitted in the same manner as the Bid. The notice must be signed by a properly authorized agent of the Bidder.

Mere negligence on the part of the Bidder in preparing the Bid does not constitute a right to withdraw the Bid subsequent to bid opening.

Amendments may be made only through the submission of a complete Bid along with a written statement, signed by the same person who signed the Bid, that the submission is intended to fully replace the Bidder's earlier submission. The City is not required to honor an amendment that fails to comply with this Paragraph 9.

**10. DISQUALIFICATION OF BIDDERS.**

A. **Only One Bid Permitted:** The Bidder may submit only one Bid. If the Bidder submits more than one bid for the work involved, all bid proposals submitted from the Bidder will be rejected.

B. **Collusion:** If the City determines that collusion exists among bidders, the City will reject the bids of all participants in the collusion.

C. **Scrutinized Companies List:** If the Bidder is found to have submitted a false certification as provided by F.S. Section 238.175(5), or been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, the City will have the option to immediately terminate this Contract.

**11. BID OPENING.** Bid opening will be scheduled at the location and on the date and time specified by the Invitation for Bid, or by any applicable Bid Addenda that the City may issue. At bid opening, the City will open and record the Bid so long as it is proper and has been timely submitted. In recording the Bid the City will state the name of the Bidder and the Bid Price.

The Bidder is solely responsible to ensure that the Bid is time and date stamped by the Purchasing Agent prior to bid opening. Late bids will be rejected and returned unopened.

The Bidder may be present at bid opening but is not required to be present.

**12. BID AS OFFER; FIRM PRICING; NO GUARANTEES AS TO QUANTITIES ORDERED.** In submitting the Bid, the Bidder certifies that the Bidder is making a firm offer that will remain open for 60 days following Bid Opening unless properly and timely withdrawn by the Bidder prior to Bid Opening in conformance with these Instructions unless the City, in the City's sole discretion, rejects the Bid after Bid Opening. Extensions of time beyond the 60 day-period will only be by agreement of the City, the Successful Bidder, and the surety for the Successful Bidder.

In addition, if this solicitation requests submission of unit prices: (i) all unit prices will be deemed to be held firm for the duration of the Contract, including any extension thereof, unless specifically authorized by the Contract Documents; and (ii) quantities stated are an estimate only and no guarantee is given or implied as to quantities that will actually be required during the contract period.

**13. FEDERAL TAXES.** The bid price will be exclusive of all federal taxes. If the Bidder believes that certain other taxes are properly payable by the City, the Bidder may list such taxes separately in each case directly below the respective item bid price. Tax exemption certificates will be furnished upon request.

**14. BID PRICE INCLUSIVE OF COSTS.** The Bid Price is inclusive of all of the Bidder's direct and indirect costs of performing the Work.

**15. BIDS AND PUBLIC RECORDS.** Sealed bids received by the City pursuant to this solicitation will be temporarily exempt from disclosure in accordance with Florida's Public Records Laws. Thereafter, bids will be open for inspection by any person pursuant to Public Records Law.

If the Bidder believes that the Bid or any portion thereof is permanently exempt from disclosure under the public records laws, the Bidder must state the grounds for this position in CAPITAL LETTERS on a cover sheet accompanying the sealed bid. The Bidder will be contacted prior to the opening of the Bid and a determination will be made as to whether or not it is exempt prior to opening. If a determination is made that it is not exempt from disclosure, the Bidder may in writing request the return of the sealed bid.

**16. BID OPENING RESULTS.** The Bidder may secure information pertaining to bid opening results on the Purchasing Division webpage under the "Closed Solicitations" link, by visiting the Purchasing Division Office Monday through Friday between 8:00 am and 3:00 pm, or by emailing a request to [purchasing@codb.us](mailto:purchasing@codb.us). Copies of bid tabulation sheets will be furnished upon request and receipt of a valid email address or self-addressed stamped envelope.

**17. BIDDER CAPABILITY/REFERENCES.** Prior to contract award, the City may require Bidder to show that Bidder has the necessary facilities, equipment, ability, and financial resources to perform the work specified in a satisfactory manner and within the time specified.

In addition, the City may require Bidder to demonstrate that Bidder has experience in work of the same or similar nature as the work required herein, and to provide references satisfactory to the City.

**18. REVIEW; BASIS OF AWARD.** Bids will be reviewed in accordance with the procedures set forth in these Instructions to Bidders and the applicable provisions of the Purchasing Code, Chapter 30 of the Daytona Beach Code of Ordinances. Any contract awarded pursuant to this solicitation will be made on the basis of the criteria for award of bids provided in the Purchasing Code.

A link to the Code of Ordinances is available on the City's web site, [www.codb.us](http://www.codb.us).

**19. LOCAL PREFERENCE.** The Purchasing Code, Chapter 30, Code of the City of Daytona Beach provides for a preference to local vendors whenever the application of such a preference is reasonable in light of the dollar-value of proposals received in relation to such expenditures.

As used in City Code, the term, "local vendor" means a person or business entity which has maintained a permanent place of business with full-time employees within the city limits of the City of Daytona Beach for a minimum of six months prior to the date bids or proposals were received for the purchase or contract at issue, which generally provides from such permanent place of business the kinds of goods or services solicited, and which at the time of the solicitation fully complies with state and local laws, including City zoning and licensing ordinances.

Pursuant to City Code, if the lowest responsive bid is submitted by a non-local vendor, and a bid submitted by a local vendor is within 10% of the lowest bid, then these two vendors will each have the opportunity to submit a best and final bid equal to or lower than the amount of the lowest bid within five working days after bid opening. The bid will be awarded to the bidder submitting the lowest responsive bid or final bid. In case of a tie between a local vendor and a non-local vendor, the bid will be awarded to the local vendor.

If the Bidder intends to qualify as a local vendor, the Bidder must complete and sign the Local Vendor affidavit and submit it as part of the Bid. A Bidder who fails to properly complete and sign this affidavit or submit it with the Bid, will not further considered for local preference.

If the Bidder submits a properly completed Local Vendor affidavit as part of its Bid, the City reserves the right to verify that the Bidder meets the definition of Local Vendor, including by requiring the Bidder to supply additional documentation. In all instances, the City will be the final arbiter as to whether the Bidder qualifies for local preference.

With certain exceptions, application of local preference is discretionary. For more information on how the Local Preference may apply, see the Purchasing Code.

**20. IDENTICAL TIE BIDS.** If there are two or more low responsive bids from responsible bidders that are identical in price and other evaluation criteria, the tie will be awarded to the following in order of preference: a) the bidder qualifying for local preference under Code 30-86; b) the bidder in compliance with the drug free workplace certification requirements set forth in Florida Statutes 287.087; or c) the most responsible bidder as defined under the City Code 30-82 (9)(c).

**21. RIGHT TO ACCEPT OR REJECT BIDS.** The City will reject bids which contain modifications, qualifications, or exceptions, or which are incomplete, unbalanced, conditional, obscure, or which contain additions not requested, or irregularities of any kind, or which do not comply in every respect with these Instructions to Bidders and the Contract Documents, unless the City in its sole discretion determines that the non-compliance is minor.

The City does not bind itself to accept the minimum bid stated herein, but reserves the right to accept any bid, which in the judgment of the City will best serve the needs and interests of the City.

**22. CRA MAY AWARD PURCHASE ORDERS ISSUED PURSUANT TO CONTRACT.** In the case of a continuing/term supply or service contract awarded pursuant to this solicitation, if the funds to be used to pay for a portion of the supply or service are from redevelopment trust funds, the Community Redevelopment Agency (CRA) is authorized to issue the purchase order corresponding to the supply or service instead of the City.

**23. CITY'S PROJECT-SPECIFIC CONSTRUCTION CONTRACT FORM.** The City's contract form for project specific construction projects, which is included in this solicitation, contains additional terms and conditions, including indemnification and insurance requirements, completion deadlines, and liquidated damages, that the Bidder should review prior to submitting the Bid. The City reserves the right to make minor changes to the form contract prior to execution by the successful bidder to correct errors, make other minor formatting changes, or for legal sufficiency. The City will provide the successful bidder the final contract for execution.

**24. LICENSES.** At time of Bid submittal, the Bidder must hold the required licensure to be the prime contractor for all work to be performed under this solicitation. Any subcontractors or sub-consultants whom the Bidder proposes to use to perform work under this solicitation must also hold the required licensure at the time of Bid submittal. Required licensure must be maintained in full force and effect during the contract term.

**25. BIDDER RESPONSIBILITY FOR PREPARATION COSTS.** Neither the City nor the City's officers or agents will be liable for the costs incurred by the Bidder in reviewing or responding to this solicitation.

**26. POST-AWARD SUBMITTAL REQUIREMENTS.** Within 15 business days after the City's issuance of a notice of award, the Successful Bidder must submit each of the following:

- A. A fully-executed contract, using the form provided with or referenced by the notice of intent to award.
- B. Proof of insurance, in accordance with the requirements of the Contract. See the Contract form for more information regarding insurance requirements.
- C. Performance Security, as further described below, in an amount equal to 100% of the Contract Price.

The award is subject to cancellation and the bid security subject to forfeiture if this deadline is not met.

**27. PERFORMANCE SECURITY.** Performance Security is required unless contract is less than \$100,000.00. Payment and performance bonds may be submitted; or an alternative form of security as specified in Florida Statutes § 255.05(7) may be provided upon the City's prior written approval.

If the Successful Bidder elects to use payment and performance bonds for required Performance Security, the Successful Bidder will use forms provided by the City. Copies of the City's current form bonds will be provided with the Notice of Award. Completed bonds must be originals, not copies, with raised corporate seals included where applicable. The bonds must be accompanied by sufficient evidence of the authority of the issuing agent, including a certified copy of the power of attorney of the person signing the bond on the surety's behalf. The surety company executing the bonds must be must be rated "A" or better by A.M. Best Key Rating Guide, authorized to do business in the State of Florida, and must be listed by the United States Treasury Department Treasury Fiscal Service, Bureau of Government Financial Operations, Federal Register, Part V, latest revision, entitled: "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies," as being approved for writing bonds for federal projects on its current list in an amount not less than the required bond amount.

## **END OF INSTRUCTIONS TO BIDDERS SECTION**

**SPECIAL INSTRUCTIONS**  
**SI 1. MINIMUM CONSTRUCTION EXPERIENCE QUALIFICATIONS.**

The Bid requires that the Bidder and certain subcontractors have sufficient experience in similar construction projects.

This Special Instruction sets forth certain Minimum Construction Experience Qualifications (“Minimum Qualifications”) that must be met by the Bidder, and in some instances, the Bidder’s Significant Task Subcontractor, and describes the reference information that the Bidder must submit as part of the Bid to allow the City to confirm that these Minimum Qualifications are met.

The imposition of the Minimum Qualifications stated herein will not be deemed to restrict the City’s ability to determine whether the Bidder is “responsible” as that term is referenced in Section 30-82(8) of Chapter 30 of the City of Daytona Beach Code of Ordinances.

For purposes of these Special Instructions, a “Significant Task Subcontractor” is a subcontractor of the Bidder who will be performing a specific type of Task below. Also, for purposes of these Special Instructions, “Task” means one of the following specific types of construction-related activity: Utilities Construction by Open Cut, Horizontal Directional Drilling.

**PART 1** The Bidder must meet the Minimum Qualifications associated with a Task listed below, if the Bidder proposes to perform 50% or more of the Task through the Bidders’ own forces for the Project.

**PART 2** Significant Task Subcontractor must meet the Minimum Qualifications associated with a Task, if the Bidder proposes to have the Subcontractor substantially perform the Task in the course of the Project.

**PART 3** Minimum Qualifications

**3.0** Task Experience:

- A. Utilities Construction by Open Cut: Successful completion of at least five (5) projects successfully completed totaling more than 2,000 linear feet or more of pipe length for pipe greater than 20-inches in diameter using open cut construction completed no earlier than 2011. Utilities shall include potable water, reuse water and wastewater force main projects. Each project listed must include 1 of the 3 utilities listed in this paragraph.
  
- B. Horizontal Directional Drilling (HDD): Successful completion of five (5) horizontal directional drill water, reclaimed water, or wastewater transmission force main projects completed no earlier than 2011 with a minimum 24-inch diameter, minimum 1,200 linear feet length, with similar scope, nature, and cost to the proposed project. The Prime Contractor/Subcontractor on these projects must be trained and certified to operate the Horizontal Directional Drilling

equipment and HDPE fusion equipment with at least five (5) years of experience in directional drilling. Each project listed must include 1 of the 3 utilities listed in this paragraph.

### 3.1 Definition of Project Success

- A. A project will be deemed “successful” only if: (i) the entire project, including the Task referenced, achieved final acceptance; or (ii) the Task referenced was deemed substantially complete (i.e., the Facility Owner has accepted the project for the Facility Owner’s beneficial use).
- B. A project will not be deemed to be “successful” for purposes above, even if it otherwise meets the foregoing, conditions, if any of the following occurred: (i) the Bidder/Subcontractor was terminated from the project for cause, (ii) in association with the work listed, the Prime Contractor/Subcontractor enforcement agency warning letters, administrative fines or penalties, or the Prime Contractor/Subcontractor was required to pay damages by a court of law, for Occupational Safety and Health Administration (OSHA) violations in association with work; (iii) after project completion, the Facility Owner requested the Bidder/Subcontractor to provide warranty work and the Bidder/Subcontractor failed to provide such work to the Facility Owner’s satisfaction; or (iv) the Facility Owner or the Facility Owner’s contact person (listed below), for any other reason provides the City a negative reference regarding the Bidder/Subcontractor.

**PART 4** To help the City determine whether all of the required Minimum Qualifications are met, the Bidder must submit the following as part of the signed and sealed Bid:

- A. A list of Significant Task Subcontractors, including the name of the person or firm, and each Task for which the Subcontractor will act as a Significant Task Subcontractor.
- B. A Reference Package. The Reference Package will contain a title page containing the City contract number and title as referenced in the Invitation to Bid; the name of the contractor, followed by Reference Sets for the Bidder on each Significant Task Subcontractor. The Reference Package will be tabbed and indexed.
- C. Each Reference Set contained within a Reference Package is limited to ten single-sided, 8.5” x 11” pages, and must be typed using a font size no less than 10. Each Reference Set will contain a sufficient number of references as requested to show that the Minimum Qualification is being met. For each reference the following must be provided:

1. The name and location of the project, the type of Bidder's/Subcontractor' work on the project (with reference to the Tasks listed above), the years in which the work was performed, and a summary of any OSHA safety violations or significant injuries received by Bidder's/Subcontractor's employees during the course of the work (significant meaning an injury resulting in the employee's missing 15 or more days of work or death).
2. The name and address of at least one Contact Person for Facility Owner. The Contract Person must have sufficient knowledge of the project listed to confirm that the applicable Minimum Qualifications were met by the Bidder/Subcontractor.
3. The Contact Person need not to be a former or current officer or employee of the Facility owner, so long as the person represented the owner's construction management and or construction interests for project listed (such as by acting as project manager, project administrator, resident construction engineer, etc.) The Contact Person, title name of employers, and telephone number or e-mail address (or both) must be provided.

**LIST OF SIGNIFICANT TASK SUBCONTRACTORS**

**(Add more pages if necessary)**

Task Subcontractor Company Name: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

Task(s): \_\_\_\_\_

Task Subcontractor Company Name: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

Task(s): \_\_\_\_\_

Task Subcontractor Company Name: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

Task(s): \_\_\_\_\_



**REFERENCE NO.** \_\_\_\_\_

Bidder/Major Subcontractor: \_\_\_\_\_

Name of Project: \_\_\_\_\_

Location of Project: \_\_\_\_\_

Type of Work on Project: \_\_\_\_\_

Length of Project (Feet): \_\_\_\_\_

Project Components:

Yes No

a. Potable Water Construction     

b. Reuse Water Construction     

c. Sewer Force Main Construction     

Dates Work was Performed:

\_\_\_\_\_

Work Completion:

a. Was project, or Bidder/Subcontractor portion of the project completed no earlier than 2011?  
(Yes/No) \_\_\_\_\_

b. Did the successful Bidder perform at least 50% of the work described for that project? (Yes/No) \_\_\_\_\_

c. Did project achieve final acceptance? (Yes/No) \_\_\_\_\_ or, was the project deemed substantially complete and available for beneficial use by the Facility Owner? (Yes/No) \_\_\_\_\_

Summary of any OSHA safety violations or significant injuries during the course of the work:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Name of Facility Owner:

\_\_\_\_\_

Address: \_\_\_\_\_

Primary Contact Person for Facility Owner: \_\_\_\_\_

Employed by Owner: (Yes/No) \_\_\_\_\_ Consultant: (Yes/No) \_\_\_\_\_

Resident Construction Engineer: (Yes/No) \_\_\_\_\_ Project Administrator: (Yes/No) \_\_\_\_\_

Contact Person Company Name:

\_\_\_\_\_

Telephone Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

Secondary Contact Person: \_\_\_\_\_

Company Name: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

## SUBMITTAL CHECKLIST

The following items will be submitted with the Bid Proposal Letter. Each blank on the form will be filled out. Use NA (not applicable) rather than leaving blank.

<b>Item(s) Required with Submittal</b>	
	BID PROPOSAL LETTER
	BID SCHEDULE
	NONCOLLUSION AFFIDAVIT OF PRIME BIDDER
	DRUG-FREE WORKPLACE CERTIFICATION
	AFFIDAVIT ON PUBLIC ENTITY CRIMES
	LOCAL VENDOR AFFIDAVIT <i>(only if filing for local preference)</i>
	MINORITY AND WOMEN OWNED BUSINESS ENTERPRISES CERTIFICATION FORM
	MINORITY AND WOMEN OWNED BUSINESS ENTERPRISE OFFICER CERTIFICATION FORM
	BID SECURITY (10% OF BASE BID)
	LIST OF SIGNIFICANT SUB-CONTRACTORS
	REFERENCE SET FOR 5 OPEN CUTS AND 5 HDD'S
<b>Label the outer most package with the following:</b>	
	Bid Number
	Date of the Opening
	Contractor Name and Address
<b>Item(s) Required after Bid Submittal</b>	
	<u>Certificate of Insurance</u> indicating the coverages outlined in this solicitation, including naming the City as additional insured <i>(requested when Notice of Intent to Award is Issued)</i>
	Contract signed by Authorized Representative of the Vendor <i>(completed contract sent with Notice of Intent to Award)</i>
	Payment & Performance Bonds to be returned as instructed within 15 days after the Notice of Award is issued <i>(P &amp; P Bonds acceptable to the City will be sent with Notice of Award)</i>

**BID PROPOSAL LETTER - ITB NO.: 19083**

TO THE MAYOR AND COMMISSIONERS  
THE CITY OF DAYTONA BEACH, A FLORIDA MUNICIPAL CORPORATION

Dear Mayor and Commissioners:

This Bid is submitted by \_\_\_\_\_  
*(insert Bidder's full legal name; include D/B/A if applicable)*

Business Address: \_\_\_\_\_  
*(include P.O. Box/street address, city, state and zip code)*

Business Phone: \_\_\_\_\_ Business Fax: \_\_\_\_\_  
*(include area code) (include area code)*

Business Email: \_\_\_\_\_  
*(leave blank if n/a)*

The undersigned, as BIDDER or BIDDER's authorized representative, hereby declares and affirms each of the following:

1. That BIDDER has had the opportunity to examine the project site(s) and is fully informed in regard to all conditions pertaining to the site(s).
2. That BIDDER is fully informed regarding local conditions where the work will be required.
3. That BIDDER has thoroughly examined all Contract Documents, including Plans and Specifications as applicable, relative to the work to be performed, and that BIDDER is sufficiently knowledgeable of the work to be performed.
4. That BIDDER hereby agrees to furnish all labor, materials, and equipment to do the work in strict accordance with the Contract Documents for the price(s) stated in the attached Bid Schedule.
5. That, subject to the terms and conditions stated in the Contract Documents, BIDDER will perform the work in accordance with the completion date(s) specified in the Contract Documents, and will pay liquidated damages in the amounts specified in the Contract Documents for BIDDER's failure to comply with the completion date(s).
6. That BIDDER agrees to indemnify and hold harmless the CITY any other interests as set forth in the Contract Documents.
7. That insofar as the attached Bid Schedule includes extended unit prices, the use of extended unit quantities will not be construed to be a guarantee that the CITY will purchase such quantities if a contract is awarded; and that, subject to the terms and conditions of the Contract, BIDDER will be entitled to payment only based on the units constructed, installed, or otherwise placed in service.

**BID PROPOSAL LETTER -- ITB No.: 19083, cont.**

8. That BIDDER has received the following Addenda (*leave blank if inapplicable*):

No. \_\_\_\_\_ Dated: \_\_\_\_\_ No. \_\_\_\_\_ Dated: \_\_\_\_\_

No. \_\_\_\_\_ Dated: \_\_\_\_\_ No. \_\_\_\_\_ Dated: \_\_\_\_\_

(*list any additional Addenda by number and date*): \_\_\_\_\_

\_\_\_\_\_

9. That, if within the time period specified in the bid solicitation, BIDDER fails to execute the form Contract, provide proof of insurance, and submit (if required) Performance Security, the bid award will be subject to cancellation and the Bid Security provided with this Bid will be subject to forfeiture.

10. That all information provided by BIDDER as part of this Proposal is truthful to the best of BIDDER's knowledge.

11. That BIDDER is (*mark the appropriate box and include the additional information, as applicable*):

An individual person/sole proprietor

A Florida corporation/ limited liability company

A foreign corporation/limited liability company authorized to do business in Florida\*  
\_\_\_\_\_ (*specify state of incorporation/formation*)

A Florida limited partnership

A foreign limited partnership authorized to do business in Florida\*  
\_\_\_\_\_ (*specify state of incorporation / formation*)

A general partnership\*\*

A joint venture\*\*\*

Other \_\_\_\_\_ (specify, including type of entity)

\* *Attach proof of formation/registry from State of Florida.*

\*\* *Provide on separate, signed sheets(s) of paper, full legal name and address of the partnership; and names of all general partners.*

\*\*\* *Provide on separate signed sheet(s) of paper the full legal names of all persons/firms comprising the joint venture.*

**BID PROPOSAL LETTER -- ITB NO.: 19083, CONT.**

12. That BIDDER has completed and attached all required attachments with this Bid Proposal, including Bid Schedule, Non-Collusion Affidavit, Drug Free Workplace Certification, MWBE Certifications, and Public Entity Crimes Affidavit.

In signing below, I certify that I am the above-named BIDDER or a person duly authorized by BIDDER to bind BIDDER to these terms and conditions.

By: \_\_\_\_\_  
(Signature)

Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date signed: \_\_\_\_\_

Email: \_\_\_\_\_

**BID SCHEDULE - ITB NO. 19083**  
**WILLIAMSON BLVD. - DUNN AVE TO MASON AVE, RECLAIMED WATER**  
**IMPROVEMENTS**

ITEM NO.	DESCRIPTION	QTY	UNIT	UNIT COST	AMOUNT
<b>BASE BID</b>					
1	Mobilization / Demobilization (Max. 5% of Bid)	1	LS	\$	\$
2	Furnish & Install HDD Fused Reclaimed Main				
	a. 24-inch HDPE Pipe	1420	LF	\$	\$
	b. 24-inch HDPE MJ Restrained Adaptor	2	EA	\$	\$
3	Furnish & Install PVC Reclaimed Main				
	a. 20-inch PVC Pipe	960	LF	\$	\$
4	Furnish & Install Compact Ductile Iron Fittings with Megalug Restrainers				
	a. 20-inch 11.25 Degree Bend*	4	EA	\$	\$
	b. 20-inch 45 Degree Bend	10	EA	\$	\$
	c. 20-inch Restrained MJ Sleeve*	4	EA	\$	\$
	d. 20-inch x 24-inch MJ Restrained Reducer	2	EA	\$	\$
5	Furnish & Install Valves and Valve Boxes				
	a. 20-inch Gate Valve (side actuated) *	4	EA	\$	\$
	b. Automatic Air Release/Vacuum Valve Assembly and Above Ground Box	4	EA	\$	\$
	c. Manual Air Release Valve Assembly and Box	1	EA	\$	\$

6	Clean, Pig, Flush & Pressure Test Force Main	1	LS	\$	\$
7	Driveway and Sidewalk Replacement.				
	a. Concrete Driveways (minimum 6-inches thick)	100	SY	\$	\$
	b. Asphalt Driveways	380	SY	\$	\$
	c. Concrete Sidewalks (minimum 6-inches thick)	120	SY	\$	\$
8	Furnish & Install Bahia Sod	2,350	SY	\$	\$
9	Submit Certified "As-Built" Drawings	1	LS	\$	\$
	<b>TOTAL BASE BID</b>			\$	

\* Not all the items are shown on the drawings. Items not shown are to be used as needed in project as directed by the City.

Submitted by:

Contact Name: (signature)	Contact Name: (printed)
Vendor Name:	Phone:
Address:	Email:

**NONCOLLUSION AFFIDAVIT OF PRIME BIDDER**

STATE OF \_\_\_\_\_ )  
COUNTY OF \_\_\_\_\_ )

\_\_\_\_\_, being first duly sworn deposes and says that:

(1) He is \_\_\_\_\_ of \_\_\_\_\_, the Bidder that has submitted the attached Bid;

(2) He is 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 or cost element of the Bid price or the Bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the City of Daytona Beach, FL (Local Public Agency) or any person interested in the proposed Contract;

(5) The price or 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.

By: \_\_\_\_\_  
(Signature)

Name Typed: \_\_\_\_\_

Title: \_\_\_\_\_

Bidder: \_\_\_\_\_

Subscribed and sworn to before me

This \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

\_\_\_\_\_  
(Signature of Notary Public)  
My commission expires: \_\_\_\_\_



## DRUG-FREE WORKPLACE CERTIFICATION

**IDENTICAL TIE BIDS:** - If there are two or more low responsive bids from responsible bidders that are identical in price and other evaluation criteria, the tie will be awarded to the following in order of preference: a) the bidder qualifying for local preference under Code 30-86; b) the bidder in compliance with the drug free workplace certification requirements set forth in Florida Statutes 287.087; or c) the most responsible bidder as defined under the City Code 30-82 (9)(c).

In order to have a drug-free workplace program, a business will:

(1) Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

(2) Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violation.

(3) Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in section (1), above.

(4) In the statement specified in section (1), above, notify the employees that, as a condition of working on the commodities or contractual services that are underbid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or *nolo contendere* to, any violation occurring in the workplace no later than five days after such conviction.

(5) Impose sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.

(6) Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

By: \_\_\_\_\_  
(Signature)

Title: \_\_\_\_\_  
(leave blank if sole proprietor)

Date: \_\_\_\_\_

**AFFIDAVIT ON PUBLIC ENTITY CRIMES**  
**(SWORN STATEMENT PURSUANT TO SECTION 287.133(3) (a), FLORIDA STATUTES)**

**THIS FORM MUST BE SIGNED AND SWORN TO IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICIAL AUTHORIZED TO ADMINISTER OATHS.**

This sworn statement is submitted to the City of Daytona Beach

by \_\_\_\_\_  
*(insert individual's printed name and title)*

for \_\_\_\_\_ whose business address  
*(insert name of Bidder)*

is \_\_\_\_\_

- I. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or of the United States, including, but not limited to, any bid or contract for goods or services to be provided to any public entity or an agency or political subdivision of any other state or of the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.
- II. I understand that "convicted" or "conviction" as defined in Paragraph 287.133(1)(b), Florida Statutes, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, non-jury trial, or entry of a plea of guilty or nolo contendere.
- III. I understand that an "affiliate" as defined in Paragraph 287.133(1)(a), Florida Statutes, means:
  1. A predecessor or successor of a person convicted of a public entity crime; or
  2. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.
- IV. I understand that a "person" as defined in Paragraph 287.133(1)(e), **Florida Statutes**, means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.

V. Based on information and belief, THE STATEMENT WHICH I HAVE MARKED BELOW is true in relation to the entity submitting this sworn statement (*Place initial of check mark next to applicable statement*):

\_\_\_ Neither the entity submitting this sworn statement, nor any of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, nor any affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

\_\_\_ The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

\_\_\_ The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989. However, there has been a subsequent proceeding before a Hearing Officer of the State of Florida, Division of Administrative Hearings and the Final Order entered by the Hearing Officer determined that it was not in the public interest to place the entity submitting this sworn statement on the convicted vendor list. (Attach a copy of the final order)

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR THE PUBLIC ENTITY IDENTIFIED IN PARAGRAPH 1 (ONE) ABOVE IS FOR THAT PUBLIC ENTITY ONLY AND, THAT THIS FORM IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT I AM REQUIRED TO INFORM THE PUBLIC ENTITY PRIOR TO ENTERING INTO A CONTRACT IN EXCESS OF THE THRESHOLD AMOUNT PROVIDED IN SECTION 287.017, FLORIDA STATUTES FOR CATEGORY TWO OF ANY CHANGE IN THE INFORMATION CONTAINED IN THIS FORM.

\_\_\_\_\_  
(Signature) (Date)

STATE OF \_\_\_\_\_ )  
COUNTY OF \_\_\_\_\_ )

PERSONALLY APPEARED BEFORE ME, the undersigned authority,

\_\_\_\_\_ who, after first being sworn by me, affixed his/her signature  
(Name of individual signing)

in the space provided above on this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

Attest: \_\_\_\_\_  
(Notary Public)

My commission expires: \_\_\_\_\_

(Notary Seal)

**LOCAL VENDOR AFFIDAVIT**

*Complete and submit this form ONLY if you qualify for local preference as provided in the City of Daytona Beach Purchasing Code.*

*A copy of the Bidder's Daytona Beach Business Tax Receipt must be submitted with this Affidavit.*

NAME OF BIDDER: \_\_\_\_\_

LOCAL BUSINESS ADDRESS *(street address being used to claim Local Preference, including zip code):*  
\_\_\_\_\_

The undersigned certifies under penalty of perjury each of the following:

The Local Business Address has continuously been used as a Permanent Place of Business with at least one full-time employee since \_\_\_\_\_.  
*(Insert date)*

The Local Business Address has consistently offered or provided the goods or services being solicited by the City of Daytona Beach during the time referenced above.

The Local Business Address has not been established with the sole purpose of obtaining the advantages that may be granted pursuant to the Local Preference provisions of the City of Daytona Beach Purchasing Code.

\_\_\_\_\_  
Signature *(Must be same person as person signing the Bid Proposal)*

\_\_\_\_\_  
Print Name/Title

Subscribed and sworn to before me

This \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

\_\_\_\_\_  
(Signature of Notary Public)  
My commission expires: \_\_\_\_\_

**The City of Daytona Beach reserves authority to require a copy of the corporate charter, corporate income tax filing return, and any other documents(s) to evaluate the Bidder's Local Preference claim.**

**MINORITY AND WOMEN OWNED BUSINESS ENTERPRISES  
CERTIFICATION FORM**

The Bidder hereby certifies that in accordance with applicable provisions of the Daytona Beach Purchasing Code, Chapter 30, Daytona Beach Code of Ordinances, a good faith effort has been made to contact the following minority and women owned business enterprises:

---

---

---

---

*(Use separate sheet if additional space is needed. If separate sheet is used, include a reference to this form, and sign and date the sheet).*

SIGNATURE: \_\_\_\_\_

NAME TYPED: \_\_\_\_\_

TITLE: \_\_\_\_\_

The Bidder further certifies that of the minority and women owned business enterprises contacted, he was unable through a good faith effort to obtain any minority or women owned business enterprise to work on this project.

SIGNATURE: \_\_\_\_\_

NAME TYPED: \_\_\_\_\_

TITLE: \_\_\_\_\_

**MINORITY AND WOMEN OWNED BUSINESS ENTERPRISE OFFICER  
CERTIFICATION FORM**

I, \_\_\_\_\_,  
Name of Executive Officer  
certify that \_\_\_\_\_  
Name of MBE Officer

has been named Minority and Women Owned Business Enterprise Officer for

\_\_\_\_\_  
\_\_\_\_\_

Company

Corporation

Date: \_\_\_\_\_

By: \_\_\_\_\_

Name Typed: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

**DRAFT  
PROJECT-SPECIFIC CONSTRUCTION CONTRACT  
ITB 19083**

THE PARTIES TO THIS CONTRACT are the City of Daytona Beach, a Florida municipal corporation, hereinafter the "CITY" or "OWNER," and >, a >, hereinafter the "CONTRACTOR."

WITNESSETH, that the CONTRACTOR and the CITY agree as follows, for the mutual valuable consideration provided herein:

**ARTICLE I. SCOPE OF WORK**

The CONTRACTOR will, at its sole cost and expense, provide, perform, and complete the construction project commonly known as "WILLIAMSON BLVD. - DUNN AVE TO MASON AVE, RECLAIMED WATER IMPROVEMENTS" and more fully described in the Contract Documents, hereinafter the "Work".

**ARTICLE II. CONTRACT DOCUMENTS**

The Contract Documents are further described in the General Conditions, and if applicable the Supplemental General Conditions. In addition, the Plans, dated 6/2018 and referenced herein are the plans or drawings prepared by Arminius Consultants, LLC (the "Engineer/Architect" or "E/A"), provided or made available with the CITY's Invitation to Bid, as amended by any addenda to the bid documents, are a part of the Contract Documents. These Plans are not physically attached hereto but are incorporated herein by reference. CONTRACTOR acknowledges receipt of all such Plans.

The Contract Documents are intended to include all information necessary for CONTRACTOR's proper prosecution and timely completion of the Work. CONTRACTOR will prosecute the Work as necessary to produce the results indicated by the Contract Documents. The Contract Documents are complementary, and what is required by one will be as binding as if required by all.

**ARTICLE III. COMMENCEMENT AND COMPLETION**

The CITY and the CONTRACTOR mutually agree that time is of the essence with respect to the dates and times set forth in the Contract Documents. To that end, the CONTRACTOR will commence the Work not later than the Commencement Date set forth in the General Conditions, and will diligently and continuously prosecute the Work at such a rate, and with sufficient forces as will allow the CONTRACTOR to achieve Substantial Completion within **150** days after the Commencement Date and Final Completion within **30** days after Substantial Completion, subject only to any adjustments in the Contract Time that may be authorized by Change Orders properly issued in accordance with the Contract Documents. In executing this Contract, CONTRACTOR affirms that the time set for completion is reasonable.

The CITY will suffer financial loss if Final Completion of the Work is not achieved within the Contract Time. Accordingly, and in lieu of actual damages or proof thereof, if CONTRACTOR fails to meet these deadlines, CONTRACTOR will be liable to the CITY for liquidated damages as follows:

In the amount of **\$570** for each and every day of unexcused delay in achieving Substantial Completion; and

In the amount of **\$285** for each and every day of unexcused delay from the date that Substantial Completion is achieved until Final Completion is achieved.

The CITY will have the right to offset such liquidated damages against any remaining portion of the Contract Price due CONTRACTOR, but will not be limited to the offset if it is insufficient. If the unpaid balance of the Contract Price is less than the amount of the Liquidated Damages, the CONTRACTOR or its Surety must pay the deficiency to the CITY upon demand.

#### **ARTICLE IV. CONTRACT PRICE**

Subject to any adjustments that may be authorized pursuant to this Contract, the Contract Price due the CONTRACTOR is \$>\_\_\_\_\_ for work completed and accepted in accordance with the Contract Documents. The Contract Price represents the CONTRACTOR's sole compensation from the CITY for prosecution of the Work. The Contract Price will be paid in a series of Progress Payments and a Final Payment, and is subject to retainage, as further described in the Contract Documents.

#### **ARTICLE V. PERFORMANCE SECURITY**

CONTRACTOR must provide a payment bond and a performance bond, or alternate form of Performance Security in an amount equal to 100% of the Contract Price >if the contract price exceeds \$100,000.00.

Additional requirements associated with the provision of Performance Security, including requirements to increase the amount provided, are set forth in the General Conditions and, if applicable, the Supplemental General Conditions.

#### **ARTICLE VI. INDEMNIFICATION**

A. CONTRACTOR hereby indemnifies and holds harmless the CITY from and against all liabilities, damages, losses, and costs, including but not limited to reasonable attorneys' fees, arising out of or resulting from the Work provided that the liabilities, damages, losses, and costs are caused in whole or in part by any negligence, recklessness, or intentional wrongful misconduct of CONTRACTOR, any subcontractor, anyone directly or indirectly employed by any one of them, or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder. This indemnification agreement is separate and apart from, and in no way limited by, any insurance provided pursuant to this agreement or otherwise.

B. CONTRACTOR indemnifies the CITY against any claim of supplier's or subcontractor's lien (in cases where such payment is not already guaranteed by payment bond). If any claim or lien remains unsatisfied after all payments are made, CONTRACTOR must refund to the CITY all monies that the latter may be compelled to pay in discharging such a lien, including all costs and a reasonable attorney's fee.

C. For purposes of the obligations stated in this Article, references to the CITY include the CITY's officers, employees, and agents.

D. CONTRACTOR's obligations under this Article are made without regard to the availability of insurance of the CITY or the Engineer/Architect.



## ARTICLE VII. INSURANCE

### A. **Required Insurance.**

CONTRACTOR will purchase and maintain, at its own expense, the following types and amounts of insurance, primary and non-contributory with the CITY's own insurance, in form and companies satisfactory to the CITY:

1. **Workers' Compensation Insurance** – As required by Florida Statutes, Chapter 440, Workers' Compensation Insurance, for all employees of CONTRACTOR employed at the project site or in any way connected with the Work.

The insurance required by this provision will comply fully with the Florida Workers' Compensation Law and include Employers' Liability Insurance with limits of not less than \$500,000 per accident. Any associated or subsidiary company involved in the service must be named in the Workers' Compensation coverage.

2. **Liability insurance – Including Commercial General Liability coverage** for operations, independent contractors, products-completed operations, broad form property damage, collapse and underground, and personal injury on an "occurrence" basis, insuring the CONTRACTOR and any other interests, including but not limited to any associated or subsidiary companies involved in the Work; and **Automobile Liability coverage** insuring claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle used by CONTRACTOR at the project site or in any way connected with the Work.

THE COMMERCIAL GENERAL LIABILITY INSURANCE POLICY WILL NAME THE CITY AS AN ADDITIONAL INSURED. CONTRACTOR'S Commercial General Liability insurance policy shall provide coverage to CONTRACTOR, and CITY when required to be named as an additional insured either by endorsement or pursuant to a blanket additional insured endorsement, 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) without the attachment of any endorsements excluding or limiting coverage for Products/Completed Operations, Independent Contractors, Property of CITY in Contractor's Care, Custody or Control or Property of CITY on which contracted operations are being performed, Explosion, Collapse or Underground hazards (XCU Coverage, Contractual Liability or Separation of Insureds). When CITY is added as additional insured by endorsement, ISO Endorsements CG 20 10 and CG 20 37 or their equivalent shall be used to provide such Additional Insured status.

The limit of liability will be a combined single limit for bodily injury and property damage of no less than \$1,000,000 per occurrence. If insurance is provided with a general aggregate, the aggregate will be in an amount of no less than \$2,000,000. The Risk Manager may authorize lower liability limits for the automobile policy only, at the Risk Manager's sole discretion.

Unless specifically waived hereafter in writing by the Risk Manager, CONTRACTOR agrees that the insurer will waive its rights of subrogation, if any, against the CITY on of the above-listed types of required insurance coverage.

3. **Builders' Risk** - The CONTRACTOR is required to maintain Builders Risk Insurance on an "all risk" basis, including but not limited to the completed value basis on the insurable portion of the work for the benefit of the CITY, the CONTRACTOR and subcontractors as their interests may appear. The CITY, the CONTRACTOR and any subcontractor insured therein waive all rights against each other for damages caused by fire and other perils to the extent covered by the insurance obtained pursuant to this paragraph.

**B. Subcontractors' Insurance.** Each of CONTRACTOR's subcontractors will be required to provide insurance in substantially similar form to the insurance required of CONTRACTOR above based on the services they will provide to the project.

**C. Proof of Insurance.** CONTRACTOR will furnish proof of insurance acceptable to the CITY prior to or at the time of execution of this Contract. CONTRACTOR will not commence Work until all required insurance has been approved by the CITY. CONTRACTOR will furnish evidence of all required insurance in the form of certificates of insurance which will clearly outline all hazards covered as itemized above, the amounts of insurance applicable to each hazard and the expiration dates.

Upon request of the Risk Manager, CONTRACTOR will also provide the CITY copies of the insurance contracts referenced by the certificates.

**D. Cancellation and Replacement.** CONTRACTOR will file replacement certificates 30 days prior to expiration or termination of any required insurance occurring prior to expiration or termination of this Contract. If such insurance terminates without CONTRACTOR's prior knowledge, immediately upon becoming aware of such termination CONTRACTOR will provide notice to the City's Risk Manager at P.O. Box 2451, Daytona Beach, Florida 32115-2451.

The CITY reserves the right to suspend any or all of the Work until such insurance has been replaced, or to obtain replacement insurance at CONTRACTOR's sole cost.

**E. Termination of Insurance.** CONTRACTOR will not cancel any required insurance coverage until the work is completed, accepted by the CITY and CONTRACTOR has received written notification from the Risk Manager that CONTRACTOR is authorized to cancel the insurance and the effective date of such authorization. The Risk Manager will provide such written notification at the request of CONTRACTOR if the request is made no earlier than two weeks before the work is to be completed.

The liabilities of CONTRACTOR under this Contract will survive and not be terminated, reduced, or otherwise limited by any expiration or termination of insurance coverage. Neither approval nor failure to disapprove insurance furnished by the contractor will relieve the CONTRACTOR or its sub-contractors from responsibility to provide insurance as required by the contract.

## **ARTICLE VIII. NOTICES**

A. Where the Contract Documents authorize or require the CITY to provide notice to CONTRACTOR, notice may be provided by delivery by hand to CONTRACTOR's designated Superintendent at the Project Site, or in the absence or unavailability of the Superintendent to any other person on the Project Site who holds himself or herself out as managing the Work on behalf of CONTRACTOR, or in lieu of either of these, by written notice to the address provided below.

B. Where the Contract Documents authorize or require CONTRACTOR to provide notice to the CITY, notice may be provided only by written notice to the address provided below.

C. Written notice is valid only if sent by certified United States mail, return receipt requested, facsimile with confirmation receipt required, or by recognized courier such as Federal Express with confirmation receipt requested. All such notices will be deemed to have been duly given and provided on (i) the date of receipt, (ii) upon receipt or refusal of delivery if transmitted by registered or certified mail, return receipt requested, or (iii) the first business day after the date of deposit, if transmitted by reputable overnight courier service, whichever occurs first. Written notices will be sent to the following persons:

If to the CITY:  
Attn: Kimberly Dixon, Engineer II  
The City of Daytona Beach Utilities  
125 Basin St., Suite 131  
Daytona Beach, FL 32114  
Fax: 386-671-5963

If to the CONTRACTOR:  
Attn: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Fax: \_\_\_\_\_

provided, however, that either Party may by written notice change the address designated for receipt of written and faxed notices.

#### ARTICLE IX. DISPUTE RESOLUTION

If a dispute exists concerning this Contract, the Parties agree to use the following procedure prior to pursuing any judicial remedies.

A. **Negotiations Required.** A Party will request in writing that a meeting be held between representatives of each Party within 14 days of the request or such later date that the Parties may agree to. Each Party will attend and will include, at a minimum, a senior level decision maker (an owner, officer, or employee of each organization) empowered to negotiate on behalf of their organization. The purpose of this meeting is to negotiate the matters constituting the dispute in good faith. The Parties may mutually agree in writing to waive this step and proceed directly to mediation as described below.

B. **Non-Binding Mediation.** Mediation is a forum in which an impartial person, the mediator, facilitates communication between parties to promote reconciliation, settlement, or understanding among them. Within 30 days after the procedure described above proves unsuccessful or the Parties mutually waive the procedure, the Parties will submit to a non-binding mediation. The mediation, at a minimum, will provide for (i) conducting an on-site investigation, if appropriate, by the mediator for fact gathering purposes, (ii) a meeting of all Parties for the exchange of points of view and (iii) separate meetings between the mediator and each Party to the dispute for the formulation of resolution alternatives. The Parties will select a mediator trained in mediation skills and certified to mediate by the Florida Bar, to assist with resolution of the dispute. The Parties will act in good faith in the selection of the mediator and give consideration to qualified individuals nominated to act as mediator. Nothing in this Contract prevents the Parties from relying on the skills of a person who also is trained in the subject matter of the dispute or a contract interpretation expert. Each Party will attend and will include, at a minimum, a senior level decision maker (an owner, officer, or employee of each organization) empowered to negotiate on behalf of their organization.

If the Parties fail to reach a resolution of the dispute through mediation, then the Parties are released to pursue any judicial remedies available to them.

#### **ARTICLE X. GENERAL PROVISIONS**

A. This Contract will be governed by the laws of the state of Florida without regard to any choice of law principles that could result in application of the laws of any other jurisdiction. Venue for any legal action or proceeding arising out of this Contract is exclusively in the federal or state courts in and for Volusia County, Florida. The Parties hereby waive any right to stay or dismiss any action or proceeding brought under or in connection with this Contract that is brought before the above-referenced courts on the basis of *forum non-conveniens*.

B. In case of litigation arising out of this Contract where the meaning of one or more provisions is at issue, the CITY will not be penalized by virtue of its having drafted this Contract. CONTRACTOR has carefully reviewed and had the opportunity to seek advice of legal counsel prior to executing this Contract.

C. The CITY and CONTRACTOR agree that they have knowingly waived the right to trial by jury and have instead agreed that, in the event of any litigation arising out of or connected to this Contract, to proceed with a trial before the court, unless both parties subsequently agree otherwise in writing.

D. In performing the services provided for herein, CONTRACTOR is an independent contractor and not an employee of the CITY.

E. The waiver of any provision of this Contract will not be deemed to be a waiver of any other provision of this Contract. No waiver of any provision of this Contract will be deemed to constitute a continuing waiver unless expressly provided in writing, nor will a waiver of any default be deemed a waiver of any subsequent defaults of the same type. The failure at any time to enforce this Contract, whether the default is known or not, does not constitute a waiver or estoppel of the right to do so.

F. All terms and conditions of this Contract which contemplate a period of time beyond completion or termination, will survive such completion or termination and not be merged therein or otherwise terminated.

G. If any word, phrase, clause, sentence or provision of the Contract, or the application of same to any person or set of circumstances is for any reason held to be unconstitutional, invalid or unenforceable, that finding will only effect such word, phrase, clause, sentence or provision, and such finding will not affect the remaining portions of this Contract; this being the intent of the Parties in entering into the Contract; and all provisions of the Contract are declared to be severable for this purpose.

H. The undersigned representative of CONTRACTOR affirms that in executing this Contract on behalf of CONTRACTOR, he or she is fully authorized to bind CONTRACTOR to the terms and conditions herein set forth.

I. No CITY officer, employee, or independent consultant who is involved in the development, evaluation, or decision-making process of the performance of any solicitation will have a financial interest, direct or indirect, in the Contract resulting from that solicitation. Any violation of this

provision, with the knowledge, expressed or implied, of CONTRACTOR will render the Contract voidable by the CITY.

J. This Contract represents the entire and integrated agreement between the CITY and CONTRACTOR with respect to the subject matter hereof and supersedes all prior negotiations, representations or agreements, either written or oral.

IN WITNESS WHEREOF, the Parties have executed this Contract on the dates written below.

**THE CITY OF DAYTONA BEACH**

**>CONTRACTOR**

By: \_\_\_\_\_  
Derrick L. Henry, Mayor

By: \_\_\_\_\_  
Printed Name: \_\_\_\_\_  
Title: \_\_\_\_\_

Attest: \_\_\_\_\_  
Letitia LaMagna, City Clerk

Date: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to legal form:

By: \_\_\_\_\_  
Robert Jagger, City Attorney

# GENERAL CONDITIONS

## ARTICLE 1 – DEFINITIONS AND TERMS

### 1.1 Defined Terms.

Whenever used in the Contract the following terms have the meanings indicated, which are applicable to both the singular and plural thereof

*“50-Percent Completion”* means the point at which the OWNER has expended 50% of the Adjusted Contract Price.

*“Adjusted Contract Price”* means the Contract Price as set forth in the Contract, as previously adjusted by valid Change Order.

*“Bid”* means the offer of the Bidder.

*“Bid Schedule”* means the Bid Schedule submitted by CONTRACTOR with the Bid; unless CONTRACTOR was the sole responsive bidder and the Parties have negotiated final pricing as part of the bid solicitation process pursuant to the Purchasing Code, in which instance the term means the Revised Bid Schedule included within the Contract Documents.

*“Change Instrument”* means a Field Directive or a Change Order.

*“Change Order”* means a written directive issued by the OWNER authorizing an adjustment in the Contract Price, the Contract Time, the scope of Work, or any other material term or condition of the Contract. When approved by the City Commission, a change order may be in the form of a formal amendment to this Contract.

*“City Code”* means the City of Daytona Beach Code of Ordinances.

*“City Commission”* or *“Commission”* means the City of Daytona Beach City Commission.

*“City Manager”* means the City Manager for the City.

*“Commencement Date”* means the date established in the Notice to Proceed upon which the Contract Time begins to run; or if no such date is provided in the Notice to Proceed, the date of the Notice to Proceed.

*“Construction Contract form”* means that part of the titled as “Project-Specific Construction Contract” or something similar, and signed by the Parties.

*“Contract”* includes all Contract Documents.

*“Contract Administrator”* means the individual specifically authorized to administer the Contract on the OWNER’s behalf; provided, however that in all instances the City Manager may act as the Contract Administrator.

*“Contract Price”* means the total compensation due to CONTRACTOR for the Work to be performed under the contract, subject only to those adjustments provided in the Contract Documents.

*“Contract Time”* means the total period of time stated in the Contract between the Commencement Date and the deadline for Final Completion, subject only to those adjustments provided in the Contract Documents.

*“Critical Path”* means the longest series of tasks that runs consecutively from the beginning to the end of the Project, as determined by duration and workflow sequence. This longest path sets the managerial standard for how quickly the Project can be completed, given appropriate resources.

“Day” or “Days” means calendar days unless otherwise specifically noted in the Contract Documents.

“Defective Work” or “Nonconforming Work” means Work that:

- (i) Does not conform to the requirements of the Contract;
- (ii) Does not meet the requirements of any inspection, test, or approval as referred to in the Contract or as required by law;
- (iii) Contains defects;
- (iv) Represents a substitute for that required by the Technical Provisions, unless properly approved and authorized as provided in the Contract; or
- (v) Has been damaged or destroyed prior to Final Completion.

“Effective Date” means the date on which this Contract is approved by City Commission.

“E/A” (also, “Engineer/Architect”, “Architect, or “Engineer” as applicable ) generally means the professional licensed architect or engineer who develops the criteria and concept for the Project, performs the analysis, and is responsible for the preparation of the Technical Provisions and Plans. The E/A may be the OWNER’s in-house staff or a consultant retained by the OWNER. No contractual relationship is created by this Contract between CONTRACTOR and the E/A.

“Equipment” means the machinery and equipment, together with the necessary supplies for upkeep and maintenance thereof, and all other tools and apparatus necessary for the construction and acceptable completion of the Work.

“Field Directive” means a written order prepared and signed by the OWNER, not involving a change in Contract Price or Contract Time, directing a minor change in the Work where a Change Order is not required.

“Final Completion” means acceptance of the Work by the OWNER as evidenced by its signature upon the Certificate of Final Completion.

“Force Account” means a method for payment of additional Work that is based on CONTRACTOR’s labor, equipment and materials costs with consideration for overhead and profit.

“Force Majeure Event” means conditions or other circumstances, such as acts of God, that: (i) were not foreseen, and could not have been reasonably foreseen, by CONTRACTOR or the OWNER, (ii) are beyond the control of CONTRACTOR and the OWNER, and (iii) materially hinder or interfere with the ability of CONTRACTOR to prosecute the Work; provided, however, that no such condition or circumstance will be a Force Majeure event if it is the result of CONTRACTOR’s fault, negligence, or material breach of this Contract. Examples of Force Majeure events include wars, floods, strikes and labor disputes, unusual delay in transportation, epidemics abroad, earthquakes, and severe adverse weather conditions not reasonably anticipated.

“Hazardous Materials” has the meaning as provided by law.

“Legal Requirements” means, collectively, all applicable federal, state, and local laws, codes, ordinances, rules, regulations, orders and decrees of any government or quasi-government entity having jurisdiction over the Project or Site, the practices involved in the Project or Site, or any Work. The term includes the City Code and other CITY ordinances and regulations.

“Materials” means goods or substances to be incorporated in the Work under the Contract.

“Milestone” means a significant event specified in the Contract Documents relating to an intermediate completion date or time prior to Final Completion of the Work.

“OWNER” means the City of Daytona Beach; or, if the form Contract so provides, the Community Redevelopment Agency for the CITY. All references within the Technical Provisions to the “CITY” (whether or not capitalized) are intended to refer to the “OWNER” unless logic dictates otherwise.

“Plans” means the plan documents prepared by the E/A and identified in the Table of Contents or otherwise incorporated into the Contract, including reproductions thereof, showing the location, character, dimensions, and details of the Work. The term may also be referred to herein as “drawings,” “contract drawings,” “contract plans,” or similar terms; but not “shop drawings.”

“Project” means the subject of the Work and its intended result.

“Project Site” or “Site” means the land or premises on which the Project is located, and in addition any land and areas identified in and permitted for use by CONTRACTOR by the Contract, subject to conditions that may apply such as for rights-of-way, permits, and easements.

“The Prompt Payment Act” means the Local Government Prompt Payment Act, F.S. § 218.70 et seq. (2014), as hereafter amended.

“Purchasing Code” means the provisions of Chapter 30 of the City Code.

“Referenced Standards” includes standards, standard details, specifications, manuals, regulations or codes of any technical society, organization or association, or of any governmental or quasi-governmental authority referred to in the Contract to describe the nature or quality of any of the Work, whether such reference be specific or by implication, and means the latest standard, standard detail, specification, manual, regulation or code in effect at the time of Bid opening, except as may be otherwise specifically stated in the Contract.

“Resident Project Representative” means, where the E/A is a private firm or person under contract with the CITY to act as the E/A, the authorized representative of E/A assigned to the Project Site; and in all other instances, the Contract Administrator.

“Risk Manager” means the Risk Manager for the CITY or designee; provided however, that the City Manager may act on behalf of the Risk Manager.

“Schedule of Values” means the written breakdown of the Contract Price by Construction Specification Institute divisions or by other format acceptable to the OWNER, prepared by CONTRACTOR for OWNER’s review and approval.

“Shop Drawings” means all drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for CONTRACTOR and submitted by CONTRACTOR as required by this Contract.

“Site-Related Reports” means any environmental, geotechnical, subsoil, and related reports relating to conditions at the Project Site which were used or made available for the OWNER’s or E/A’s use in creating the Plans.

“Specifications” means the Technical Provisions and Plans.

“Stored Materials” means delivered materials or equipment that are located at the Project Site, or with the OWNER’s approval at another location, and that have not yet been incorporated into the Work.

“Subcontractor” means a person or firm that under a direct contract with CONTRACTOR to perform a portion of the Work, and also unless logic dictates otherwise, sub-subcontractors and persons or firms doing work through such sub-subcontractors.

“Substantial Completion” means the completion of the Work, or an agreed upon portion of the Work, so as to allow the OWNER to occupy and use the Project or a portion thereof for its intended purposes.



“*Sub-subcontractor*” means a person or firm who has a direct or indirect contract at any tier with a subcontractor to perform a portion of the Work.

“*Supplemental General Conditions*” means that part of the Contract labeled as such and identified in the Table of Contents or otherwise incorporated into the Contract, that amends and supplements these General Conditions.

“*Supplier*” means a person or firm having a contract with CONTRACTOR or with any subcontractor of any tier to furnish materials to be incorporated in the Work.

“*Technical Provisions*” means those provisions of the Contract containing or referencing required technical specifications and standards. The term includes all such technical specifications and standards of other governmental jurisdictions, or professional association where referenced in the Contract, including any exceptions thereto regardless of whether these are attached to or enumerated within the Contract.

Whenever this Contract refers to but does not include a specific Technical Provision, the reference will be deemed to be to the version of the referenced Technical Provision included in the applicable CITY engineering or utility standard unless logic dictates otherwise.

“*Unilateral Change Instrument*” means a Change Instrument issued by the OWNER and not executed by CONTRACTOR.

“*Unit Price Schedule*” means the Bid Schedule.

“*Working Hours*” means 7:00 am through 6:00 pm, Monday through Friday excluding holidays designated by the CITY.

**1.2 Abbreviations.** The following abbreviations, when used in the Contract, represent the full text shown.

AAN	American Association of Nurserymen, Inc.
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AGC	The Associated General Contractors of America, Inc.
AGMA	American Gear Manufacturers Association
AIA	American Institute of Architects.
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute, Inc.
APWA	American Public Works Association
AREA	American Railway Engineering Association
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWG	American Wire Gauge
AWPA	American Wood Preservers Association
AWS	American Welding Society
AWWA	American Water Works Association
CRSI	Concrete Reinforcing Steel Institute
DIPRA	Ductile Iron Pipe Research Association
EASA	Electrical Apparatus Service Association
EPA	Environmental Protection Agency of the United States Government
FDHR	Florida Division of Historical Resources
FEMA	Federal Emergency Management Agency
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
FHWA	Federal Highway Administration
FSS	Federal Specifications and Standards

IEEE	Institute of Electrical and Electronics Engineers
IES	Illuminating Engineering Society
IFAS	Institute of Food and Agricultural Sciences
IMSA	International Municipal Signal Association
IPCEA	Insulated Power Cable Engineers Association
ISA	International Society of Arboriculture
ISO	International Organization for Standards
MPO	Volusia County Metropolitan Planning Organization
MSTCSD	Minimum Specifications for Traffic Control Signals and Devices
MUTCD	Manual on Uniform Traffic Control Devices
NACE	National Association of Corrosion Engineers
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NIST	National Institute for Standards and Technology
NOAA	National Oceanic and Atmospheric Administration
NSPE	National Society of Professional Engineers
OSHA	Occupational Safety and Health Administration
SAE	Society of Automotive Engineers
SJWRMD	St. Johns River Water Management District
SI	International System of Units
SSPC	Society of Protective Coatings
UL	Underwriters' Laboratories
USACOE	United States Army Corps of Engineers
USGS	United States Geological Service

Each of the above abbreviations, when followed by a number or letter designation, or combination of numbers and letters, designates a specification, test method, or other code or recommendation of the particular authority or organization shown. Where the above-referenced abbreviations refer to a written standard, specifications, test method, or other code, the reference will be deemed to be the edition of the code promulgated at the time of Bid opening.

### 1.3 Use of Terms.

**1.3.1 Singular and Plural.** The OWNER, E/A, CONTRACTOR, subcontractor, sub-subcontractor, supplier, other contractors, surety, insurer and others may be referred to in the Contract Documents as if singular in number. In the event that more than one person or entity occupies the position referred to and unless otherwise indicated, the term is interpreted to include all such persons or entities.

**1.3.2 Technical Terms and Trade Usage.** Terms in the Contract which have well-known technical or construction industry meanings and are not otherwise defined are used in accordance with such recognized meanings unless the context clearly indicates otherwise.

## ARTICLE 2 –ORGANIZATION AND INTENT OF CONTRACT

### 2.1 Interpreting the Contract.

**2.1.1 Order of Precedence.** In cases of conflict or discrepancy among Contract Documents, interpretations will generally be based on the following order of precedence, ranked from highest to lowest priority:

- .1 Change Orders;
- .2 The Construction Contract form;
- .3 Supplemental General Conditions, if any;
- .4 General Conditions;

- .5 Technical Provisions;
- .6 Plans (figured dimensions will govern over scaled dimensions);
- .7 The Invitation to Bid and General and Supplemental Instructions to Bidders, including Addenda thereto;
- .8 The Bid Schedule;
- .9 All other documents required to be submitted and submitted as part of CONTRACTOR's Bid Proposal; and
- .10 All other Contract Documents that are neither listed above nor expressly incorporated into one of the foregoing Contract Documents;

with the understanding that a common sense approach will be used as necessary so that the Contract Documents produce the intended response.

**2.1.2 Contract Documents Complementary.** The Contract Documents are complementary, and what is required by one is as binding as if required by all. Anything mentioned in the Specifications and not shown on the Drawings, or shown on the Drawings and not mentioned in the Specifications, are of like effect as if shown or mentioned in both.

**2.1.3 Intent to Require Completed Project.** The intent of the Contract Documents is to require that CONTRACTOR provide all materials and labor, including tools, equipment and supervision, necessary for the proper execution and completion of the Work as a functioning whole or required for a completed Project.

**2.1.4 Work Required if Reasonably Inferable.** Performance by CONTRACTOR is required to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the intended results. Where no explicit quality or standards for materials or workmanship are established for the Work, the Work is to be of good quality for the intended use and consistent with the quality of surrounding Work which conforms to the requirements of the Contract Documents and to the standards for construction of the Project generally.

**2.1.5 Organization of Drawings and Specifications.** Organization of the Drawings around professional disciplines such as civil, architectural, structural, plumbing, mechanical, and electrical, and of the Specifications into divisions, sections, and articles, does not control CONTRACTOR in dividing the Work among sub-contractors or in establishing the extent of Work to be performed by any trade or excuse CONTRACTOR of its obligation to properly allocate and provide for the performance of all Work under the Contract.

**2.1.6 Documents Excluded from the Contract.** The Contract Documents do not include the Site-Related Reports referenced herein or other documents issued or provided to CONTRACTOR for the information of CONTRACTOR or for reference purposes and which are not specifically incorporated in the Contract Documents.

**2.1.7 Titles, Headings, and Capitalization.** The titles and headings of the various sections and subsections of these General Conditions and other Contract Documents are intended only as a matter of reference and convenience and in no way define, limit, or prescribe the scope or intent of the Contract Documents. The use, or inadvertent failure to use, capitalization of terms used in the Contract Documents is not intended to define or limit the meaning of the term.

### **3.1.8 Other Interpretive Rules.**

**2.1.8.1** Provisions of the Contract Documents that use the active voice-imperative mood writing style are directions to CONTRACTOR and are intended as commands. In such instance, the subject "the Bidder" or "CONTRACTOR" is understood.

**2.1.8.2** Provisions of the Contract Documents that use the passive voice writing style are also directions to CONTRACTOR and intended as commands unless logic clearly dictates otherwise.

**2.1.8.3** Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

## **2.2 Referenced Standards.**

**2.2.1 Standards Incorporated.** All Referenced Standards are incorporated into the Contract as fully as if printed and bound with the Specifications, but only to the limited extent that such standards are applicable to the Work.

**2.2.2 Availability of Referenced Standards.** CONTRACTOR is responsible for obtaining and having available at the Project Site a copy of each Referenced Standard insofar as it is applicable to the Work.

**2.2.3 Precedence of Contract Documents Over Referenced Standards.** No provision of a Referenced Standard is effective to change (i) the procedures established in the Contract Documents or by any applicable laws or regulations, or (ii) the duties and responsibilities of the OWNER, E/A or CONTRACTOR from those set forth in the Contract Documents; nor is any provision of a Referenced Standard effective to assign to the OWNER or the E/A any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility inconsistent with the Contract.

## **ARTICLE 3 - PRELIMINARY MATTERS**

**3.1 Pre-Contract Submittals.** The OWNER reserves the right to require certain Submittals before executing the Contract. Submittals required before execution of the Contract include, but are not limited to Insurance certificates acceptable to the OWNER as provided in the Contract and any other submittals required by the Bid Documents.

**3.2 Project Information.** Within ten days after the Effective Date, the OWNER will furnish CONTRACTOR free of charge, two signed, sealed, hard copies and one electronic copy of the Plans in AutoCAD and the Technical Provisions in PDF format, and one copy of each of the Site Related Reports, if any. All Site Related Reports are given to CONTRACTOR for information only, are not warranted as to accuracy, and are not a part of the Contract Documents. CONTRACTOR will not be entitled to rely on the accuracy or the completeness of any information contained in these Reports in performing the Work required herein, or in seeking claims for Contract Price or Contract Time adjustments. It is the CONTRACTOR's responsibility to determine and verify all information provided by OWNER including, but not limited to grades and elevations.

**3.3 CONTRACTOR's Review of Contract Documents and Site Related Reports.** Before undertaking a project, CONTRACTOR will carefully study the Contract Documents and any Site Related Reports provided by OWNER, to check and verify pertinent figures shown thereon compares accurately to all applicable field measurements. CONTRACTOR will promptly report in writing to the Contract Administrator any conflict, error, ambiguity, or discrepancy that CONTRACTOR discovers and will obtain a written interpretation or clarification from the Contract Administrator before proceeding with any Work affected thereby. CONTRACTOR will be liable to the OWNER for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents or Site Related Reports of which CONTRACTOR knew or reasonably should have known.

## **3.4 Pre-Construction Submittals.**

**3.4.1** CONTRACTOR will prepare and submit all required pre-construction submittals within 15 Days after the Effective Date, except where the Contract Administrator extends time for submittal in writing. The submittals will include each of the following:

**3.4.1.1** A proposed Progress Schedule, developed using Microsoft Project software unless otherwise approved by the Contract Administrator. The Progress Schedule will (i) indicate the times (number of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract, (ii) identify the Critical Path for completing the Work, (iii) identify when all subcontractors will be utilized,

and (iv) take into consideration any Working Hours limitations. The Progress Schedule will contain sufficient detail to indicate that CONTRACTOR has identified all required Work elements and tasks, has provided for a sufficient and proper workforce and integration of subcontractor, has provided sufficient resources and has considered the proper sequencing of the Work required to result in a successful Project that can be completed in accordance with any Milestones and within required completion deadlines.

**3.4.1.2** A proposed Schedule of Values, except where the Contract Price is based solely on Unit Prices set forth in the Bid Schedule. The Schedule of Values will be prepared in such a manner that each item of Work is shown as one or more line items on AIA Document G703, Continuation Sheet (latest ed.) or such other form as the OWNER may prescribe, and will contain such detail and be supported by such data as to allow the OWNER and the E/A to substantiate accuracy. Upon approval by the OWNER, the Schedule of Values will be used as the basis for reviewing progress payment requests. After the OWNER has approved the initial Schedule, CONTRACTOR will revise and resubmit for the OWNER's approval, amended Schedules of Values as necessary to reflect adjustments in the Contract Price resulting from approved Change Orders. A schedule of values may be required if a substantial portion of the contract price is a lump sum bid item.

**3.4.1.3** An organizational chart showing the principals and management personnel who will be involved with the Work, including each one's responsibilities for the Work.

**3.4.1.4** Preliminary Shop Drawings. Shop Drawings will be neat, legible, and drawn to scale. CONTRACTOR will specifically identify any proposed deviations from dimensions, details, and other requirements as provided by the Plans and specifications. When submitting Shop Drawings, CONTRACTOR will also provide a written narrative explanation itemizing each proposed deviation from the Specifications or other Contract requirements. No such deviations will be deemed to be accepted unless they are specifically approved in accordance with the procedures for substitutes and Change Orders.

**3.4.1.5** To the extent not set forth in the Contract, a letter designating the Superintendent and, if such designation is required by the Supplemental General Conditions, the Project Manager.

**3.4.1.6** A letter designating CONTRACTOR's safety representative, who will be responsible for general safety and excavation safety measures along with certifications or other documentation of the safety representative's qualifications.

**3.4.1.7** If applicable, an excavation safety system plan.

**3.4.1.8** If applicable, a plan illustrating proposed locations of temporary facilities.

**3.4.1.9** A completed Non-Use of Asbestos Affidavit (prior to construction).

**3.4.1.10** A map of proposed "haul routes" for delivery of materials and transportation of equipment to the Project Site.

**3.4.1.11** A letter designating the Florida Registered Professional Land Surveyor for layout of the Work, if the Work requires the services of a surveyor.

**3.4.1.12** Any other documents as required by the OWNER, consistent with the terms of the Contract.

The Supplemental General Conditions (if any) or the Technical Provisions may amplify, waive, or otherwise amend requirements for the above-referenced submittals.

**3.4.2** The OWNER will have the right to accept or reject each of the required submittals. The OWNER will provide CONTRACTOR written notice as to any submittals that are rejected, in which instance CONTRACTOR will promptly resubmit them. Alternatively in such instance, the OWNER will have the right but not the obligation to schedule a preconstruction meeting; provided that the preconstruction meeting is scheduled no later than 30 days

after the Effective Date, and the OWNER may delay issuance of the Notice to Proceed until the OWNER and CONTRACTOR have held the meeting.

**3.4.3** The OWNER's acceptance of the above-referenced submittals will be deemed to be general only relating solely to their sufficiency and compliance with the intent of the Contract. Such acceptance does not constitute the OWNER's adoption, affirmation, or direction of CONTRACTOR's means and methods, and does not constitute a Change Instrument. OWNER's acceptance of the Progress Schedule will not impose on the OWNER, responsibility or liability for the sequencing, scheduling, or progress of the Work, and will not relieve CONTRACTOR from CONTRACTOR's responsibility for complying with the terms and conditions of this Contract. CONTRACTOR will at all times remain responsible for the factual accuracy of all such submittals.

**3.5 Notice to Proceed.** No work will proceed until the OWNER has issued a written notice to proceed. The OWNER will issue a Notice to Proceed within 60 days after the Effective Date, provided that CONTRACTOR has submitted all required documents, including insurance and, where applicable Performance Security. The OWNER in its sole discretion may delay issuing the Notice if CONTRACTOR has not completed its preconstruction submittals within that time; or with CONTRACTOR's written concurrence for any other or no reason.

**3.6 Limitations on Custody and Use of Plans.** CONTRACTOR will not re-use the Plans and Technical Provisions, including modifications thereto, on any other project or for any other client. CONTRACTOR may not own or claim a copyright in the Site-Related Reports, or the Plans or any other Contract Documents. With the exception of the signed Contract Documents, all sets of the above-referenced documents are the property of the OWNER, and will be returned to the OWNER on request or at the completion of the Work prior to issuance of Final Payment.

**3.7 Availability of Lands.** The OWNER will provide access to the Project Site, secure any easements necessary therefore, and notify CONTRACTOR of any restrictions in such access. The OWNER may identify in the Contract Documents encumbrances or restrictions not of general application which are known by the OWNER and specifically related to use of the Site, but which are not of public record. CONTRACTOR will comply with such encumbrances and restrictions in performing the Work. Permanent easements for the completed facility or for changes in existing facilities will be obtained and paid for by the OWNER, unless otherwise provided in the Contract Documents.

#### **ARTICLE 4 – OWNER'S RESPONSIBILITIES**

**4.1 Contract Administrator.** The Contract Administrator is authorized to administer the Contract on behalf of the OWNER, commencing on the Effective Date and terminating on the date CONTRACTOR performance is completed (including final payment) or terminated.

**4.1.1** The Contract Administrator's authority is limited as follows:

- .1 Provide direction to CONTRACTOR to ensure satisfactory and complete performance;
- .2 Issue Field Directives;
- .3 Monitor and inspect CONTRACTOR performance to ensure acceptable timeliness and quality;
- .4 Maintain necessary documentation and records regarding CONTRACTOR performance and other pertinent matters;
- .5 Furnish timely written notice of CONTRACTOR performance failures to the City Manager and to the City Attorney, as appropriate;
- .6 Determine acceptance or rejection of CONTRACTOR's performance;
- .7 Approve or reject applications for payment, other than application for final payment;
- .8 Furnish necessary reports to the City Manager;
- .9 Recommend Change Instruments or stop work orders to the City Manager; and

- .10 Recommend termination of Contract or work authorizations for default or convenience to the City Manager.

4.1.2 The authority of the Contract Administrator is limited to the functions set forth above. In particular, the Contract Administrator is NOT authorized to make determinations (as opposed to recommendations) that:

- .1 Alter or modify Contracts;
- .2 Terminate or cancel Contracts;
- .3 Approve, as opposed to recommend, Change Orders or Contract Amendments;
- .4 **Except as expressly provided herein**, interpret ambiguities in Contract language; or
- .5 Approve final applications for payment; or
- .6 Waive the OWNER's contract rights.

4.2 **City Manager.** The City Manager has all of the authority of the Contract Administrator. The City Manager has authority to approve final applications for payment except where approval also requires approval of a change order that is not within the City Manager's authority, below. In addition, the City Manager is authorized to issue (i) Change Orders increasing Contract Price or Contract Time as provided in the Purchasing Code or as specifically authorized by the City Commission; (ii) Change Orders reducing Contract Price or Contract Time; and (iii) stop work orders where reasonably necessary to preserve property or prevent injury.

4.3 **Authority Reserved in City Commission.** All administrative authority not specifically conferred upon the Contract Administrator or City Manager is reserved to the City Commission. Modifications to the Contract required to be approved by the Commission may be in the form of Change Orders or formal amendments, as appropriate.

4.4 **General Obligation to Avoid Delays.** Information or services under the OWNER's control will be furnished by the OWNER with reasonable promptness to avoid delay in orderly progress of the Work. The OWNER will have a reasonable amount of time to investigate site conditions, review submittals, analyze requests for changes, and to make other decisions in the orderly administration of the Contract. CONTRACTOR will notify the OWNER in writing, if the time for the investigation, review, analysis of any submittals, required for changes or otherwise required for the OWNER's decision, impacts in any way the Critical Path of the current approved Progress Schedule.

4.5 **Owner-Provided Inspectors.** The OWNER will provide persons to perform OWNER-required inspections.

## ARTICLE 5 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS

CONTRACTOR will obtain any additional temporary construction facilities, stockpiling or storage sites not otherwise provided. CONTRACTOR will be responsible for providing at his own expense and without liability to the OWNER, any additional land and access thereto that may be required for temporary construction facilities, or for storage of materials. CONTRACTOR will be required to obtain approval of any private property owner for such additional lands and access unless specifically provided otherwise in the Contract Documents.

### 5.1 Subsurface and Physical Conditions.

5.1.1 CONTRACTOR affirms that CONTRACTOR has carefully examined the Plans and the Site-Related Reports, if any. CONTRACTOR acknowledges that the Site-Related Reports are **not** a guarantee of specific site conditions which may vary between boring locations, and that the Project Site is unwarranted.

5.1.2 CONTRACTOR affirms that prior to executing this Contract, CONTRACTOR has had the opportunity to become familiar with the Project Site and the local conditions under which the Project is to be constructed and operated, and to undertake its own geotechnical studies to the extent that CONTRACTOR deems appropriate. CONTRACTOR will not be entitled to any additional time or compensation as a result of any conditions at the Project Site which would have been disclosed to CONTRACTOR by a site visit or by undertaking its own geotechnical studies.

**5.1.3** CONTRACTOR will provide the OWNER written notice as soon as reasonably possible, but no later than three days, if unforeseen conditions are encountered at the Project Site which are subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents, or unknown physical conditions of an unusual nature that differ materially from those normally encountered in the type of work being performed under this Contract. CONTRACTOR may not disturb the conditions until the OWNER conducts an investigation. The OWNER will promptly investigate such conditions.

**5.1.3.1** If it is determined that such conditions differ materially and cause an increase or decrease in CONTRACTOR's cost of or time required for performance of any part of the Work, the Contract Administrator will recommend an equitable adjustment in the Contract Price or Contract Time, or both. If it is determined that such conditions are not materially different from those indicated in the Contract Documents, the Contract Administrator will notify CONTRACTOR in writing of such findings and the Contract will not be adjusted.

**5.1.3.2** CONTRACTOR will be liable to the OWNER for failure to report any such conflict, error, ambiguity, or discrepancy of which CONTRACTOR knew or reasonably should have known, and for CONTRACTOR's failure to report any conflict, error, ambiguity or discrepancy in the Contract Documents within said three-day period, and for any increases in Project costs, or damages accruing, in association with CONTRACTOR's disturbance of the conditions pending OWNER's investigation.

**5.1.4** Notwithstanding any other provision of this Contract, CONTRACTOR is solely responsible for the location and protection of any and all public utility lines and utility customer service lines in the Work area. "Public utility lines" means the utility distribution and supply system, and "utility customer service lines" means the utility lines connecting customers to the utility distribution and collection system. Generally, existing utility customer service line connections are not shown on the Plans. CONTRACTOR will notify "One Call" and exercise due care to locate, mark, uncover and otherwise protect all such lines in the construction zone and any of CONTRACTOR's work or storage areas. CONTRACTOR's responsibility for the location and protection of utilities is primary and non-delegable. CONTRACTOR will indemnify or reimburse such expenses or costs (including fines that may be levied against the OWNER) that may result from unauthorized or accidental damage to all public lines and utility customer service lines in the work area. The OWNER reserves the right to repair any damage CONTRACTOR causes to such utilities at CONTRACTOR's expense. If a public or customer service line is damaged by CONTRACTOR, CONTRACTOR will give verbal notice within one hour and written notice within 24 hours, to the OWNER and to the utility representatives identified on the Plans.

**5.1.5** CONTRACTOR will take reasonable precaution to avoid disturbing primitive records and antiquities of archaeological, paleontological or historical significance. No objects of this nature will be disturbed without written permission of the OWNER and the FDHR. When such objects are uncovered unexpectedly, CONTRACTOR will stop all Work in close proximity and notify the OWNER and the FDHR of their presence and will not disturb them until written permission and permit to do so is granted. All primitive rights and antiquities uncovered on the OWNER's property will remain property of FDHR conforming to applicable provisions of Florida Statutes. If the OWNER, in consultation with the FDHR, determines that exploration or excavation of primitive records or antiquities on Project Site is necessary to avoid loss, CONTRACTOR will perform salvage work attendant to preservation. If the Work stoppage or salvage work causes an increase in CONTRACTOR's cost of, or time required for, performance of the Work, the Contract Price or Contract Time will be equitably adjusted subject to compliance with the provisions herein for Changes and Delays.

**5.2 Protection of Reference Points.** Unless otherwise specified, the OWNER will furnish a base line and a suitable number of bench marks adjacent to the work. From the information provided by the OWNER, CONTRACTOR will develop and make all detailed surveys, stakes, lines, and elevations, as CONTRACTOR deems necessary. CONTRACTOR will carefully protect and preserve benchmarks, reference points, and stakes. If these benchmarks, reference points, or stakes are disturbed or destroyed due to CONTRACTOR's failure to comply with the above-referenced requirement, CONTRACTOR will bear the cost of expenses of relocating and replacing them, including the costs of a Registered Professional Land Surveyor if the OWNER determines the same to be necessary.



### **5.3 Hazardous Materials.**

**5.3.1** To the extent provided by applicable law, the OWNER will be responsible for any pre-existing hazardous material uncovered or revealed at the Project Site which was not shown, indicated or identified in the Contract Documents to be within the scope of the Work and which may present a substantial danger to persons or property exposed thereto in connection with the Work.

**5.3.1.1** CONTRACTOR will immediately stop Work in the affected area and will take all necessary precautions to avoid further disturbance of the materials. CONTRACTOR will also will immediately notify the OWNER and, if required by applicable law or regulations, all government or quasi-government entities with jurisdiction over the Project or Project Site.

**5.3.1.2** Upon receiving notice of the presence of suspected Hazardous Materials, the OWNER will take the necessary measures required to ensure that the Hazardous Materials are remediated or rendered harmless. Such necessary measures will include the OWNER retaining qualified independent experts to (i) ascertain whether Hazardous Materials have actually been encountered, and, if they have been encountered, (ii) prescribe the remedial measures that the OWNER will take either to remove the Hazardous Materials or render the Hazardous Materials harmless.

**5.3.1.3** CONTRACTOR will be obligated to resume Work at the affected area of the Project only after the OWNER provides written certification that (i) the Hazardous Materials have been removed or rendered harmless and (ii) all necessary approvals have been obtained from all government and quasi-government entities having jurisdiction over the Project or Site. CONTRACTOR will be responsible for continuing the Work in the unaffected portion of the Project and the Project Site.

**5.3.1.4** CONTRACTOR will be entitled, in accordance with these General Conditions, to an adjustment in its Contract Price or Contract Time(s) to the extent CONTRACTOR's cost or time of performance have been adversely impacted by the presence of Hazardous Materials.

**5.3.2** CONTRACTOR will maintain at the Project Site, available to the OWNER, appropriate information pertaining to all Hazardous Materials brought to the Project Site by CONTRACTOR or any subcontractor, and as may be required by the Supplemental General Conditions, if any. CONTRACTOR will ensure that all such materials are properly labeled or identified, and will properly store, handle and use them at all times. In accordance with federal Hazard Communication Standard (29 CFR § 1910.1200) and all other applicable Legal Requirements, manufacturers and distributors are required to label each Hazardous Material or chemical container, and to provide Material Safety Data sheets to the purchaser. CONTRACTOR will comply with these laws and will provide the OWNER with copies of all relevant documents, including Material Safety Data sheets prior to performance or services or contemporaneous with delivery of goods. CONTRACTOR will provide and designate appropriate and secure areas for their storage and will notify the OWNER of their presence and location at Project Site. CONTRACTOR will not store Hazardous Materials at the Project Site in excess of those reasonably needed for CONTRACTOR's prosecution of the Work, and will properly remove or dispose of all Hazardous Materials, including combustible waste, as soon as possible after completion of the operations in which they are utilized.

**5.3.3** No asbestos-containing materials will be incorporated into the Work or brought on Project Site without prior approval of the OWNER. CONTRACTOR will not knowingly use, specify, request or approve for use any asbestos containing materials or lead-based paint without the OWNER's written approval. When a specific product is specified, CONTRACTOR will endeavor to verify that the product does not include asbestos containing material.

**5.3.4** CONTRACTOR will be solely responsible for use, storage and remediation of any Hazardous Materials brought to Project Site by CONTRACTOR, subcontractors, sub-subcontractors, suppliers, and anyone else for whom CONTRACTOR is responsible. CONTRACTOR will indemnify, defend and hold harmless the OWNER and the OWNER's officers, directors, employees and agents from and against all claims, losses, damages, liabilities and expenses, including attorneys' fees and expenses, arising out of or resulting from those Hazardous Materials introduced to Project Site by CONTRACTOR, subcontractors, sub-subcontractors, suppliers, or anyone for whose acts they may be liable.

## ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

### 6.1 General Responsibilities.

**6.1.1 Scope of Work.** CONTRACTOR will provide, perform, and complete all necessary work, labor, services, transportation, equipment, materials, apparatus, machinery, tools, fuels, gas, electric, water, waste disposal, information, data and other means and items necessary to accomplish the Project at the Work Site, including measures for sediment control, storm water management, and waste disposal, in compliance with this Contract. CONTRACTOR is required to perform all Work specified in the Contract Documents and reasonably inferable from these Documents as being necessary to produce the intended results.

**6.1.2 Quality.** All materials and Work will be of good quality for the intended use and consistent with the quality of surrounding Work, and will conform to the requirements of the Contract Documents and to the standards for construction of the Project generally. All materials will be new.

**6.1.3 Construction Means and Methods.** CONTRACTOR will provide continuous on-site supervision and direction of the Work using CONTRACTOR's best efforts. CONTRACTOR will have control over construction means, methods, techniques, sequences, and procedures, unless the Contract Documents give other specific instructions concerning these matters, and is solely responsible therefore.

**6.1.4 Discipline at the Project Site.** CONTRACTOR will enforce strict discipline and good order among CONTRACTOR's employees and other persons for whose Work CONTRACTOR is responsible, including CONTRACTOR's employees, subcontractors, sub-subcontractors, and suppliers, and the agents and employees of any of them.

**6.1.5 Responsibility for Subordinates.** CONTRACTOR is responsible for the acts and omissions of all persons performing portions of the Work at the Project Site, including but not limited to CONTRACTOR's employees, subcontractors, sub-subcontractors, and suppliers, and the agents and employees of any of them.

**6.1.6 Assignment, Scheduling and Coordination.** CONTRACTOR is solely responsible for and has control over assigning, scheduling and coordinating all portions of the work under the Contract performed by CONTRACTOR's own forces and by its subcontractors, sub-subcontractors, and suppliers, in accordance with the approved Progress Schedule, unless the Contract Documents give other specific instructions concerning these matters.

**6.1.7 Obligations Not Relieved.** CONTRACTOR is not relieved of its obligations to perform the Work in accordance with the Contract Documents, by the activities or duties of the OWNER or the E/A in the administration of the Contract or of construction, or by tests, inspections, or approvals required or performed by persons other than CONTRACTOR.

**6.1.8 Ongoing Duty to Report Problems with Contract Documents.** If, during the performance of the Work, CONTRACTOR discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between any Contract Document and any Legal Requirement or of any such standard, specification, manual, or code or instructions of any manufacturer or supplier, CONTRACTOR will within three days of such discovery report it to the OWNER in writing, and CONTRACTOR will not proceed with the Work affected thereby until a Change Order has been issued. CONTRACTOR will be liable to the OWNER for failure to report any such conflict, error, ambiguity, or discrepancy of which CONTRACTOR knew or reasonably should have known. CONTRACTOR will be liable to the OWNER for CONTRACTOR's failure to report any conflict, error, ambiguity or discrepancy in the Contract Documents within said three-day period.

**6.1.9 Inspection of Work.** CONTRACTOR will make frequent inspections during the progress of the Work to confirm that work previously performed by CONTRACTOR is in compliance with the requirements of this Contract, and that any portion of Work previously performed by CONTRACTOR or by others is in proper condition to receive subsequent Work.

**6.2 Diligent Prosecution.** CONTRACTOR will at all times be responsible for the diligent prosecution of the Work so as to complete the Work within the Contract Time.

**6.2.1** CONTRACTOR will have an affirmative obligation to rearrange Milestones, notwithstanding the manner in which they are scheduled in the current approved Progress Schedule, as circumstances may require. If in order to meet this obligation CONTRACTOR rearranges the order of Work in a manner that materially departs from the current approved Progress Schedule, CONTRACTOR will within 3 days thereafter provide notice to the OWNER, who may require CONTRACTOR to submit a revised Progress Schedule reflecting the rearrangement. No revised Progress Schedule extending the Contract Time will be approved without the issuance of a Change Order in compliance with the Contract Documents.

**6.2.2** CONTRACTOR will carry on the Work and adhere to the current approved Progress Schedule, including during all disputes or disagreements with the OWNER. No Work will be delayed or postponed pending resolution of any disputes or disagreements, except as the OWNER and CONTRACTOR may otherwise agree through a Change Order or Contract amendment.

**6.3 Supervision and Superintendence.**

**6.3.1** CONTRACTOR will supervise 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.

**6.3.2** CONTRACTOR will have an English-speaking, competent Superintendent on the Work at all times that work is in progress. The Superintendent will be CONTRACTOR's representative on the Work and will have the authority to act on the behalf of CONTRACTOR. All communications given to the Superintendent will be as binding as if given to CONTRACTOR, even where written notice is otherwise required. Either CONTRACTOR or the Superintendent will provide a cellular telephone number and an emergency and home telephone number at which one or the other may be reached if necessary when Work is not in progress. The Superintendent will be an employee of CONTRACTOR, unless waived in writing by the OWNER. If CONTRACTOR proposes a management structure with a Project Manager supervising, directing, and managing construction of the work in addition to or in substitution of a Superintendent, the requirements of these Construction Documents with respect to the Superintendent will likewise apply to any such Project Manager.

**6.3.2.1** CONTRACTOR will present the resume of the proposed Superintendent to the OWNER showing evidence of experience and successful superintendence and direction of work of a similar scale and complexity. The OWNER may reject the proposed Superintendent if the OWNER determines that the proposed Superintendent does not have sufficient experience in line with the Work, in which instance CONTRACTOR will propose a different Superintendent for OWNER approval.

**6.3.2.2** CONTRACTOR will not replace the Superintendent without written notice to the OWNER. If CONTRACTOR deems it necessary to replace the Superintendent, CONTRACTOR will provide the necessary information for approval, as stated above, on the proposed new Superintendent.

**6.3.2.3** CONTRACTOR may designate a qualified substitute Superintendent if the designated Superintendent is temporarily away from the Work, subject to OWNER approval.

**6.3.2.4** CONTRACTOR will replace the Superintendent upon the OWNER's request, if the Superintendent is unable to perform to the OWNER's satisfaction.

**6.4 Labor, Materials, and Equipment.**

**6.4.1** CONTRACTOR will employ only orderly and competent workers, skillful in performance of the type of Work required under this Contract. CONTRACTOR will prohibit the use and possess any alcoholic or other intoxicating beverages, illegal drugs, or controlled substances while on the job or on the OWNER's property. Subject to the applicable provisions of Florida law, neither CONTRACTOR, nor subcontractors, suppliers, or other agents of CONTRACTOR, may use or possess any firearms or other weapons while on the job or on the OWNER's property. If the OWNER notifies CONTRACTOR that any officer, employee, subcontractor, supplier, or other agent

is incompetent, disorderly, abusive, or disobedient, has knowingly or repeatedly violated safety regulations, has possessed any firearms in contravention of the applicable provisions of Florida law, or has possessed or was under the influence of alcohol or drugs on the job, CONTRACTOR will immediately remove that person from performing Contract Work, and may not employ that person again on the Work without the OWNER's prior written consent. CONTRACTOR will at all times maintain good discipline and order on- and off-Project Site in all matters pertaining to the Project. CONTRACTOR will pay workers no less than the wage rates established by law, and maintain weekly payroll reports as evidence thereof.

**6.4.2** CONTRACTOR will not use any preexisting facilities of the OWNER without the specific written consent of the OWNER, except as indicated in the Contract Documents. CONTRACTOR is solely responsible for temporary facilities and services provided or utilized by CONTRACTOR and will remove those not required to remain at the completion of the Work or any portion thereof, will promptly correct any damage caused by the erection, use or removal of temporary facilities; and will restore the Project Site and any adjacent areas to their original condition or that required by the Contract Documents upon completion of the Work.

**6.4.3** CONTRACTOR will store, handle, install, and test all materials in accordance with the manufacturer's or suppliers' most recent instructions and recommendations. CONTRACTOR will promptly notify the OWNER if these instructions and recommendations are in conflict with any provision of the Contract Documents.

**6.4.4** All materials and equipment will be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with instructions of the applicable manufacturer and supplier, except as otherwise provided in the Contract Documents. The Contract Administrator or E/A may require CONTRACTOR to furnish one or more of the following:

**6.4.4.1** Satisfactory evidence (i.e., reports of required tests, manufacturer's certificates of compliance with material requirements, mill reports, etc.) as to the kind and quality of materials and equipment.

**6.4.4.2** Samples of required equipment and materials prior to having such equipment and materials delivered to the Project Site. Each sample submitted by CONTRACTOR will carry a label giving the name of CONTRACTOR, the Project, and the name of the producer. The accompanying certificate or letter from CONTRACTOR will state that the sample complies with the contract requirements, will give the name and brand of the product, its place of origin, the name and address of the producer and all specifications or other detailed information which will assist the OWNER in reviewing the sample promptly. It will also include the statement that all materials or equipment furnished for use in the Project will comply with the samples or certified statements. In addition, the accompanying certificate will include a written narrative explanation itemizing the extent to which the sample deviates from the Specifications or other Contract requirements.

**6.4.5** The OWNER will not be required to consider delays in the Work caused by delivery of non-complying materials or equipment, or by late or improper submission test reports or manufacturer's certificates for OWNER approval, as just cause for an extension of the Contract Time. The OWNER's acceptance of any test report, certificate, or sample will be general only and will not constitute a waiver of the OWNER's right to demand full compliance with Contract requirements, nor relieve CONTRACTOR from ensuring full compliance with the Contract.

**6.4.6** CONTRACTOR will assign to the OWNER, any rights CONTRACTOR may have to bring antitrust suits against suppliers for overcharges on materials incorporated in the Project growing out of illegal price fixing agreements. CONTRACTOR will cooperate with the OWNER should the OWNER wish to prosecute suits against suppliers for illegal price fixing.

**6.4.7.** Upon CONTRACTOR's request and the Contract Administrator's written approval, CONTRACTOR may locate stored materials off-site, so long as they are in a bonded and insured facility, accessible to the OWNER, and are clearly marked as OWNER's property.

**6.4.8** Title to materials delivered to the Project Site or stored off-site will not be deemed to pass to the OWNER until the OWNER accepts such title by paying for same. The OWNER will be entitled but is not required to request title documentation. Risk of loss will not pass to the OWNER until title passes.

## **6.5 Concerning Subcontractors, Suppliers, and Others.**

**6.5.1** CONTRACTOR will retain direct control of and give direct attention to the fulfillment of this Contract. CONTRACTOR agrees not to assign this Contract, by power of attorney or otherwise, without the OWNER's prior written consent.

**6.5.2** Unless the Supplemental General Conditions provide otherwise, CONTRACTOR will not subcontract the performance of the entire Project or the supervision and direction of the Work without the OWNER's prior written consent. CONTRACTOR will not employ any subcontractor or other person or organization, whether initially or as a substitute, against whom the OWNER may have reasonable objection. The OWNER will communicate such objections by written notice. CONTRACTOR will not substitute any subcontractor that has been accepted by the OWNER, unless the OWNER first accepts the substitute in writing.

**6.5.3** CONTRACTOR will enter into written agreements with all subcontractors and suppliers which specifically bind the subcontractors and suppliers to the applicable terms and conditions of the Contract Documents for the OWNER's benefit. The OWNER reserves the right to specify that certain requirements will be adhered to by all subcontractors and sub-subcontractors as indicated in other portions of the Contract Documents, in which instance these requirements will be made a part of the written agreement between CONTRACTOR and each subcontractor. CONTRACTOR's standard subcontract form is subject to the OWNER's review and approval. Within five working days of the OWNER's request for subcontractor contract documents, CONTRACTOR will provide them to the OWNER.

**6.5.4** CONTRACTOR will be fully responsible to the OWNER for all acts and omissions of the subcontractors, suppliers, and other persons and organizations performing or furnishing any of the Work under contract with CONTRACTOR and under contract with CONTRACTOR's subcontractors or suppliers, just as CONTRACTOR is responsible for CONTRACTOR's own acts and omissions. Nothing in the Contract Documents will create for the benefit of any such subcontractor or other person or organization any contractual relationship between the OWNER and any such subcontractor or other person or organization, nor will it create any obligation on the part of the OWNER or E/A to pay or to see to the payment of any moneys due any such subcontractor or other person or organization except as may otherwise be required by Legal Requirements.

**6.5.5** CONTRACTOR will be solely responsible for efficiently scheduling and coordinating the Work of subcontractors and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR in order to avoid any delays or inefficiencies in the prosecution of the Work. CONTRACTOR will require all subcontractors and such other persons and organizations performing or furnishing any of the Work to communicate with the OWNER through CONTRACTOR.

**6.5.6** The divisions and sections of the Technical Provisions and the identification of any Plans will not control CONTRACTOR in dividing or delineating the Work to be performed by any specific trade.

**6.5.7** CONTRACTOR will pay each subcontractor their appropriate share of payments made to CONTRACTOR not later than ten days of CONTRACTOR's receipt of payment from the OWNER.

**6.5.8** To the extent allowed by Florida law, the OWNER will be deemed to be a third party beneficiary to each subcontract and may, if the OWNER elects, following a termination of CONTRACTOR, require that the subcontractor(s) perform all or a portion of unperformed duties and obligations under its subcontract(s) for the benefit of the OWNER, rather than CONTRACTOR; however, if the OWNER requires any such performance by a subcontractor for the OWNER's direct benefit, then the OWNER will be bound and obligated to pay such subcontractor the reasonable value for all Work performed by such subcontractor to the date of the termination of CONTRACTOR, less previous payments, and for all Work performed thereafter. If the OWNER elects to invoke the OWNER's right under this Section, the OWNER will provide notice of such election to CONTRACTOR and the affected subcontractor(s).

## **6.6 Patent Fees and Royalties.**

**6.6.1** CONTRACTOR will be responsible at all times for compliance with applicable patents and copyrights encompassing, in whole or in part, any design, device, material, or process utilized, directly or indirectly, in the performance of the Work or the formulation or presentation of its Bid.

**6.6.2** CONTRACTOR will pay all royalties and license fees and will provide, prior to commencement of Work hereunder and at all times during the performance of same, for lawful use of any design, device, material or process covered by letters, patent or copyright by suitable legal agreement with the patentee, copyright holder, or their duly authorized representative whether or not the OWNER specifies a particular design, device, material, or process.

**6.6.3** CONTRACTOR will defend all suits or claims for infringement of any patent or copyright and will save the OWNER harmless from any loss or liability, direct or indirect, arising with respect to CONTRACTOR's process in the formulation of its Bid or the performance of the Work or otherwise arising in connection therewith. The OWNER reserves the right to provide its own defense to any suit or claim of infringement of any patent or copyright in which event CONTRACTOR will indemnify and save harmless the OWNER from all costs and expenses of such defense as well as satisfaction of all judgments entered against the OWNER.

**6.6.4** The OWNER will have the right to stop the Work or terminate this Contract at any time if CONTRACTOR fails to disclose to the OWNER that CONTRACTOR's work methodology includes the use of any infringing design, device, material, or process.

**6.7 Permits, Fees.** CONTRACTOR will secure and pay for at CONTRACTOR's expense, all permits and licenses of a temporary nature that are required for the prosecution of the Work; provided, however, that the OWNER will reimburse CONTRACTOR for any CITY-required permits unless specified otherwise in the Supplemental General Conditions.

Unless the Supplemental General Conditions provide otherwise, the OWNER will obtain licenses and easements for permanent structures and or permanent changes in existing facilities.

## **6.8 Construction Operations.**

**6.8.1** CONTRACTOR will confine operations at the Project Site to those areas permitted by all Legal Requirements, and will not unreasonably encumber the Project Site with materials and equipment. CONTRACTOR will assume full responsibility for any damage to any portion of the Project Site, or to the owner or occupant thereof or of any adjacent land or areas, resulting from the performance of the Work. If an adjacent property owner or occupant files a claim because of or in connection with the performance of the Work, CONTRACTOR will promptly settle the claim by negotiation or as otherwise provided by law. CONTRACTOR will indemnify, defend and hold harmless the OWNER and anyone directly or indirectly employed by the OWNER, from and against all claims, costs, losses, and damages (including court costs and reasonable attorney's fees) arising out of or resulting from any claim or action, legal or equitable, brought by any such the owner or occupant against the OWNER, E/A or any other party indemnified hereunder to the extent caused by or based upon performance of the Work or failure to perform the Work.

**6.8.2** CONTRACTOR will establish the exterior lines and elevations of all buildings and structures to be erected on the Project Site, and lines and grades of site work such as roads, utilities, and site grading, based on reference points, the location of existing structures and improvements, or benchmarks identified in the site surveys provided by the OWNER. CONTRACTOR will provide a professional certification by a professional engineer or land surveyor as to the actual location of building lines prior to constructing any foundations. CONTRACTOR will establish the building grades, lines, and levels, and column, wall, and partition lines required by subcontractors in laying out the Work. At the completion of the Work, CONTRACTOR will provide another professional certification by a registered engineer or land surveyor as to the location of completed improvements in relation to property lines, building lines, easements, and other boundaries.

**6.8.3** CONTRACTOR will not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor will CONTRACTOR subject any part of the Work, the Project Site, or adjacent property to stresses or pressures that will endanger it.

**6.8.4** All Work will be performed solely during Working Hours, unless (i) more restrictive hours are required by CITY ordinances or other Legal Requirements governing CONTRACTOR's performance of the Work, or (ii) the Contract Administrator approves expanded Working Hours in writing, such as in the event of emergencies, in which instance the Contract Administrator's approval may be terminated at any time and for any reason without recourse to CONTRACTOR. The OWNER has the right to impose further restrictions on working hours reasonably related to the use of occupied facilities. No delays resulting from compliance with applicable Legal Requirements may form the basis for any claim by CONTRACTOR for delay damages or additional compensation or for any extensions of the Contract Time; any delays arising from restrictions related to the use of occupied facilities are non-compensable and any claims for extensions of the Contract Time relating to them will be filed in accord with Article 11 or the same will be conclusively deemed to have been waived. CONTRACTOR will not permit Work outside of Working Hours without the written consent of the OWNER; such consent, if given, may be conditioned upon payment by CONTRACTOR of the OWNER's additional costs and fees incurred in monitoring such off-hours Work. CONTRACTOR will notify the OWNER as soon as possible if Work will be performed outside such times in the interest of the safety and protection of persons or property at the Project Site or adjacent thereto, or in the event of an emergency. In no event will CONTRACTOR permit Work to be performed at the Project Site without the presence of CONTRACTOR's Superintendent and person responsible for the protection of persons and property at the Project Site and compliance with all Legal Requirements, if different from the Superintendent.

**6.8.5 Temporary Utilities.** CONTRACTOR, at its own expense, will:

**6.8.5.1** Furnish all temporary heat, cooling ventilation, and humidity control including all required apparatus and fuel as may be necessary to protect the Work fully, both during its execution and until Final Completion and acceptance. CONTRACTOR will not use any method of heating, cooling, ventilation, or humidity control of the building unless approved by the OWNER in advance.

**6.8.5.2** Provide all temporary on-Site water service required to perform the Work, to assure safety at the Site, and as otherwise required. All temporary services will be removed by CONTRACTOR.

**6.8.5.3** Furnish all temporary electric service required to perform the Work, to assure safety at the Site, and as otherwise required.

**6.8.5.4** CONTRACTOR will provide and maintain in a neat, sanitary condition such accommodations for the use of CONTRACTOR's employees, subcontractors, and others for whom CONTRACTOR may be responsible, as may be necessary to comply with Legal Requirements, and will commit no public nuisance.

**6.8.6 Site Maintenance.** During the progress of the Work and on a daily basis, CONTRACTOR will keep the Project Site free from accumulation of waste materials, rubbish, and other debris resulting from the Work. If CONTRACTOR fails to do so in a manner reasonably satisfactory to the OWNER within 48 hours after notice or as otherwise required by the Contract Documents, the OWNER may clean the Project Site and back charge CONTRACTOR for all costs associated with the cleaning. At Substantial Completion, CONTRACTOR will leave the Project Site clean, including but not limited to the cleaning of manholes, inlets, and gravity underground piping systems, and ready for the OWNER's occupancy, and will at this point also remove all temporary buildings, waste, trash, debris, and surplus materials. At Final Completion, CONTRACTOR will remove all tools, appliances, construction equipment, and machinery, in addition to the above-referenced materials, and leave the Project Site clean and ready for OWNER's occupancy. This requirement will not apply to property used for permanent disposal of rubbish or waste materials in accordance with permission for such disposal granted to CONTRACTOR by the OWNER. CONTRACTOR will, at a minimum, restore to original condition all property not designated for alteration by the Contract Documents. If CONTRACTOR fails to clean up at the completion of the Work, the OWNER may do so and the cost thereof will be charged against CONTRACTOR.

**6.8.7 Risk of Performance.** If CONTRACTOR performs any work involving an apparent error, inconsistency, ambiguity, construction impracticality, omission, or violation of Legal Requirements in the Contract Documents of which CONTRACTOR is aware, or which could reasonably have been discovered by the review required by CONTRACTOR by this Contract, without prompt written notice to the OWNER and the E/A and request

for correction, clarification or additional information, as appropriate, CONTRACTOR does so at its own risk and expense and all claims relating thereafter are specifically waived.

## **6.9 Legal Requirements.**

**6.9.1** CONTRACTOR will diligently and promptly call for locates required, in accordance with Sunshine State One Call of Florida requirements.

**6.9.2** CONTRACTOR will give all other notices and comply with all other Legal Requirements, including arranging for and obtaining any required inspections, tests, approvals or certifications from any public body having jurisdiction over the Work or any part thereof. Except where these Legal Requirements provide otherwise, neither the OWNER nor the E/A will be responsible for monitoring CONTRACTOR's compliance with any Legal Requirements.

**6.9.3** Maintaining clean water, air, and earth or improving thereon will be regarded as of prime importance. CONTRACTOR will plan and execute its operations in compliance with all applicable Legal Requirements concerning control and abatement of water pollution and prevention and control of air pollution, including where applicable the terms and conditions of the CITY's current National Pollutant Discharge Elimination System (NPDES) permit.

## **6.10 Taxes.**

**6.10.1** CONTRACTOR will pay only those sales, consumer, use and other similar taxes required to be paid by CONTRACTOR in accordance with the laws and regulations of the State of Florida in the performance of this Contract.

**6.10.2** The OWNER is an exempt organization as defined by Florida Statutes and is therefore exempt from payment of sales and use taxes.

## **6.11 Maintenance of Records and Documents.**

**6.11.1** CONTRACTOR will maintain at the Site, available to the OWNER for reference during the progress of the Work, a copy of the current approved Progress Schedule and any approved revisions thereto. CONTRACTOR will keep current records of and mark on a copy of the current approved Progress Schedule the actual commencement date, progress, and completion date of each scheduled activity indicated on the Progress Schedule.

**6.11.2** CONTRACTOR will maintain in a safe place at the Project Site, or other location acceptable to the OWNER, one record copy of all Drawings, Specifications, Addenda, Change Instruments and written interpretations and clarifications issued pursuant to this Contract (collectively, "Record Documents") in good order and annotated to show all changes made during construction. The Record Documents and all final samples and final Shop Drawings will be available to the OWNER and E/A for reference during performance of the Work. Upon Substantial Completion of the Work, CONTRACTOR will deliver these Record Documents, and final samples and Shop Drawings, to the OWNER.

**6.11.3** To the extent applicable, CONTRACTOR will comply with the requirements of Florida Statutes Section 119.0701, which include the following:

**6.11.3.1** Keeping and maintaining public records that the CITY requires for performance of the service provided herein.

**6.11.3.2** Upon the request of the City Clerk of the CITY, (i) providing the City Clerk with a copy of requested public records or (ii) allowing inspection or copying of the records, within a reasonable time after receipt of the CITY Clerk's request, at a cost that does not exceed the cost provided in Ch. 119, Florida Statutes, or as otherwise provided by law.



**6.11.3.3** Ensuring that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law until completion of this Contract, and following such completion if CONTRACTOR fails to transfer such records to the CITY.

**6.11.3.4** Upon completion of this Contract, keep and maintain public records required by the CITY to perform the service. CONTRACTOR will meet all applicable requirements for retaining public records. All records stored electronically must be provide to the CITY upon request from the CITY Clerk, in a format that is compatible with the CITY's information technology systems.

**6.11.3.5 IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTRACTOR MUST CONTACT THE CITY CLERK, WHOSE CONTACT INFORMATION IS AS FOLLOWS:**

(Phone)	386 671-8023
(Email)	clerk@codb.us
(Address)	301 S. Ridgewood Avenue Daytona Beach, FL 32114

**6.11.4** Nothing herein will be deemed to waive CONTRACTOR's obligation to comply with Section 119.0701(3)(a), Florida Statutes, as amended by Chapter 2016-20, Laws of Florida (2016).

**6.12 Safety and Protection.**

**6.12.1** CONTRACTOR will be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Upon request, and prior to installation of measures, CONTRACTOR will submit a site security plan to the OWNER. By reviewing the plan or making recommendations or comments, the OWNER will not assume liability nor will CONTRACTOR be relieved of liability for damage, injury, or loss. CONTRACTOR will take all necessary precautions for the safety of and will provide the necessary protection to prevent damage, injury, and loss to:

**6.12.1.1** The public;

**6.12.1.2** All persons on the Project Site or who may be affected by the Work;

**6.12.1.3** All the Work and materials and equipment to be incorporated therein, whether in storage on or off Project Site; and

**6.12.1.4** Other personal property, fixtures and other items at the Project Site or adjacent thereto, including, but not limited to, trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and underground facilities not designated for removal, relocation, or replacement in the course of construction.

**6.12.2** CONTRACTOR will comply with the Occupational Safety and Health Administration's (OSHA) Excavation Safety Standard, 29 U.S.C § 651 et seq., 29 C.F.R. 1926.650 Sub Part P., and the Trench Safety Act, Section 553.60 et seq. In addition CONTRACTOR will comply with all other applicable laws and regulations of any public body having jurisdiction for safety of persons or property or to protect them from damage, injury or loss, and will erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR will notify owners of adjacent property and of underground facilities, and utility owners when prosecution of the Work may affect them, and will cooperate with them in the protection, removal, relocation and replacement of their property. All damage, injury or loss to any property referred to in Subparagraphs 6.12.1.3 and 6.12.1.4, above, caused, directly or indirectly, in whole or in part, by CONTRACTOR, any subcontractor, or any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, will be remedied by CONTRACTOR (except damage or loss attributable to the fault of Drawings or

Specifications or to the acts or omissions of the OWNER, or E/A, or anyone employed by any of them or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the faults or negligence of CONTRACTOR or any subcontractor, supplier or other person or organization directly or indirectly employed by any of them). CONTRACTOR's duties and responsibilities for safety and protection of the Work will continue until such time as all the Work is completed and the OWNER has issued a Certificate of Final Completion (except as otherwise expressly provided in connection with Substantial Completion). Without limitation, CONTRACTOR will comply with the following specific provisions:

**6.12.3** CONTRACTOR will designate in writing a qualified and experienced safety representative at Project Site whose duties and responsibilities will be the prevention of accidents and the maintaining and supervising of safety precautions and programs. Upon request of the OWNER, CONTRACTOR will provide certifications or other documentation of the safety representative's qualifications.

**6.12.4** CONTRACTOR will be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at Project Site in accordance with Legal Requirements.

**6.12.5** CONTRACTOR will comply with the following requirements in emergencies:

**6.12.5.1** In emergencies affecting the safety or protection of persons or the Work at Project Site or adjacent thereto, CONTRACTOR, without special instruction or authorization from the OWNER or E/A, is obligated to act reasonably to prevent threatened damage, injury or loss and to mitigate damage or loss to the Work. CONTRACTOR will give the OWNER telephone notification as soon as reasonably practical and a prompt written notice if CONTRACTOR believes that any significant changes in the Work or variations from the express provisions of this Contract Documents have been caused thereby. If the OWNER determines that a change in the Contract Documents is required because of the action taken by CONTRACTOR in response to such an emergency, a Change Order will be issued; otherwise the OWNER will not be responsible for CONTRACTOR's emergency action.

**6.12.5.2** Authorized agents of CONTRACTOR will respond immediately to call-out at any time of any day or night when circumstances warrant the presence on Project Site of CONTRACTOR or his agent to protect the Work or adjacent property from damage, restriction or limitation or to take such action or measures pertaining to the Work as may be necessary to provide for the safety of the public. Should CONTRACTOR or CONTRACTOR's agent fail to respond and take action to alleviate such an emergency situation, the OWNER may direct other forces to take action as necessary to remedy the emergency condition, and the OWNER will deduct any cost of such remedial action from the funds due CONTRACTOR under this Contract.

**6.12.5.3** If there is an accident involving injury to any individual or damage to any property on or near the Work, CONTRACTOR will provide to the Contract Administrator verbal notification within one hour and written notification within 24 hours of the event and will be responsible for recording the location of the event and the circumstances surrounding the event through photographs, interviewing witnesses, obtaining medical reports, police accident reports and other documentation that describes the event. CONTRACTOR will provide the OWNER copies of such documentation within 48 hours of the event.

**6.12.5.4** CONTRACTOR will cooperate with the OWNER in any investigation of any such incident. CONTRACTOR will immediately report such incidents to any other governmental or quasi-governmental authorities having jurisdiction over safety-related matters as may be required by law.

## **6.13 Indemnification.**

**6.13.1** Any obligation of CONTRACTOR to indemnify or hold harmless under this Contract will not be limited in any way by any limitation on the amount or type of damages, or compensation or benefits payable by or for CONTRACTOR or any such subcontractor, supplier, or other person or organization for whom CONTRACTOR may be responsible under workers' compensation acts, disability benefit acts, or other employee benefit acts.

**6.13.2** Any obligation of CONTRACTOR to indemnify and hold harmless under this Contract, will not extend to the liability of the OWNER, E/A, E/A's consultants, and their officers, directors, partners, employees or

agents, when caused primarily by negligent preparation of maps, drawings, surveys, designs or specifications upon which is placed the applicable state-authorized design professional seal of the OWNER, E/A, or OWNER's or E/A's consultant's, officers, directors, partners, employees or agents.

**6.13.3** If CONTRACTOR fails to follow the OWNER's directives concerning use of Project Site, scheduling or course of construction, or engages in other conduct which proximately causes damage to property based on inverse condemnation or otherwise, then and in that event, CONTRACTOR will indemnify the OWNER against all costs resulting from such claims.

**6.13.4** If CONTRACTOR unreasonably delays progress of the Work being done by others on Project Site so as to cause loss for which the OWNER becomes liable, then CONTRACTOR will indemnify the OWNER from and reimburse the OWNER for such loss.

**6.14 Survival of Obligations.** All representations, indemnifications, warranties and guarantees made in, required by or given in accordance with this Contract, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion and acceptance of the Work and termination or completion of the Contract.

**6.15 Losses from Natural Causes.** Unless otherwise specified, all loss or damage to CONTRACTOR arising out of the nature of the Work to be done or from action of the elements, floods or from unforeseeable circumstances in prosecution of the Work or from unusual obstructions or difficulties which may be encountered in prosecution of the Work, will be sustained and borne by CONTRACTOR at its own cost and expense.

**6.16. Notice of Claim.** Should CONTRACTOR suffer injury or damage to person or property because of any error, omission or act of OWNER or of any of OWNER's employees or agents or others for whose acts OWNER is liable, CONTRACTOR must file a claim within 30 calendar days of the event giving rise to such injury or damage. The provisions of this Section will not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitations or statute of repose.

**6.17 Financial Records.**

**6.17.1** For purposes of this Section 6.17, "financial records" means all records generated by or on behalf of CONTRACTOR and each Subcontractor and supplier of CONTRACTOR, whether paper, electronic, or other media, which are in any way related to performance of or compliance with this Contract, including, without limitation:

- .1 Accounting records;
- .2 Written policies and procedures;
- .3 Subcontract files (including proposals of successful and unsuccessful Bidders, Bid recaps, etc.);
- .4 Original estimates and estimating work sheets;
- .5 Correspondence;
- .6 Change Order files (including documentation covering negotiated settlements);
- .7 Back charge logs and supporting documentation;
- .8 General ledger entries detailing cash and trade discounts earned, insurance rebates and dividends;
- .9 Lump sum agreements between CONTRACTOR and any Subcontractor or supplier;
- .10 Records necessary to evaluate: Contract compliance, Change Order pricing, and any Claim submitted by CONTRACTOR or any of its payees; and
- .11 Any other CONTRACTOR record that may substantiate any charge related to this Contract.

**6.17.2** CONTRACTOR will allow the OWNER, and the OWNER's authorized representatives, to inspect, audit, and reproduce all Records generated by or on behalf of CONTRACTOR and each subcontractor and supplier, upon the OWNER's written request. Further, CONTRACTOR will allow the OWNER, and the OWNER's authorized representatives, to interview any of CONTRACTOR's employees, all Subcontractors, all suppliers, and all of their respective employees.

**6.17.3** CONTRACTOR will retain all its Records, and require all its subcontractors and suppliers to retain their respective Records, during this Contract and for three years after final payment, until all audit and litigation matters that the OWNER has brought to the attention of CONTRACTOR are resolved, or as otherwise required by law, whichever is longer. The OWNER's right to inspect, audit, or reproduce Records, or interview employees of CONTRACTOR or its respective subcontractors or suppliers, exists during this Contract, and for three years after final payment, until all audit and litigation matters that the OWNER has brought to CONTRACTOR's attention are resolved, or as otherwise required by law, whichever is longer, and at no cost to the OWNER, either from CONTRACTOR or any of its subcontractors or suppliers that may furnish Records or make employees available for interviewing.

**6.17.4** CONTRACTOR must provide sufficient and accessible facilities during its normal business hours for the OWNER to inspect, audit, or reproduce Records, or all three, and to interview any person about the Records.

**6.17.5** CONTRACTOR must insert these requirements in each written contract between CONTRACTOR and any subcontractor or supplier and require each subcontractor and supplier to comply with these provisions.

## **ARTICLE 7 - OTHER WORK**

**7.1 Coordinating Other Work.** The OWNER may perform other work related to the Project at Project Site by the OWNER's own forces, or let other contracts for the Project or Project Site, or have other work performed by utility owners. CONTRACTOR and the OWNER agree to and will use best efforts to cooperate and coordinate the Work with others performing work and other work related to the Project in order to avoid conflicts and delays in the Work. If CONTRACTOR believes that delay or additional cost is involved because of such action by the OWNER, CONTRACTOR may make a Claim as provided in Article 11.

**7.2 Proper and Safe Access by Other Contractors.** CONTRACTOR will afford other contractors and each utility owner (and the OWNER, if the OWNER is performing the additional work with the OWNER's employees) proper and safe access to the Project Site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work and will properly connect and coordinate the Work with theirs. CONTRACTOR will do all cutting, fitting, patching, and finishing of the Work that may be required to make its several parts come together properly and integrate with such other work. CONTRACTOR will not endanger any work of others by cutting, excavating or otherwise altering their work and will only cut or alter their work with the written consent of the OWNER and the other contractors whose work will be affected. CONTRACTOR will promptly remedy damage wrongfully caused by CONTRACTOR to completed or partially completed construction or to property of the OWNER or separate contractors.

**7.3 CONTRACTOR's Inspection and Reports.** If the proper execution or results of any part of CONTRACTOR's Work depends upon work performed by others under this Article 7, CONTRACTOR will inspect such other work and promptly report to the OWNER in writing any delays, defects or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of CONTRACTOR's Work. CONTRACTOR's failure to report will constitute an acceptance of such other work as fit and proper for integration with CONTRACTOR's Work except for latent or non-apparent defects and deficiencies in such other work.

**7.4 Progress Schedules.** The OWNER will provide for coordination of the activities of the OWNER's own forces, of each separate CITY contractor, and of any other utility owners performing work in relation to the Work of CONTRACTOR, who will cooperate with them. CONTRACTOR will participate with the OWNER any other contractors retained by the OWNER, in reviewing their construction progress schedules when directed to do so. On the basis of such review, CONTRACTOR will make any revisions to the current approved Progress Schedule deemed necessary after a joint review and mutual agreement. The agreed-upon progress schedules will then

constitute the progress schedules to be used by CONTRACTOR, the OWNER, and any other contractor retained by the OWNER until subsequently revised.

**7.5 Improper Timing or Delays.** Costs caused by delays or by improperly timed activities or defective construction will be borne by the party responsible therefore.

## **ARTICLE 8 – WARRANTIES**

### **8.1 General Warranty.**

CONTRACTOR warrants that the Work and all of its components will be free from defects and flaws in design, workmanship, and materials for the duration of the General Warranty Period described below; will strictly conform to the requirements of the Contract; and will be fit, sufficient and suitable for the purposes expressed in, or reasonably inferred from, the Contract. This general warranty is in addition to any other warranties expressed or implied by law, which are hereby reserved unto the OWNER.

**8.1.1 General Warranty Period.** The General Warranty Period will be one year from Substantial Completion, except for those items of equipment or those aspects of work placed in service or approved by the OWNER after Substantial Completion, in which instance the warranty for the particular equipment or aspect of work will be one year from the date of OWNER approval; provided, however, that the General Warranty Period for particular equipment placed in continuous service before Substantial Completion may start to run from an earlier date, if expressly provided in this Contract.

**8.1.2 Duty to Correct.** CONTRACTOR will correct any and all defects that defects in material or workmanship which may appear during the General Warranty Period, even if discovered after the General Warranty Period, by repairing (or replacing with new items or new materials, if necessary) any such defect at no cost to the OWNER, within a reasonable period of time, and to the OWNER's satisfaction.

**8.1.3 General Warranty is Absolute.** The only exceptions to the General Warranty will be defects or damage caused by abuse, modification or improper maintenance or operation by persons other than CONTRACTOR or CONTRACTOR's subcontractors, sub-subcontractors or suppliers; or normal wear and tear under normal usage. In all other respects the General Warranty will be absolute.

**8.2 Special Warranties.** CONTRACTOR will furnish all additional special warranties required by this Contract no later than Substantial Completion. The OWNER may require special warranties in connection with the approval of accepted equals and other substitute materials, equipment, methods, and procedures, and in connection with Work which is defective or nonconforming.

**8.3 Limitation as to Certain Equipment.** As to any equipment which the OWNER has reserved the sole right to have installed, the Warranties under this Article 8 will extend to ensure that the equipment is installed according to the Plans and Technical Provisions, and that any manufacturer or product warranties are conveyed to the OWNER; but in such instance CONTRACTOR will not be held liable for the operating performance of such equipment.

**8.4 Relation to Specific Correction Provisions and Other Remedies.** CONTRACTOR's general warranty and any additional or special warranties are not limited by CONTRACTOR's obligations to specifically correct Defective/Nonconforming Work, nor are they limited by any other remedies provided in the Contract Documents. CONTRACTOR will also be liable for any damage to property or persons (including death), including consequential and direct damages, relating to any breach of the General Warranty or any additional or special warranties required.

**8.5 Third Party Warranties.** CONTRACTOR will obtain and assign or transfer to the OWNER, all product warranties available from manufacturers or suppliers of materials to be used in the Project. CONTRACTOR will also obtain and assign or transfer to OWNER, any additional third party warranties as to materials or methods as specified in the Contract Documents. The OWNER's acceptance of any assigned warranties or guaranties will be a precondition to final payment and will not relieve CONTRACTOR of any of CONTRACTOR's guaranty or warranty obligations under this Contract.

## ARTICLE 9 – E/A'S STATUS DURING CONSTRUCTION

**9.1 Applicability.** The provisions of this Article will apply only where the Contract Documents specifically authorize a consultant of the OWNER to act as the E/A to review and modify Technical Provisions, Plans, and other technical specifications associated with the Work. In all instances in which there is no such specific authorization, the provisions of this Article will have no effect, and any authorization or delegation within the Contract Documents to the E/A, will be deemed to be to the Contract Administrator. In addition, where the Contract Documents contain language specifically authorizing a consultant of the OWNER to act as E/A, the OWNER retains the right to assign or assume such authority upon written notice to CONTRACTOR.

**9.2 The OWNER's Sole Benefit.** The assignment, if any, of any authority, duties or responsibilities to the E/A under this Contract, or under any agreement between the OWNER and the E/A, or any undertaking, exercise or performance thereof by the E/A, is intended to be for the sole and exclusive benefit of the OWNER and not for the benefit of CONTRACTOR, subcontractor, supplier, or any other person or organization, or for any surety or employee or agent of any of them.

**9.3. CONTRACTOR Remains Responsible.** The E/A will not supervise, direct, control or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto. The E/A is not responsible for any failure of CONTRACTOR to comply with laws and regulations applicable to the furnishing or performing the Work. The E/A is not responsible for CONTRACTOR's failure to perform or furnish the Work in accordance with this Contract. Failure or omission of the E/A to discover, or object to or condemn any defective Work or material will not release CONTRACTOR from the obligation to properly and fully perform the Contract.

**9.3.1** The E/A is not 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.

**9.3.2** If the OWNER and E/A agree, the E/A will review each Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds and certificates of inspection, tests and approvals and other documentation required to be delivered, but only to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests and approvals that the results certified indicate compliance with, this Contract.

**9.4 Applicability to E/A's Agents.** The limitations upon authority and responsibility set forth in this Article 9 will also apply to the E/A's consultants, Resident Project Representative and assistants.

**9.5 Visits to Project Site.** If the OWNER and E/A agree, the E/A will make visits to the Project Site at intervals appropriate to the various stages of construction as E/A deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of CONTRACTOR's executed Work. Based on information obtained during such visits and observations, the E/A will endeavor for the benefit of the OWNER to determine, in general, if the Work is proceeding in accordance with this Contract. The E/A will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The E/A's efforts will be directed toward providing for the OWNER a greater degree of confidence that the completed Work will conform generally to this Contract. On the basis of such visits and on-site observations, E/A will keep the OWNER informed of the progress of the Work and will endeavor to guard the OWNER against Defective Work. The E/A's visits and on-site observations are subject to all the limitations on the E/A's authority and responsibility set forth in this Article 9.

**9.6 Resident Project Representative.** If the OWNER and E/A agree, E/A will furnish a Resident Project Representative to assist the E/A in providing more continuous observation of the Work. The responsibilities and authority and limitations of any such Resident Project Representative and assistants will be as provided in this Article 9 and in the Supplemental General Conditions. The OWNER may designate another representative or agent to represent the OWNER at Project Site who is not the E/A, E/A's consultant, agent or employee.

**9.7 Clarifications and Interpretations.** The E/A may determine that written clarifications or interpretations of the requirements of the Technical Provisions (in the form of drawings or otherwise) are necessary. Such written clarifications or interpretations will be consistent with the intent of and reasonably inferable from the Contract Documents, will be issued with reasonable promptness by the OWNER and will be binding on the OWNER and CONTRACTOR. If the OWNER or CONTRACTOR believes that a written clarification or interpretation justifies an adjustment in the Contract Price or the Contract Times, the OWNER or CONTRACTOR may make a Claim therefore as provided in these General Conditions.

**9.8 Recommendations as to Defective Work.** The E/A will recommend that the OWNER disapprove or reject Work which the E/A believes to be defective, or believes will not produce a completed Project that conforms to this Contract or will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by this Contract.

## **ARTICLE 10 – ACCEPTED EQUALS AND SUBSTITUTIONS**

**10.1 Accepted Equals.** Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item, the specification or description is intended to require the item named, unless the Contract Documents, in specifying the name, specifically authorize the use of functionally equivalent item through the use of terms such as “as equal,” “or equal,” or “equivalent.” For purposes herein, an item is only “functionally equivalent” if it is available at the same or lower cost, and if it is sufficiently similar to the item specified, including as to durability, warranty, acquisition time, and availability, so that no change in related Work will be required, and no change in the useful life, maintenance, repair cost, or quality of the completed work is anticipated.

**10.2 CONTRACTOR May Propose Substitutions.** CONTRACTOR may propose a substitution for any item of material or equipment, and for any means, method, technique, sequence, or procedure of construction, specified in the Contract Documents. CONTRACTOR’s will propose such substitutes at CONTRACTOR’s sole cost and expense, and at CONTRACTOR’s sole risk as to disruptions to the Critical Path of the current approved Progress Schedule. CONTRACTOR will provide OWNER sufficient data and documentation to allow the OWNER to review the proposal.

**10.3 OWNER’s Evaluation.** The OWNER will be allowed a reasonable time within which to evaluate each proposal made by CONTRACTOR pursuant to this Section. The OWNER will be the sole judge of acceptability. No accepted equal or substitute will be ordered, installed, or utilized until the OWNER’s review is complete, which will be evidenced by a Change Instrument. The OWNER may require CONTRACTOR to furnish at CONTRACTOR’s expense a special performance guarantee or other surety bond with respect to any accepted equal or substitution or for any other delay or disruption to the Critical Path of the Project Schedule attributable to any such substitution. The OWNER will not be responsible for any delay due to review time for any proposed substitution, unless such an extension is due to CONTRACTOR, consistent with the requirements of this Contract for changes and delays. The OWNER will not be responsible for increased costs associated with the review or approval of a proposed substitution, unless the increase is required as provided in association with changes and delays. In any event, no such extension or increase will be deemed provided unless specified in the Change Instrument approving the substitution.

**10.4 CONTRACTOR to Remain Responsible.** The OWNER’s acceptance of a substitution will not relieve CONTRACTOR from primary responsibility and liability for the suitability and performance of any proposed substitute item or substituted method or procedure, and will not relieve CONTRACTOR from its primary responsibility and liability for curing Defective Work and performing warranty work, which CONTRACTOR will cure and perform, regardless of any claim CONTRACTOR may choose to advance against the OWNER or manufacturer.

## **ARTICLE 11 – DELAYS AND ADJUSTMENTS TO CONTRACT TIME AND CONTRACT PRICE**

**11.1 Delay.** Delays are classified in one of the following categories:

**11.1.1** An excusable delay is a delay caused by a Force Majeure event. An excusable delay may entitle CONTRACTOR to an extension of Contract Time but not an increase in Contract Price.

**11.1.2** A compensable delay is a delay which is caused solely and exclusively by acts or omissions of the OWNER, excepting actions taken by the OWNER to protect the public health or safety or to conform to law. A compensable delay may entitle CONTRACTOR to both an extension of Contract Time and an increase in Contract Price.

**11.1.3** An unexcused delay is any delay other than an excusable or compensable delay. An unexcused delay entitles CONTRACTOR to no adjustment to Contract Time or Contract Price.

**11.2 Events Not Constituting a Delay.** The following events will not be considered an excusable delay of any kind even though they are not anticipated by CONTRACTOR, not within CONTRACTOR's control, and are not reasonably foreseeable:

**11.2.1** Events that pose no delay to items of Work on the Critical Path of the current approved Progress Schedule.

**11.2.2** Events that would not prevent CONTRACTOR from achieving Final Completion before the expiration of the Contract Time, where CONTRACTOR may otherwise accelerate other items of Work without undue expense.

**11.2.3** Weather, unless the weather is more severe than the adverse weather normally anticipated for the Project Site for the month in question, based on a generally accepted source of data such as the National Weather Service.

**11.2.4** Events, including actions of the OWNER, that impact Critical Path activity, because the activity was previously delayed due to unexcused delays.

**11.3 Notice of Delay Required.** CONTRACTOR will provide written notice of any actual or prospective delay promptly, and in no event later than ten days after the occurrence of the event giving rise to such delay. CONTRACTOR will give the notice to both the E/A and the Contract Administrator within the specified time. In the case of a continuing delay, CONTRACTOR will provide an initial notice and a further notice at each progress meeting throughout the duration of the delay. The notice will contain all of the specific information required in the following Subsection.

**11.4 Contents/Supporting Documents.** CONTRACTOR's notice of delay will identify those portions of the current approved Progress Schedule affected by the delay and will include an estimate of the cost and probable effect of the delay, if any, on the progress of the Work. Supporting documentation will include, but is not limited to:

**11.4.1** A written detailed statement of the reasons and causes for the delay;

**11.4.2** Inclusive dates of the delay;

**11.4.3** Specific trades and portions of the Work affected by the delay;

**11.4.4** Status of Work affected before commencement of the delay;

**11.4.5** Effect of the delay on available "float" time;

**11.4.6** A Critical Path Method (CPM) analysis demonstrating that the delay has affected an activity then on the Critical Path at the time of the occurrence of the delay as shown on the most current approved Progress Schedule; and

**11.4.7** If CONTRACTOR claims that the delay is an excusable delay or compensable delay, evidence that the delay was unforeseeable, beyond CONTRACTOR's control, and without the fault or negligence of CONTRACTOR or the negligence of anyone for whose acts CONTRACTOR is responsible including any subcontractor, sub-subcontractor or supplier; and in the case of a compensable delay, was caused solely and



exclusively by the acts or omissions of the OWNER (excepting actions taken by the OWNER to protect the public health or safety or to conform to law) or anyone for whose acts the OWNER is responsible, and which are unreasonable under the circumstances involved and not reasonably within the contemplation of the parties.

**11.5 Failure to Comply with Notice Requirements.** The notice required by this Article 11 operates as a condition precedent to the assertion of any claim for extension of Contract Time, increase in Contract Price, or damages by CONTRACTOR. If CONTRACTOR fails to give the OWNER timely written notice of a claim as required by this Article 11, CONTRACTOR will be deemed to have waived the claim, and the OWNER will have no further liability respecting the claim.

**11.6 Review and Adjustment of Schedules.** Upon receipt of a notice from CONTRACTOR of the occurrence of a delay complying with the requirements of this Article, the OWNER will review the current approved Progress Schedule to determine (i) whether the delay is in fact an excusable or compensable delay, and (ii) whether any adverse effects of the delay can be overcome by an adjustment in the Progress Schedule, including the application of any unused "float" time available in the Schedule. The OWNER may require CONTRACTOR to submit a more detailed Progress Schedule than previously required in order to permit the OWNER to evaluate the delay. Based on such review, CONTRACTOR will, if required by the OWNER, submit for the OWNER's approval a revised Progress Schedule, which minimizes the adverse effects of the delay.

**11.7 Limitation on Adjustments Due to Delays Generally.** No extension of the Contract Time or increase in the Contract Price will be allowed for an unexcused delay. No extension of the Contract Time or increase in the Contract Price will be made to the extent that performance is, was or would have been suspended, delayed or interrupted by another cause for which CONTRACTOR is responsible. No increase in the Contract Price will be made to the extent performance was or would have been suspended, delayed or interrupted by another cause for which the OWNER is not solely and exclusively responsible.

**11.8 Additional Limitations on Adjustments to Contract Time Due to Delays.** No extension of Contract Time will be provided where, notwithstanding a Force Majeure event or other claimed delay, CONTRACTOR may achieve Final Completion within the Contract Time through adjustments to the current approved Progress Schedule.

**11.9 Additional Limitations on Adjustments to Contract Price Due to Delays.** Any obligation on the part of the OWNER to pay CONTRACTOR for compensable delay is solely intended to reimburse CONTRACTOR for actual expense arising out of the compensable delay. No consequential damages will be allowed to CONTRACTOR in connection with any claimed delays. Damages for compensable delay will be determined by the Force Account method set forth in Subsection 13.3.2.

**11.9.1** Standby equipment costs will not be allowed during periods when the equipment would have otherwise been idle. Standby equipment time will not exceed more than eight hours per day, 40 hours per week, and 176 hours per month. Standby equipment costs will be paid at 50 percent of the applicable Rental Rate Blue Book rates and calculated by dividing the monthly rate by 176, multiplying the result by the number of standby hours and multiplying that number by the regional adjustment factor and the rate adjustment factor contained in the Blue Book. Operating costs will not be allowed.

**11.10 Liquidated Damages Due to CONTRACTOR's Delays.** Liquidated Damages, if any, are set forth in the Contract form.

**11.11 No Damages are Due to CONTRACTOR for Prevention of Early Completion.** CONTRACTOR represents that its Bid includes all costs, overhead and profit which may be incurred throughout the Contract Time, including the period between Substantial and Final Completion. Accordingly, CONTRACTOR may not make any claim for delay damages based in whole or in part on the premise that CONTRACTOR would have completed the Work prior to the expiration of the Contract Time but for any claimed delay.

**11.12 Acceleration to Avoid Delays.** If CONTRACTOR's progress is not maintained in accordance with the current approved Progress Schedule, or the OWNER determines that CONTRACTOR is not diligently proceeding with the Work or has evidence reasonably indicating that CONTRACTOR will not be able to conform to the current approved Progress Schedule, CONTRACTOR will, promptly and at no additional cost to the OWNER, take all

measures necessary to accelerate its progress to overcome the delay and ensure that there will be no further delay in the progress of the Work and notify the OWNER thereof. Any extension of working hours requires approval of the OWNER, which will not be unreasonably withheld but may be subject to reasonable conditions including payment for additional or overtime services of the OWNER the Architect/Engineer and any other applicable consultants, testing or regulatory agency costs.

## ARTICLE 12 – CHANGES

**12.1 Materially Different Site Conditions.** For purposes herein, “materially different site conditions” means conditions that are different from those indicated in the Contract Documents, that are unknown to CONTRACTOR, and that could not be reasonably anticipated based upon on the following: (i) typical soil or subsurface conditions for the area in which the Project Site is located; (ii) site visits CONTRACTOR made, or was encouraged or permitted to make by the Bid Documents, prior to Bid submission; or (iii) a careful review of any Site-Related Reports.

**12.1.1** CONTRACTOR may be entitled to an increase in Contract Time for materially differing site conditions as an excusable delay as provided in Article 11, subject to the exclusions and conditions of that article including notice requirements.

**12.1.2** CONTRACTOR may also be entitled to an increase in Contract Price for materially different site conditions, where these conditions will require additional labor or materials, or both, exceeding the amount estimated in the Schedule of Values or Bid Schedule, as applicable, by 5% or more, provided, that CONTRACTOR complies with the notice requirements in Section 12.3. In such instance, the basis for adjusting Contract Price is set forth in Section 13.3.

**12.2 Materially Different Structural Conditions (Remodeling or Renovation Contracts).** If this is a Contract for a remodeling or renovation of an existing structure and CONTRACTOR encounters materially different conditions in the structure (not as to the Site or subsurface conditions) from those indicated in the Contract Documents provided by the OWNER as part of the Bid or Proposal Documents, CONTRACTOR will give written notice thereof to the OWNER and the E/A promptly before conditions are disturbed and in no event later than ten days after first observing such conditions. Failure of CONTRACTOR either (i) to provide notice before disturbing the existing conditions or (ii) failure to give notice within ten days of first observing such conditions is conclusively deemed a waiver of any claim relating to such conditions.

**12.2.1 Investigation and Determination.** The E/A will promptly investigate any alleged differing conditions as to the structure (but not as to the Site or subsurface conditions) and provide a written report of its findings to the OWNER. If the OWNER finds that the conditions of the structure differ materially and require a change in the Work and cause an increase or decrease in CONTRACTOR’s cost of, or time required for, performance of any part of the Work, the OWNER may make an adjustment in the amount payable to CONTRACTOR or the Contract Time, as applicable. If the OWNER determines that the conditions of the structure are not materially different or that no change in the terms of the Contract is justified, the OWNER will so notify CONTRACTOR in writing.

### **12.3 Constructive Changes and Disputed Adjustments.**

**12.3.1 Notice to the OWNER and E/A.** CONTRACTOR will advise the OWNER and the E/A in writing promptly and in no event later than ten days after (i) issuance of any interpretation, clarification, instruction, direction or order whether orally or in writing from either the OWNER or the E/A, or (ii) the occurrence of any event or discovery of any condition (including any condition as provided in Section 12.1 and if applicable, 12.2), which CONTRACTOR believes or has reason to believe entitles CONTRACTOR to an increase in the amount payable to CONTRACTOR or an extension of the Contract Time; and except in the case of an emergency involving possible loss of life or bodily injury or significant property damage, the required written notice will be provided prior to proceeding with the Work. Failure of CONTRACTOR to provide such notice constitutes an acceptance of the interpretation, clarification, instruction, direction, order, event, or condition without adjustment to the Contract Price or the Contract Time and a conclusive waiver of any claim relating to the same. In order to be valid, a claim for an adjustment of Contract Price or Contract Time must contain the specific adjustment requested and must be supported by a detailed explanation of the basis for the claim. In addition to be valid, a claim for increase in

Contract Time must be supported by the documentation specified in Subsection 11.4, and a claim for an increase in the Contract Price must be documented and calculated as specified in Subsection 13.3.2. Failure of CONTRACTOR to object as and when specified in this Subsection is deemed an acceptance of interpretation, clarification, instruction, direction or order as issued and a waiver of any claim by CONTRACTOR to any adjustment to the Contract Price or the Contract Time.

**12.3.2 Disputed Adjustments.** All disputed adjustments under this Contract will be determined in accordance with the Contract, Article IX if, as conditions precedent thereto, CONTRACTOR has timely provided all notices and objections required under the terms of the Contract.

## ARTICLE 13 - CHANGE INSTRUMENTS

### 13.1 Introduction.

**13.1.1** The OWNER may issue a Change Instrument to require changes in the Work without invalidating the Contract.

**13.1.1.1** A Field Directive may be issued to require minor changes in the Work that, in the OWNER's view, do not change the Scope of Work, present a delay, or require an adjustment to Contract Time or Contract Price. Examples of such situations where Field Directives may be appropriate are unanticipated field conditions or unavailability of specified materials and equipment.

**13.1.1.2** All other changes to the Work will require the issuance of a Change Order issued in conformance with these General Conditions.

**13.2 Change Order Required for Contract Time and Contract Price Adjustments.** Adjustments to Contract Time or Contract Price will be granted only through a properly-issued Change Order.

**13.3 Change Orders Adjusting Contract Price.** All Change Orders adjusting Contract Price will be invalid unless approved in accordance with the authority provided by the Purchasing Code.

**13.3.1 Basis for Contract Price Adjustment.** Subject to any federal procurement standards that may apply if the Project is a federally funded project, in which case the standards will govern to the extent of conflict, a Change Order may provide for an adjustment in the Contract Price based only on one of the following methods:

.1 Unit Prices as stated in the Bid Schedule.

.2 A fixed not-to-exceed or lump sum agreed to by the OWNER and CONTRACTOR and stated in the Change Order, properly itemized and supported by sufficient substantiating data to permit evaluation which will be limited to estimated costs of labor, materials, supplies and equipment, rental cost of machinery and equipment, additional bond cost, plus a fixed fee for profit and overhead (which includes office overhead and site-specific overhead and general conditions) of 10% if the Work is performed by CONTRACTOR, or 5% if the Work is performed by a subcontractor or sub-subcontractor. The subcontractors' or sub-subcontractors' overhead and profit in turn will not exceed 10%. The total percentage of overhead and profit payable by the OWNER (to both CONTRACTOR and all sub tier subcontractors), regardless of the sub-tier which performs the work, will not exceed 15%.

.3 Actual costs, properly itemized, plus a profit factor, using the Force Account method set forth in Section 13.3.2.

.4 In the absence of an agreement between the OWNER and CONTRACTOR, the OWNER will determine the amount of the Contract Price Adjustment using any of the methods outlined in Subsections 13.3.1.1 – 13.3.1.3, above, whichever will result in the lowest cost to the OWNER.

.5 No cost will be included in a Change Order for time spent preparing the Change Order, nor will costs be included for an estimate of time to negotiate the Change Order costs for machinery, tools, or equipment.

**13.3.2 Force Account Method for Contract Price Increases.** Before using the Force Account method provided for herein, the OWNER and CONTRACTOR agree to negotiate a Change Order using the other methods identified in Subsection 13.3.1, above, as appropriate, to determine the adjustment in the Contract Price. If neither of these methods can be agreed upon before a change in the Work is commenced which will result in an adjustment in the Contract Price, then the change in the Work will be performed by a Change Order using the Force Account method, and payment will be made as follows:

**13.3.2.1** For all personnel, CONTRACTOR will receive actual field cost wage rates for each hour that said personnel are actually engaged in such Work, as substantiated by its certified payroll, to which will be added an amount equal to 15% of the sum thereof as compensation for CONTRACTOR's and any effected subcontractor's total overhead and profit. No separate charge will be made by CONTRACTOR or its subcontractor(s) for organization or overhead expenses. CONTRACTOR will also receive an amount equal to 55% of the wages paid personnel, excluding the 15% compensation provided above, for CONTRACTOR's and any effected subcontractor's cost of premiums on liability insurance, workers' compensation insurance, social security and unemployment insurance. The actual cost of CONTRACTOR's bond(s) on the extra Work will be paid based on invoices from surety. No charge for superintendence will be made unless considered necessary and ordered by the OWNER.

**13.3.2.2** CONTRACTOR will receive the actual cost, including freight charges, of the materials used and installed on such Work, to which costs will be added a sum equal to 20% thereof as compensation for CONTRACTOR's and any effected subcontractor's total overhead and profit. In case material invoices indicate a discount may be taken, the actual cost will be the invoice price minus the discount.

**13.3.2.3** For machinery, trucks, power tools, or other similar equipment (the "equipment") agreed to be necessary by the OWNER and CONTRACTOR, the OWNER will allow CONTRACTOR the applicable daily, weekly or monthly rate as given in the latest edition of the "Rental Rate Blue Book" as published by EquipmentWatch (1-800-669-3282) for each hour that said equipment is in use on such work, which rate includes the cost of fuel, lubricants and repairs. The established equipment rates will be paid for each hour that the equipment is utilized in the Work. If the equipment is used intermittently during the Work, full payment for an eight-hour day will be made if the equipment is not idle more than four hours of the day. If the equipment is idle more than four hours in a day, then payment will be made only for the actual hours worked. No additional compensation will be allowed on the equipment for CONTRACTOR's or any affected subcontractor's overhead and profit. The OWNER may accept an actual rental invoice in lieu of the method of calculation set forth in this Paragraph for equipment rented exclusively for Force Account Work or for equipment not included in the Rental Rate Blue Book.

**13.3.2.4** The compensation provided for herein, will be received by as payment in full for work done pursuant to the Change Order and will include use of small tools, and total overhead expense and profit. CONTRACTOR and the OWNER will compare records of work done by Change Order at the end of each day. Copies of these records will be made upon forms provided for this purpose by the OWNER and signed by both the OWNER and CONTRACTOR, with one copy being retained by the OWNER and one by CONTRACTOR. Refusal by CONTRACTOR to sign these records within two working days of presentation does not invalidate the accuracy of the record.

**13.3.3 Additional Performance Security in Conjunction with Change Order.** The CITY may require CONTRACTOR to increase or supplement previously-provided Performance Security to cover any additional costs of performing services required under a Change Order that increases Contract Price, commensurate with such additional cost. In such instance, any compensation due CONTRACTOR for CONTRACTOR's cost of providing such increase or supplement will be reflected in the Change Order or otherwise borne by CONTRACTOR.

**13.4 Payment for Work Covered by Change Order.** Additional monies due CONTRACTOR pursuant to a valid Change Order providing for an adjustment to the Contract Price, will be paid for in accordance with the

Progress Payment schedule established by the Contract, in which case payment will be subject to retainage requirements set forth in the Contract; or at the time of Final Payment.

**13.5 Absence of Proposed Adjustments.** If a Change Instrument is silent as to any adjustment to the Contract Price or the Contract Time, it will be conclusively presumed that none is intended and none will be allowed unless CONTRACTOR files an objection as and when specified in the following Subsection.

**13.6 Action upon Receipt of Change Instrument.** Upon receipt of a Change Instrument, CONTRACTOR will promptly proceed with the change in the Work involved.

**13.6.1** CONTRACTOR will advise the OWNER in writing, promptly and in any event no later than ten days after issuance of the Unilateral Change Instrument, of CONTRACTOR's objection (i) to the amount or method, if any, provided for in the Change Instrument for adjustment to Contract Price or Contract Time, or (ii) to the absence of any adjustment to the Contract Price or Contract Time. In order to be valid, a claim for an adjustment of Contract Price or Contract Time, must contain the specific adjustment requested, must be supported by a detailed explanation of the basis for the claim. In addition, to be valid a claim for increase in Contract Time must be supported by the documentation specified in Subsection 11.4, and a claim for an increase in the Contract Price must be documented and calculated as specified in Subsection 13.3.1. Failure of CONTRACTOR to object as and when specified in this Subsection is deemed an acceptance of the Unilateral Change Order as issued and a waiver of any claim by CONTRACTOR to any adjustment to the Contract Price or the Contract Time.

**13.7 Waiver of Claim.** Except for emergencies involving possible loss of life or bodily injury or significant property damage, CONTRACTOR's commencement of the Work that is subject to a Change Instrument will constitute a complete waiver by CONTRACTOR as to such claim regardless of whether CONTRACTOR has within the ten-day period notified the OWNER of a claim consistent with the requirements of Subsection 13.6.1.

**13.8 OWNER's Right to Use Third Parties for Additional Work.** If the OWNER and CONTRACTOR are unable to negotiate the terms of a Change Order for the performance of additional Work, the OWNER may, at its election, perform such additional Work with its own forces or with another CONTRACTOR and such work will be considered "Other Work."

**13.9 OWNER's Right to Accelerate Schedule.** The OWNER reserves the right to issue a Change Instrument to accelerate the Work which may be subject to an appropriate adjustment, if any, in the Contract Price. If the OWNER requires an acceleration of the Project Schedule and no adjustment is made in the Contract Price, or if CONTRACTOR disagrees with any adjustment made, any claim an adjustment must comply with the requirements of Subsection 13.6.1 or be deemed to be conclusively waived.

#### **ARTICLE 14 – TESTS AND INSPECTIONS; CORRECTIONS, REMOVAL AND ACCEPTANCE OF DEFECTIVE WORK**

**14.1 Access to Work.** The OWNER, including the Contract Administrator and other employees and agents, including E/A and E/A's consultants, independent testing laboratories, and governmental agencies having jurisdiction, will each have access to the Work at reasonable times for observing, inspecting and testing. CONTRACTOR will provide them proper and safe conditions for such access, and advise them of CONTRACTOR's site safety procedures and programs so that they may comply therewith as applicable.

#### **14.2 Tests and Inspections.**

**14.2.1** CONTRACTOR will give timely notice of readiness of the Work for all required inspections, tests or approvals, and will cooperate with inspection and testing personnel to facilitate required inspections or tests. All testing will be performed by the CONTRACTOR. Only verification testing will be performed by the CITY. CONTRACTOR is not required to enter test results into MAC.

**14.2.2** The OWNER will employ and pay for services of an independent testing laboratory to perform all inspections, tests or approvals required by the Contract Documents except:

- .1 For inspections, tests or approvals covered by Paragraph 14.2.3 below;
- .2 That costs incurred with tests or inspections conducted pursuant to Paragraph 14.3.3 below will be paid as provided in Paragraph 14.3.3;
- .3 For re-inspecting or re-testing Defective Work; and
- .4 As otherwise specifically provided in the Contract Documents. All testing laboratories will meet the requirements of ASTM E-329.

**14.2.3** If Legal Requirements specifically require any Work (or part thereof) to be inspected, tested, or approved by an employee or other representative of a governmental or related authority, CONTRACTOR will assume full responsibility for arranging and obtaining such inspections, tests or approvals, pay all costs in connection therewith and furnish the OWNER the required certificates of inspection or approval.

**14.2.4** CONTRACTOR will also be responsible for arranging and obtaining and will pay all costs in connection with any inspections, tests or approvals required for the OWNER's and E/A's review of materials or equipment to be incorporated in the Work, or of materials, mix designs or equipment submitted for review prior to CONTRACTOR's purchase thereof for incorporation in the Work.

### **14.3 Uncovering Work.**

**14.3.1** If any Work (or the work of others) that is to be inspected, tested or approved is covered by CONTRACTOR without written concurrence of the Contract Administrator, or if any Work is covered contrary to the written request of the Contract Administrator, it will, if requested by the Contract Administrator, be uncovered and recovered at CONTRACTOR's expense.

**14.3.2** Uncovering Work as provided in Paragraph 14.3.1 above, will be at CONTRACTOR's expense unless CONTRACTOR has given the OWNER timely notice of CONTRACTOR's intention to cover the same and the OWNER has not acted within five working days to such notice.

**14.3.3** If the OWNER considers it necessary or advisable that covered Work be observed, inspected or tested, CONTRACTOR will uncover, expose or otherwise make available for observation, inspection or testing that portion of the Work in question, furnishing all necessary labor, material and equipment. If the OWNER determines that such Work is defective, CONTRACTOR will pay all claims, costs, losses and damages caused by, arising out of or resulting from such uncovering, exposure, observation, inspection and testing and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and the OWNER will be entitled to an appropriate decrease in the Contract Price, and may make a Claim therefore as provided in these General Conditions. However, if such Work is not found to be defective, CONTRACTOR will be allowed an increase in the Contract Price or an extension of the Contract Times (or Milestones), or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement and reconstruction; and CONTRACTOR may make a Claim therefore as provided in these General Conditions.

### **14.4 The OWNER May Stop the Work.**

**14.4.1** If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to furnish or perform the Work in such a way that the completed Work will conform to this Contract, the OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of the OWNER to stop the Work will not give rise to any duty on the part of the OWNER to exercise this right for the benefit of CONTRACTOR or any surety or other party.

**14.4.2** If CONTRACTOR fails to correct Defective Work or submit a satisfactory plan to take corrective action, with procedure and time schedule, the OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until cause for such order has been eliminated, or take any other action permitted by this Contract. A notice to stop the Work, based on defects, will not stop calendar or Working Days charged to the Project.

**14.5 Correction or Removal of Defective Work.** If required by the OWNER, CONTRACTOR will promptly, as directed, either correct all Defective Work, whether or not fabricated, installed or completed, or, if the Work has

been rejected by the OWNER, remove it from Project Site and replace it with Work that is not defective. CONTRACTOR will correct or remove and replace Defective Work, or submit a plan of action detailing how the deficiency will be corrected, within the time frame identified in the notice of Defective Work. CONTRACTOR will pay all claims, costs, losses and damages caused by or resulting from such correction or removal (including but not limited to all costs of repair or replacement of work of others).

**14.6 Correction Required.** If within the Warranty Period, or such longer period of time as may be prescribed by Legal Requirements or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work, including Work performed after the Substantial Completion date, is found to be defective, CONTRACTOR will promptly, without cost to the OWNER and in accordance with the OWNER's written instructions:

**14.6.1** Correct such Defective Work, or, if it has been rejected by the OWNER, remove it from Project Site and replace it with Work that is not defective, and

**14.6.2** Satisfactorily correct or remove and replace any damage to other Work or the work of others resulting from the Defective Work.

If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, the OWNER may have the Defective Work corrected or the rejected Work removed and replaced, and all claims, costs, losses and damages caused by or resulting from such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by CONTRACTOR. The warranty period will be deemed to be renewed and recommenced in connection with the completed items of Work requiring correction.

**14.7 Coordination with OWNER.** If correction of Defective Work will affect the function or use of the facility, CONTRACTOR will not proceed with correction of Defective Work without prior coordination and approval of the OWNER.

**14.8 Acceptance of Defective Work.** If, instead of requiring correction or removal and replacement of Defective Work, the OWNER decides to accept it, the OWNER may do so. CONTRACTOR will pay all claims, costs, losses and damages attributable to the OWNER's evaluation of and determination to accept such Defective Work. For purposes of this Section, the OWNER's acceptance of sample materials or equipment will not be deemed to be acceptance of Defective Work. If any such acceptance occurs prior to recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents and compensating the OWNER for the diminished value of the Defective Work. If the acceptance occurs after such recommendation, an appropriate amount will be paid by CONTRACTOR to the OWNER after a calculation by the OWNER of the diminution in value of the Defective Work.

**14.9 The OWNER May Correct Defective Work.** If CONTRACTOR fails within a reasonable time after written notice of the OWNER to correct Defective Work, or to remove and replace rejected Work, or if CONTRACTOR fails to perform the Work in accordance with this Contract, or if CONTRACTOR fails to comply with any other provision of this Contract, the OWNER may, after seven days' written notice to CONTRACTOR, correct and remedy any such deficiency. If, in the opinion of the Contract Administrator, significant progress has not been made during this seven-day period to correct the deficiency, the OWNER may exercise any actions necessary to remedy the deficiency. In exercising the rights and remedies under this paragraph, the OWNER will proceed expeditiously. In connection with such corrective and remedial action, the OWNER may exclude CONTRACTOR from all or part of Project Site, take possession of all or part of the Work, and suspend CONTRACTOR's services related thereto, and incorporate in the Work all materials and equipment stored at Project Site or for which the OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR will allow the OWNER, its agents and employees, the OWNER's other contractors, E/A and E/A's consultants access to Project Site to enable the OWNER to exercise the rights and remedies under this paragraph. All claims, costs, losses and damages incurred or sustained by the OWNER in exercising such rights and remedies will be charged against CONTRACTOR and a Change Order will be issued incorporating the necessary revisions to this Contract with respect to the Work. Such claims, costs, losses and damages will include but not be limited to all costs of repair or replacement of work of others destroyed or damaged by correction, removal or replacement of CONTRACTOR's Defective Work. CONTRACTOR will not be allowed an

extension of the Contract Times (or Milestones), or claims of damage because of any delay in the performance of the Work attributable to the exercise by the OWNER of the OWNER's rights and remedies hereunder.

**14.10 Testing and Inspections Outside of Working Hours.** This Contract contemplates that all testing and inspections will be done during Working Hours as defined herein. Whenever the OWNER is required to test or inspect outside of Working Hours, on weekends, or during Holidays observed by the OWNER, the OWNER will be entitled to a reduction in the Contract Price to the extent of any overtime costs incurred by the OWNER, unless such testing or inspection is required to be performed at that time due to:

**14.10.1** Emergency conditions that are not the fault of CONTRACTOR, and subcontractors, sub-subcontractors, suppliers, or other persons for whom CONTRACTOR is responsible;

**14.10.2** A Force Majeure event, the OWNER's disruption, or other events which, pursuant to this Contract, would otherwise require an extension of the Contract Time.

**14.11 CONTRACTOR Remains Responsible for the Work.** The following will not be deemed to be a release of CONTRACTOR's obligation to perform the Work in accordance with this Contract:

**14.11.1** Observations by the E/A;

**14.11.2** The issuance of a Certificate of Substantial Completion or any payment by the OWNER to CONTRACTOR under this Contract;

**14.11.3** Partial use or occupancy of the Work or any part thereof by the OWNER;

**14.11.4** Any acceptance by the OWNER or any failure to do so;

**14.11.5** Any review of a Shop Drawing or sample submittal;

**14.11.6** Any inspection, test or approval by others; or

**14.11.7** Any correction of Defective Work by the OWNER.

## **ARTICLE 15 – PROGRESS PAYMENTS, PARTIAL UTILIZATION AND FINAL COMPLETION**

**15.1 General Method of Payment.** Payment of the Contract Price will be made in a series of Progress Payments and after Final Completion, a Final Payment, in accordance with this Article.

**15.1.1** If CONTRACTOR has provided Payment and Performance Bonds, no payment will be made unless and until CONTRACTOR records the bonds and provides the OWNER certified copies of the recorded bonds in accordance with Florida Statutes Section 255.05(b).

**15.2 Application for Payment.** CONTRACTOR may submit to the OWNER, no more than once a month and no sooner than 30 days following commencement of the Work, an application for payment for those portions of the Work completed as of the date of the application. The OWNER may, by notice, designate a specific day of each month for submission of the application for payment. Each application for payment will be in a form acceptable to the OWNER, and will include the following documentation and information:

**15.2.1** The current approved Progress Schedule;

**15.2.2** If applicable, the Schedule of Values;

**15.2.3** Unless CONTRACTOR has provided payment and performance bonds and recorded them in the public records as provided in Florida Statutes Section 255.05, releases of liens from subcontractors or suppliers;

**15.2.4** CONTRACTOR's written certification (i) as to the value of the Work completed, (ii) that partial or final waivers of lien have been received covering all such Work, (iii) and that all prior Progress Payments have been properly applied to the payment or reimbursement of the costs with respect to which they were paid;



**15.2.5** If payment is requested on the basis of materials or equipment not incorporated in the Work but delivered and suitably stored at Project Site or at another location agreed to in writing, the application for payment by such bills of sale, data, and other procedures satisfactory to the OWNER substantiating the OWNER's title to such materials or equipment or otherwise protecting the OWNER's interest;

**15.2.6** A completed Minority and Women-Owned Business Enterprise (MBE/WBE) Usage Report, using forms provided by the OWNER. CONTRACTOR will complete all blank spaces shown on these Report forms. If no amounts have been paid to MBE/WBE subcontractors, the completed form will so indicate; and

**15.2.7** The consent of the surety, if any, to the requested payment.

Each application for payment will be deemed to be a warranty and guarantee by CONTRACTOR that title to all Work, materials and equipment covered by the application, whether incorporated in the Project or not, will pass to the OWNER free and clear of all liens no later than the time of payment to CONTRACTOR.

**15.3 Review of Application for Payment.** As soon as practicable after receipt of an application for Payment, and within the 20-day period following receipt of the application as provided by the Prompt Payment Act, the OWNER will approve, partially approve, or reject the application. The OWNER will provide written notice if payment is rejected or partially rejected, specifying the deficiency in the application for payment and the action necessary to make the request proper. In addition to rejecting payment of all or a portion of the application for failure to comply with submittal requirements referenced above, the OWNER will have the right to reject all or a portion of the application for any of the following reasons:

**15.3.1** Defective Work not remedied;

**15.3.2** Third party Claims filed or reasonable evidence indicating probable filing of such Claims;

**15.3.3** Unless CONTRACTOR has provided payment and performance bonds and complied procedurally with Florida Statutes Section 255.05, failure of CONTRACTOR to make payments properly to subcontractor or for labor, materials or equipment;

**15.3.4** Reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Price;

**15.3.5** Damage to the OWNER or another CONTRACTOR;

**15.3.6** Reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;

**15.3.7** Failure of CONTRACTOR to submit a Schedule of Values in accordance with the Contract Documents, if one is required;

**15.3.8** Failure of CONTRACTOR to submit a submittal schedule in accordance with the Contract Documents;

**15.3.9** Failure of CONTRACTOR to submit and update a Progress Schedule in accordance with the Contract Documents;

**15.3.10** Failure of CONTRACTOR to maintain a record of changes on drawings and documents;

**15.3.11** Failure of CONTRACTOR to maintain weekly payroll reports and, as applicable, provide copies of reports in a timely manner upon request of the OWNER;

**15.3.12** CONTRACTOR's neglect or unsatisfactory prosecution of the Work, including failure to clean up;  
or

**15.3.13** CONTRACTOR's failure to comply with the submittal requirements of Section 15.2, above, or with any other provision of this Contract.

If any portion of the application is rejected the OWNER will provide CONTRACTOR a written notice as to the reasons for rejection, within the time frame provided in the Prompt Payment Act. CONTRACTOR will then make the necessary corrections and re-submit the application or portion of application rejected.

**15.4 Progress Payments.** The OWNER will make payment on an approved or partially approved application, less amounts set aside for retainage within the deadlines provided by the Prompt Payment Act. If CONTRACTOR and the OWNER disagree on the basis or amount of the payment, or if CONTRACTOR is unwilling to make the necessary corrections or modifications and re-submit the Request as to those items rejected by the OWNER, then the OWNER may approve and process the Request by making such adjustments thereto as the OWNER deems appropriate so that CONTRACTOR receives without delay, payment of the amount determined by the OWNER to have been earned and owing to CONTRACTOR.

**15.5 Amounts Withheld from Progress Payments.** The OWNER will withhold an amount from each such approved progress payment, as follows:

**15.5.1** If the Contract Price is \$200,000 or more, the amount of retainage will be determined by the Prompt Payment Act, which as of the Effective Date provides for a 10% retainage until 50-Percent Completion, and a 5% retainage thereafter.

**15.5.2** In all other instances, the amount of retainage will be ten percent for each progress payment.

Subject to any limitations that may be imposed by the Prompt Payment Act if applicable, the OWNER will hold all retainage until Final Payment. However, if the Work is near Substantial or Final Completion and delay occurs due to no fault or neglect of CONTRACTOR, the OWNER may pay a portion of the retained amount to CONTRACTOR. CONTRACTOR, at the OWNER's option, may be relieved of the obligation to complete the Work and thereupon, CONTRACTOR will receive payment of the balance due for the work completed and accepted, subject to the conditions applicable to OWNER's termination of work without cause.

**15.6 Delayed Payments.** Should the OWNER fail to make payment to CONTRACTOR of the amount approved for any application for payment within the time frames provided in the Prompt Payment Act, the OWNER will pay to CONTRACTOR, in addition to amount approved, interest thereon at the rate specified in the Act, from date due until fully paid, which will fully liquidate any injury to CONTRACTOR growing out of such delay in payment.

**15.7 Substantial Completion.**

**15.7.1** When CONTRACTOR considers that the Work, or a portion thereof which the OWNER agrees to accept separately, is substantially complete, CONTRACTOR will notify the OWNER and request a determination as to whether the Work or designated portion thereof is substantially complete. If the OWNER does not consider the Work substantially complete, the OWNER will notify CONTRACTOR giving reasons therefore. After performing any required Work, CONTRACTOR will then submit another request for the OWNER to determine Substantial Completion. If the OWNER considers the Work substantially complete, the OWNER will prepare and deliver a certificate of Substantial Completion which will establish the date of Substantial Completion, will include a punch list of items to be completed or corrected before Final Payment, will establish the time within which CONTRACTOR will finish the punch list, and will establish responsibilities of the OWNER and CONTRACTOR for security, maintenance, heat, utilities, damage to the Work, warranty and insurance. Failure to include an item on the punch list does not alter the responsibility of CONTRACTOR to complete all Work in accordance with this Contract. The Work will not be deemed to be substantially or finally complete until any certificates of occupancy required to occupy the Project are issued. The OWNER and CONTRACTOR will both sign the certificate of Substantial Completion, to evince acceptance of the responsibilities assigned to them in such certificate.

**15.8 Partial Utilization.** The OWNER will have the option to use any portion of the Work prior to Substantial Completion of the Project where:

**15.8.1** The Contract Documents specifically provide for such portion to be partially utilized prior to Substantial Completion; or

**15.8.2** Upon the OWNER's request, if CONTRACTOR agrees and, upon joint inspection, the parties agree that the portion of the Work in question is Substantially Complete. In such instance, the OWNER will issue a certificate of Substantial Completion, attaching thereto a punch list of items to be completed or corrected before Final Payment and fixing the responsibility between the OWNER and CONTRACTOR for maintenance, heat and utilities as to that part of the Work.

The OWNER will have the right to exclude CONTRACTOR from any part of the Work which is so certified to be Substantially Complete but the OWNER will allow CONTRACTOR reasonable access to complete or correct items on the punch list.

**15.9 Final Inspection and Final Completion.** CONTRACTOR will provide the OWNER the Notice of Completion sufficiently in advance of the Completion Date to allow for scheduling of the final inspection and for completion or correction of all Punch List Work before the Completion Date. Upon receipt of CONTRACTOR's Notice of Completion, the OWNER will make a review of the Work and notify CONTRACTOR in writing of all Punch List Work, if any, to be completed or corrected. Following CONTRACTOR's completion or correction of all Punch List Work, the OWNER again review the Work and prepare and deliver to CONTRACTOR either a written notice of additional Punch List Work to be completed or corrected or a written Certificate of Final Completion, signifying final acceptance of the Work.

**15.9.1** If the sole remaining unfinished item to complete the Work is the reestablishment of vegetation, at the OWNER's option the OWNER may issue a Certificate of Final Completion on the condition that CONTRACTOR executes a re-vegetation letter, with letter of credit or other guarantee in form and amount satisfactory to the OWNER, to ensure completion of this item. This Work will be accomplished within 120 days of the date of Final Completion of the Work. When permanent erosion control has been established, the OWNER will initiate an inspection for final acceptance of the erosion controls. If the re-vegetation is not completed within the 120 days, the OWNER, at its option, may complete the Work using the posted guarantee.

**15.9.2** In all other instances, the OWNER will only be obligated to issue a Certificate of Final Completion accepting the Work as finally complete, when the whole and all parts thereof will have been completed to the satisfaction of the OWNER in full compliance with this Contract.

**15.10 Final Application for Payment.** As soon as practical after the OWNER's issuance of the Certificate of Final Completion, CONTRACTOR will submit to the OWNER a properly completed application for Final Payment in the form approved or provided by the OWNER. The application will include or attach the following:

**15.10.1** Three complete manuals containing all maintenance and operating instructions, warranties, and other associated documents for equipment or other materials that have been installed or otherwise included in the Work;

**15.10.2** Record documents (as provided in Paragraph 6.11.2 of these General Conditions);

**15.10.3** Unless CONTRACTOR has provided payment and performance bonds and procedurally complied with Florida Statutes, Section 255.05:

**15.10.3.1** Legally effective final releases or waivers of liens from CONTRACTOR, and from all subcontractors and sub-subcontractors which performed services for CONTRACTOR and all suppliers of material or equipment to CONTRACTOR;

**15.10.3.2** An affidavit that all of CONTRACTOR's debts, and claims, including from all subcontractors, subcontractors, and suppliers in connection with the Work, have been paid or otherwise satisfied;

**15.10.4** Complete and legally effective releases or waivers satisfactory to the OWNER of all claims other than claims of subcontractors, Sub-subcontractors, and suppliers, filed in association with the Work;

**15.10.5** The consent of the surety, if any, to final payment;

**15.10.6** Non-Use of Asbestos Affidavit (After Construction);

**15.10.7** Certificate evidencing that required insurance will remain in force after final payment and through the warranty period; and

**15.10.8** Any other documentation required pursuant to this Contract.

**15.11 If Final Application is Rejected.** If the OWNER rejects the request for Final Payment, the OWNER will provide CONTRACTOR written notice stating the reasons therefore within the time required by the Prompt Payment Act.

**15.12 Final Payment; Waiver of Claims.** Final Payment will be deemed to have taken place when CONTRACTOR or any of its representatives negotiates the OWNER's final payment check, whether labeled final or not, for cash or deposits check in any financial institution for its monetary return. The making and acceptance of Final Payment will constitute:

**15.12.1** A waiver of claims by the OWNER against CONTRACTOR, except claims arising from unsettled claims, from Defective Work appearing after final inspection, from failure to comply with this Contract or the terms of any warranty specified therein, or from CONTRACTOR's continuing obligations under this Contract; and

**15.12.2** A waiver of all claims by CONTRACTOR against the OWNER other than those which were made in writing through the date that the check for final payment was issued and which are unsettled.

**15.13 Partial Final Payment in Extenuating Circumstances.** If the OWNER determines that after CONTRACTOR has achieved Substantial Completion, Final Completion is materially delayed through no fault of CONTRACTOR, the OWNER may without terminating this Contract, make payment of balance due for that portion of the Work fully completed and accepted. Such payment will be made under the terms and conditions governing Final Payment, except that it will not constitute a waiver of claims by the OWNER, and will not cause a transfer of title or relieve CONTRACTOR for responsibility for the Substantially Completed Work.

## **ARTICLE 16 - SUSPENSION OF WORK AND TERMINATION**

**16.1 The OWNER May Suspend Work Without Cause.** At any time and without cause, the OWNER may suspend the Work or any portion thereof for a period of not more than 90 days by written notice to CONTRACTOR which will fix the date on which the Work will be resumed. CONTRACTOR will resume the Work on the date so fixed. CONTRACTOR will be allowed an adjustment in the Contract Price or an extension of the Contract Time, or both, directly attributable to any such suspension if CONTRACTOR makes an approved Claim for such an adjustment as provided herein.

**16.2 The OWNER May Terminate Without Cause.** Upon seven days' notice to CONTRACTOR, the OWNER may, without cause and without prejudice to any right or remedy of the OWNER, elect to terminate the Contract. In such case, CONTRACTOR will be paid for completed and acceptable Work executed in accordance with this Contract prior to the date of termination, and if the Contract Price is **NOT** based on unit prices, the following:

**16.2.1.1** Reasonable demobilization costs;

**16.2.1.2** Reasonable anticipated profits on completed and accepted Work not previously paid and not included in separate pay items calculated to date of termination but not for anticipated profit on the entire Contract not previously paid, unabsorbed overhead, or lost opportunity; and

**16.2.1.3** All claims incurred in settlement of terminated contracts with subcontractor and others, including for anticipated profits on completed and accepted Work not previously paid and not included in separate pay items calculated to date of termination but not for anticipated profit on the entire Contract not previously paid, unabsorbed overhead, or lost opportunity. CONTRACTOR agrees to negotiate in good faith with subcontractors and others to mitigate the OWNER's cost.

### **16.3 The OWNER May Terminate With Cause.**

**16.3.1** Upon the occurrence of any one or more of the following events:

- .1 If CONTRACTOR persistently fails to perform the Work in accordance with the Contract Documents
- .2 If CONTRACTOR disregards or fails to comply with Legal Requirements;
- .3 If CONTRACTOR disregards the authority of the Contract Administrator or the City Manager;
- .4 If CONTRACTOR makes fraudulent statements;
- .5 If CONTRACTOR fails to maintain a work force adequate to accomplish the Work within the Contract Time;
- .6 If CONTRACTOR fails to make adequate progress and endangers successful completion of the Contract; or
- .7 If CONTRACTOR otherwise materially breaches the Contract;

The OWNER may, after giving CONTRACTOR (and the surety, if any) seven days' notice terminate the Contract. The OWNER, at its option, may proceed with negotiation with surety for completion of the Work. Alternatively, the OWNER may under these circumstances exclude CONTRACTOR from the Project Site and take possession of the Work (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at Project Site or for which the OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work as the OWNER may deem expedient. In such case CONTRACTOR will not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds all claims, costs, losses and damages sustained by the OWNER arising out of or resulting from completing the Work, such excess will be paid to CONTRACTOR. If such claims, costs, losses and damage exceed such unpaid balance, CONTRACTOR or surety will pay the difference to the OWNER. If a termination for cause is found to be wrongful, the termination will be converted to a termination without cause, and CONTRACTOR's remedy for wrongful termination is limited to the recovery of the payments permitted for termination without cause.

**16.3.2** Where CONTRACTOR's services have been so terminated by the OWNER, the termination will not affect any rights or remedies of the OWNER against CONTRACTOR and surety then existing or which may thereafter accrue. Any retention or payment of moneys due CONTRACTOR by the OWNER will not release CONTRACTOR from liability.

**16.4 CONTRACTOR May Stop Work or Terminate.** If through no act or fault of CONTRACTOR, the Work is suspended for a period of more than 90 days by the OWNER or under an order of court or other public authority, or (except during disputes) the Contract Administrator fails to forward for processing any mutually acceptable Application for Payment within 30 days after it is submitted, or (except during disputes) the OWNER fails for 60 days after it is submitted to pay CONTRACTOR any sum finally determined by the OWNER to be due, then CONTRACTOR may, upon seven days' written notice to the OWNER, and provided the OWNER does not remedy such suspension or failure within that time, terminate the Agreement and recover from the OWNER payment on the same terms as if OWNER terminated without cause pursuant to this Contract. In lieu of terminating the Agreement and without prejudice to any other right or remedy, if (except during disputes) the Contract Administrator has failed to forward for processing any mutually acceptable Application for Payment within 30 days after it is submitted, or (except during disputes) the OWNER has failed for 60 days after it is submitted to pay CONTRACTOR any sum finally determined by the OWNER to be due, CONTRACTOR may upon seven days' written notice to the OWNER stop the Work until payment of all such amounts due CONTRACTOR, including interest thereon. The provisions of

this Section are not intended to preclude CONTRACTOR from making a Claim for an increase in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to CONTRACTOR's stopping Work as permitted by this Section.

**16.5 Discretionary Notice to Cure.** In its complete discretion, the OWNER may, but is not required to, provide a Notice to Cure to CONTRACTOR and its surety to cure any of the conditions constituting a breach of Contract or an anticipatory breach of contract and, if required by the OWNER, to attend a meeting with the OWNER, regarding the Notice to Cure, the event of default or the anticipatory breach of contract. The Notice to Cure will set forth the time limit in which the cure is to be completed or commenced and diligently prosecuted. Upon receipt of any Notice to Cure, CONTRACTOR will prepare a report describing its program and measures to affect the cure of the event of default or anticipatory breach of contract within the time required by the Notice to Cure. The CONTRACTOR's report will be delivered to the OWNER at least three days prior to any requested meeting with the OWNER and surety.

**16.6 Bankruptcy.** If CONTRACTOR declares bankruptcy or is adjudged bankrupt or makes an assignment for the benefit of creditors or if a receiver is appointed for the benefit of creditors or if a receiver is appointed by reason of CONTRACTOR's insolvency, CONTRACTOR may be unable to perform this Contract in accordance with the Contract requirements. In such an event, the OWNER may demand CONTRACTOR or its successor in interest provide the OWNER with adequate assurance of CONTRACTOR's future performance in accordance with the terms and conditions of the Contract. If CONTRACTOR fails to provide adequate assurance of future performance to the OWNER's reasonable satisfaction within ten days of such a request, the OWNER may terminate the Contract for cause or without cause, as set forth above. If CONTRACTOR fails to provide timely adequate assurance of its performance and actual performance, the OWNER may prosecute the Work with its own forces or with other contractors on a time and material or other appropriate basis and the cost of which will be charged against the balance of the Contract Price otherwise due to CONTRACTOR.

**16.7 Duty to Mitigate.** If the OWNER terminates this Contract or suspends CONTRACTOR's work, CONTRACTOR agrees to and will take all reasonable actions to mitigate its damages and any and all claims which may be asserted against the OWNER.

**16.8 Responsibility during Demobilization.** While demobilizing, CONTRACTOR will take all necessary and reasonable actions to preserve and protect the Work, the Project Site and other property of the OWNER or others at the Project Site.

**16.9 CONTRACTOR to Remove Equipment.** In the case of termination of this Contract before completion for any cause whatsoever, CONTRACTOR, if notified to do so by the OWNER, will promptly remove any part or all of his equipment or supplies from the property of the OWNER; failing to, the OWNER will have the right to remove such equipment and supplies at the expense of CONTRACTOR.

**16.10 CONTRACTOR to Clean Up Project Site.** If either OWNER or CONTRACTOR terminates the Contract before Substantial or Final Completion, CONTRACTOR will leave the Project Site in a clean condition as if Final Completion had been achieved, unless OWNER directs otherwise; and if CONTRACTOR fails to comply clean up the Project Site as required, the OWNER may do so and the cost thereof will be charged against CONTRACTOR.

***END OF GENERAL CONDITIONS SECTION***

## SUPPLEMENTAL GENERAL CONDITIONS

### SGC1. ADDITIONAL NPDES REQUIREMENTS

- A. CONTRACTOR will at all times ensure certification and licensing from the Florida Department of Agriculture and Consumer Services (FDACS) of all of CONTRACTOR's personnel and subcontractors who apply pesticides or herbicides on City property or public right-of-way pursuant to the Contract. All such personnel and subcontractors who apply fertilizer will be trained and certified through the "Green Industry BMP Program" and FDACS; and will have a limited certification for urban landscape commercial fertilizer application under Section 482.1562, F.S
- B. All commercial applicators of fertilizer will have and carry in their possession at all time when applying fertilizer, evidence of certifications by the Florida Department of Agricultural and Consumer Services **and** a Commercial Fertilizer Applicator License as per 5E-14.117(18) FAC.
- C. All Contractors shall comply with the minimum requirements of the Urban Turf Fertilizer Rule RE-1.003(2) FAC.
- D. Fertilizer used will meet Florida-friendly fertilizer requirements pursuant to Section 403.9337 F.S.
- E. Fertilizer and Pesticide application must meet minimum requirements of the most recent edition of the Florida Friendly Best Management Practices for Protection of Water Resources by the Green Industries, 2008.
- F. Fertilizer should not be applied within 10 feet of any inlet, curb and gutter, public street, pond, stream watercourse, lake, canal, or wetland as defined by the FDEP Chapter 62-340 FAC. Fertilizer may be applied within 3 ft. of a water body only if the applicator is equipped with a spreader deflector.
- G. A 10-foot wide Low Maintenance Zone is required from any pond, stream, watercourse, canal, ditch, lakes wetland or from the top of a seawall. No mowed or cut vegetative material may be deposited in any water body. Care must be taken to prevent erosion of the surface soils in this Zone. Contractor shall set mechanical mowers to prevent the exposing of bare soil on pond slopes, ditches, wetlands, stream and lakes. This Zone shall be suitably vegetated at all times to ensure soil stability.
- H. Fertilizers applied to turf shall be formulated and applied in accordance with requirements and direction provided by Rule 5E-1.003(2) FAC, Labeling for Urban Turf Fertilizers.
- I. In no case shall grass clipping, vegetative material, and /or vegetative debris be washed, swept or blown off into stormwater drains, curbs and gutters, ditches, conveyance, water bodies, wetlands or sidewalks or roadway. Any material that is accidentally so deposited shall be immediately removed to the maximum extent practicable.
- J. The monthly invoices shall include
- (1) A summary of the type and amount of fertilizer used at each location.
  - (2) A summary of the type and amount of any chemicals and /or pesticides used at each pond, ditch, roadway or park location.

**SGC 2. STAGING AREA:** The CONTRACTOR is allowed to use land adjacent to the reuse storage tank located at the City of Daytona Beach's Police Station at 129 Valor Avenue, Daytona Beach, Florida for staging and the storage of materials under certain conditions.

Due to the secure nature of the facility, the City requires that all personnel who will have access to the site complete and pass to the satisfaction of the City a background check.

The CONTRACTOR shall supply information to the City of Daytona Beach Police Department (Community Relations Specialist Nick Fiore or authorized City representative) on each employee, including subcontractors, who will be accessing the site.

The information needed shall include the workers full name, address and date of birth. This information will be used by the City for a basic check to determine criminal background.

The purpose of this check will be to determine individuals who should not have access to the rear portion of the Daytona Beach Police Department for reasons of:

- FCIC/NCIC computer use within potential sight of workers.
- Undercover operations taking place/ undercover employees entering and leaving the facility.
- Prisoner Transfers.
- Specific training, tactics, and equipment which should be shielded from the public.

The CONTRACTOR will be notified of any worker determined to have a background which could prove problematic in any facet of the above reasons or deemed to be in the City's best interest for restriction. The required information can be provided by e-mail, fax, US mailed or by phoning in.



# TABLE OF CONTENTS

TABLE OF CONTENTS	44
<b>1. DIVISION 1 – GENERAL</b>	<b>46</b>
SECTION 01010 - SUMMARY OF WORK	47
SECTION 01014 - MAINTENANCE OF OPERATIONS	49
SECTION 01025 - MEASUREMENT AND PAYMENT	51
SECTION 01026 - SCHEDULE OF VALUES & PAYMENT APPLICATIONS	58
SECTION 01040 - COORDINATION	61
SECTION 01045 - CUTTING AND PATCHING	63
SECTION 01050 - FIELD ENGINEERING	65
SECTION 01065 - PERMITS AND FEES	67
SECTION 01200 - PROJECT MEETINGS AND VIDEO	68
SECTION 01300 - GENERAL SUBMITTALS	70
SECTION 01340 - SHOP DRAWING PROCEDURES	72
SECTION 01400 - QUALITY CONTROL	75
SECTION 01500 - TEMPORARY UTILITY FACILITIES	76
SECTION 01541 - PROTECTION OF THE WORK AND PROPERTY	78
SECTION 01568 - EROSION & SEDIMENTATION CONTROL	80
SECTION 01570 - TRAFFIC CONTROL	83
SECTION 01600 - MATERIALS AND EQUIPMENT	85
SECTION 01611 - STORAGE OF MATERIAL	86
SECTION 01640 - SUBSTITUTIONS AND PRODUCT OPTIONS	87
SECTION 01660 - RECLAIMED FORCEMAIN PIPING - FIELD TESTING	89
SECTION 01700 - SUBSTANTIAL COMPLETION OF FACILITIES	93
SECTION 01720 - AS-BUILTS/RECORD DOCUMENTS	95
SECTION 01740 - WARRANTIES	101
<b>2. DIVISION 2</b>	<b>104</b>
SECTION 02010 - SUBSURFACE INVESTIGATION	105
SECTION 02110 - CLEARING AND GRUBBING	106
SECTION 02202 - EXCAVATING, BACKFILLING AND COMPACTING	108
SECTION 02240 - DEWATERING	114
SECTION 02489 - GRASSING	117
SECTION 02616 - FITTINGS FOR PRESSURE SERVICE	119
SECTION 02610 - PAVING, MILLING & RESURFACING	121

SECTION 02611 - SIDEWALK, DRIVEWAY, CURB AND GUTTER \_\_\_\_\_ 122

SECTION 02612 - BASE, STABILIZED SUBGRADE AND FLOWABLE FILL \_\_\_\_\_ 123

SECTION 02622 - HORIZONTAL DIRECTIONAL DRILLING \_\_\_\_\_ 124

SECTION 02641 - PRESSURE PIPE CLEANING \_\_\_\_\_ 142

SECTION 02801 - RESTORATION OF SURFACE IMPROVEMENTS \_\_\_\_\_ 144

**3. DIVISION 3 CONCRETE \_\_\_\_\_ 147**

SECTION 03300 - CONCRETE \_\_\_\_\_ 148

SECTION 03450 - PRECAST CONCRETE STRUCTURES \_\_\_\_\_ 158

**4. DIVISION 15 MECHANICAL \_\_\_\_\_ 162**

SECTION 15000 - MECHANICAL GENERAL REQUIREMENTS \_\_\_\_\_ 163

SECTION 15049 - TRACER WIRE AND ALARMING TAPE \_\_\_\_\_ 171

SECTION 15050 - WATER PIPING GENERAL \_\_\_\_\_ 174

SECTION 15066 - POLYVINYL CHLORIDE (PVC) PIPE AND CONDUIT \_\_\_\_\_ 178

SECTION 15067 - RECLAIMED WATER PIPE FOR TRENCH INSTALLATION \_\_\_\_\_ 179

SECTION 15110 - VALVES AND ACCESSORIES – RECLAIMED WATER \_\_\_\_\_ 183

**5. APPENDICES \_\_\_\_\_ 185**

APPENDIX A - GEOTECHNICAL REPORT - GEOTECHNICAL REPORT DATED JANUARY 2018 \_\_\_\_\_ 186

APPENDIX B – VOLUSIA COUNTY RIGHT OF WAY USE PERMIT \_\_\_\_\_ 208

# **DIVISION 1 – GENERAL**

## **SECTION 01010 - SUMMARY OF WORK**

### **PART 1 GENERAL REQUIREMENTS**

#### **1.0 SUMMARY**

- A.** Work under the contract for the Williamson Blvd Reclaimed Pipeline located as shown on the Contract Drawings between Dunn and Mason along the west side of Williamson Blvd connecting existing elements of the reclaimed water system.
- B.** The secondary work will include maintenance of traffic and all other ancillary construction support services including coordination with other facility and property owners within and adjacent to the project site that are affected by constructions activities and the restoration and or replacement of all improvements above, on and below ground that are disturbed by construction activities.
- C.** All work, materials, means and methods involved in the construction work shall be acceptable to the CITY and in accordance with the CITY Utilities Department Standard Details (latest edition and amendments), CITY Specifications and the applicable sections of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, and the Florida Department of Transportation Design Standards, latest edition.
- D.** Work may not be performed during City Holidays, Bike Week, Biketoberfest, and Race Week.

#### **1.1 REQUIRED NOTICES TO AGENCIES AND PUBLIC**

The CONTRACTOR shall adequately inform in advance the affected business, property owners and utility customers of scheduled temporary utility service disruptions and changes in access. CONTRACTOR shall provide alternative accommodations when required by CITY. In cases of emergency, CONTRACTOR to promptly contact Emergency Services.

#### **1.2 SALVAGED MATERIALS**

Unless otherwise noted in the contract, materials, equipment or supplies that are removed or that are no longer needed as a result of the contract work will become the property of the CONTRACTOR and shall be removed from the project and disposed of by the CONTRACTOR in areas provided by the CONTRACTOR. Unsuitable materials consisting of rock or cemented coquina shall be the property of the CITY

**PART 2      PRODUCTS**

(Not Applicable, General Conditions may apply)

**PART 3      EXECUTION**

The CONTRACTOR shall be responsible for reviewing the site conditions, reviewing the Bid Documents, verifying the Summary of Quantities and Bid Schedule and the inclusion of all items and costs necessary to complete the work prior to preparing and submitting a balanced and responsive bid.

**END OF SECTION**

## **SECTION 01014 - MAINTENANCE OF OPERATIONS**

### **PART 1 GENERAL REQUIREMENTS**

#### **1.0 SUMMARY**

This Section sets forth the requirements for scheduling and performing the work to keep existing essential facilities in continuous dependable operation.

#### **1.1 GENERAL CONSTRAINTS**

- A.** The CONTRACTOR shall keep existing essential facilities in operation at the performance levels specified unless otherwise specifically permitted in these specifications or approved by the CITY in writing. Coordinate any system shutdowns with the CITY sufficiently in advance to provide alternative service. Allowable shutdown times will be at the CITY's discretion.
- B.** Any temporary work, facilities, roads, walks, protection of existing structures, piping, blind flanges, valves, equipment, etc. that may be required within the CONTRACTOR'S work limits to maintain continuous and dependable operation of existing systems shall be furnished and maintained by the CONTRACTOR at no extra cost to the CITY.
- C.** The CONTRACTOR shall schedule the work in such a manner so that all existing systems are maintained in continuous operation unless otherwise directed by CITY. All short-term system or partial system shutdowns shall be approved in writing by the CITY. If, in the opinion of the CITY/ENGINEER, a shutdown is not required in order for the CONTRACTOR to perform the work, the CONTRACTOR shall utilize alternative methods to accomplish the work. CITY shall be provided a minimum of thirty (30) days-notice of CONTRACTOR'S need for any system shutdown.
- D.** Required shutdowns shall not begin until all materials are on-hand, pre-assembled, as possible, and ready for installation. Upon commencement of the shutdown period the CONTRACTOR shall proceed with the work continuously, start to finish, until the work is completed, and the system is tested, cleared for service, and ready for operation. If the CONTRACTOR completes all required work before the specified shutdown period has ended the CITY may immediately place the system back in service.
- E.** The CITY reserves the right to cancel scheduled shutdowns if conditions warrant. Delays to the CONTRACTOR caused by cancellations will be considered in evaluating requests for a time extension. They will not be considered an entitlement to additional compensation. However, compensation may be considered at CITY's sole discretion.

#### **1.2 SUBMITTALS**

- A.** Submit a detailed schedule for and process description of proposed testing

### **PART 2 PRODUCTS**

(Not Applicable, General Conditions may apply)

**PART 3 EXECUTION**

(Not Applicable, General Conditions may apply)

**END OF SECTION**

## SECTION 01025 - MEASUREMENT AND PAYMENT

### PART 1 GENERAL REQUIREMENTS

#### 1.0 SUMMARY

- A. This Section sets forth supplemental measurement and payment conditions. Explanation of the Measurement and Payment for bid/pay items is made for information and guidance. The omission of reference to any item in this description shall not, however, alter the intent of the bid form or relieve the CONTRACTOR of the necessity of furnishing such as part of the contract.
- B. Payment shall be made for the items listed on the Bid Item Schedule on the basis on the work actually performed and completed, such work including, but not limited to, the furnishing of all necessary labor, materials, equipment, transportation, clean up, and all other appurtenances to complete the construction and installation of the work to the configuration and extent as shown on the drawings described in the specifications, noted in the construction plans, noted in the Summary of Pay Items and on the Summary of Quantity sheet.
- C. The quantities set forth in the Bid Item Schedule are approximate and are given to establish a uniform basis for the comparison of bids. The owner reserves the right to increase or decrease the quantity of any class or portion of the work during the progress of construction in accordance with the terms of the contract.
- D. Unit prices are used as a means of computing the final figures for bid and contract purposes, for periodic payments for work performed, for determining value of additions or deletions and wherever else reasonable.

#### 1.1 REFERENCE

- A. The General Conditions, the Summary of Quantities and the Bid Schedule.

#### 1.2 TYPICAL PAYMENT ITEM COSTS

- A. No separate payment will be made for the following items. The cost of such work shall be included in the unit price of applicable pay items listed in the Bid Schedule unless otherwise noted in the construction plans:
  - 1. Clearing and grubbing including removal and disposal of all above and below ground improvements such as but not limited to trees, brush, residential commercial and bridge structures, septic tanks and drain-fields, roadway pavement and concrete, drainage and utilities systems, etc... unless otherwise specified.



2. Trench and roadway excavation, including rock and cemented coquina excavation and disposal, excavation and removal of unsuitable soils and unsuitable materials of any nature unless otherwise specified.
3. Structure excavation including rock and cemented coquina excavation and disposal, excavation and disposal of unsuitable materials of any nature except as otherwise specified.
4. Dewatering and disposal of surplus water, prevention of sediment and erosion pollution and prevention of flooding
5. Structural fill, backfill, including furnishing, placement, compaction and final grading of suitable fill material, pipe bedding and compacted granular material.
6. The temporary removal and replacement of fences and walls.
7. Foundation and borrow materials, except as otherwise specified.
8. Paved and unpaved roadway restoration or replacement including but not limited to all disturbed improvements within the right of way, adjacent traffic signal system components included within the limits of lump sum work, unless otherwise specified.
9. Maintenance of vehicular and pedestrian traffic including detours and haul routes.
10. Shoring, sheeting and worksite safety.
11. Sod, sidewalk and pavement restoration in areas other than pipeline excavations.

**B. Methods of Measurement - Generally:**

1. Units of measurement shall be defined in general terms as follows:
  1. Linear Feet (LF)
  2. Square Feet (SF)
  3. Square Yards (SY)
  4. Cubic Yards (CY)
  5. Lump Sum (LS)
2. Unit Price Contracts/Items:

1. Linear Feet (LF) shall be measured along the horizontal length of the centerline of the installed material, unless otherwise specified. Pipe shall be measured along the length of the completed pipeline, regardless of the type of joint required, without deduction for the length of valves or fittings. Pipe included within the limits of lump sum items will not be measured.
2. Square Feet (SF), Square Yards (SY), Cubic Yards (CY), Each (EA) and Sacks (SK) shall be measured as the amount of the unit of measure installed and compacted within the limits specified and shown in the Specifications and Drawings. Slope angles and elevations shall be measured using land-surveying equipment. CONTRACTOR shall provide supporting documentation (i.e. drawings, delivery tickets, invoices, survey calculations, etc.) to verify actual installed quantities.

**B.** Lump Sum Contracts/Items - Generally:

1. Quantities provided in the Schedule of Values are for the purpose of estimating the completion status for progress payments. Payment will be made for each individual item on a percentage of completion basis as estimated by the CONTRACTOR and approved by the CITY.
2. Adjustments to costs provided in the accepted Schedule of Values maybe made only by Change Order.
3. The CITY reserves the right to delete any item included in the Schedule of Values and decrease the Contract Price by the scheduled amount for the item deleted.

**PART 2 PRODUCTS**

(Not Applicable, General Conditions may apply)

**PART 3 EXECUTION**

**3.0 Bid Items**

- A.** Bid Item No. 1 – Mobilization / Demobilization. Mobilization / Demobilization shall be the preparatory work and operations in mobilizing for beginning work on the project, including, but not limited to, those operations necessary for the movement of personnel, equipment, supplies and incidentals to the project site and staging area, and for the establishment of temporary offices, storage buildings, safety equipment and first aid supplies, sanitary and other facilities, as required by the Contract Documents and applicable laws and regulations. The costs of bonds, required insurance, permits and any other preconstruction expense necessary for the start of the work, excluding the cost of construction materials, shall also be included in this item. The CITY shall make 50% of the payment at beginning of project for mobilization and 50% of the payment at the end

of the project for demobilization. Unit of measurement is lump sum. Mobilization/Demobilization shall be limited to a maximum of 5% of the Bid Price.

**B. Bid Item No. 2 – Furnish & Install HDD Fused Reclaimed Main**

1. Bid Item No. 2.a. – 24-inch HDPE Pipe. Payment for this item shall include all labor, materials, and equipment necessary for dewatering, excavation, sheeting, shoring, bracing, drilling, installation of 24-inch HDPE Pipe pipeline, fittings, pipeline identification, mechanical joint restraints, disposal of excess material, suitable backfill, connections, removal and disposal of existing pipe, and relocation of existing valves. This work shall include but not be limited to, survey, locating and protection of all existing utilities, preparation and submittal of shop drawings. Payment of the applicable unit price per linear foot shall be full compensation for furnishing all labor, materials, and equipment necessary to furnish and install the force main.
2. Bid Item No. 2.b. – 24-inch HDPE MJ Restrained Adaptor, Payment for all labor, equipment, materials, delivery for all work necessary and required to furnish and install 20-inch 11.25 Degree bend and restrainers as indicated on the Drawings or as needed. This work shall include but not be limited to, survey, locating and protection of all existing utilities, preparation and submittal of shop drawings, requirements associated with the installation of a fitting. Unit of measurement is each.

**C. Bid Item No. 3 – Furnish & Install PVC Reclaimed Main**

1. Bid Item No. 3.a. – 20-inch PVC. Payment for this item shall include all labor, materials, and equipment necessary for dewatering, excavation, sheeting, shoring, bracing, installation of 20-inch PVC pipeline, fittings, pipeline identification and warning tape, mechanical joint restraints, disposal of excess material, suitable backfill, connections, removal and disposal of existing pipe, and relocation of existing valves. This work shall include but not be limited to, survey, locating and protection of all existing utilities, preparation and submittal of shop drawings. Payment of the applicable unit price per linear foot shall be full compensation for furnishing all labor, materials, and equipment necessary to furnish and install the force main.

**D. Bid Item No. 4 – Furnish & Install Compact Ductile Iron Fittings with Megalug Restrainers**

1. Bid Item No. 4.a. – 20-inch 11.25 Degree bend. Payment for all labor, equipment, materials, delivery for all work necessary and required to furnish and install 20-inch 11.25 Degree bend and restrainers as indicated on the Drawings or as needed. This work shall include but not be limited to, survey, locating and protection of all existing utilities, preparation and submittal of shop drawings, requirements associated with the installation of a fitting. Unit of measurement is each.
2. Bid Item No. 4.b. – 20-inch 45 Degree bend. Payment for all labor, equipment, materials, delivery for all work necessary and required to furnish and install 20-inch 45 Degree bend and restrainers as indicated on the Drawings. This work shall include but not be limited to, survey, locating and protection of all existing utilities, preparation and submittal of shop drawings, requirements associated with the installation of a fitting. Unit of measurement is each.
3. Bid Item No. 4.c. – 20-inch Restrained MJ Sleeve. Payment for all labor, equipment, materials, delivery for all work necessary and required to furnish and install 20-inch Restrained MJ Sleeve and restrainers as indicated on the Drawings or as needed. This work shall include but not be limited to, survey, locating and protection of all existing utilities, preparation and submittal of shop drawings, requirements associated with the installation of a fitting. Unit of measurement is each.
4. Bid Item No. 4.d. – 20-inch x 24-inch MJ Restrained Reducer. Payment for all labor, equipment, materials, delivery testing and commissioning for all work necessary and required to furnish install 20-inch x 24-inch MJ Restrained Reducers and restrainers as indicated on the Drawings. This work shall include but not be limited to, survey, locating and protection of all existing utilities, preparation and submittal of shop drawings, requirements associated with the installation of a fitting. Unit of measurement is each.

**E. Bid Item No. 5 – Furnish & Install Valve and Valve Boxes**

1. Bid Item No. 5.a. – 20-inch Gate Valve. Payment for all labor, equipment, materials, delivery testing and commissioning for all work necessary and required to furnish install a 20-inch Gate Valve as indicated on the Drawings. Not all new valves are shown on the drawings; these valves shall be furnished and installed at the discretion of the CITY; CONTRACTOR shall not order “not shown” valves unless directed by the CITY. This work shall include but not be limited to, survey, locating and protection of all existing utilities,

preparation and submittal of shop drawings, requirements associated with the installation of a valve. Unit of measurement is each.

2. Bid Item No. 5.b. – Automatic Air Release/Vacuum Valve Assembly and Above Ground Box Payment for all labor, equipment, materials, delivery testing and commissioning for all work necessary and required to furnish install an Automatic Air Release/Vacuum Valve Assembly and Above Ground Box as indicated on the Drawings. This work shall include but not be limited to, survey, locating and protection of all existing utilities, bollard protection, preparation and submittal of shop drawings, requirements associated with the installation of a valve. Unit of measurement is each.
3. Bid Item No. 5.c. – Manual Air Release Valve Assembly and Box Payment for all labor, equipment, materials, delivery testing and commissioning for all work necessary and required to furnish install a Manual Air Release Valve Assembly and Box as indicated on the Drawings. This work shall include but not be limited to, survey, locating and protection of all existing utilities, bollard protection, preparation and submittal of shop drawings, requirements associated with the installation of a valve. Unit of measurement is each.

**F.** Bid Item No. 6 – Clean, Pig, Flush & Pressure Test Force Main. Payment of this item shall include all labor, materials and equipment necessary to clean, pig, flush and pressure test the force main. Unit of measurement is lump sum on per test segment successfully achieved basis (Existing Portion, North Portion, HDPE Preinstall, South Portion, Total Pipeline).

**G.** Bid Item No. 7 – Driveway and Sidewalk Replacement. This item is for damaged/destroyed driveways and sidewalks above the pipeline excavations. Other damaged areas including but not limited to access road(s), staging/storage/layout areas and, placement areas for equipment, etc are considered to be site restorations whose costs shall be incorporated into the various unit price items.

1. Bid Item No. 7.a. – Concrete Driveways. Payment shall include all labor, materials, and equipment for saw-cutting, removal and proper disposal of existing concrete, compaction, form work, concrete replacement, restoration, curbs, and clean-up for a complete installation. Width of repaired driveway shall match that of existing driveway. Unit of measurement is square yards.
2. Bid Item No. 7.b. – Asphalt Driveways. Payment shall include all labor, materials, and equipment for saw-cutting, removal and proper disposal of existing asphalt, compaction, form work, asphalt replacement, restoration, curbs, and clean-up for a complete installation. Width of repaired driveway shall match that of existing driveway. Unit of measurement is square yards.

3. Bid Item No. 7.c. – Concrete Sidewalks. Payment shall include all labor, materials, and equipment for saw-cutting, removal and proper disposal of existing concrete, compaction, form work, concrete replacement, restoration, and clean-up for a complete installation. Width of repaired sidewalk shall match that of existing sidewalk. Unit of measurement is square yards.
- H. Bid Item No. 8 – Furnish & Install Bahai Sod. Payment of this item shall include all labor, materials, and equipment necessary to furnish, install, fertilize, water and maintain a healthy stand of grass including any soil amendments or conditioning required to bring the existing soil to within acceptable pH levels as recommended by the sod grower. This item is for sod damaged/destroyed to be replaced above the pipeline excavations. Other damaged sod areas including but not limited to access road(s), staging/storage/layout areas, placement areas for equipment, etc are considered to be site restorations whose costs shall be incorporated into the various unit price items and are not included under this bid item. Unit of measurement is square yards.
- I. Bid Item No. 9 – Submit Certified As-Built Drawings. Payment Measurement shall be on a lump sum basis. The completeness of the As-Built Drawings/Certified Record Drawings shall conform to section 01720 (As-Built/Record Documents) and will be the CITY’s determination as to completeness, serviceability, and compatibility.

**END OF SECTION**

## **SECTION 01026 - SCHEDULE OF VALUES & PAYMENT APPLICATIONS**

### **PART 1 GENERAL REQUIREMENTS**

#### **1.0 SUMMARY**

This Section specifies preparation and submittal requirements for Pay Applications and a Schedule of Values.

### **PART 2 SCHEDULE OF VALUES (FOR LUMP SUM ITEM CONTRACTS ONLY)**

- 2.0** Coordination: Coordinate preparation of the Schedule of Values on Lump Sum Item Contracts with preparation of CONTRACTOR'S Construction Schedule.
- 2.1** Correlate line items in the Schedule of Values with other required administrative forms and schedules, including Application for Payment forms with Continuation Sheets, Submittals Schedule and CONTRACTOR'S Construction Schedule.
- 2.2** Sub-Schedules: Where the Work is separated into phases requiring separately phased payments, provide sub-schedules showing values correlated with each phase of payment.
- 2.3** Format and Content Use the Bid Schedule as a guide to establish line items for the Schedule of Values on Lump Sum Item Contracts. Provide at least one-line item for each Specification Section.
- 2.4** Identification Include the following Project identification on the Schedule of Values or unit price pay item Bid Schedule, whichever is applicable, that accompanies the Pay Application
- 1.** Project name and location & Purchase Order Number
  - 2.** Name of CITY project manager.
  - 3.** CITY's project number.
  - 4.** CONTRACTOR's name and address.
  - 5.** Date of submittal.
  - 6.** Submit draft of AIA Document G703 Continuation Sheets.
- 2.5** Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Pay Applications and progress reports. Coordinate with the Project Bid Schedule. Provide several line items for principal subcontract amounts, where appropriate. Include separate line items under required principal subcontracts for operation and maintenance manuals, punch list activities, Project Record Documents, and demonstration and training.
- 2.6** Round amounts to nearest whole dollar; total shall equal the Contract Sum.
- 2.7** Provide a separate line item in the Schedule of Values for each part of the Work where Pay Applications may include materials or equipment purchased or fabricated and stored, but not yet installed.

- 2.8** Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the work.
- 2.9** Each item in the Schedule of Values and Pay Applications shall be complete and include the total cost.
- 2.10** Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at CONTRACTOR's option.
- 2.11** Schedule Updating on Lump Sum Item Contracts update and resubmit the Schedule of Values before the next Pay Applications when Change Orders or Construction Change Directives result in a change in the Contract Sum.

**PART 3 PAY APPLICATIONS**

- 3.0** Each Pay Application shall be consistent with previous applications and payments as certified by ARCHITECT/ ENGINEER and or CITY
- 3.1** CONTRACTOR to prepare Pay Application after confirming quantities or percent of work completed with CITY's construction field representative in draft form.
- 3.2** Pay Application Work Periods The period of construction work covered by each Application for Payment is the period indicated and agreed to on the Pay Application.
- 3.3** Pay Application Submittal Times Progress payments shall be submitted to CITY on average at one per thirty-day period.
- 3.4** Pay Application Forms Use AIA Document G702/CMA and AIA Document G703 Continuation Sheets or City acceptable equivalents as a format for Applications for Payment.
- 3.5** Application Preparation A company logo should be at the top. Complete every entry on form. Place the CITY Purchase Order number on the form near the top. Notarize and execute by a person authorized to sign legal documents on behalf of CONTRACTOR. CITY will return incomplete applications without action.
- 3.6** Entries shall match data on the Bid Schedule and Construction Schedule and if it is a Lump Sum Item Contract, the Schedule of Values. Provide updated schedules if revisions were made.
- 3.7** Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
- 3.8** Transmittal Submit two (2) signed and notarized original copies of each Pay Application to CITY by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.



**3.9** Transmit each copy with a transmittal form listing attachments and recording appropriate information pertaining to the application such as work progress projections, CITY's Minority and Women Owned Business Enterprise Usage form, certified payrolls, etc....

**3.10** Initial Application for Payment Administrative actions and submittals that must precede or coincide with submittal of first Pay Application include the following if applicable to the work.

- A.** List of SUBCONTRACTORS.
- B.** Schedule of Values (For Lump Sum Contract).
- C.** CONTRACTOR's Construction Schedule (preliminary if not final).
- D.** Bid Schedule of unit prices.
- E.** Submittals Schedule (preliminary if not final).
- F.** List of CONTRACTOR's principal consultants.
- G.** Copies of building permits.
- H.** Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
- I.** Initial progress report and projected work forecast.
- J.** Pay Application at Substantial Completion After issuing the Certificate of Substantial Completion, submit a Pay Application showing 100 percent completion for portion of the Work claimed as substantially complete. Include documentation supporting that the Work is substantially complete This application shall reflect Certificates of Partial Substantial Completion issued previously for CITY occupancy or use of designated portions of the Work.

**3.11** Final Pay Application Submit Final Pay Application in accordance with the requirements of the General Conditions, and may also include the following

- A.** Updated final statement, accounting for final changes to the Contract Sum.
- B.** Evidence that claims have been settled.
- C.** Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when CITY took possession of and assumed responsibility for corresponding elements of the Work.
- D.** Final, liquidated damages settlement statement.

**PART 4 PRODUCTS**

(Not Applicable, General Conditions may apply)

**PART 5 EXECUTION**

(Not Applicable, General Conditions may apply)

**END OF SECTION**

## SECTION 01040 - COORDINATION

### PART 1 GENERAL

#### 1.0 PROJECT COORDINATION

A. The CONTRACTOR shall provide for the complete coordination of the construction efforts. This shall include, but not necessarily be limited to, coordination of the following:

- The work of subcontractors.
- The flow of material and equipment from suppliers.
- The effort of equipment manufacturers during test and checkout.
- Interrelated work with public utilities companies.
- The interrelated work with the OWNER where tie-ins to existing facilities are required.
- The effort of independent testing agencies.
- Maintain operation of the existing facilities during tie-ins to piping/equipment.

#### 1.1 DEWATERING AND INSPECTION SURVEY/PLAN

A. Prior to starting fieldwork and within seven calendar days after the Notice to Proceed date, the CONTRACTOR'S Project Coordinator shall provide the City's Project Manager with the Dewatering and Inspection/Survey Plan.

B. The Plan shall include, but not be limited to, the sequence of dewatering, entry/exit ports to be used for pipe marking and field evaluation, the direction that the pipeline will be inspected/surveyed, the locations where ventilation will be introduced, and dates and times in which field work will be performed.

C. This Plan shall also include the names of the inspection/surveying crew and the company that they work for, the projected start and finish dates, times and progression of each inspection/survey, the number of persons involved in each inspection/survey, and the entry/exit ports that will be used by each inspection/survey crew. The CONTRACTOR shall coordinate his field activities with the City's Project Manager to ensure efficient and coordinated progress.

#### 1.2 REFERENCE

A. Section 02240: Dewatering (During Construction)

### PART 2 PRODUCTS

(Not Applicable, See General Conditions)

**PART 3 EXECUTION**

(Not Applicable, See General Conditions)

**END OF SECTION**

## **SECTION 01045 - CUTTING AND PATCHING**

### **PART 1 GENERAL**

#### **1.0 DESCRIPTION OF WORK**

- A. This Section establishes general requirements pertaining to cutting (including excavating), fitting, and patching of the Work required to:
- B. Make the several parts fit properly.
- C. Uncover Work to provide for installation.
- D. Remove and replace Work not conforming to requirements of the Contract Documents.
- E. Rework existing items to provide for new construction.

#### **1.1 QUALITY ASSURANCE**

- A. Perform all cutting and patching in strict accordance with pertinent requirements of these Specifications and, in the event no such requirements are determined, in conformance with the ENGINEER'S written direction.
- B. Codes and standards for work of this Section shall be the same as for the pertinent sections of this Specification.

#### **1.2 SUBMITTALS**

- A. Request for ENGINEER'S Consent Prior to cutting any item which affects structural safety, submit written request to the ENGINEER for permission to proceed with cutting.
- B. Should conditions of the Work, or schedule, indicate a required change of materials or methods for cutting and patching, so notify the ENGINEER and secure his written permission prior to proceeding.
- C. Submit written notice to the ENGINEER designating time the Work will be uncovered to provide for the Engineer's observation.

### **PART 2 PRODUCTS**

#### **2.0 MATERIALS**

Materials used in the replacement of existing work and the construction of work in conjunction with cutting and patching shall be new unless prior approval from the ENGINEER has been obtained to re-use existing materials.

#### **2.1 FABRICATION**

The materials and methods used in the fabrication of items required under this Section shall comply with the individual sections of this Specification that have to do with new construction.

**PART 3 EXECUTION**

**3.0 CONDITIONS**

- A. Examination: Examine existing conditions, including elements subject to movement or damage during cutting, excavating, backfilling, and patching. After uncovering the Work, inspect conditions affecting installation of the new Work.
- B. Discrepancies: If uncovered conditions are not as anticipated, immediately notify the ENGINEER and secure needed directions. Do not proceed in areas of discrepancy until all such discrepancies have been fully resolved.

**3.1 PREPARATION PRIOR TO CUTTING**

Provide all required protection including, but not necessarily limited to, shoring, bracing, and support to maintain structural integrity of the Work.

**3.2 PERFORMANCE**

Perform all required excavating and backfilling as required under pertinent Sections of these Specifications. Perform cutting and demolition by methods which will prevent damage to other portions of the Work and will provide proper surfaces to receive installation or repair and new work. Perform fitting and adjustment of products to provide finished installation complying with the specified tolerances and finishes.

**END OF SECTION**

## **SECTION 01050 - FIELD ENGINEERING**

### **PART 1      GENERAL**

**1.0**      Provide field engineering service for project as indicated on Drawings and specified in this Section.

#### **1.1      QUALIFICATIONS OF SURVEYOR OR ENGINEER**

**A.**      Florida Registered Engineer or Land Surveyor.

#### **1.2      SURVEY REFERENCE POINTS**

**A.**      Existing basic horizontal and vertical control points are designated on Drawings. All elevations are referred to NGVD 1988. Establish all vertical and horizontal controls required for construction.

**B.**      Locate and protect control points prior to starting site work and preserve permanent reference points during construction.

- 1.**      Make no changes or relocations of such points without prior written notice to ENGINEER.
- 2.**      Report to ENGINEER when any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations.
- 3.**      Require surveyor to replace control points which may be lost or destroyed. Establish replacements based on original survey control.
- 4.**      ENGINEER will identify existing control points and properly line corner stakes indicated on Drawings, as required.

#### **1.3      PROJECT SURVEY REQUIREMENTS**

**A.**      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.

**B.**      Establish lines and levels, locate and lay out, by instrument and similar appropriate means.

- 1.**      Site improvements.
- 2.**      Utilities and utility pipelines.
- 3.**      Controlling lines and levels required for mechanical and electrical trades.

**C.**      Verify layouts by same methods from time to time.

#### **1.4 RECORDS**

- A. Maintain a complete, accurate log of control and survey work as it progresses.
- B. On completion of foundations and major site improvements, prepare a certified survey showing finished dimensions, locations, angles and elevations of construction.

#### **1.5 SUBMITTALS**

- A. Submit name and address of surveyor or professional engineer to ENGINEER.
- B. On request of ENGINEER, submit documentation to verify accuracy of field survey work.
- C. 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.

#### **PART 2 PRODUCTS**

(Not Applicable, See General Conditions)

#### **PART 3 EXECUTION**

(Not Applicable, See General Conditions)

**END OF SECTION**

## **SECTION 01065 - PERMITS AND FEES**

### **PART 1      GENERAL**

#### **1.0      DESCRIPTION**

- A.**      Scope of Work: Obtain and pay for all permits and licenses including, but not limited to, all construction and Right-of-Way utilization permits.
  
- B.**      Permits by CITY: CITY will obtain and pay for the following permits:
  - 1.**      City of Daytona Beach Building Permit (if applicable)
  
  - 2.**      Volusia County Right of Way Use Permit
  
- C.**      Permits by CONTRACTOR: CONTRACTOR will apply for and CONTRACTOR will pay for the following permits:
  - 1.**      Remaining permits needed to construct the project
  
- D.**      Copies of the permits obtained by the OWNER are attached as an Appendix or will be distributed at the Pre-Construction Conference.

### **PART 2      PRODUCTS**

(Not Applicable, See General Conditions)

### **PART 3      EXECUTION**

(Not Applicable, See General Conditions)

**END OF SECTION**



## **SECTION 01200 - PROJECT MEETINGS AND VIDEO**

### **PART 1 GENERAL REQUIREMENTS**

#### **1.0 SUMMARY**

- A. This Section sets for the requirements and responsibilities for conducting project meetings and the videoing of the project area to document the pre-construction conditions.

#### **1.1 PRE-CONSTRUCTION CONFERENCE**

- A. A pre-construction conference will be held prior to beginning any work under the Contract. ENGINEER will schedule the conference in consultation with OWNER and CONTRACTOR. CONTRACTOR shall be ready to submit his anticipated progress schedule, a preliminary schedule of shop drawing submissions, and a preliminary schedule of values of work. The pre-construction conference will be attended by representatives of OWNER, ENGINEER, utility companies who will be affected by the work, and such of CONTRACTOR'S subcontractors as he wishes to attend.

#### **1.2 PROGRESS MEETINGS**

- A. Regular progress meetings to be scheduled by CITY shall be held during the construction period at which the CONTRACTOR shall submit updated progress schedules, discuss significant events that have or will affect the progress and discuss the work to occur in the upcoming work period.

#### **1.3 INSTALLATION/DEMOLITION & SPECIAL EVENT CONFERENCES**

- A. Well in advance of the installation/demolition of every major unit of work or special event that requires coordination with other work, CONTRACTOR will schedule a meeting with CITY, installers and representatives of manufacturers and fabricators, utility owners and or facility owners who are involved in or affected by the unit of work, and in its coordination or integration with other work which has preceded or will follow. Advise the CITY three (3) working days in advance of scheduled meeting dates.
- B. At each meeting review the progress of other work and preparations for the particular work under consideration, including the requirements of the contract documents, options, related change orders, purchases, deliveries, shop drawings, product data, quality control samples, possible conflicts, compatibility problems, time schedules, weather limitations, temporary facilities, space and access limitations, structural limitations, governing regulations, safety, inspection and testing requirements, required performance results, recording requirements, and protection. Record the significant discussions of each conference along with the final place of action. Distribute record of meeting promptly to everyone concerned.

**PART 2      PROJECT VIDEO AND PHOTOGRAPHY**

**2.0**      Video (photograph for additional detail as necessary) all improvements and existing conditions within and adjacent to the project rights of way as well as all line work, water, sanitary sewer, drainage, etc. CONTRACTOR shall make provisions at his expense for DVD video of all line work just prior to construction, and during construction on a minimum monthly basis and at keystones of the project.

**2.1**      The video shall show pertinent physical features along the line of construction including significant trees and buildings. The purpose of the video is to determine any damage to private or public property during construction.

**2.2**      A copy of the video and photographs shall be provided to the CITY.

**PART 3      PRODUCTS**

(Not Applicable, General Conditions may apply)

**PART 4      EXECUTION**

(Not Applicable, General Conditions may apply)

**END OF SECTION**

## SECTION 01300 - GENERAL SUBMITTALS

### **PART 1 GENERAL REQUIREMENTS**

#### **1.0 SUMMARY**

This Section sets forth the general requirements for various types of submittals including but not necessarily limited to product and process data, samples and miscellaneous work. No work shall be performed without “accepted/reviewed” submittals as defined in these specifications.

#### **1.1 SUBMITTALS**

- A.** Submittals shall be clear and legible, printed or typed. Submittals received that are not so, shall be returned to be resubmitted when in legible form.
- B.** Product data includes standard printed information on materials, products and systems, not custom-prepared for this project, other than the designation of selections from available choices.
- C.** Samples include both fabricated and not fabricated physical examples of materials, products and work both as complete units and as smaller portions of units of work, either for limited visual inspection or (where indicated) for more detailed testing and analysis.
- D.** Miscellaneous submittals related directly to the work (non-administrative) include warranties, guarantees, maintenance agreements, workmanship bonds, project photographs/videos, survey data and reports, physical work records, statements of applicability, quality testing and certifying reports, copies of industry standards, record drawings, operating and maintenance materials, overrun stock, security/protection/safety keys and similar information, devices and materials applicable to the work and not defined as shop drawings, product data or samples.
- E.** Five (5) copies of each submittal shall be submitted with (3 copies returned) unless otherwise approved.

#### **1.2 GENERAL SUBMITTAL REQUIREMENTS**

- A.** Coordination and Sequencing Coordinate the preparation and processing of submittals with the performance of the work so that work will not be delayed by submittals. Coordinate and sequence categories of submittals for the same work, and for interfacing units of work, so that one will not be delayed for coordination with another. No extension of time will be allowed because of failure to properly coordinate and sequence submittals. Do not proceed with purchasing, fabrication and delivery of work related to a submittal until submittal procedure has been successfully completed.
- B.** Preparation of Submittals Provide permanent marking on each submittal to identify it by project, date, CONTRACTOR, sub-CONTRACTOR, submittal name and similar information to distinguish it from other submittals. Show CONTRACTOR’s approval marking and provide space for review marking by CITY’s Representative. This will reduce the time required to re-stamp each submittal with the review stamp of the CITY. Package each submittal appropriately for transmittal and handling. Submittals that are received directly from sources other than through the CONTRACTOR’s office will be

returned without review. The following statement will be considered having been attached to each submittal even though the statement has not been physically placed on the submittal

Engineer's review is for general conformance of the design concept and contract documents. Markings or comments shall not be construed as relieving the CONTRACTOR from compliance with the project drawings and specifications nor departures. The CONTRACTOR remains responsible for details and accuracy, for confirming and correlating all quantities and dimensions, for selecting fabrication processes, for techniques of assembly, and for performing his work in a safe manner.

CITY OF DAYTONA BEACH

BY \_\_\_\_\_ DATE \_\_\_\_\_

Circle:

Reviewed

Reviewed as Noted

Rejected

Revise and Resubmit

- C. Reviewed submittals will have the CITY/ ENGINEER signature as appropriate for responsibility.
- D. Should a supplier demand more formal approval the CONTRACTOR can request the traditional approval which will include a red stamped statement on each sheet which includes limitations of responsibility

**PART 2 PRODUCTS**

(Not Applicable, General Conditions may apply)

**PART 3 EXECUTION**

(Not Applicable, General Conditions may apply)

**END OF SECTION**

## **SECTION 01340 - SHOP DRAWING PROCEDURES**

### **PART 1      GENERAL REQUIREMENTS**

#### **1.0          SUMMARY**

- A.        This Section sets for the Shop Drawing submittal procedures shall conform to the general requirements of Section 01300, and as described in this Section.

### **PART 2      PRODUCTS**

- 2.0        CONTRACTOR shall initially submit to CITY /ENGINEER a minimum of five (5) copies of all submittals that are on 11-inch by 17-inch or smaller sheets (no less than 8 1/2-inch by 11-inch), and one adobe computer file and 2 prints made from that file for all submittals on sheets larger than 11-inch by 17-inch.

### **PART 3      EXECUTION**

- 3.0        Shop drawings include custom-prepared data of all forms including drawings, diagrams, performance curves, data sheets, schedules, templates, patterns, reports, calculations, instructions, measurements and similar information not in standard printed form applicable to other projects.
- 3.1        Submit Shop Drawings to CITY/ENGINEER as directed at the Pre-construction meeting.
- 3.2        A letter of transmittal shall accompany each submittal. If data for more than one Section of the Specifications is submitted, a separate transmittal letter shall accompany the data submitted for each Section.
- 3.3        At the beginning of each letter of transmittal provide a reference heading indicating the following
- CITY and Department
  - Project Name
  - Contract Number & Project Number
  - Transmittal Number
  - Section Number
- 3.4        If a Shop Drawing deviates from the requirements of the Contract Documents, CONTRACTOR shall specifically note each variation in his letter of transmittal.
- 3.5        All Shop Drawings submitted for approval shall have a title block with complete identifying information satisfactory to CITY and or Engineer of Record.
- 3.6        All Shop Drawings submitted shall bear the stamp of approval and signature of CONTRACTOR as evidence that they have been reviewed by CONTRACTOR. Submittals without this stamp of approval will not be reviewed by CITY/ENGINEER and will be returned to CONTRACTOR. CONTRACTOR'S stamp shall contain the following minimum information

Project Name/CODB Contract No.  
CONTRACTOR'S Name \_\_\_\_\_  
Date \_\_\_\_\_  
Reference Item \_\_\_\_\_  
Specifications \_\_\_\_\_  
Section \_\_\_\_\_  
Page No. \_\_\_\_\_  
Paragraph No. \_\_\_\_\_  
Drawing No. \_\_\_\_\_ of \_\_\_\_\_  
Location \_\_\_\_\_  
Submittal No. \_\_\_\_\_  
Approved By \_\_\_\_\_

**3.7** A number shall be assigned to each submittal by CONTRACTOR starting with No. 1 and thence numbered consecutively. Re-submittals shall be identified by the original submittal number followed by the suffix "A" for the first re-submittal the suffix "B" for the second re-submittal, etc.

**3.8** For CITY/ENGINEER review purposes the following statement will be considered having been attached to each submittal even if the statement has not been physically placed on the submittal:

Engineer's review is for general conformance of the design concept and contract documents. Markings or comments shall not be construed as relieving the CONTRACTOR from compliance with the project drawings and specifications nor departures. The CONTRACTOR remains responsible for details and accuracy, for confirming and correlating all quantities and dimensions, for selecting fabrication processes, for techniques of assembly, and for performing his work in a safe manner.  
CITY OF DAYTONA BEACH

BY \_\_\_\_\_ DATE \_\_\_\_\_

**3.9** After CITY /ENGINEER completes' the review, the Shop Drawings will be marked with one of the following notations

- A. Reviewed
- B. Reviewed as Noted
- C. Rejected
- D. Revise and Resubmit

**3.10** If a submittal is acceptable, it will be marked "Reviewed" or "Reviewed as Noted". Three (3) prints or copies of the submittal will be returned to CONTRACTOR unless otherwise agreed upon.

**3.11** Upon return of a submittal marked "Reviewed" or "Reviewed as Noted" which may include comments, CONTRACTOR may order, ship or fabricate the materials included on the submittal, provided it is in accordance with the corrections indicated.

- A. If a Shop Drawing is approved with extensive corrections or corrections affecting other drawings or work, CITY/ ENGINEER may require that CONTRACTOR make the corrections indicated thereon and resubmit the Drawings for record purposes. Such drawings will be noted to "Revise and Resubmit".
- 3.12** If a submittal is unacceptable, three (3) copies will be returned to CONTRACTOR with one of the following notations
- A. "Revise and Resubmit"
- B. "Rejected"
- 3.13** Upon return of a submittal marked "Revise and Resubmit", CONTRACTOR shall make the corrections indicated and repeat the initial approval procedure. The "Rejected" notation is used to indicate material or equipment that is not acceptable. Upon return of a submittal so marked, CONTRACTOR shall repeat the initial approval procedure utilizing acceptable material or equipment.
- 3.14** Shop Drawings shall be submitted well in advance of the need for the material or equipment for construction and with ample allowance for the time required to make delivery of material or equipment after data covering such is approved.
- 3.15** It is CONTRACTOR's responsibility to review submittals made by his suppliers and SUBCONTRACTORS for conformance to the contract requirements and to ensure that they include the required information before transmitting them to CITY/ENGINEER for review.
- 3.16** CONTRACTOR shall furnish required submittals with complete information and accuracy in order to achieve required approval of an item within three submittals. All costs to CITY/ENGINEER involved with subsequent submittals of Shop Drawings will be back charged to CONTRACTOR, at the rate of 3.0 times direct technical labor cost, by deducting such costs from payments due CONTRACTOR for work completed. In the event that CONTRACTOR requests a substitution for a previously approved item, the CITY/ENGINEER's costs for the review and approval of the substitution may be back-charged to CONTRACTOR unless the need for such substitution is beyond the control of CONTRACTOR.
- 3.17** Close-out Submittals Refer to General Conditions and Section 01700 for related requirements on the submittal of closeout information, materials, tools, and similar items.

**END OF SECTION**

## **SECTION 01400 - QUALITY CONTROL**

### **PART 1 GENERAL REQUIREMENTS**

#### **1.0 TESTING LABORATORY SERVICES**

- A.** Arrangements for testing laboratory services will be made by OWNER. Payment for testing to show compliance with specified requirements will be paid for by OWNER. The cost of retesting when materials and workmanship fail to meet specified requirements will be deducted from monies due CONTRACTOR.

#### **1.1 LABORATORY STANDARDS**

- A.** Testing laboratories 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 AS 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.
- B.** Agents of testing laboratories performing field sampling and field testing of concrete shall be certified by the American Concrete Institute as Concrete Field Testing Technicians Grade 1 or by an equivalent recognized national authority for an equivalent level of competence or shall be licensed Professional Engineers.

#### **1.2 ACCESS FOR INSPECTION**

- A.** OWNER, ENGINEER and their authorized representatives shall be permitted free access and every reasonable facility for the inspection of all Work, materials and equipment. OWNER and his authorized representatives shall also be permitted to inspect payrolls, invoices for materials and equipment. OWNER and his authorized representatives shall also be permitted to inspect payrolls, invoices for materials and equipment and other relevant data and records.
- B.** Authorized representatives of Federal, State or local agencies shall be permitted access to inspect for compliance with applicable laws, regulations and permit requirements.

### **PART 2 PRODUCTS**

- A.** (Not Applicable, See General Conditions)

### **PART 3 EXECUTION**

- A.** (Not Applicable, See General Conditions)

**END OF SECTION**



## **SECTION 01500 - TEMPORARY UTILITY FACILITIES**

### **PART 1 GENERAL REQUIREMENTS**

#### **1.0 SUMMARY**

- A.** This section specifies the minimum requirements for temporary utility facilities to be brought to and operated at the project site in conjunction with the project work. The providing and operation of temporary utilities facilities is the CONTRACTOR's sole responsibility and is not limited by the requirements of this Section.
- B.** The types of utility service facilities required for temporary use at the project site include Potable and reclaimed water, sanitary sewer, stormwater drainage/run-off control facilities, electric power service, Information Technology communications service and telephone service. Other site-specific services may be required for prosecution of the work.

#### **1.1 QUALITY ASSURANCE**

- A.** Comply with local, state and federal regulatory requirements and utility company regulations and recommendations for the construction of temporary utility services; including (but not necessarily limited to); code compliance, permits, inspections, testing, and health and safety compliance.
- B.** Comply with pollution and environmental protection regulations for the use of water and other services, and for the discharge of wastes and stormwater drainage from the project site. Comply with all environmental impact commitments of record that have been made by the CITY or previous owners of the site in securing approval to proceed with the construction of the project.
- C.** CONTRACTOR must control turbidity in rivers or canals so that it does not exceed established background turbidity by more than 50 Jackson Units at a distance greater than 100 feet from the point of work. This shall be done by the use of a "diaper" or floating or anchored turbidity barriers or other methods approved by the environmental agency or CITY.
- D.** Safety compliance at a minimum shall be in accordance with the "Manual of Accident Prevention in Construction" by AGC or other similar accident prevention organization.

### **PART 2 PRODUCTS**

(Not Applicable, General Conditions may apply)

### **PART 3 EXECUTION**

#### **3.0 OPERATIONS**

- A.** Inspections: Prior to placing temporary utility services into use, inspect and test each service and arrange for governing authorities required inspection and test, and obtain required certifications and permits for use thereof.

- B.** Supervision: Enforce strict discipline in the use of utility services. Limit availability to essential uses, so as to minimize wastes. Do not allow the installations to be abused or endangered.
- C.** Protection: Prevent water filled piping from freezing, by ground cover or insulation or by keeping drained, or by temporary heating. Maintain distinct markers for underground lines and protect from damage during excavating operations.
- D.** Public Safety: The CONTRACTOR shall at all times so conduct his work as to insure the least possible obstruction to traffic and inconvenience to the general public and the residents in the vicinity of the work, and to insure the protection of persons and property, in a manner satisfactory to the CITY. No road or street shall be closed to the public, except with the prior permission of the CITY and proper governmental authority. (Contact the CITY to complete special form so adequate public announcement can occur.) Fire hydrants on or adjacent to the work shall be kept accessible to fire-fighting equipment at all times.
- E.** Temporary provisions shall be made by the CONTRACTOR to ensure that sidewalks are usable and A.D.A compliant and that all gutters, sewer inlets, drainage ditches, and irrigation ditches are properly functioning.
- F.** CONTRACTOR shall provide adequate drainage facilities, tie-downs, or other preventative measures for the work to protect the CITY and other properties from damage that occurs during severe weather events. At first notice of a "SPECIAL WEATHER ALERT" the CONTRACTOR is hereby required to make the works area as safe as possible. This may mean filling excavations and removing all equipment at no extra cost to the CITY. The use of barricades during excessive winds should be avoided by installing in-the-ground mounted construction activity warning signs.

**END OF SECTION**

## **SECTION 01541 - PROTECTION OF THE WORK AND PROPERTY**

### **PART 1 GENERAL REQUIREMENTS**

#### **1.0 SUMMARY**

This Section sets forth the requirements and responsibilities to protect the work and all public and private property and improvements above and below ground from aesthetic and structural damage during the performance of the work.

#### **1.1 TREE AND PLANT PROTECTION**

CONTRACTOR shall protect unique species, significant and or historical existing trees adjacent to the site that are shown or designated to remain in place against unnecessary cutting, breaking or skinning of trunk, branches, bark or roots. The CONTRACTOR shall utilize the services of a Florida licensed arborist for protective services if so directed by the CITY.

- A.** Materials, fuels, lubricants, chemicals, fire or equipment shall not be stored or parked within the drip line.
- B.** Temporary fences or barricades in keeping with regionally recognized damage prevention practices shall be installed to protect trees and plants in areas subject to construction traffic.
- C.** Within the limits of the work, water trees and plants that are to remain or that have been temporarily relocated, in order to maintain their health during construction operations.
- D.** Cover all exposed roots with burlap that shall be kept continuously wet. Cover all exposed roots with earth as soon as possible. Protect root systems from mechanical damage and damage by erosion, flooding, run-off or noxious materials in solution
- E.** If branches or trunks are damaged, prune branches immediately and protect the cut or damaged areas with emulsified asphalt compounded specifically for horticultural use in a manner approved by the CITY.
- F.** All damaged trees and plants that die or suffer permanent injury shall be removed when ordered by the CITY and replaced by a specimen of equal or better quality.

#### **1.2 PROTECTION OF EXISTING IMPROVEMENTS**

- A.** Underground improvements are defined to include, but not limited to, all storm sewer, sanitary sewer, water, gas, and other piping, and manholes, chambers, electrical conduits, tunnels and other existing subsurface improvements located within or adjacent to the limits of the work.
- B.** Surface improvements are defined as all existing buildings, structures and other facilities above the ground surface. Surface structures include, but are not limited to, buildings, tanks, walls, bridges, roads and their dams, channels, open drainage, piping, poles wires, posts, signs, markers, curbs, pavers, walks and all other facilities that are visible above the ground surface.

### **1.3 PROTECTION OF UNDERGROUND AND SURFACE STRUCTURES**

CONTRACTOR shall sustain in their places and protect from direct or indirect injury all underground and surface improvements located within or adjacent to the limits of the work. Such sustaining and supporting shall be done carefully and as required by the party owning or controlling such structure. Before proceeding with the work of sustaining and supporting such structure, CONTRACTOR shall satisfy the CITY that the party owning same has approved the methods and procedures to be used.

### **1.4 PROTECTION OF INSTALLED IMPROVEMENTS**

- A.** Provide protection of installed improvements to prevent damage. Remove protection when no longer needed, with CITY concurrence, prior to completion of work.
- B.** Control construction traffic to prevent damage to equipment, materials and surfaces.

### **PART 2 PRODUCTS**

(Not Applicable, General Conditions may apply)

### **PART 3 EXECUTION**

(Not Applicable, General Conditions may apply)

**END OF SECTION**

## **SECTION 01568 - EROSION & SEDIMENTATION CONTROL**

### **PART 1 GENERAL REQUIREMENTS**

#### **1.0 SUMMARY**

- A.** This Section sets forth the requirements for the control and containment and general prevention of pollution by erosion and sediment resulting from the project work in compliance with General Conditions of the contract and environmental regulations of the City, the, County, Department of Environmental Protection and United States Environmental Protection Agency.
- B.** The cost of all work, materials and coordination to implement and maintain an effective and regulatory compliant erosion and sediment control plan shall be included in the unit cost for the associated primary items of work unless otherwise provided for in the bid items.
- C.** Measures for erosion and sedimentation control shall be taken at the project site and ancillary areas disturbed by the project.

#### **1.1 SUBMITTALS**

- A.** CONTRACTOR shall upon request at the Pre-construction meeting submit an Erosion and Sedimentation Control Plan, prepared by an FDEP certified Stormwater Management Inspector, to the CITY for review and acceptance prior to beginning work. Each month a record of erosion control measures in place during the previous month will be provided.
- B.** Should the CITY receive a warning letter from the Department of Environmental Protection, the CITY/ENGINEER will move to issue a Stop Work Order until the Department of Environmental Protection representative has re-inspected the work conditions and given a statement that the project now appears to be in compliance with Chapter 373 no additional work days will be allowed.
- C.** The CONTRACTOR shall submit to CITY in writing the plan of action to prevent erosion and sedimentation problems cited during the project duration

#### **1.2 JOB CONDITIONS**

- A.** Prior to beginning construction, the contractor shall prepare a draft plan of action for erosion and sedimentation control. The full cost for all materials, labor and equipment shall be considered within the bid items of the submitted bid. There will be no extra payment for any installation, maintenance or reinstallation of erosion control devices that the Department of Environmental Protection may order as part of a warning letter.

## **PART 2 PRODUCTS**

(Not Applicable, General Conditions may apply)

## **PART 3 EXECUTION**

- 3.0** GENERAL CONTRACTOR shall not start work until erosion and sediment control measures are fully in place to prevent pollution of air, water and adjacent property. It shall be the CONTRACTOR's responsibility to provide, construct and maintain all sediment and erosion control devices. The CONTRACTOR shall have an FDEP Certified Stormwater Management Inspector onsite to supervise installation and maintenance of all erosion and sedimentation controls. Best Management Practices shall be used where directed by the CITY.
- 3.1** The CITY shall not be tasked with advising the CONTRACTOR of compliance, but should the CITY believe the Erosion and Sedimentation Control Plan proposed or installed by the CONTRACTOR to be inadequate the CITY will send a certified letter to the CONTRACTOR warning the CONTRACTOR of potential environmental concern. Should the Department of Environmental Protection conduct a field inspection and the CITY be put on notice the CITY will order the project closed until the erosion and sedimentation control devices are all in place and functioning properly.
- 3.2** Two (2) primary types of silt barriers may be installed in accordance with an action plan prepared by the CONTRACTOR and as noted on the plans; silt barriers installed on the ground, and floating turbidity/silt-barriers.
- 3.3** Silt barriers (filter fabric) shall be synthetic and contain ultraviolet ray inhibitors and stabilizers. Silt barriers shall be maintained and remain in-place until all risk of erosion has passed.
- 3.4** Hay bales shall not be used for silt barriers, unless maintained during rain events.
- 3.5** Inlet sediment protection barrier systems shall be maintained in place until all risk of erosion has passed.
- 3.6** Sandbagging shall consist of furnishing and placing sandbags in a configuration that prevents or contains erosion.
- 3.7** Sediment basins shall be constructed as necessary to prevent erosion from leaving the project limits.
- 3.8** Berms with appropriate sod or all-weather coverings shall be constructed as necessary to divert the flow of water from causing erosion.
- 3.9** Temporary grassing, chemical soil stabilizers or non-erodible coverings will be required to prevent erosion from soil surfaces with an anticipated unprotected exposure to sun and wind of more than 30 days.

### **3.10 CONTROL OF CONTRACTOR'S OPERATIONS**

- A.** In the event that it is necessary that the construction operations be suspended due to major storm events, the CONTRACTOR shall use due care secure the construction zone and do everything possible to prevent erosion at the same time preventing flooding of adjacent properties.
- B.** Should such preventative measures fail, CONTRACTOR shall immediately take all action as necessary to effectively remediate erosion and sedimentation damage.
- C.** Should the CITY be ordered by the Department of Environmental Protection to upgrade erosion control immediately after the major storm event the CONTRACTOR shall contact the CITY for further consideration of available options.

**END OF SECTION**

## **SECTION 01570 - TRAFFIC CONTROL**

### **PART 1 GENERAL REQUIREMENTS**

#### **1.0 SUMMARY**

- A.** The work in this section includes the coordination, implementation and operation of a Maintenance of Traffic (MOT) plan, in accordance with the construction plans and permits, that provides for the safe execution of the work and the safety of the public while maintaining property access and an effective flow of pedestrian and vehicular traffic.

#### **1.1 SUBMITTALS**

- A.** The CONTRACTOR shall submit three maintenance of traffic plan sets (MOT) complying with the M.U.T.C.D., Part IV and the Florida Department of Transportation (FDOT) Roadway and Traffic Design Standards, latest edition, Index No. 600 series as a project Shop Drawing submittal. The MOT shall also be submitted to Volusia County for approval. No construction shall occur without an approved plan.
- B.** The Plan must provide for the maintenance of vehicular and pedestrian traffic, including public safety and driveway access to properties on all roads and streets during the prosecution of the Work.
- C.** The CITY shall have the right at any time to require revisions to the Plan and to require CONTRACTOR to take additional steps not reflected on the approved Plan, in order to ensure maintenance of vehicular and pedestrian flow and provide protection against damage to access routes and haul routes.

### **PART 2 PRODUCTS**

(Not Applicable, General Conditions may apply)

### **PART 3 EXECUTION**

- 3.0** The CONTRACTOR shall be responsible for the implementation of the maintenance of traffic plan. Vehicular and pedestrian traffic including access to businesses and other properties shall be maintained on all roads and streets.
- 3.1** The CONTRACTOR shall coordinate with the CITY's Project Manager and Traffic Operations Manager and the Owner of the road right of way in preparing the maintenance of traffic plan.
- 3.2** The CONTRACTOR shall provide a Worksite Traffic Supervisor for the duration of the project, to supervise the implementation of the plan. The Supervisor must be trained and certified by a Florida Department of Transportation approved traffic safety education provider. Contact information shall be provided at the Pre-Construction meeting.



- 3.3** It shall be the CONTRACTOR's responsibility to restore work site access routes and material haul routes to their pre-construction condition when damages result from the CONTRACTOR's activities.
- 3.4** The CONTRACTOR shall comply with the requirements and permits of the respective right of way owners while working within their right of ways.
- 3.5** No additional compensation shall be made for compliance with these requirements.

**END OF SECTION**

## **SECTION 01600 - MATERIALS AND EQUIPMENT**

### **PART 1      GENERAL REQUIREMENTS**

#### **1.0 SUMMARY**

- A. This Section sets forth the general requirements for quality and uniformity of materials and equipment furnished by CONTRACTOR. Materials and equipment shall conform to applicable specifications, operating and performance standards and comply with the size, make, type and quality specified, or as specifically approved in writing by CITY and or Engineer of Record.

#### **1.1 TRANSPORTATION AND HANDLING**

- B. Materials and equipment shall be loaded and unloaded by methods affording adequate protection against damage. Every precaution shall be taken to prevent injury to the materials or equipment during transportation and handling.
- C. Suitable power equipment will be used and the materials or equipment shall be under control at all times. Under no condition shall the materials or equipment be dropped, bumped or dragged. When a crane is used, a suitable hook or lift sling shall be used. The crane shall be so placed that all lifting is done in a vertical plane.
- D. Materials or equipment skid loaded, palletized or handled on skid ways shall not be skidded or rolled against materials or equipment already unloaded.
- E. Materials and equipment shall be delivered to the job site by means that will adequately support it and not subject it to undue stresses. CONTRACTOR shall promptly inspect the products for damage and defects and conformance with the specification. Materials and equipment damaged or injured in the process of transportation, unloading or handling will be rejected and shall be immediately removed from the site.

### **PART 2      PRODUCTS**

- 2.0 The CONTRACTOR shall provide anchor bolts and weather exposed structural attachments in stainless steel 304 for each piece of equipment furnished unless otherwise directed.

### **PART 3      EXECUTION**

(Not Applicable, General Conditions may apply)

**END OF SECTION**

## **SECTION 01611 - STORAGE OF MATERIAL**

### **PART 1      GENERAL REQUIREMENTS**

#### **1.0            SUMMARY**

This Section sets forth the requirements and provisions necessary for the storage of materials and equipment. Materials and equipment shall be kept neatly and compactly stored in locations that will cause a minimum of inconvenience to other contractors, public travel, adjoining Cities, tenants, and occupants. Contractor is responsible for damage of items caused by improper storage or handling and shall replace damaged items at his cost.

#### **1.1            UNCOVERED STORAGE**

The following types of materials may be stored out of doors without cover; masonry units, reinforcing steel, structural steel, piping, pre-cast concrete items, castings, hand-railing. Store the above materials on wood blocking so there is no contact with the ground.

#### **1.2            COVERED STORAGE**

The following types of materials may be stored out of doors if covered with material impervious to water rough lumber, filter media. Tie down covers with rope and slope to prevent accumulation of water on covers.

#### **1.3            FULLY PROTECTED STORAGE**

Store all products not named above in buildings or trailers that have concrete or wooden floor, a roof, and fully closed walls on all sides. Provide heated storage space for materials that would be damaged by freezing. Protect mechanical and electrical equipment from being contaminated by dust, dirt and moisture. Maintain humidity at levels recommended by manufacturers for electrical and electronic equipment. Provide air conditioning areas as necessary.

#### **1.4            MAINTENANCE OF STORAGE**

- A.**      Maintain a periodic system of inspection of stored products on a scheduled basis to assure that the state of storage facilities is adequate to provide required conditions, that the required environmental conditions are maintained on a continuing basis and that products exposed to elements are not adversely affected.
  
- B.**      Mechanical and electrical equipment which requires long term storage shall have complete manufacturer's instructions for servicing, accompanying each item, with notice of enclosed instructions shown on exterior of package. Comply with manufacturer's instructions on scheduled basis.

### **PART 2      PRODUCTS**

(Not Applicable, General Conditions may apply)

### **PART 3      EXECUTION**

(Not Applicable, General Conditions may apply)

**END OF SECTION**

## **SECTION 01640 - SUBSTITUTIONS AND PRODUCT OPTIONS**

### **PART 1 GENERAL REQUIREMENTS**

#### **1.0 REQUESTS FOR REVIEW**

- A.** Requests to review substitute items of material and equipment will not be accepted by the ENGINEER from anyone other than the CONTRACTOR. If the CONTRACTOR wishes to furnish or use a substitute or equivalent items of material or equipment, the CONTRACTOR shall make written application to the ENGINEER for acceptance, certifying that the proposed substitute will perform adequately the functions called for by the general design, be similar and of equivalent substance to that specified and be suited to the same use and capable of performing the same function as that specified. The application will state whether or not acceptance of the substitute for use in the work will require a change in Drawings or Specifications to adapt the design to the substitute and whether or not incorporation or use of the substitute in connection with the work is subject to payment of any license fee or royalty.
- B.** All variations of the proposed substitute from that specified shall be identified in the application and available maintenance, repair and replacement service will be indicated. The application will also contain an itemized estimate of all costs that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which shall be considered by the ENGINEER in evaluating the proposed substitute.
- C.** The ENGINEER may require the CONTRACTOR to furnish at the CONTRACTOR's expense additional data about the proposed substitute. The ENGINEER will be the sole judge of acceptability, and no substitute will be ordered or installed without the ENGINEER's prior written acceptance. The OWNER may require the CONTRACTOR to furnish at the CONTRACTOR's expense, a special performance guarantee of other surety with respect to any substitute.

#### **1.1 SUBSTITUTION AFTER EXECUTION OF AGREEMENT**

- A.** After execution of the Agreement, substitution of materials or equipment from Suppliers other than those listed or included in the Agreement will be considered only if it is demonstrated by CONTRACTOR that:
- 1.** The material or equipment proposed for substitution is superior in design, construction and/or efficiency to that of the listed manufacturer or supplier;
  - 2.** The material proposed for substitution is in every way equal to that of the listed supplier, and that availability and/or delivery of listed materials within the time frame scheduled cannot be met; or

3. The material proposed for substitution is in every way equal to that of the listed supplier and is available at a lower cost. In the event such a substitution is allowed, CONTRACTOR shall accept and execute a Change Order reducing the Contract Price by an amount equal to the cost differential.

## **1.2 ENGINEERS' CHARGES**

- A. The Engineers will record time required by the ENGINEER and the ENGINEER'S consultants in evaluating substitutions proposed by the CONTRACTOR and in making changes in the Drawings or Specifications occasioned by the substitution. Whether or not the ENGINEER accepts a proposed substitute, the CONTRACTOR shall reimburse the OWNER for the charges of the ENGINEER and the ENGINEER'S consultants for evaluating any proposed substitute.

## **1.3 EQUIPMENT REQUIRING VARIATION IN SPACE**

- A. It is intended that the CONTRACTOR shall furnish equipment which may be installed and shall operate properly in the structures as shown. Should the CONTRACTOR select alternate equipment resulting in an alteration to, addition to, enlargement of, or any other changes from the lines, dimensions, and grades shown, the CONTRACTOR shall make such changes or alterations as are required and no additional payment will be made by the OWNER for changes in structures occasioned by the selection of alternate equipment. All such variations shall be subject to review and acceptance by ENGINEER. Equipment requiring supplemental services in addition to those shown or specified in order to fulfill the operating objectives and including additional mechanisms, operating steps and/or controls as compared with specified equipment will not be acceptable.

## **PART 2 PRODUCTS**

(Not Applicable, See General Conditions)

## **PART 3 EXECUTION**

(Not Applicable, See General Conditions)

**END OF SECTION**

## **SECTION 01660 - RECLAIMED FORCEMAIN PIPING - FIELD TESTING**

### **PART 1 GENERAL REQUIREMENTS**

#### **1.0 SUMMARY**

- A. The scope of work is the performing of all field tests required to demonstrate that the new equipment and piping constructed is as specified and complete and ready. The repeating of tests that did not meet the established standards will be at the total cost of the CONTRACTOR. The work in this section shall be performed at no additional costs and unless a separate bid item is provided. The cost of all work and materials needed to perform the field tests shall be included in pipe and equipment items or included in the project lump sum bid value.
- B. The CITY shall not be tasked with advising the CONTRACTOR of compliance, but should the CITY believe the field tests are inadequate the CITY will require the CONTRACTOR to provide additional random field verification tests.

#### **1.1 REFERENCES**

- A. The CITY Utilities Department Standard Details, latest edition, AWWA C 651 and ancillary applicable standards and manufacturer's recommended standards shall apply.

#### **1.2 SUBMITTALS**

- A. The CONTRACTOR shall submit to the CITY the results of field tests.
- B. CONTRACTOR shall submit calibration reports for test gauges to be used prior to use for testing.
- C. The CONTRACTOR shall submit Test schedule.
- D. The CONTRACTOR shall submit Test water needs.

#### **1.3 JOB CONDITIONS**

- A. To the maximum extent possible the CONTRACTOR shall schedule field tests to allow portions of the project to be cleared for use and to allow pavement replacement final grassing to begin as soon as possible.

### **PART 2 PRODUCTS**

(Not Applicable, General Conditions may apply)

### **PART 3 EXECUTION**

#### **3.0 SPECIAL REQUIREMENTS/SEQUENCE FOR PRESSURE TESTING**

- A. CONTRACTOR to perform the following cleaning, flushing and testing and in the following sequence:
  - 1. Pressure test the existing pipe segment that is located between the North and South Pipelines. Should the pressure test fail as a result of the existing portion of the pipeline, the repairs of the existing pipeline shall be the responsibility of the CITY.
  - 2. Pressure test the NORTH pipeline in its entirety after installation.

3. Pressure test the HDPE pipeline as an entire piece prior to pulling of the pipe into the drilled hole.
4. Pressure test the SOUTH pipeline in its entirety after installation.
5. Pressure test the entire pipeline including the existing middle section from the south end of the SOUTH pipeline to the north end of the NORTH pipeline. Should the pressure test fail as a result of the existing portion of the pipeline, the repairs of the existing pipeline shall be the responsibility of the CITY.

### **3.1 RECLAIMED WATER FOR TESTING**

- A. Reclaimed water is generally available for use for flushing, pigging, and testing purposes from the City at no cost to the Contractor every day excluding Wednesday.
- B. Alternatively, CONTRACTOR at his cost can use potable water. CONTRACTOR to notify the CITY of potable water needs. CONTRACTOR to purchase a meter from the City. CONTRACTOR will be billed for all potable water used for testing and other purposes.
- C. CONTRACTOR is made aware that certain precautions made need to be taken with the use of reclaimed water and CONTRACTOR is required to do so at his cost.
- D. Reclaimed water is available from the north end of the project at the point of connection to the existing reclaimed water system to the new work. Contractor is required to make connection to the reuse system and convey water at his cost. Reclaimed water is not available from the south end of the project.
- E. CONTRACTOR, as part of the Reclaimed Water Conveyance may use the completed North portion and existing middle portion of the pipeline to deliver water to the South portion of the projects. Use of these pipelines is at the risk of the Contractor and does not relieve the Contractor of pressure testing of the total overall pipeline.
- F. CONTRACTOR is to notify in writing the City, at least 7 days in advance of the approximate amount of reclaimed water needs and schedule of needs. City, at its discretion, may inform the Contractor of the lack of availability of reclaimed water at that time. Contractor shall reschedule work at his cost due to availability of reuse water.

### **3.2 PRELIMINARY TESTING**

- A. The CONTRACTOR shall make preliminary field tests of all equipment and piping. The Purpose of testing shall be to establish that the equipment and piping was delivered to the site in good condition and is properly installed.
- B. CONTRACTOR shall furnish all labor, materials, instruments, fuel, incidentals and expendables required, unless otherwise provided.
- C. CONTRACTOR shall make all changes, adjustments and replacements required to place equipment in service and provide verification testing.

**D.** The CITY shall be given sufficient prior notice to prepare for and witness tests.



### **3.3 FINAL TESTING**

- A.** The CONTRACTOR shall perform final field tests of equipment and piping, provide install and remove test equipment and appurtenances and make all CITY required system adjustments and replacements resulting from failed tests at his cost prior to acceptance.
- B.** CONTRACTOR shall seek approval from the CITY for scheduling tests at least three (3) business days in advance of the desired timeframe.
- C.** In the case of flushing, disinfection or pigging operations and/or tests the Utilities Department Water System Manager will determine the time period (night or day) when these operations and tests are allowed to be conducted in order to minimize the negative impacts of additional water volume demands.
- D.** The field tests shall clearly demonstrate that the equipment and piping meet the operational requirements and manufacture's recommended standards. The cost of all work and materials needed to perform the field tests shall be included in the applicable pipe and equipment items or included in the project lump sum bid value.
- E.** The cost of all work and materials needed to perform the field tests shall be included in the applicable pipe and equipment items or included in the project lump sum bid value.
- F.** Flushing, pigging and miscellaneous testing water shall be free of pollutants prior to discharge to any Stormwater system, wetland, waterway or water-body. CONTRACTOR to obtain permits necessary for the discharge of water.
- G.** Force mains shall be pigged and subjected to a hydrostatic leakage test. This test measures the amount of water required to be supplied to newly laid pipe to maintain a specified pressure after the pipe has been filled with water and the air expelled. The duration of this test shall not be less than four (4) uninterrupted hours and the test pressure shall be 150 psig as measured at the high point in the line. The maximum allowable leakage for the pipe material used shall not exceed the applicable limits specified in AWWA C-600.
- H.** Acceptance of the piping installation shall be determined on the basis of testing allowances defined in the AWWA C600-99 standard. If any test of laid pipe discloses a testing allowance greater than that specified in Section 5.2.1.6, repairs, replacement and re-testing at the CONTRACTORS sole expense shall be accomplished in accordance with these specifications.
- I.** The CITY will conduct random inspections and operational evaluations of the in-line valves and blow off points to be certain that the total force main has been fully pressure tested

**(i) END OF SECTION**

## **SECTION 01700 - SUBSTANTIAL COMPLETION OF FACILITIES**

### **PART 1 GENERAL REQUIREMENTS**

#### **1.0 SUMMARY**

The work in this section includes general requirements evidencing completion of the work in preparation for final acceptance not otherwise found in Section 01720 As-Built Record Documents and the General Conditions.

### **PART 2 PRODUCTS**

(Not Applicable, General Conditions may apply)

### **PART 3 EXECUTION**

#### **3.0 COMPLETION PROCEDURES**

General operating/Maintenance Instructions

- A. Arrange for each installer of work requiring continuing maintenance (by the CITY) or operation, to meet with the CITY's personnel, at the project site, to provide basic instructions needed for proper operation and maintenance of the entire work.
- B. Include instructions by manufacturer's representatives where installers are not expert in the required procedures.
- C. Review maintenance manuals, record documentation, tools, spare parts and materials, lubricants, fuels, identification system, control sequences, hazards, cleaning and similar procedures and facilities.
- D. For operational equipment, demonstrate start-up shutdown, emergency operations, noise and vibration adjustments, safety, economy/efficiency adjustments, and similar operations.
- E. Review maintenance and operations in relation with applicable guarantees, warranties, agreements to maintain, bonds, and similar continuing commitment.

#### **3.1 FINAL CLEANING**

General Provide final cleaning of the work, at the time indicated, consisting of cleaning each surface or unit of work to the normal "clean" condition expected for a first-class building cleaning and maintenance program. Comply with manufacturers' instructions for cleaning operations. The following are examples, but not by way of limitation, of the cleaning levels required

- A. Remove labels, which are not, required as permanent labels.
- B. Wipe surfaces of mechanical and electrical equipment clean; remove excess lubrication and other substances.
- C. Clean concrete floors in non-occupied spaces broom clean.
- D. Clean project site (yard and grounds), including landscape, development areas, of litter and foreign substances.

- E. Sweep paved areas to a broom-clean condition; remove stains, petrochemical spills and other foreign deposits. Rake grounds, which are neither planted nor paved, to a smooth even-textured surface.

### **3.2 REMOVAL OF PROTECTION**

Except as otherwise indicated or requested by the CITY, remove temporary protection devices and facilities which were installed during the course of the work and dispose of them when no longer needed.

### **3.3 COMPLIANCY**

- A. Comply with safety and erosion control standards and governing regulations for cleaning operations.
- B. Do not burn waste materials at the site or bury debris or excess materials on the CITY's property or discharge volatile or other harmful or dangerous materials into drainage systems.
- C. Remove waste materials from the site and dispose of them in a timely and lawful manner.
- D. Where materials of value are to become CITY property after completion of the work the CONTRACTOR shall store them as directed by the CITY.

**END OF SECTION**

## **SECTION 01720 - AS-BUILTS/RECORD DOCUMENTS**

### **PART 1 GENERAL REQUIREMENTS**

#### **1.0 SUMMARY**

This Section sets forth the requirements for preparing as-built/record drawings and documents for verification of construction and archiving for future use. CONTRACTOR shall secure the services of a Florida licensed surveyor to collect data and prepare as-built/record drawings in accordance with City of Daytona Beach Utilities standards as follows:

#### **1.1 REFERENCE**

The preparation work shall be in accordance with this Section and supplementary details in the City of Daytona Beach Utilities Department Standard Details, latest edition.

#### **1.2 AS-BUILT/RECORD DRAWINGS**

In order to ensure that the City's project records are maintained to the highest standards and the information can easily be added to the City's electronic records the following information is required on all as-built/record drawings

- A.** The intent of these details for As-built/record drawings are required for all public facilities constructed. Prior to construction completion these as-built/record requirements will be reviewed to be certain the Contractor's surveyor has a clear understanding of what is required for completion of this work.
- B.** Pavement and curb widths shall be verified and dimensioned for each street at each block (for subdivisions) and as appropriate to confirm paving limits (on site plans).
- C.** All radii at intersections shall be verified and dimensioned. This information is to be clearly indicated on the as-built/record drawings.
- D.** Roadway elevations shall be recorded at all grade changes, 100' intervals along roadway, and other intervals as needed along all streets. Street centerline and curb invert elevations shall be recorded as noted. The as-built centerline profile of all streets shall also be shown on the plan and profile, so it may be compared to the design profile grade lines. In the event that the as-built centerline longitudinal grade does not meet the City minimum standards, additional longitudinal grades of the adjacent curbing and similar roadway cross-section surveys to verify the correct cross slope, shall be required to verify that the system will function as originally designed.
- E.** Storm drainage structures shall be located and/or dimensioned from centerlines or lot lines as appropriate. Each structure shall be located by sub-meter GPS with latitude, longitude and elevation data.
- F.** Storm drainage pipe invert and inlet elevations shall be recorded and clearly denoted as as-built information. Design elevations shall be crossed out and as-built information written next to it.
- G.** Storm drainage pipe material, length, and size shall be measured and/or verified. This information is to be clearly indicated as being as-built information.

- H.** All applicable topographic information pertinent to the on-site drainage system, such as ditches, swales, lakes, canals, etc. that are deemed necessary by the City to verify the functional performance of the storm water system, shall be noted. Normally, recording elevations every 100 feet at the top of bank and toe of slope will be required. Measurements shall be taken and recorded in order to accurately tie down these features to the roadway centerlines and to plat lines. Whenever possible, contour lines shall be utilized to graphically describe these topographic features.
- I.** Retention areas shall have their top of bank and bottom elevations recorded. Actual measurements shall be taken, and dimensions recorded of the size of all retention areas. Measurements shall be done from top of bank with side slopes indicated. Separate calculations shall be submitted to indicate required and provided retention volumes.
- J.** Actual materials used, and elevations and dimensions of overflow weir structures and skimmers shall be noted on the as-built.
- K.** Storm drainage swale centerlines shall be located and elevations of flow line and top of bank shall be recorded every 100 feet. Side slopes shall also be indicated.
- L.** Sanitary sewer manholes shall be verified and dimensioned from street centerlines or lot lines as appropriate. All rim and invert elevations shall be verified and recorded. This information shall be clearly indicated as being as-built information. Design Elevations shall be crossed out and as-built information written next to it.
- M.** For subdivisions, proposed design finish floor elevations shall appear on all subdivision lots on the appropriate plan and profile sheet as well as on the master drainage plan.
- N.** Sanitary Sewer line lengths, sizes, material, slope, etc., shall be verified and recorded, this information is to be clearly indicated as being as-built information.
- O.** Sewer Laterals shall be verified and recorded at their clean out locations, stationing and offset distances shall be measured from downstream manholes towards upstream manholes. Invert information at cleanout shall be provided, and be located by sub-meter GPS with latitude, longitude and elevation data
- P.** Lift stations and force mains shall be verified and dimensioned from street centerlines or lot lines as appropriate. Force main depth and location including valves will be provided and tied to permanent above grade features. Dimensional and elevation information indicated on the approved plan shall be verified and recorded. This information shall be clearly indicated as being as-built information. Buried potable water lines and electrical service lines shall be clearly dimensioned, located, and labeled. Each lift station shall be located by sub-meter GPS with latitude, longitude and elevation data.
- Q.** Curb cuts or metal tabs, used to mark sewer laterals, water services and water valves, shall be verified for presence and accuracy of location.
- R.** Potable and reclaimed water main lines shall be dimensioned off the baseline construction. Water main line material size, length and depth placed shall be noted. Locations of valves shall also be tied to baseline construction. This information shall be clearly indicated as being as-built information.

- S. Potable and reclaimed water valves, tees, bends, all services, and fire hydrants shall be located by tying them to baseline construction (Sta. & Offset). Similarly, force main valves, tees and bends shall be located in the same manner. Stationing and offset distances shall be measured from downstream manholes to upstream manholes. All valves and hydrants shall be located by sub-meter GPS with latitude, longitude and elevation data.
- T. For perpendicular crossings of storm water, sanitary sewer, potable water, or reclaimed water, the as-built plans shall clearly indicate which utilities are located over or under other utilities, as necessary.
- U. Any special features such as, concrete flumes, lake banks, walls, fencing, etc. which are a part of the approved construction drawings should also be located and dimensioned.
- V. If an approved subdivision plat or site plan shows a conservation easement, the project surveyor should provide the exact location of the specimen tree(s) from the right-of-way or property lines and proposed easement boundaries on the as-built drawing. The as-built location of these trees will help verify the sufficiency of the conservation easement prior to plat recording or certificate of occupancy.
- W. When storm water, potable water, reclaimed water, or sanitary sewer improvements are located within an easement, the as-built drawing will accurately depict the location of the easement itself as well as the exact location of the improvements within the easement. This is required in order to verify that the improvements have been properly located and to ensure that future subsurface excavation to perform remedial repair can be accomplished without disturbance beyond the easement.
- X. As-built drawings are to be prepared by a Florida licensed surveyor and shall include a signed certification statement by the Florida licensed engineer of record. Two (2) paper copy sets of as-built record drawings shall be provided, a CD with a digital copy in a compatible AutoCAD format, and PDF format.
- Y. Elevations shall be referenced to NGVD 1988 Data. As-built survey information shall be referenced to at least two Florida State Plane east coordinates NAD 83.
- Z. Benchmark Datum utilizes monumentation from the North American Vertical Datum of 1929 with elevations adjusted to NGVD 1988 data. Any NAVD 1929 monument with the limits of construction is to be protected.

### **1.3 SUBMITTALS**

- A. CONTRACTOR shall submit each month to CITY the Project Activity Summary that shows current construction activities and a copy of notices to agencies including the City regarding road closures; plus, a record of events that will be needed in the future.
- B. CONTRACTOR shall submit to CITY as required the proposed shut-off schedule, capping, temporary service scheduling, record of notices to customers and proposed roadway closings.
- C. CONTRACTOR shall submit copies of published notices.

**D.** CONTRACTOR shall submit Final as-built for each utility included in the plans. Send the two paper copies and the AutoCAD files for pre-approval. The final submittal shall include two (2) Paper Copies of Record, signed and sealed by surveyor (rolled not folded), a CD with the AutoCAD files, and a set of PDF files with an electronic seal (Mylars are no longer required). Below are minimum detail samples of how the As-built drawing information will need to be presented.

**E.** These are examples of how to display and label valves, fittings, and pipes on the plans. Include a location arrow going to the identified object.

**F.** Valve Example

1. 20" GATE VALVE
2. STA. 22+33 (LT.55.0')
3. LAT. = 29°12'53.009"N
4. LONG. = 81°04'03.355"w
5. N = 1,774,373.4058
6. E = 634,602.7566
7. TOP OF NUT ELEV. = 27.50

**G.** GROUND ELEV. = 30.50

1. Pipe Example
2. 20" DIP WATER MAIN
3. STA. 22+00 (RT.55.0')
4. LAT. = 29°12'50.009"N
5. LONG. = 81°04'26.355"W
6. N = 1,774,373.4058
7. E = 634,602.7566
8. TOP OF PIPE ELEV. = 27.50
9. GROUND ELEV. = 30.50

**H.** Manhole Example

1. STA. 20+33 (LT. 85.5')
2. 3/4" Iron Rod with Plastic Cap...
3. N = 1,774,373.4058
4. E = 634,602.7566

5. LAT. = 29°04'53.355" W
6. LONG. = 81°04'53.355" W
7. RIM ELEV. = 22.55
8. NORTH 15" RCP INVERT ELEV. = 10.35
9. WEST 24" CMP INVERT ELEV. = 10.25
10. BOTTOM ELEV. = 10.00

I. (All Bench Marks used must be shown on the plans)

J. Bench Mark Example

1. BM#13
2. STA. 20+33 (LT. 85.5')
3. 3/4" Iron Rod with Plastic Cap...
4. N = 1,774,373.4058
5. E = 634,602.7566
6. LAT. = 29°04'53.355" W
7. LONG. = 81°04'53.355" W
8. ELEV. = 32.55

## **PART 2 EXECUTION**

### **2.0 GENERAL**

All drawings shall be prepared to True State Plane Coordinates. CONTRACTOR shall provide all materials, equipment, labor needed to prepare and submit accurate As-Built/Record Drawings.

- A. It is acceptable to CITY if the surveyor utilizes an after the fact approach to collecting and verifying the location and depth by vertical PVC pipes placed by the CONTRACTOR as markers for this purpose. The surveyor shall verify to the accuracy defined in Florida Statutes the As-built conditions and certify the Record Drawings.
- B. CITY shall not be considered the best source of information for valve locations that may have been lost during final grading, the surveyor or CONTRACTOR shall excavate and properly mark all valve boxes and each valve shall have a tag or color coded to define water, sewer or reuse water valves. The use of temporary PVC pipe markers color coded is acceptable so long as cross references are provided on the Record Drawings to prevent the tops from a water valve being placed on a sewer valve.



- C. The CONTRACTOR shall provide the utilities department engineering division the final as built/record drawings on cd and two signed and sealed paper copies rolled not folded. The as-built record drawings shall be prepared using AutoCAD format 2014 or later (the cd shall contain the AutoCAD files, x-ref's, and pdf's. All files shall be working files and not locked). In model space the drawing shall be in fl83-ef state plane coordinates and shall be able to be inserted into the city's overall GIS system. The record drawings shall also be printed on two paper copies signed and sealed by a Florida Board of Professional Land Surveyors. A disclaimer may be noted in a transmittal letter plus the surveyor may add a special notice on each sheet regarding the location of the true original record drawings or place limits on responsibility should someone in the future someone need to modify the AutoCAD files.
- D. Identify the source markers for the survey used for Record Drawings.

**END OF SECTION**

## **SECTION 01740 - WARRANTIES**

### **PART 1 GENERAL REQUIREMENTS**

#### **1.0 WARRANTY**

- A.** All work performed under this contract shall be warranted for labor and materials for a minimum period of one year after date of Substantial Completion. Specific warranties are noted in specific Sections.
- B.** Standard product warranties are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the OWNER.
- C.** Special warranties are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the OWNER.
- D.** Refer to the General Conditions for terms of the CONTRACTOR'S period for correction of the Work.

#### **1.1 DISCLAIMERS AND LIMITATIONS**

- A.** Manufacturer's disclaimers and limitations on product warranties do not relieve the CONTRACTOR of the warranty on the Work that incorporates the products.
- B.** Manufacturer's disclaimers and limitations on product warranties do not relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the CONTRACTOR.

#### **1.2 RELATED DAMAGES AND LOSSES**

- A.** When correcting failed or damaged warranted construction, remove and replace construction that has been damaged as a result of such failure or the item must be removed and replaced to provide access for correction of warranted construction.

#### **1.3 REINSTATEMENT OF WARRANTY**

- A.** When Work covered by a warranty has failed and has been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.

#### **1.4 REPLACEMENT COST**

- A.** Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of the Contract Documents. The CONTRACTOR is responsible for the cost of replacing or rebuilding defective Work regardless of whether the OWNER has benefited from use of the Work through a portion of its anticipated useful service life.

## **1.5 OWNER'S RECOURSE**

- A.** Expressed warranties made to the OWNER are in addition to implied warranties and shall not limit the duties, obligations, rights, and remedies otherwise available under the law. Expressed warranty periods shall not be interpreted as limitations on the time in which the OWNER can enforce such other duties, obligations, rights, or remedies.
- B.** Rejection of Warranties: The OWNER reserves the right to reject warranties and to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
- C.** Where the Contract Documents require a special warranty, or similar commitment, the OWNER reserves the right to refuse to accept the Work, until the CONTRACTOR presents evidence that entities required to countersign such commitments are willing to do so.

## **1.6 WRITTEN WARRANTIES**

- A.** Submit written warranties to the ENGINEER prior to the date certified for Substantial Completion. If the ENGINEER'S Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion, submit written warranties upon request of the ENGINEER.
- B.** When a designated portion of the Work is completed and occupied or used by the OWNER, by separate agreement with the CONTRACTOR during the construction period, submit properly executed warranties to the ENGINEER within 15 days of completion of that designated portion of the Work.
- C.** When the Contract Documents require the CONTRACTOR, or the CONTRACTOR and a subcontractor, supplier or manufacturer to execute a special warranty, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the OWNER, through the ENGINEER, for approval prior to final execution.
- D.** Refer to Divisions 2 through 16 Sections for specific content requirements and particular requirements for submitting special warranties.
- E.** Bind warranties and bonds in heavy-duty, commercial-quality, durable 3-ring, vinyl-covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (115-by-280-mm) paper.
- F.** Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product, and the name, address, and telephone number of the Installer.
- G.** Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project title or name, and name of the CONTRACTOR.

- H.** When warranted construction requires operation and maintenance manuals, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

**PART 2 PRODUCTS**

(Not Applicable, See General Conditions)

**PART 3 EXECUTION**

(Not Applicable, See General Conditions)

**END OF SECTION**

## **DIVISION 2**

## **SECTION 02010 - SUBSURFACE INVESTIGATION**

### **PART 1 GENERAL REQUIREMENTS**

#### **1.0 DESCRIPTION**

- A.** A soils investigation report has been prepared for the site of this work by Universal Engineering Sciences, hereinafter referred to as the Soils Engineer. A copy of the soils investigation report is included within this Project Manual as an Appendix.
- B.** This report was obtained only for the ENGINEER's use in design and is not a part of the Contract Documents. The report is available for bidder's information but is not a warranty of subsurface conditions.

#### **1.1 QUALITY ASSURANCE**

- A.** Bidders should visit the site and acquaint themselves with all existing conditions.
- B.** Prior to bidding, bidders may make their own subsurface investigations to satisfy themselves as to site and subsurface conditions, but all such investigations shall be performed under time schedules and arrangements approved in advance by the OWNER.

### **PART 2 PRODUCTS**

(Not Applicable)

### **PART 3 EXECUTION**

(Not Applicable)

**END OF SECTION**

## **SECTION 02110 - CLEARING AND GRUBBING**

### **PART 1 GENERAL REQUIREMENTS**

#### **1.0 DESCRIPTION OF WORK**

##### **A. Traffic**

1. Conduct site-clearing operations to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities. Do not close or obstruct streets, walks, or other occupied or used facilities without permission from authorities having jurisdiction.

##### **B. Protection:**

1. Provide temporary fences, barricades, coverings, or other protection to preserve existing items indicated to remain and to prevent injury or damage to persons or property. Provide protection for adjacent properties as required.
2. Restore damaged work to condition existing prior to start of Work.
3. Protect existing trees and vegetation that are indicated to remain from physical damage. Do not store materials or equipment within tree drip line.
4. Use licensed arborist for tree damage repair. Replace damaged trees that cannot be restored to full growth, as determined by arborist, unless otherwise acceptable to the CITY.

- C. Existing Services: Locations indicated are approximate; determine exact location before commencing Work. Coordinate with local utility service requirements and comply with their instructions.

### **PART 2 PRODUCTS**

(Not Applicable, See General Conditions)

### **PART 3 EXECUTION**

#### **3.0 GENERAL**

- A. Site Clearing: Remove trees, shrubs, grass, and other vegetation, improvements, or obstructions as indicated or that interfere with new construction. Removal includes digging out stumps and roots, together with subsequent off-site disposal.
- B. Strip and stockpile topsoil that will be reused in the Work.
- C. Remove existing improvements, both above-grade and below-grade, to extent indicated or as otherwise required to permit new construction.
- D. Salvable Items: Carefully remove items indicated to be salvaged and store on CITY's premises where indicated or directed.

- E.** Control air pollution caused by dust and dirt; comply with governing regulations.
- F.** Fill depressions and voids resulting from site-clearing operations. Using satisfactory soil materials, place in maximum 6-inch-deep horizontal layers and compact each layer to density of surrounding original ground.
- G.** Grade ground surface to conform to required contours and to provide surface drainage.
- H.** Dispose of waste materials, including trash and debris, off CITY's property.
- I.** Burning waste materials on site is not permitted.

**END OF SECTION**



## **SECTION 02202 - EXCAVATING, BACKFILLING AND COMPACTING**

### **PART 1 GENERAL REQUIREMENTS**

#### **1.0 SUMMARY**

- A.** This Section includes the requirements for furnishing equipment, labor and materials, and performing all operations necessary and incidental to complete the required work.
- B.** Payment for all work described in this Section shall be included in the unit prices for the associated primary items of work such as pipe, utility and stormwater system components, jack and bore, horizontal and vertical drilling operations, etc... unless otherwise noted in the plans.
- C.** Contractor shall locate existing utilities in the areas of WORK. Contractor shall provide adequate means of protection during earthwork operations. Payment for damage and repair to such piping or utilities is the Contractor's responsibility.

#### **1.1 REFERENCES**

- A.** The requirements of the CITY Utility Department Standard Details, latest edition, The Florida Department of Environmental Protection-Stormwater Erosion and Sedimentation Control Inspector's Manual, latest edition and Section 01200, 01568.

### **PART 2 PRODUCTS**

#### **2.0 GENERAL**

- A.** Materials for use as bedding and backfill, whether in-situ or borrow, shall be as described under this section. The CONTRACTOR shall, upon request by the COUNTY, make an appropriate sample of this material available for testing by the City or its designated representative.

#### **2.1 COMMON FILL**

- A.** Common fill shall consist of mineral soil, substantially free of clay, organic material, loam, wood, trash and other objectionable material which may be compressible, or which cannot be compacted properly. Common fill shall not contain stones larger than 3-inch in any dimension, asphalt, broken concrete, masonry, rubble, or other similar materials. It shall have physical properties such that it can be readily spread and compacted during filling. Additionally, common fill shall be no more than 12 percent by weight finer than the No. 200 mesh sieve unless finer material is approved for use in a specific location by the City. Material falling within the above SPECIFICATIONS, encountered during the excavation, may be stored in segregated stockpiles for reuse. All material which, in the opinion of the City, is not suitable for reuse, shall be disposed of as unsuitable materials.

## **2.2 SELECT COMMON FILL**

- A.** Select common fill shall be as specified above from common fill, except that the material shall contain no stones larger than 1-1/2 inches in largest dimension and shall be no more than 5 percent by weight finer than the No. 200 mesh sieve.

## **2.3 BEDDING ROCK**

- A.** Bedding rock shall be 3/16 inch to 3/4 inch washed and graded stone (F.D.O.T. #57). This stone shall be graded so that 90 to 100 percent will pass a 3/4-inch screen and 95 to 100 percent will be retained on a No. 8 screen. No stones larger than 1 inch in any dimension shall be accepted.

## **PART 3 EXECUTION**

### **3.0 CONSTRUCTION**

- A.** Clearing The site of the work shall be cleared of all trees, shrubs, improvements and objectionable material that interfere with the completion of the proposed work. The CONTRACTOR shall be responsible for the offsite disposal of all clearing debris. Trees and shrubs that will not interfere with construction shall be protected from damage. Clearing shall be considered as an incidental item with the cost to be included in the applicable primary items of work unless otherwise noted in the plans.
- B.** Excavation Perform excavation of all soils and materials encountered to the dimensions and depths specified or shown on the drawings as necessary to construct the associated applicable items of work. Undercutting will not be permitted, except when ordered by the CITY. Material suitable for backfill shall be stockpiled near the site. Rock and cemented coquina shall be the property of the CITY and be spoiled outside the area in a neat manner, as directed by the CITY. Other soils and materials unsuitable for backfill shall be disposed of by the CONTRACTOR in areas provided by him. Where it is necessary to cut roots projecting into an excavation or where it is necessary to trim branches for equipment clearance, all severed root ends or cuts to branches over 1/2" diameter shall be treated with an asphalt base pruning paint. Backfill over exposed roots as soon as possible.
- C.** Rock and Cemented Coquina Where rock and cemented coquina are encountered, the trench bed shall be excavated to a depth of 1/4 of the pipe diameter but in no case less than 4" below the bottom of the pipe. All undercut trench excavation shall be backfilled with suitable materials and made firm and unyielding as specified in the following paragraphs under Unstable Soils and Materials.
- D.** Unsuitable Soils and Materials In the event that unsuitable soils and material is encountered at or below the excavation depth specified or shown on the drawings, the CITY shall be notified. Such material shall be removed, disposed of and replaced with suitable material. The CITY shall determine the methods and materials to be used, based upon the condition of the excavation, the pipe or structure to be supported, and the availability and character of stabilizing materials.
- E.** Methods and materials used for replacement shall be one of the following as directed by the CITY in writing:

1. Suitable earth (common fill) or sand compacted in the trench. Materials shall be furnished and paid for as a part of the pipe or structure bid item.
2. Gravel or crushed lime rock compacted in the trench. Materials shall be furnished and paid for as part of the pipe or structure bid item.
3. Existing materials, stabilized after removal and then replaced and compacted in the trench and paid for as part of the pipe or structure bid item.

**F. Trenching**

1. Keep pipe laying operations as close to the excavation operation as possible during the prosecution of the work. The CITY reserves the right to stop the excavation-at any time when, in its opinion, the excavation is not properly safeguarded or is opened too far in advance of the pipe laying.
2. Pipe trenches shall be excavated to a depth that will insure a minimum of 36” of cover for all types of pipe, except service laterals. Trenches shall be only of sufficient width to provide a free working space on each side of the pipe. The maximum width of trench at the top of the pipe and at the bottom of the trench shall not be greater than two feet wider than the greatest exterior diameter of the pipe. If this maximum width is exceeded, it shall be the CONTRACTOR's responsibility to provide, at no additional cost to the owner, such additional bedding or select backfill materials as the CITY may require. The excavation below the spring line shall be made to conform as near as possible to the shape of the lower third of the pipe. To protect the pipe lines from unusual stresses, all work shall be done in open trenches. Excavation shall be made for bells of all pipes and of sufficient depth to permit access to the joint for construction and inspections. In no case will the bells be used to support the body of the pipe.
3. In order to avoid existing utilities, at times it may be necessary for the pipe to be laid deeper than the minimum cover specified in the preceding paragraph. At such time, the CONTRACTOR will not be allowed extra compensation for additional excavation involved.
4. In case excavation has been made deeper than necessary, a layer of concrete, fine gravel or other material satisfactory to the CITY shall be placed, at no extra cost, to secure a firm foundation for the lower third of each pipe. Where possible, excavated material shall be placed so as not to interfere with public travel. Bridging shall be provided for public travel and to afford necessary access to public or private premises. Bridging shall be considered as part of the excavation operation and shall be supplied at no additional cost to the Owner.

**G. Structures Excavation (For inlets, manholes, valve pits and similar structures)**

1. Remove sufficient material to allow proper space for erecting and removing forms. The elevations of the bottoms of footings, if shown on the drawings, shall be considered as approximate only, and the CITY may order, in writing, such changes in dimensions or elevations of footings as may be deemed necessary to secure a satisfactory foundation. Excavation for structures shall be sufficient to leave at least 12” in the clear between their outer surfaces and the embankment

or timber that may be used to protect them. Backfill of earth under structures will not be permitted. Excess excavation for structures shall be filled with thoroughly compacted sand, gravel, or concrete at the expense of the CONTRACTOR.

2. After excavation for a structure is completed, the CONTRACTOR shall notify the CITY to that effect. No concrete or reinforcing steel shall be placed until the CITY has inspected the depth of the excavation and the character of the foundation material. Materials for roadways, road shoulders, alleys, or driveways, shall be compacted to a minimum of 98% of the maximum density as determined by AASHTO Method T-180.

#### **H. Sheeting and Shoring**

1. The CONTRACTOR shall provide all trench and structural bracing, sheeting or shoring necessary to construct and protect the excavation, existing utilities, structures and private property of all types and as required for the safety of the employees. Sheeting shall be removed or cut off by the CONTRACTOR during backfilling operations as directed by the CITY.
2. Removal of shoring for structures shall be done in such a manner as not to disturb or mar finished masonry or concrete surfaces.

**I.** Drainage Grading shall be controlled in the vicinity of excavations so that the surface of the ground will be properly sloped to prevent water from running into trenches or other excavated areas. Any water that accumulates in the excavations shall be removed promptly by well point or by other means satisfactory to the CITY in such a manner as to not create a nuisance to adjacent property or public thoroughfare. Trenches shall be kept dry while pipe is being laid. Bridging of dewatering pipe shall be provided where necessary. Pumps and engines for well point systems shall be operated with mufflers, and at a minimum noise level suitable to a residential area. The CONTRACTOR will not be allowed to discharge water into the owner's storm drainage system without the written approval of the CITY. Approval will be subject to the condition that the storm sewer be returned to its original conditions.

#### **J. Backfill**

1. Trenches shall be backfilled immediately after the pipe is laid unless other protection for the pipe line is provided. Clean earth, sand, crushed limerock, or other material approved by the CITY shall be used for backfill.
2. Backfill material shall be selected, deposited and compacted so as to eliminate the possibility of lateral displacement of the pipe. Backfill material shall be solidly tamped around the pipes in six (6) inch layers up to a level at least one foot above the top of the pipe. Backfilling shall be carried out simultaneously on both sides of the pipe.
3. The remainder of the backfill shall be deposited and compacted by puddling water, flooding or mechanical tampers except in areas where paving is to be placed over the backfilled trench. In these areas, the entire depth of backfill shall be deposited in six (6) inch layers and compacted by hand or mechanical tampers. Compaction shall be carried out to achieve a density of at least 98% of

the maximum density as determined by ASSHTO Method T-180. Under areas to be paved, pudding may be used for backfill consolidation after tamping to one foot over the pipe, as specified, provided the method is first approved by the CITY and the density requirements are met.

4. In areas to be paved, density tests for determination of the specified compaction shall be made by a testing laboratory and spaced one in every 300 feet of trench cut. Density tests shall be considered a part of the backfill operation. It is the intent of this specification to secure a condition where no further settlement of trenches will occur. When backfilling is completed, the roadway base for pavement replacement may be placed immediately.

**K. Structures Backfill** After completion of foundation footings and walls and other construction below the elevation of the final grades, and prior to backfilling, all forms shall be removed, and the excavation shall be cleared of all trash and debris. Material for backfilling shall consist of the excavated materials, borrow sand or other approved materials, and shall be free of trash, lumber or other debris. Backfill shall be placed in horizontal layers not to exceed a nine (9) inch thickness and have a moisture content such that a density may be obtained to prevent excessive settlement or shrinkage. Each layer shall be compacted by hand or approved machine tampers with extreme care being exerted not to damage pipe or structures. Backfill shall be placed and compacted evenly against the exposed surfaces to prevent undue stress on any surface.

**L. Restorations of Areas Disturbed by Construction**

1. All improvements and natural systems on public or private property which have been damaged, altered or removed during construction, shall be restored in accordance with the respective owner's permit requirements or CITY requirements to conditions equal to or better than conditions existing prior to beginning work unless otherwise noted in the plans. Restoration of shoulders shall consist of stabilizing, grading and sodding as directed by the CITY. The cost of doing this work shall be included in the cost of the various applicable primary items unless otherwise directed in the plans. Photographs as specified in Section 01200 will be used as an aid in determining existing condition details prior to construction.
2. Materials for roadways, road shoulders, alleys, or driveways, shall be compacted to a minimum of 98% of the maximum density as determined by ASSHTO Method T-180. The cost of this work and furnishing new materials shall be included in the cost of the applicable items of work as no separate payment will be made unless a separate bid item is provided.

**M. Grading**

1. The CONTRACTOR shall within a maximum of two (2) weeks from date of excavation, rough grade existing surfaces disturbed by construction to provide surfaces suitable for proper use of moving machines.
2. Finished areas around structures shall be graded smooth and hand raked. All finished areas shall be safely traversable by pedestrians and meet the elevations

and contours shown on the drawings. Lumber, earth clods, rocks and other undesirable materials shall be removed from the site.

- N.** Disposal of Materials Such portions of the excavated soils and materials as needed and as suitable shall be used for backfilling and grading about the completed work to the elevations as shown on the drawings or as directed. Unsuitable materials consisting of rock or cemented coquina shall be the property of the CITY. CONTRACTOR shall remove, stockpile for CITY pick up, and replace with dry compacted granular material, satisfactory to the CITY unless otherwise directed in the plans and specifications. Other unsuitable soils and materials and suitable excavated material in excess of the quantity required for completion of the work shall belong to the CONTRACTOR and be disposed of by the CONTRACTOR in areas provided by the CONTRACTOR unless otherwise directed in the plans and specifications.
- O.** Sediment, Erosion and Dust Control It shall be the responsibility of the CONTRACTOR to take all necessary steps to prevent soil from eroding onto all paved areas and into natural watercourses, ditches, private properties and the public sewer systems. Streets and haul roads shall be swept by an automatic, self-contained mechanical sweeper. Prevent air and water pollution through dust and dirt control to the satisfaction of the CITY in the following areas
1. Streets, sidewalks and drives within the limits of the contract and all construction material stockpile and field office site locations.
  2. Any haul roads leading to or away from the project that are used by the CONTRACTOR, his sub-contractors and his material suppliers.
- P.** The CONTRACTOR shall comply with the above requirements on a daily basis. If the CONTRACTOR fails to perform the above work in a satisfactory manner, all work, except cleanup operations, will be stopped immediately until the CONTRACTOR has complied with the above requirements to the satisfaction of the CITY.

**END OF SECTION**

## **SECTION 02240 - DEWATERING**

### **PART 1 GENERAL REQUIREMENTS**

#### **1.0 DESCRIPTION**

- A.** Scope of Work: The work to be performed under this Section shall include the design and installation of a temporary dewatering system or other suitable system to dewater subsurface waters as required. The system shall remain in place until completion of construction.
- B.** Related Work Described Elsewhere:
  - 1.** Section 01300: Submittals
  - 2.** Section 01340: Shop Drawings Procedures
  - 3.** Section 02202: Trenching, Backfilling and Compacting

#### **1.1 QUALITY ASSURANCE**

- A.** Qualifications
  - 1.** The temporary dewatering system shall be designed by a FL Professional Engineer 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.** 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.
- C.** Permits: CONTRACTOR shall be required to obtain and pay for all local and state permits required for installation and operation of the dewatering system and for disposal of water discharged from the dewatering system. CONTRACTOR shall obtain and pay for St. Johns River Water Management District (SJRWMD) permit for project, if required.

#### **1.2 SUBMITTALS**

- A.** Materials and Shop Drawings: No submittals required for dewatering. Submittals will be returned un-reviewed.

#### **1.3 CRITERIA**

- A.** The dewatering system shall be developed to the point that is capable of dewatering such that pipe can be laid and compacted satisfactorily. Each dewatering system shall be capable of dewatering and maintaining groundwater levels at the respective structures.

- B. Groundwater shall be lowered to be a minimum of 30 inches below the bottom of the pipeline trench.

## **PART 2 PRODUCTS**

### **2.0 GENERAL**

- A. The equipment specified herein shall be standard 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.

## **PART 3 EXECUTION**

### **3.0 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 dewatering system.
- B. 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.
- 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.

### **3.1 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, provided that the CONTRACTOR has permission to do so from the OWNER of the system or the property.
- 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.

**END OF SECTION**

## SECTION 02489 - GRASSING

### **PART 1 GENERAL**

#### **1.0 SCOPE OF WORK**

This Section set forth the work to establish and maintain a thriving stand of grass, as determined by the CITY, within the areas disturbed by construction operations. Disturbed areas shall be sodded unless they are indicated in the plans to be seeded and mulched

#### **1.1 REFERENCES**

Florida Department of Transportation Standard Specifications for Road and Bridge Construction, 2000 edition sections 570, 575, 981, 982 and 983 deference to the CITY requirements of this Section.

#### **1.2 SUBMITTALS**

At the CITY's discretion, the CONTRACTOR shall provide a certification of quality from the supplier that the materials are free from invasive species and noxious pests and meet or exceed the specification and referenced requirements.

#### **1.3 JOB CONDITIONS**

The CONTRACTOR shall have photographs of the before conditions to ensure that the grassing is properly installed to meet or exceed the pre-construction condition.

### **PART 1 PRODUCTS**

#### **1.0 GRASS SOD**

- A.** Sod shall comply with the requirements of Section 575, 981, and 983 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, 2000 edition with the exceptions that all required water, fertilizer, slope pegging, and maintenance will be included in the unit cost of the sod and the sod type shall not be limited to the three types or the CONTRACTOR's option as set forth in Sub-section 981-2.1.
- B.** Sod shall match the adjacent existing type or shall be Argentina Bahia if the existing sod is weedy and unidentifiable. Sod shall be installed within 5 days after cutting.
- C.** Sod shall be in good health, have adequate moisture at the time of delivery and installation and be free from weeds, other objectionable vegetation, fungus, insects and disease of any kind.

#### **1.1 SEED AND MULCH**

- A.** Seeding and mulching shall comply with the requirements of Section 570, 981, 982 and 983 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, 2000 edition with the exception that all work and the cost of all seed types, mulch, water, fertilizer will be included in the unit cost of the seed and mulch pay item.

**PART 2 EXECUTION**

**2.0 INSTALLATION AND MAINTENANCE**

- A.** Seed, mulch and sod shall be placed to achieve a smooth and easily traversable finish. Portions of unhealthy sod shall be removed and replaced within 10 days of placement at no additional cost.
- B.** Seed, mulch and sod shall be watered as necessary to keep it alive and healthy until the CITY accepts the project. For areas of sod placed adjacent to well-maintained lawns the CONTRACTOR shall see to it that the property owner is pleased with the work and that the property owner's irrigation system has not been broken. Excessive storage of sod within the street right of ways is prohibited. Each area of the project that is completed and ready for grassing acceptance should be listed in an attachment to the periodic pay estimate.
- C.** Fertilizer, water and or mowing will be required for the grassed areas, as directed by the CITY, throughout the duration of the project to ensure that they are green, thriving and of good appearance on the day the CITY accepts the project. One month prior to the end of the warranty period all sod that is not fully established shall be replaced.
- D.** CONTRACTOR may secure a fire hydrant meter following payment of established fees to provide for a source of water. The cost of all water used by the project shall be the responsibility of the CONTRACTOR. If the CONTRACTOR fails to allow the Utility Billing personnel to record the Fire Hydrant meter volumes, the Fire Hydrant meter shall be returned immediately. No partial or final project payments will be allowed if the outstanding water meter use fees are unpaid.

**END OF SECTION**

## **SECTION 02616 - FITTINGS FOR PRESSURE SERVICE**

### **PART 1 GENERAL REQUIREMENTS**

#### **1.0 SUMMARY**

This Section sets forth the requirements for materials and methods to furnish and install buried fittings on ductile iron water mains, ductile iron stormwater force mains, ductile iron wastewater force mains and PVC reclaimed water mains.

#### **1.1 REFERENCE**

Utility Department Standard Details latest edition and Specifications.

#### **1.2 CONTRACTOR RESPONSIBILITIES**

The CONTRACTOR shall review the field conditions prior to placing a bid for this project and evaluate the need for required fittings and split restraint joint systems such as Megalug or there equivalent.

#### **1.3 JOB CONDITIONS**

Field conflicts may require additional fittings and minor adjustments not shown on the plans. The Contractor shall provide and install fittings unless directed to deflect the pipe to avoid the need.

### **PART 2 PRODUCTS**

#### **2.0 FITTINGS**

- A.** Fittings 3-inch through 24-inch diameter shall be mechanical joint ductile iron conforming to the requirements of ANSI/AWWA C153/A21.53 or, cast iron fittings conforming to the requirements of ANSI/AWWA C110/A21.10. Fittings and joint systems shall be compatible with the pipe system and provided at a Pressure Class that matches or exceeds the pipe with which they are to be installed.
- B.** Restrained joints shall be of the essentially boltless type which relies on metal lugs, rotating retainer rings, or stainless-steel gaskets for joint restraint. Joint restraints connecting ductile-iron pipe to ductile iron pipe or fittings shall be a split retainer type band or ring made of ductile iron. Split restrained joint systems shall be the preferred Megalug joint restraint as manufactured by EBBA Iron, Inc on the CITY approved product list or its equivalent as approved by CITY.
- C.** Buried fittings shall have bituminous coating approximately 1 mil thick applied to the outside. The finished coating shall be continuous, smooth, neither brittle when cold nor sticky when exposed to the sun and shall be strongly adhered to the fitting.
- D.** Cement Mortar Lining or Ceramic Epoxy Lining typical of fittings in water, sewer or reuse water systems is required).
- E.** All fittings shall be manufactured and provided by a single sole manufacturer.

**PART 3 EXECUTION.**

(Not Applicable, General Conditions may apply

**END OF SECTION**

**SECTION 02610 - PAVING, MILLING & RESURFACING**

**PART 1 GENERAL REQUIREMENTS**

**1.0 SUMMARY**

- A.** This Section sets forth the material and work requirements necessary to construct a complete finished compacted structural support base, stabilized subgrade and flowable fill.
- B.** CONTRACTOR shall abide by Volusia County Design and Construction Standards including compliance with FDOT Standard Specifications for Road and Bridge Construction latest edition except as otherwise stated or shown in the Volusia County Standards.

**END OF SECTION**

## **SECTION 02611 - SIDEWALK, DRIVEWAY, CURB AND GUTTER**

### **PART 1 GENERAL REQUIREMENTS**

#### **1.0 SUMMARY**

- A. The work under this section includes the replacement, furnishing, and installation of sidewalk, driveway, curb and gutter for the entire project as set forth on the plans and as outlined herein. Any disturbed or damaged sidewalk, driveway, curb or gutter shall be replaced at no cost to the City.

#### **1.1 REFERENCE**

- A. All sidewalk, driveway, curb and gutter work within Volusia County right-of-way shall conform to the applicable Volusia County Standard Specifications and Details for sidewalk, driveway, curb and gutter. All sidewalk, driveway, curb and gutter work within the City of Daytona Beach right-of-way shall conform to the applicable City of Daytona Beach Specifications for sidewalk, driveway, curb and gutter.
- B. Handicapped ramps shall be constructed in accordance with Chapter 11 of the Florida Accessibility Code and American with Disabilities Act Accessibility Guidelines (ADAAG). All new sidewalks installed shall include handicap ramps. Handicap ramps shall not be installed if sidewalk is not being disturbed. FDOT Standard Specifications for Road and Bridge Construction latest edition.
- C. Details shall be latest edition unless otherwise noted in the Contract Bid Documents.

**END OF SECTION**

## **SECTION 02612 - BASE, STABILIZED SUBGRADE AND FLOWABLE FILL**

### **PART 1 GENERAL REQUIREMENTS**

#### **1.0 SUMMARY**

- A. This Section sets forth the material and work requirements necessary to construct a complete finished compacted structural support base, stabilized subgrade and flowable fill.

#### **1.1 REFERENCE**

- A. The FDOT Standard Specifications for Road and Bridge Construction latest edition for material and process requirements with deference to CITY requirements in the Public Works Roadway Details latest edition unless otherwise noted in the Contract Bid Documents.

### **PART 2 PRODUCTS**

#### **2.0 FDOT BASE SECTIONS**

- A. Sections 200 (@ LBR 100), 204 (in the form of recycled concrete @ LBR 130) and 280 (@ LBR 100)

#### **2.1 FDOT STABILIZED SUBGRADE SECTION**

- A. Section 160 (Type B stabilizing only)

#### **2.2 FDOT FLOWABLE FILL SECTION**

- A. Section 121

**END OF SECTION**



## **SECTION 02622 - HORIZONTAL DIRECTIONAL DRILLING**

### **PART 1 GENERAL REQUIREMENTS**

#### **1.0 SCOPE OF WORK**

- A.** The work specified in this section consists of furnishing and installing underground utilities using the horizontal directional drilling (HDD) method of installation, also commonly referred to as directional boring.
- B.** CONTRACTOR shall be responsible for all installation including but not limited to drilling, back-reaming, management and disposal of all drilling fluid, dewatering, and leak testing the pipe and fittings in accordance with these specifications.
- C.** This work shall include all services, equipment, materials, and labor for the complete and proper installation, testing, restoration of underground utilities and environmental protection and restoration.
- D.** For the supply of domestic water during construction, the CONTRACTOR shall use a CITY supplied meter assembly (meter & backflow device) and pay for all water consumed. Un-accountable domestic water quantities shall be minimized, where possible. CONTRACTOR to notify the CITY of potable water needs.
- E.** Reclaimed water is generally available for use for flushing, pigging, and testing purposes from the City at no cost to the Contractor every day excluding Wednesday.
  - 1.** CONTRACTOR is made aware that certain precautions made need to be taken with the use of reclaimed water and CONTRACTOR is required to do so at his cost.
  - 2.** Reclaimed water is available from the north end of the project at the point of connection to the existing reclaimed water system to the new work. Contractor is required to make connection to the reuse system and convey water at his cost. Reclaimed water is not available from the south end of the project.
  - 3.** CONTRACTOR, as part of the Reclaimed Water Conveyance may use the completed North portion and existing middle portion of the pipeline to deliver water to the South portion of the projects. Use of these pipelines is at the risk of the Contractor and does not relieve the Contractor of pressure testing of the total overall pipeline.
  - 4.** CONTRACTOR is to notify in writing the City, at least 7 days in advance of the approximate amount of reclaimed water needs and schedule of needs. City, at its discretion, may inform the Contractor of the lack of availability of reclaimed water at that time. Contractor shall reschedule work at his cost due to availability of reuse water.

- F. CONTRACTOR shall provide HDPE pipe for installation by HDD. Individual pipe lengths shall be assembled by butt-fusion. Connecting fittings shall be fused to the piping as specified.

## **1.1 QUALITY ASSURANCE**

- A. The requirements set forth in this document specify a wide range of procedural precautions necessary to ensure that the very basic, essential aspects of a proper horizontal directional drilling installation are adequately controlled. Strict adherence shall be required under minimal conditions outlined in this specification and within any associated permit.
- B. Adherence to the specifications contained herein, or the CITY Representative's approval on any aspect of any directional bore operation covered by this specification, shall in no way relieve the CONTRACTOR of their ultimate responsibility for the satisfactory completion of the work authorized under the Contract.
- C. The HDD CONTRACTOR shall be responsible for the repair of all damage to private and/or public property (at no expense to CITY). Repair work shall meet all utility, local and state rules and requirements.
- D. All HDPE fusion equipment operators shall be qualified to perform pipe joining using the means, methods and equipment employed by the contractor. Fusion equipment operators shall have current, formal training on all fusion equipment employed the project. Training received more than two years prior to operation of the fusion equipment shall not be considered current. The Contractor shall submit written certification of training provided by the fusion equipment manufacturer.

## **1.2 PROJECT SCHEDULE AND WORK PLAN**

- A. The project schedule shall be established on the basis of working a normal work schedule including five days per week, single shift, and eight hours per day or four days per week, single shift, ten hours per day.
- B. Unless approved otherwise by CITY normal or general items of work, such as leakage and pressure testing, density testing and final inspections, shall be scheduled during the normal work schedule.
- C. Due to operational and manpower limitations on the CITY's systems, CITY will require the CONTRACTOR to perform work outside of the normal work schedule. These operational and manpower limitations, including but not limited to, line filling and flushing operation, tie-in work, (cut-in work or other work) and other phases of the work which may impact the continued (non-interruptible) service to existing CITY customers.

The CONTRACTOR shall plan and anticipate the cost impact of these systems limitations and provide such work or services at no additional cost to CITY.

**D.** In addition to the typical schedule requirements, the following tasks shall be included in the CONTRACTOR's detailed schedule:

1. utility locate requests,
2. utility locate verification,
3. rig mobilization,
4. pilot bore drilling,
5. pre-reaming and reaming,
6. layout and fusion of pipe,
7. final reaming,
8. pipe pullback,
9. connection to the existing system,
10. pressure testing,
11. pig cleaning of installed pipeline, and
12. site restoration.

### **1.3 REFERENCES**

**A.** The work shall conform to applicable provisions of the CITY Utilities Department Standard Details most current update, and the following standards, latest editions, except as modified herein.

1. American Water Works Association (AWWA) Standards
2. AWWA C906 Polyethylene (PE) Pressure Pipe and Fittings, 4-inch through 63-inch, for Water Distribution American Society for Testing and Materials (ASTM) Standards.
3. ASTM D638 Standard Test Method for Tensile Properties of Plastics.
4. ASTM D2122 Standard Method of Determining Dimensions of Thermoplastics Pipe and Fittings.
5. ASTM D2683 Standard Specification for Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing.

6. ASTM D2837 Standard Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials.
7. ASTM D3035 Standard Specification for Polyethylene (PE) Plastic Pipe (SDRPR) Based on Controlled Outside Diameter.
8. ASTM E3261 Standard Specification for Butt Heat Fusion Polyethylene Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing.
9. ASTM D3350 Standard Specification for Polyethylene Plastic Pipe and Fittings Materials.
10. ASTM F1962 Standard Guide for polyethylene Pipe or Conduit Under Obstacles, including River Crossing.
11. ASTM F412 Standard Terminology Relating to Plastic Piping Systems.
12. ASTM F714 Standard Specification for Polyethylene (PE) Plastic Pipe (SDRPR) Based on Outside Diameter.
13. ASTM F2620 Standard Practice for Heat Fusion Joining of Polyethylene Pipe and Fittings.
14. NSF-61 Drinking Water System Components – Health Effects

#### **1.4 PERMITS**

- A. Permits work within the county right-of-way shall be obtained by the CITY.
- B. The CONTRACTOR shall review and comply with of all permits before commencing any work on the project.

#### **1.5 SUBMITTALS**

- A. The Contractor shall submit information demonstrating compliance with the Contractor and personnel qualification requirements of this Section. Contractor shall also submit to Volusia County, at least 14 days before commencing drilling activities, a schedule of activities.

#### **1.6 WORK PLAN**

- A. Prior to beginning work, the CONTRACTOR must submit to the CITY and Volusia County for review a representative work plan detailing the procedure and schedule to be used to execute the project. The work plan should include:
  1. a description of all equipment to be used, down-hole tools,
  2. a list of personnel and their qualifications and experience (including back-up personnel in the event that an individual is unavailable),
  3. list of sub-contractors,

4. a schedule of work activity,
  5. a safety plan (including MSDS of any potentially hazardous substances to be used), traffic control plan (if applicable),
  6. *a plan to locate and protect all adjacent utilities and infrastructure,*
  7. an environmental protection plan and a contingency plan including prevention of inadvertent fluid losses and spills (Frac-Out and Surface Spill Contingency Plan), and contingencies for rapid containment and cleanup, addressing: Measures to mitigate risk of inadvertent fluid returns to surface. Procedures for monitoring and controlling drilling fluid flows and pressures. Equipment, resources, and procedures for identifying, containing, and cleaning up fluid losses and spills.
- B.** The work plan should be comprehensive, realistic and based on actual working conditions for this particular project. Plan should document the thoughtful planning required to successfully complete the project.
- C.** Contractor shall submit to the City of Daytona Beach and Volusia County, at least 14 days before commencing drilling activities, notification of the commencement of activities and schedule of anticipated activities.

#### **1.7 HDD BORE PLAN**

- A.** The HDD CONTRACTOR shall submit a pre-construction bore-log depicting a plan and profile (horizontal and vertical alignment) of the proposed bore path. The bore-log shall show all utility crossings and existing structures. All deviations from the drawings included in the contract documents shall be clearly identified. The CONTRACTOR shall perform investigations to verify the location of existing utilities. The CONTRACTOR will repair/replace any damages to existing utilities at no cost to the CITY.
- B.** The CONTRACTOR shall perform additional investigations (ie soil investigations, utility locating, etc.) as needed to successfully complete the work. The costs for these investigations shall be included as part of the contract and included in bid item for the HDD.
- C.** All calculations and responses shall be based on the geotechnical data and other information provided in the Bid Documents and other investigations performed by the CONTRACTOR. Generic assumptions will not be acceptable. Acceptable responses will be required prior to beginning any HDD work. CONTRACTOR shall provide a bore plan of each HDD segment for this project that is compatible with the pipe characteristics, site conditions, and HDD equipment.

## **1.8 CALCULATION SUBMITTAL**

- A.** CONTRACTOR Calculations shall be signed and sealed by a professional ENGINEER registered in the State of Florida and provided (in accordance with ASTM F 1962 or equal) for pull back force required, and the resulting rig size proposed for this project.
- B.** CONTRACTOR shall provide calculations (in accordance with industry standards) predicting the expected annular pressure and identify areas subject to hydro-fracture. CONTRACTOR shall provide calculations demonstrating that the pipe will not be overstressed.
- C.** The following calculations at a minimum shall be submitted prior to beginning any HDD work
  - 1.** Safe Pullback Force calculations (straight run and bends)
  - 2.** Safe Tensile Stress calculation
  - 3.** Rate of penetration
  - 4.** Maximum allowable drilling fluid pressure calculation
  - 5.** Safety Factor against collapse
  - 6.** Confirmation that design parameters do not exceed predicted installation stresses including factors such as tensile load, buckling and deformation.
  - 7.** CONTRACTOR shall identify which, if any, items of the basis of design that the CONTRACTOR proposes to change (entry/exit angles, depth, radius, etc.). These changes shall be reflected in the calculations and information required in these evaluation criteria.

## **1.9 NOTIFICATION**

- A.** *The CITY's representative must be notified 48 hours (minimum) in advance of starting the drilling work. The HDD work shall not begin until the proper preparations (see work plan) for the operation have been completed and approved.*
- B.** *The CONTRACTOR shall immediately inform the CITY and take measures to correct when:*
  - 1.** *Frac-Out and Surface Spill*
  - 2.** *Loss of returns and fluid containment*
  - 3.** *Obstructions along bore-path during reaming or pullback*

4. *Drill pipe or product pipe cannot be advanced*
5. *Deviations in design line and grade exceeding tolerances*
6. *Drill pipe or product pipe broken off in borehole*
7. *Collapse or product pipe or excessive deformation*
8. *Damage to a utility*
9. *Excessive subsidence or heave*

#### **1.10 RECORD DRAWINGS**

- A. *Submit for the CITY's approval the record drawings in duplicate to the CITY's Representative within ten days after completing the pull back for review and approval. The drawings (24 x 36 (min.) and Auto CAD disk of the drawing, 20 horizontal max scale with 2-foot vertical max scale) shall include a plan, profile (data every 25 LF of main, at a minimum), and all information recorded during the progress of the work.*
- B. *The entry and exit points shall be located with GPS coordinates based on a locally available reference system (lat/long, state plane coordinates, etc.).*
- C. *The HDD CONTRACTOR shall certify the accuracy of all record drawings. Final record drawing submittals shall meet the requirements of Specification Section 01720.*

#### **1.11 PIPE PRODUCT DATA SUBMITTAL**

- A. *In addition to any other submittal requirements, the following data shall be provided*
  1. *The name of the pipe manufacturer and a list of the piping and quantities to be provided by manufacturer.*
  2. *Product data and pipe supplier data indicating conformance with this specification and applicable standards, including written documentation regarding any intended variance from this specification and applicable standards.*
  3. *Experience of pipe supplier by years and number of projects.*
  4. *Warranty information; and independent laboratory testing certification.*

#### **1.12 PERSONNEL QUALIFICATIONS CERTIFICATION**

- A. *Directional Drilling - All personnel shall be fully trained in their respective duties as part of the directional drilling crew and in safety. Each person must have been fully*

*trained for over 1,000 hours on all facets of directional drilling, including, but not limited to machine operations, mud mixing, locating, and material fusion. CONTRACTOR shall submit qualifications and certificates of verification of training.*

- B.** *An onsite representative with a minimum of 5 years of progressively responsible drilling and supervisory experience on projects with similar diameters, pipe materials, length and site conditions and who is thoroughly familiar with the equipment and type of work to be performed, must be in direct charge and control of the operation at all times. CONTRACTOR shall submit experience record and certificates of verification of training.*
- C.** *In all cases the supervisor must be continually present at the job site during the actual HDD operation. The CONTRACTOR shall have a sufficient number of experienced competent workers on the job at all times to insure the HDD work is made in a timely and satisfactory manner.*
- D.** *Pipe Assembly - Joints between plain end pipes and pipe fittings shall be made by butt fusion when possible. The on-site welder making the joints shall have received specific training from the manufacturer of the fittings and/or pipe being welded and shall have written proof of proper training/certification from the associated manufacturers. Only certified welders who have written training certifications from the fitting and/or pipe manufacturer will be allowed to perform this work. That is, to weld a fitting in place, the on-site welder (employee) must be trained and certified by the fitting manufacturer. To butt weld pipe, the on-site welder (employee) must be trained and certified by the pipe manufacturer. The fusion work shall be accomplished (welding and cool-down/closing times) in accordance with the fitting and pipe manufacturers' recommendations, at a minimum. External and internal beads shall not be removed unless approved by CITY.*

## **PART 2 MATERIALS**

### **2.0 HIGH DENSITY POLYETHYLENE (HDPE) PIPE AND FITTINGS**

- A.** *Materials. Black PE materials used for the manufacture of polyethylene pipe, tube and fittings shall be PE 4710 high density polyethylene meeting ASTM D3350 cell classification 445574C and shall be listed in the name of the pipe and fitting Manufacturer in PPI (Plastics Pipe Institute) TR-4 with a standard grade HDB rating of 1600 psi at 73°F. The material shall be listed and approved for potable water in accordance with NSF/ANSI 61. The Manufacturer shall certify that the materials used to manufacture pipe and fittings meet these requirements.*
- B.** *Polyethylene Pipe IPS and DIPS shall be manufactured to the requirements of ASTM F714 and AWWA C906-15. Pipe shall be marked in accordance with ASTM*



F714 and/or AWWA C906. Marking shall indicate the pipe's Pressure Rating (PR) and/or Pressure Class (PC).

C. Manufacturers. The Pipe and Resin manufacturing sites shall have the same ownership, and/or be of the same company. The Pipe and Resin manufacturers shall have at least 15-years of experience producing a similar size pipe and similar resin types. Manufacturers that are qualified and approved are listed below. Products from unapproved manufacturers are prohibited.

1. Performance Pipe, a division of Chevron Phillips Chemical Company LP
2. ISCO
3. Or equal

D. *Fabricated Fittings - Products shall be made by heat fusion joining specially machined shapes cut from pipe, polyethylene sheet stock, or molded fittings. Fabricated fittings shall be rated for internal pressure service equivalent to the full-service pressure rating of the mating pipe. Directional fittings 16" and larger such as elbows, tees, crosses, etc., shall have a plain end inlet for butt fusion and flanged directional outlets. All fittings and custom fabrications shall be pressure rated for the same internal pressure rating or higher as the pipe. Fabricated fittings shall be tested in accordance with AWWA C906.*

E. *Polyethylene Mechanical Joint (MJ) Adapters - Mechanical connections of HDPE pipe to Ductile Iron or PVC piping, mechanical joint fittings, or valves shall be through a self-restraining, fusible mechanical joint adapter without an integral, internal stainless-steel insert.*

1. *Mechanical joint adapter shall be of the same SDR rating as the pipe.*
2. MJ adaptors shall be by ISCO or equal.
3. *Back-up Rings and Flange Bolts – MJ adapters shall be fitted with back-up rings that are pressure rated equal to or greater than the mating pipe. The back-up ring bore shall be chamfered or radiused to provide clearance to the flange adapter radius. Bolts and nuts shall be Grade 3 or higher. Mechanical joint adapter shall be of the same SDR rating as the pipe.*
4. *MJ Adaptor shall be provided by the same manufacturer as the pipe.*
5. *MJ adaptor shall be secured to the ductile iron fitting using an EBAA Megalug Restrainer.*

- F.** *HDPE Pipe shall conform to AWWA C906, DR-11, Ductile Iron Pipe (DIP) size and NSF 61 Standard. HDPE pipe for water or reclaimed water piping. Polyethylene pipe shall be manufactured in accordance with ASTM F714, Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Controlled Outside Diameter and shall be so marked.*
- G.** *Each production lot of pipe shall be tested for (from material or pipe) melt Index, density, % carbon, dimensions and either quick burst or ring tensile strength (equipment permitting). Fitting shall be rated at or better than the rated working pressure of the pipe.*
- H.** *Service Identification - Permanent identification of piping service shall be provided by co-extruding multiple equally spaced color stripes into the pipe outside surface or by solid colored pipe shell. The striping material shall be the same material as the pipe material except for color. The following colors shall be used to identify piping service (pressure service)*
- 1.** *Purple – reclaimed water*
- I.** *Manufacturer's Quality Control - The pipe and fitting manufacturer shall have an established quality control program responsible for inspecting incoming and outgoing materials. Incoming polyethylene materials shall be inspected for density, melt flow rated, and contamination. The cell classification properties of the material shall be certified by the supplier and verified by Manufacturer's Quality Control.*

## **PART 3      *INSTALLATION***

### **3.0      *GENERAL EQUIPMENT SYSTEM***

- A.** *The directional drilling equipment shall consist of a directional drilling rig of sufficient capacity to perform the pilot hole, reaming, and pullback the pipe; a drilling fluid mixing, delivery and recovery system of sufficient capacity to successfully complete the drill; a drilling fluid recycling system to remove solids from the drilling fluid so that the fluid can be re-used; a guidance system to accurately guide boring operations; a vacuum truck of sufficient capacity to handle the drilling fluid volume; and trained, competent personnel to operate the system. All equipment shall be in good, safe operating condition with sufficient supplies, materials and spare parts on hand to maintain the system in good working order for the duration of this project.*

### **3.1      *DRILLING SYSTEM***

- A.** *Drilling Rig - The directional drilling machine shall consist of a power system to rotate, push and pull hollow drill pipe into the ground at a variable angle while delivering a pressurized fluid mixture to a guidable drill (bore) head. The power system shall be self-contained with sufficient pressure and volume to power drilling operations.*

*The hydraulic system shall be free of leaks. The rig shall have a system to monitor maximum pull-back force during pull-back operations. The rig shall be grounded during drilling and pull-back operations. There shall be a system to detect electrical current from the drilling string and an audible alarm which automatically sounds when an electrical current is detected.*

- B.** *Drill Head The drill-head shall be steerable by changing its rotation and shall provide the necessary cutting surfaces and drilling fluid jets.*
- C.** *Mud Motors (if required) Mud motors shall be of adequate power to turn the required drilling tools.*
- D.** *Drill Pipe Shall be constructed of high quality heat-treated, forged alloy steel.*

### **3.2 GUIDANCE SYSTEM**

- A.** *Accuracy and Operation - The position of the drill head shall be continuously tracked and recorded by a down-hole wire-line tracking locator system unless otherwise approved by CITY/ENGINEER and shall be supplemented by a “TruTracker” or equivalent tracking system installed between the entry point and the exit point. The coordinates of the surface wire grid system shall be surveyed and recorded. The guidance system shall be capable of tracking at all depths up to eighty feet and in any soil condition, including hard rock. It shall enable the driller to guide the drill head by providing immediate information on the tool face, azimuth (horizontal direction), and inclination (vertical direction) The guidance system shall be accurate to +/-2% of the vertical depth of the borehole at sensing position at depths up to one hundred feet and accurate within 1.5 meters horizontally.*
- B.** *The Guidance System shall be of a proven type and shall be operated by personnel trained and experienced with this system. The Operator shall be aware of any magnetic anomalies on the surface of the drill path and shall consider such influences in the operation of the guidance system if using a magnetic system.*
- C.** *At all times during the pilot bore the CONTRACTOR shall provide and maintain a bore tracking system that is capable of accurately locating the position of the drill head in the x, y, and z axes. The CONTRACTOR shall record these data at least once per drill pipe length or every twenty-five (25) feet, whichever is most frequent.*
- D.** *Down-hole and Surface Grid Tracking System - CONTRACTOR shall monitor and record x, y, and z coordinates relative to an established surface survey bench mark. The data shall be continuously monitored and recorded at least once per drill pipe-length or at twenty-five (25) feet, whichever is more frequent. Deviations between the recorded and design bore path shall be calculated and reported on the daily log. If the deviations*

*exceed plus or minus 5 feet (horizontal or vertical deviation) from the design path, such occurrences shall be reported immediately to CITY. The CONTRACTOR shall undertake all reasonable and necessary measures to correct deviations and return to design line and grade.*

### **3.3 DRILLING FLUID & PRESSURE MONITORING SYSTEM**

- A.** *Mixing System - A self-contained, closed, drilling fluid mixing system shall be of sufficient size to mix and deliver drilling fluid. Mixing system shall continually agitate the drilling fluid during operations.*
- B.** *Drilling Fluid Pressures and Flow Rates - Drilling fluid pressures and flow rates shall be continuously monitored and recorded by the CONTRACTOR. The pressures shall be monitored at the pump. These measurements shall be made during pilot bore drilling, reaming, and pullback operations.*
- C.** *Down-hole Annular Pressure Monitoring System - The CONTRACTOR shall use a down-hole annular pressure monitoring system that will provide instantaneous and continuous operating pressures. This system shall incorporate a data recorder that will store the down-hole annular pressure data for the entire drilling operation. This data shall be maintained and provided to the CITY upon request or at the completion of the project. The data (x, y & z) shall be presented in a format easily referenced to the contract drawings. Pressure shall be indicated in psi at a specified datum. CONTRACTOR shall provide and maintain a down-hole wire-line system to accurately locate the pilot hole (both horizontal and vertical position). A Tru-Tracker energized surface grid, or equivalent, shall be installed and used to supplement the wire-line system. The CITY Representative shall have access to instrumentation and readings at all times during operation.*
- D.** *Drilling Fluids - Drilling fluid shall be composed of clean water, appropriate additives and clay. Water shall be from an authorized source with a minimum pH of 6.0. Water of a lower pH or with excessive calcium shall be treated with the appropriate amount of sodium carbonate or equal. The water and additives shall be mixed thoroughly and be absent of any clumps or clods. No potentially hazardous material may be used in drilling fluid. Drilling fluid pressures and flow rates shall be continuously monitored and recorded.*
- E.** *Delivery System - The delivery system shall have filters in-line to prevent solids from being pumped into the drill pipe. Connections between the pump and drill relatively leak-free. Used drilling fluid and drilling fluid spilled during drilling operations shall be contained and conveyed to the drilling fluid recycling system. Pumps and or vacuum truck(s) of sufficient size shall be in place to convey excess drilling fluid from containment areas to storage and recycling facilities.*

- F. *Drilling Fluid Recycling System & Control of Drilling Fluids - The drilling fluid recycling system shall separate sand, dirt and other solids from the drilling fluid to render the drilling fluid re-usable. Spoils separated from the drilling fluid will be stockpiled for later use or disposal. The CONTRACTOR shall follow all requirements of the Frac-Out and Surface Spill Contingency Plan as submitted and approved and shall control operational pressures, drilling fluid weights, drilling speeds, and any other operational factors required to avoid hydro-fracture fluid losses to formations, and control drilling fluid spills. This includes any spillages or returns at entry and exit locations or at any intermediate point.*
- G. *All inadvertent returns or spills shall be promptly contained and cleaned up.*
- H. *The CONTRACTOR shall maintain on-site mobile spoil removal equipment during all drilling, pre-reaming, reaming and pullback operations and shall be capable of quickly removing spoils. The CONTRACTOR shall immediately notify CITY of any inadvertent returns or spills and immediately contain and clean up the return or spill.*

### **3.4 MISCELLANEOUS EQUIPMENT**

- A. *Pipe Rollers - Pipe rollers, if utilized, shall be of sufficient size to fully support the weight of the pipe while being hydro-tested and during pull-back operations. Sufficient number of rollers shall be used to prevent excess sagging of pipe.*
- B. *Pipe Rammers - Hydraulic or pneumatic pipe rammers may only be used if necessary and with the authorization of the CITY's Representative.*
- C. *Restrictions - Other devices or utility placement systems for providing horizontal thrust other than those defined above in the preceding sections shall not be used unless approved by the CITY Representative prior to commencement of the work. Consideration for approval will be made on an individual basis for each specified location. The proposed device or system will be evaluated prior to approval or rejection on its potential ability to complete the utility placement satisfactorily without undue stoppage to maintain line and grade within the tolerances prescribed by the particular conditions of the projects.*

### **3.5 HDPE PIPE ASSEMBLY**

- A. Pipe shall be fused together in one length.
  - 1. Heat Fusion Joining. Joints between plain end pipes and fittings shall be made by butt fusion. The butt fusion and saddle fusion procedures used shall be procedures that are recommended by the pipe and fitting Manufacturer. The Contractor shall ensure that persons making heat fusion joints have received

training in the Manufacturer's recommended procedure. External and internal beads shall not be removed.

2. Fusion Testing - When requested by the CITY, fusion testing will be performed. The test fusion shall be allowed to cool completely, and then fusion test straps shall be cut out. The test strap shall be 12" (min) or 30 times the wall thickness in length with the fusion in the center and 1" (min) or 1.5 times the wall thickness in width.
- B. Pipe may be placed on pipe rollers before pulling into bore hole to minimize damage to the pipe.
  - C. Acceptability of Damaged Pipe - Cuts or gouges that reduce the wall thickness by more than 10% are not acceptable and must be cut out and discarded.

### **3.6 ENVIRONMENTAL PROTECTION**

- A. *CONTRACTOR shall place silt fence between all drilling operations and any drainage, wetland, waterway or other area designated for such protection by contract documents, state, federal and local regulations.*
- B. *CONTRACTOR shall place hay bales, or approved protection, to limit intrusion upon project area. Additional environmental protection necessary to contain any hydraulic or drilling fluid spills shall be put in place, including berms, liners, turbidity curtains and other measures.*
- C. *CONTRACTOR shall adhere to all applicable environmental regulations stated in local, state and federal permits.*
- D. *CONTRACTOR shall obtain all permits and permissions necessary for the discharge of flushing and test water.*

### **3.7 SAFETY**

- A. *CONTRACTOR shall adhere to all applicable state; federal and local safety regulations and all operations shall be conducted in a safe manner.*

### **3.8 SITE PREPARATION**

- A. *Video - Prior to any alterations to work-site, CONTRACTOR shall photograph or video tape entire work area. One copy of which shall be given to the CITY's Representative and one copy to remain with CONTRACTOR for a period of two (2) years following the completion of the project.*
- B. *Protection of Existing Utilities - CONTRACTOR shall abide by the Common Ground Alliance, Best Practices Version 1.0 or latest, unless exceptions are specifically*

*agreed to by CITY. The CONTRACTOR shall coordinate utilities locates with the state one-call. Once the locate service has field marked all utilities, the CONTRACTOR shall verify each utility (including any service laterals, i.e. water, sewer, cable, gas, electric, phone, etc.) and those within each paved area.*

- C.** *Verification may be performed utilizing Ground Penetrating Radar, hand dig, or vacuum excavation. Prior to initiating drilling, the CONTRACTOR shall record on the drawings both the horizontal and vertical location of the utilities off of a predetermined baseline. The CONTRACTOR shall manage and control drilling practices to prevent damage to existing utilities. The CONTRACTOR shall be responsible for all losses and repairs as a result of damage to underground utilities resulting from drilling operations. The CONTRACTOR shall make a reasonable effort to locate evidence of any other potential subsurface obstructions such as piles or piers.*
- D.** *Work Site Grading - Grade and fill to provide a level working area. No alterations beyond what is required for operations are to be made. CONTRACTOR shall confine all activities to designated work areas.*
- E.** *Following Drilling Operations - CONTRACTOR will de-mobilize equipment and restore the work-site to original condition unless otherwise shown in the plans. Drilling operation entrance and exit tunnels under or in close proximity to non-earthen surfaces and other improvements such as asphalt, concrete, pavers, walls, footers, etc.. shall be back-grouted with flowable fill around the pipe to a sufficient distance, as determined by the CITY, to ensure lasting support and prevent subsidence of the surface improvements. All excavations will be backfilled and compacted to 98% of original density (at a minimum), or as otherwise specified.*

### **3.9 HDPE PRESSURE AND LEAKAGE TESTS**

- A.** *CONTRACTOR shall test pipelines installed under this Contract in accordance with these specifications prior to acceptance of the pipeline by the CITY. All field tests shall be made in the presence of the CITY. Except as otherwise directed, all pipelines shall be tested. Unless approved otherwise by CITY, all fusible or butt weld joints shall be tested, including MJ adapter fittings associated with the new construction. All piping to operate under liquid pressure shall be tested in sections of approved length.*
- B.** *Temporary blow-offs - shall be installed for the purpose of cleaning the main. Blow-offs installed on mains up to and including 12" shall be the same diameter as the water main. Blow-offs installed on 16" mains and larger may be the next smaller size, in diameter, than the main being tested. Temporary blow-offs shall be removed and plugged after the main passes the tests. The CITY shall be present prior to and during the operation of blow-offs.*

- C. *The pressure testing of an HDPE line section shall be performed separately from the PVC line sections. Where impractical, the HDPE test section shall include only a minimum amount of PVC within the test section. If at all possible, the PVC test sections shall be left exposed during the pressure test for visual leakage observation. For these tests, the CONTRACTOR shall furnish suitable temporary testing plugs or caps, and other necessary equipment, and all labor required.*
- D. *The CONTRACTOR will furnish suitable pressure gauges, calibrated by an approved testing laboratory, with increments no greater than 2 psi. Gauges used shall be of such size that pressures tested will not register less than 10% or more than 90% of the gauge capacity. All valved sections shall be hydrostatic tested to insure sealing (leak allowance) of all line valves.*
- E. *Fill the section of pipe to be tested with potable water and expel the air from the pipe. Reclaimed water may be utilized only for filling new reclaimed water. 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 1200 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.*
- F. *The CONTRACTOR shall profile (line and grade) the main after installation and prior to pressure and leakage test to accurately locate all high points. Field survey instrument (Level equipment) shall be utilized for this task. Blow off valves shall be installed (at a minimum) at all high points which offset vertically more than two pipe diameters in length (at a minimum).*
- G. *Hydrostatic testing shall consist of a 150 psig test pressures, based on the elevation of the highest point of the line or section under tests. Pressure shall be applied by means of a pump connected to the pipe in a manner satisfactory to the CITY's Representative. The pump, pipe connection and all necessary apparatus shall be furnished by the CONTRACTOR and shall be subject to the approval of the CITY's Representative.*
- H. *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.*
- I. *If possible, all test sections shall be left exposed for visual leak inspection. Initially, the pressure within the test section should be raised to approximately 160 psi and then allowed to be idle (no additional make-up water/pressure to be injected), for approximately 4 hours. During this 4-hour period, the test section shall be allowed to stabilize and come to an equilibrium stage.*



**J.** 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).

**K.** Final Phase of Pressure Testing - The final phase of the pressure test shall involve applying make-up water/pressure to achieve an “initial test pressure” of 150 psi (minimum)/155 psi (maximum). The test section is then allowed to be idle (no make-up water/pressure is added) for a period of 2 hours. After this 2-hour period, make-up water/pressure is applied and measured to re-establish the “initial test pressure”. The quantity of water utilized to re-pump the line shall be measured and compared to the allowable quantities as determined by the table below. If the actual make-up water is equal to or less than the allowable amount, the pressure test passes.

**L.** If the actual make-up water quantities are greater than the allowable amount, the pressure test fails. CONTRACTOR shall submit results on a standard Florida industry test form.

Table 1 Allowable Make Up Amount	
Nominal Pipe Size (inches)	Make-up Water Allowance (Gallons/Linear feet of Pipe) 2-hour test
24	0.044

**M.** 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.

**N.** If, in the judgment of CITY, it is impracticable to follow the foregoing procedures exactly for any reason, modifications in the procedure shall be made with approval; but, in any event, the CONTRACTOR shall be responsible for the ultimate tightness of the piping within the above requirement. Re- disinfection shall be required if the line is de-pressurized for repairs.

### **3.10 DELIVERY, STORAGE, AND HANDLING OF MATERIALS**

- A.** *Inspect materials - All materials delivered materials shall be inspected for damage immediately upon delivery to the site. Pipe and fittings found during inspection or during the progress of work to have cracks, flaws, cracked linings, or other defects shall be rejected and removed from the job site without delay. Store materials in accordance with manufacturer recommendations. Do not store directly on the ground. Keep all materials free of dirt and debris.*
- B.** *All pipes shall be bundled or packaged in such a manner as to provide adequate protection of the ends during transportation to the site. Any pipe damaged in shipment shall be replaced as directed by the CITY.*
- C.** *Each pipe shipment should be inspected prior to unloading to see if the load has shifted or otherwise been damaged. Notify CITY immediately if more than immaterial damage is found.*
- D.** *Each pipe shipment should be checked for quantity and proper pipe size, color, and type.*
- E.** *In preparation for pipe installation, placement of pipe should be as close to the fusion area as practical.*
- F.** *Fluids - CONTRACTOR is responsible for obtaining, transporting and sorting any fluids, including water, to the work site. Disposal of fluids is the responsibility of the CONTRACTOR. Disposal of fluids shall be done in a manner that is in compliance with all permits and applicable federal, state, or local environmental regulations.*
- G.** *The bentonite drilling slurry should be recycled for reuse in the hole opening operation or shall be hauled by the CONTRACTOR to an approved location or landfill for proper disposal. CONTRACTOR shall thoroughly clean entire area of any fluid residue upon completion of installation, and replace any and all plants and sod damaged, discolored or stained by drilling fluids.*

**END OF SECTION**

## **SECTION 02641 - PRESSURE PIPE CLEANING**

### **PART 1 GENERAL REQUIREMENTS**

#### **1.0 SUMMARY**

- A. This Section sets forth the requirements for materials and methods to clean new potable water, reclaimed water, raw water, sanitary and stormwater pressure pipe lines.

#### **1.1 REFERENCES**

- A. The City Utilities Department Standard Details, latest edition and Section 01660.

#### **1.2 SUBMITTALS**

- A. The CONTRACTOR shall submit planned procedures to the CITY for review prior to beginning work. The CITY Utilities Department staff will advise as to whether or not the pipe cleaning and pigging procedures will be acceptable.

#### **1.3 CONTRACTOR RESPONSIBILITIES**

- A. The CONTRACTOR shall provide and pay for all necessary labor, materials and equipment, including cleaning pigs as required, to ensure the pipe is cleaned. Potable water pipe cleaning shall be completed and accepted by the CITY before any effort is made to disinfect the piping.

#### **1.4 JOB CONDITIONS**

- A. The CONTRACTOR shall review the field conditions prior to placing a bid for this project and evaluate the cleaning schedule that will be required.
- B. The CITY's approval is required to clean a segment of the new piping system prior to moving on to another section.

### **PART 2 PRODUCTS**

(Not Applicable, General Conditions may apply)

### **PART 3 EXECUTION**

#### **3.0 PREPARATION**

- A. The CONTRACTOR shall request approval from CITY a minimum of three (3) business days in advance for coordination of the pigging and flushing operation due to the additional water resource demand on the CITY system. At CITY discretion night time operations may be specified.

### **3.1 PIGGING & FLUSHING**

- A.** Cleaning of lines 6 inches inside diameter or greater shall be accomplished using a flexible polyurethane foam pipeline cleaner, commonly known as a "pig", manufactured for cleaning pressure lines. The pig shall be new and have a turning pattern, for use in water systems. It shall have a resilient peripheral surface that engages with the inner cylindrical wall of the pipe to maintain a sliding seal. The pig may have one or more sealing surfaces. This seal is maintained for propelling and must be abrasive resistant.
- B.** When necessary, the pig shall also have abilities to scratch, scrape, plow and jet to assist in cleaning and flushing the pipe of debris. The pig shall rotate for longer wear and be able to reduce itself to a minimum of 65% of its original cross-sectional area. It must then be able to return to its original form while maintaining its seal and ability to clean.
- C.** The pig shall have the ability to negotiate- fabricated mitered bends, short radius bends, short radius elbows, tees, crosses, and multi-dimensional pipe sizes and valves.
- D.** Follow manufacturer's recommendations for use of "pig" in cleaning the line and conduct flushing and cleaning with CITY's representative in attendance. After passing through the pipeline the CITY's representative shall determine if subsequent pigging and flushing must be performed.
- E.** The field pigging operation shall clearly establish that the piping is adequately cleaned.
- F.** All pipe and fittings used to launch and receive the pigs shall be removed at no additional cost to the CITY. The cost for constructing the pig launch and receiving piping shall be included as part of the pipe installation cost unless a separate line item is found in the bid form.

**END OF SECTION**

## **SECTION 02801 - RESTORATION OF SURFACE IMPROVEMENTS**

### **PART 1 GENERAL REQUIREMENTS**

#### **1.0 DESCRIPTION OF WORK**

- A. This Section includes the restoration of lawn areas, roadways, walks and any other existing improvement affected by the proposed work, as shown on the Drawings and as specified.

#### **1.1 QUALITY ASSURANCE**

- A. Standards
  - 1. Florida Grades and Standards for Nursery Plants, Part 1.
  - 2. Florida Department of Transportation, Standard Specifications for Road and Bridge Construction (latest Edition), hereinafter called the Standard Specifications.

### **PART 2 PRODUCTS**

#### **2.0 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. Replace any material which dies within a year after contract completion with new material.
- E. Plants shall conform to the sizes indicated by the OWNER.

#### **2.1 WATER**

- A. The water used in the performance of this Contract shall be of drinking water quality, clean and free from injurious amounts of oil, acid, alkali, or organic matter.

#### **2.2 PLANTING MIXTURE**

- A. The planting mixture, when required, shall consist of a thorough mixture of 40% peat and 60% sand. The peat shall be Florihome peat or equivalent and the sand shall be clean and free from debris of any kind.

### **2.3 FERTILIZER**

- A. Fertilizer shall be pelletized 8-8-8, or equivalent.

### **2.4 PORTLAND CEMENT CONCRETE**

- A. Portland cement concrete used in the construction of sidewalks shall have a compressive strength of 3,500 psi at 28 days and shall conform to the requirements of Section 03300.

## **PART 3 EXECUTION**

### **3.0 LANDSCAPING RESTORATION**

- A. Lawn Areas: Any lawn area affected by the required work shall be restored to a condition equal to or better than the conditions existing before the commencement of work. Grass areas disturbed by CONTRACTOR shall be restored with sod.
- B. Water: Water to be used during plant installation shall be furnished by the CONTRACTOR. The existing irrigation system, where damaged, shall be promptly repaired after the installation of the plants.

### **3.1 PAVEMENT, CURB AND SIDEWALK REMOVAL**

- A. Pavement materials shall be removed and separated from other excavated materials. Prior to removal, asphaltic and Portland cement materials shall be saw cut to neat lines parallel to the trench and sufficiently remote from the edge of the trench to prevent settling or breaking off.

### **3.2 BASE COURSE CONSTRUCTION**

- A. Recycled concrete base shall follow the requirements of Section 200 of the FDOT Standard Specifications.

### **3.3 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 and base shall be compacted and tested and fully shaped to the necessary elevations and cross-sections to provide the required thickness of pavement.

- B. Asphaltic surfaces shall be prepared, placed, finished and compacted in accordance with the requirements of the Standard Specifications.
- C. Curbs and sidewalks shall be formed with standard forms conforming to the shape and thickness of the items to be replaced. Placing, finishing, protecting and curing shall conform to the requirements of the specified standard.

### **3.4 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**

## **DIVISION 3 CONCRETE**



## **SECTION 03300 - CONCRETE**

### **PART 1 GENERAL REQUIREMENTS**

#### **1.0 SUMMARY**

- A.** This Section sets forth the requirements for concrete, grout and related work required to furnish and install cast-in-place reinforced and unreinforced concrete.

#### **1.1 GENERAL**

- A.** Reinforced concrete shall be steel reinforced and includes:
- 1.** Precast manholes and wet wells.
  - 2.** Other reinforced concrete structures.
  - 3.** Encasements, etc.
- B.** Steel Reinforcement: Includes bars, ties and supports.

#### **1.2 QUALITY ASSURANCE**

- A.** Source Quality Control
- 1.** Concrete Testing Service: CONTRACTOR shall employ acceptable testing laboratory to perform materials evaluation, testing and design of concrete mixes. CONTRACTOR's laboratory shall also evaluate concrete delivered to and placed at the site.
  - 2.** Certificates, signed by concrete producer and CONTRACTOR may be submitted in lieu of material testing when acceptable to CITY and or Engineer of Record.
- B.** Quality Control: Perform sampling and testing during concrete placement as follows:
- 1.** Sampling: ASTM C 172.
  - 2.** Slump: ASTM C 143, one test for each load at point of discharge
  - 3.** Air Content: ASTM C 31, one for each set of compressive strength specimens.
  - 4.** Compressive Strength: ASTM C 39, one set for each 50 cubic yards or fraction thereof of concrete; 1 specimen tested at 7 days, 2 specimens tested at 28 days.
  - 5.** Report test results in writing to CITY and or Engineer of Record on same day tests are made.

6. Reference Standards: Comply with the applicable provisions and recommendations of the following, except as otherwise shown or specified:
  1. ACI 301, Specifications for Structural Concrete for Building (includes ASTM Standards referred to herein except for ASTM A 36).
  2. ACI 304, Guide for Measuring, Mixing, Transporting, and Placing Concrete.
  3. ACI 305, Hot Weather concreting.
  4. ACI 306, Cold Weather Concreting.
  5. ACI 315, Manual of Engineering and Placing Drawing for Reinforced Concrete Structures.
  6. ACI 318, Building Code Requirements for Reinforced Concrete.
  7. ACI 347, Guide to Formwork for Concrete.
  8. ACI 350, Environmental Engineering Concrete Structures.
  9. ASTM A 36, Specification for Structural Steel.
  10. Concrete Reinforcing Steel Institute Manual of Standard Practice, include ASTM Standards referred to herein.

### **1.3 SUBMITTALS**

- A. Samples: Submit samples of materials as specified and may be requested by CITY and or Engineer of Record, including names, sources and descriptions.
- B. Shop Drawings: Submit for approval the following:
  1. Copies of manufacturer's specifications with application and installation instructions for proprietary materials and items, including admixtures and bonding agents.
  2. Drawings for fabrication, bending, and placement of concrete reinforcement. Comply with ACI 315, Chapters 1 thru 7. Show bar schedules, stirrup spacing, diagrams of bent bars, arrangements and assemblies, as required for the fabrication and placement of concrete reinforcement.
  3. List of concrete materials and concrete mix designs proposed for use.
  4. Include the results of all tests performed to qualify the materials and to establish the mix designs in accordance with ACI 301, 3.9. Submit written

report to CITY and or Engineer of Record for each proposed concrete mix at least 15 days prior to start of work. Do not begin concrete production until mixes have been reviewed and are acceptable to CITY and or Engineer of Record. Mix designs may be adjusted when material characteristics, job conditions, weather, test results or other circumstances warrant. Do not use revised concrete mixes until submitted to and accepted by CITY and or Engineer of Record.

- C. Laboratory Test Reports: Submit copies of laboratory test reports for concrete cylinders, materials and mix design tests. CITY and or Engineer of Record review will be for general information only. Production of concrete to comply with specified requirements is the responsibility of CONTRACTOR.

#### **1.4 PRODUCT DELIVERY, STORAGE AND HANDLING**

- A. Delivery concrete reinforcement materials to the site bundled, tagged and marked. Use metal tags indicating bar size, lengths, and other information corresponding to markings shown on placement diagrams.
- B. All materials used for concrete must be kept clean and free from all foreign matter during transportation and handling and kept separate until measured and placed in the mixer. Bins or platforms having hard clean surfaces shall be provided for storage. Suitable means shall be taken during hauling, piling and handling to ensure that segregation of the coarse and fine aggregate particles does not occur and the grading is not affected.

### **PART 2 PRODUCTS**

#### **2.0 CONCRETE MATERIALS**

- A. Portland Cement: ASTM C 150, Type II.
- B. Aggregates: ASTM C 33.
  - 1. Fine Aggregate: Clean, sharp, natural sand free from loam, clay, lumps or other deleterious substances. Dune sand, bank run sand and manufactured sand are not acceptable.
  - 2. Coarse Aggregate: Clean, uncoated, processed aggregate containing no clay, mud, loam, or foreign matter, as follows:
  - 3. Crushed stone, processed from natural rock or stone.
  - 4. Washed gravel, either natural or crushed. Use of slag and pit or bank run gravel is not permitted.

- C. Coarse Aggregate Size: Size to be ASTM C 33, Nos. 57 or 67, unless permitted otherwise by CITY and or Engineer of Record.
- D. Water: Clean, drinkable.
- E. Air-Entraining Admixture: ASTM C 260.
- F. Water-Reducing High Range Admixture: ASTM C 494, Type F/G. Only use admixtures which have been tested and accepted in mix designs.
- G. Slump Limits
  - 1. Proportion and design mixes to result in concrete slump:
  - 2. Not more than 4 inches prior to adding high range water-reducer.
  - 3. Not more than 8 inches at point of placement after adding high range water-reducer.

## **2.1 FORM MATERIALS**

- A. Provide form materials with sufficient stability to withstand pressure of placed concrete without bow or deflection.
- B. Exposed Concrete Surfaces: Acceptable panel-type to provide continuous, straight, smooth, as-cast surfaces. Use largest practical sizes to minimize form joints.
- C. Unexposed Concrete Surfaces: Suitable material to suit project conditions.

## **2.2 REINFORCING MATERIALS**

- A. Reinforcing Bars: ASTM A 615, Grade 60.
- B. Steel Wire: ASTM A 82.
- C. Supports for Reinforcement: Bolsters, chairs, spacers and other devices for spacing, supporting and fastening reinforcement in place.
  - 1. Use wire bar type supports complying with CRSI recommendations, except as specified below. Do not use wood, brick, or other unacceptable materials.
  - 2. For slabs on grade, use supports with sand plates or horizontal runners where base materials will not support chair legs.
  - 3. For all concrete surfaces, where legs of supports are in contact with forms, provide supports (Either hot-dip galvanized, plastic protected or stainless-steel legs) complying with CRSI, Manual of Standard

4. Over waterproof membranes, use precast concrete chairs.

### **2.3 RELATED MATERIALS**

#### **A. Waterstops**

1. Flat dumbbell or center bulb type, size to suit joints, uniform minimum thickness of 3/8-inch by 9 inches minimum width of Polyvinyl Chloride. Manufacturer
2. Provide waterstops of one of the following:
  1. W.R. Meadows, Incorporated.
  2. A.C. Horn, Incorporated.
  3. Or equal.

#### **B. Membrane-Forming Curing Compound: ASTM C 309, Type I.**

#### **C. Epoxy Bonding Agent**

1. Two-component epoxy resin bonding agent.
2. Product and Manufacturer: Provide one of the following:
  1. Sikadur Hi-Mod, as manufactured by Sika Chemical Corporation.
  2. Epoxite Binder (Code No. 2390), as manufactured by A.C. Horn, Incorporated. Or Equal.

### **2.4 GROUT**

#### **A. Non-shrink, Nonmetallic Grout**

1. Prepackaged non-staining cementitious grout requiring only the addition of water at the job site.
2. Product and Manufacturer: Provide one of the following:
  1. Euco N-S, as manufactured by the Euclid Chemical Company.
  2. Masterflo 713, as manufactured by Masters Buildings Company.
  3. Or equal.

#### **B. Non-shrink, Nonmetallic 100% Solids, High Strength Epoxy Grout.**

1. Use prepackaged solvent-free, moisture-insensitive, 3-component epoxy grouting system.
  2. Product or Manufacturer: Provide one of the following:
    1. Euco High Strength Grout, as manufactured by the Euclid Chemical Company, Cleveland, Ohio.
    2. Sikadur 42, Grout-Pak, as manufactured by the Sika Chemical Company, Lyndhurst, NJ
    3. Or equal.
- C. Ordinary Cement-Sand Grout
1. Except where otherwise specified use 1-part cement to 3-parts sand complying with the following:
    1. Cement: ASTM C 150, Type II.
    2. Sand: ASTM C 33.

### **PART 3 EXECUTION**

#### **3.0 INSPECTION**

- A. CONTRACTOR and his installer shall examine the foundation for and the conditions under which work is to be performed and notify CITY of unsatisfactory conditions. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to CITY and or Engineer of Record.

#### **3.1 FORMWORK**

- A. Formwork: Construction so that concrete members and structures are correct size, shape alignment, elevation, and position, complying with ACI 347.
- B. Provide openings in form work to accommodate work of other trades. Accurately place and securely support items built into forms.
- C. Clean and adjust forms prior to concrete placement. Apply form release agents or wet forms, as required. Retighten forms during and after concrete placement if required to eliminate mortar leaks.

### **3.2 REINFORCEMENT, JOINTS, AND EMBEDDED ITEMS**

- A.** Comply with the applicable recommendations of specified codes and standards and CRSI. Manual of Standard Practice, for details and methods of reinforcement placement and supports.
- B.** Clean reinforcement to bright metal surface unless otherwise directed by City.
- C.** Remove loose rust and mill scale, earth, and other materials which reduce or destroy bond with concrete.
- D.** Position, support, and secure reinforcement against displacement during formwork construction or concrete placement. Locate and support reinforcing by metal chairs, runners, bolsters, spacers and hangers, as required.
  - 1.** Place reinforcement to obtain the minimum concrete coverage as shown and as specified in ACI 18. Arrange, space, and securely tie bars and bar supports together with 16 gage wire to hold reinforcement accurately in position during concrete placement operations. Set with ties so that twisted ends are directed away from exposed concrete surfaces.
  - 2.** Reinforcing steel shall not be secured to forms with wire, nails or other ferrous metal. Metal supports subject to corrosion shall not touch formed or exposed concrete surfaces.
- E.** Provide sufficient numbers of supports of strength required to carry reinforcement. Do not place reinforcing bars more than 2 inches beyond the last leg of any continuous bar support. Do not use supports as bases for runways for concrete conveying equipment and similar construction loads.
- F.** Splices: Provide standard reinforcement splices by lapping ends, placing bars in contact, and tying tightly with wire. Comply with requirements shown for minimum lap of spliced bars.
- G.** Concrete shall not be placed until the reinforcing steel is inspected and permission for placing concrete is granted by CITY/ ENGINEER. All concrete placed in violation of this provision will be rejected.
- H.** Joints
  - 1.** Provide construction, isolation, and control joints as indicated or required.
  - 2.** Locate construction joints so as to not impair the strength and appearance of the structure.

3. Place isolation and control joints in slabs on ground to stabilize differential settlement and random cracking.
  4. In mats and slabs on grade, locate joints at a spacing of approximately 40 feet. Place concrete in a strip pattern.
- I. Installation of Embedded Items: Set and build into the work anchorage devices and embedded items required for other work that is attached to, or supported by cast-in-place concrete. Use setting diagrams, templates and instructions provided under other Sections for locating and setting.

### **3.3 CONCRETE AND PLACEMENT**

- A. Proportioning and Design of Mix
1. Minimum compressive strength at 28 days: 3000 psi
  2. Maximum water/cement ratio by weight: 0.45
  3. Minimum cement content: 564 pounds per cubic yard
  4. Normal weight: 145 pounds per cubic foot
  5. Use air-entraining admixture in all concrete: provide not less than 4 percent or more than 8 percent entrained air for concrete.
  6. Calcium Chloride: Do not use calcium chloride in concrete, unless otherwise authorized in writing by CITY and or Engineer of record. Do not use water or admixtures containing calcium chloride.
- B. Job-Site Mixing: Use drum type batch machine mixer, mixing not less than 16 minute for one cubic yard or smaller capacity. Increase mixing time at least 15 seconds for each additional cubic yard or fraction thereof.
- C. Ready-Mixed Concrete: ASTM C 94.
- D. Concrete Placement: Comply with ACI 304, placing concrete in a continuous operation within planned joints or sections. Do not begin placement until work of other trades affecting concrete is completed.
- E. Consolidate placed concrete using mechanical vibrating equipment with hand rodding and tamping, so that concrete is worked around reinforcement and other embedded items and into all parts of forms.
- F. Protect concrete from physical damage or reduce strength due to weather extremes during mixing, placement and curing.



1. In cold weather comply with ACI 306.
2. In hot weather comply with ACI 305.

### **3.4 QUALITY OF CONCRETE WORK**

- A. Make all concrete solid, compact and smooth, and free of laitance, cracks and cold joints.
- B. All concrete for liquid retaining structures, and all concrete in contact with earth, water, or exposed directly to the elements shall be watertight.
- C. Cut out and properly replace to the extent ordered by CITY, or repair to the satisfaction of CITY, surfaces which contain cracks or voids, are unduly rough, or are in any way defective. Patches or plastering will not be acceptable.
- D. Repair, removal, and replacement of defective concrete as ordered by CITY shall be at no additional cost to CITY.

### **3.5 CURING**

- A. Curing: Begin initial curing as soon as free water has disappeared from exposed surfaces. Where possible, keep continuously moist for not less than 72 hours. Continue curing use of moisture-retaining cover or membrane-forming curing compound. Cure formed surfaces by moist curing until forms are removed. Provide protection as required to prevent damage to exposed concrete surfaces.

### **3.6 FINISHES**

- A. Finish
  1. After placing concrete slabs, do not work the surface further until ready for floating. Begin floating when the surface water has disappeared or when the concrete has stiffened sufficiently. Use a wood float only.
  2. Check and level the surface plane to a tolerance not exceeding .1 inch in 10-feet when tested with a 10-foot straightedge placed on the surface at not less than 2 different angles. Cut down high spots and fill all low spots.
  3. Uniformly slope surfaces to drains. Immediately after leveling, refloat the surface to a uniform, smooth granular texture.
  4. Apply a non-slip broom finish of neat appearance to exterior concrete slabs. Use fiber-bristle broom unless otherwise directed. Coordinate the required final finish with CITY/ ENGINEER before application.

### **3.7 GROUT PLACEMENT**

#### **A. General**

- 1.** Place grout as shown and in accordance with manufacturer's instructions. If manufacturer's instructions conflict with the Specifications do not proceed until CITY provides clarification.
- 2.** Drypacking will not be permitted.
- 3.** Proprietary product manufacturers shall make the services of qualified, full-time employees available upon 72 hours notification to assure that the product is properly used.
- 4.** Placing grout shall conform to the temperature and weather limitations described in Article 3.3 above.

**END OF SECTION**

## **SECTION 03450 - PRECAST CONCRETE STRUCTURES**

### **PART 1 GENERAL**

#### **1.0 DESCRIPTION**

- A. Scope of Work: The work under this Section includes the design, casting, delivery, and erection of concrete structures as indicated on the Drawings.

#### **1.1 QUALITY ASSURANCE**

- A. Standards: Unless otherwise indicated, all materials, workmanship and practices shall be in accordance with the current editions of the following standards:

1. ACI 318, Building Code Requirements for Reinforced Concrete.
2. PCI MNL 116, Manual for Quality Control for Plants and Production of Precast Concrete Products.
3. ANSI/ASTM C55 – Concrete Building Brick.
4. ASTM A48 – Gray Iron Castings.

#### **1.2 SUBMITTALS**

- A. The following information shall be submitted for approval. Fabrication shall not begin until submission has been approved.

1. Quality Control: Satisfactory evidence shall be submitted that plant and production methods meet the requirements of PCI MNL 116.
2. Submit under provisions of Division 1.
3. Shop Drawings: Complete fabrication and erection drawings shall be submitted. All drawings shall bear the seal of a Professional Engineer registered in the State of Florida.

- B. Manufacturer's data sheets shall be submitted on the following:

1. Joint mastic and gaskets.
2. Pipe connections.
3. Grout material.
4. Hatches and manhole covers.

### **1.3 DELIVERY, STORAGE AND HANDLING**

- A. Transportation and erection shall be done by qualified personnel using proper equipment. Lifting and supporting shall be done only at points indicated on the shop drawings.

## **PART 2 PRODUCTS**

### **2.0 MATERIALS AND FABRICATION**

- A. Precast Concrete Structures:

1. Design loads shall consist of dead load, live load, impact, soil loads and loads due to water table, as well as other loads which may be imposed upon the structure. Wetwells and manholes shall be designed in accordance with ASTM C-478. The minimum wall thickness for valve vaults shall be as shown on the Drawings.
2. Forms used for precast concrete shall be of metal and sufficiently designed and braced to maintain their alignment under pressures of the concrete during placing. Base and first section of precast structures shall be an integral cast.
3. Aggregates: All aggregates, fine and coarse, other than lightweight aggregate shall conform to ASTM C33. Lightweight aggregates, fine and coarse, shall conform to ASTM C330. Aggregates shall be free of deleterious substances causing reactivity with oxidized hydrogen sulfide. Both types of aggregate shall be graded in a manner so as to produce a homogenous concrete mix. All materials are to be accurately weighed at a central batching facility for mixing.
4. Cement shall be Portland cement Type II.
5. Minimum compressive strength of concrete used for precast concrete structures shall be 4000 psi at 28 days.
6. Placing. All concrete shall be handled from the mixer or transport vehicle to the place of final deposit in a continuous manner, as rapidly as practicable, and without segregation or loss of ingredients, until the approved unit is completed. Maximum elapsed time from batching to placement shall be 2 hours. Concrete shall be placed in layers not over 2 feet deep. Each layer shall be compacted by mechanical internal or external vibrating equipment. Duration of the vibration cycle shall be limited to the time necessary to produce satisfactory consolidation without causing objectionable segregation.
7. Curing:

- i. For purposes of early reuse of forms, precast concrete may be steam cured after an initial set has taken place. The steam temperature shall not exceed 160°F, and the temperature shall be raised from normal ambient temperatures at a rate not to exceed 40°F per hour.
  - ii. The steam cured unit shall not be removed from the forms until sufficient strength is obtained for the unit to withstand any structural strain to which it may be subjected during the form stripping operation. After the stripping of forms, further curing by means of water spraying or a membrane curing compound may be used, and shall be of a clear or white type, conforming to ASTM C309.
- 8. Reinforcing steel shall be sufficiently tied to withstand any displacement during the pouring operation. All bars shall be Grade 60.
  - 9. Lifting holes through the structures are not permitted. Equally spaced lifting lugs, rings or non-penetrating lift inserts shall be provided.
  - 10. Top slabs for valve vaults shall be precast. Steel reinforcing shall be as required for the dead load of the slab plus an H-20 designation live load.
  - 11. Concrete for top slabs shall have a compressive strength of 4000 psi at 28 days. Thickness of concrete for top slabs shall be as shown on the Drawings.
  - 12. Sealing Compound: Plastic sealing compound shall comply with Federal Specification SS-SS-00210.

### **PART 3 EXECUTION**

#### **3.0 INSTALLATION**

- A. Earthwork: The CONTRACTOR shall prepare an excavation large enough to accommodate the structure and permit sealing of openings, waterproofing and backfilling operations. Earthwork shall conform to the applicable section of Division 2.
- B. Installation of Precast Concrete Structures: Precast concrete structures shall be constructed in a workmanlike manner at the locations and dimensions indicated on the Drawings. Precast structures shall be set on foundation of #57 crushed stone, 9 inches thick. The precast structures shall be constructed such that the structure will not transmit dead or live loads to the piping. Care shall be taken to prevent earth and other material from entering precast structures.
- C. Tops of Structures: Unless otherwise indicated on the Drawings, in unpaved areas, the tops of valve vaults shall be set 1-inch above grade.

**D.** Backfill: After the structure and all appurtenances are in place and approved, backfill shall be placed to the original ground line or to the limits designated on the Drawings. Backfill material shall consist of sand or loose earth, free from stones, clods, or other deleterious material. It shall be placed in horizontal layers not exceeding 12 inches in depth and shall be moistened and thoroughly compacted to a minimum relative density conforming to the requirements of Division 2.

**END OF SECTION**

# **DIVISION 15 MECHANICAL**

# **SECTION 15000 - MECHANICAL GENERAL REQUIREMENTS**

## **PART 1 GENERAL REQUIREMENTS**

### **1.0 DESCRIPTION**

#### **A. Scope of Work:**

- 1.** 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.
- 2.** 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 REFERENCES**

#### **A. Other sections directly referenced in this section include the following:**

- 1.** General Requirements: Division 1.
- 2.** Concrete: Division 3.

**B. 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.

**C.** In the event of discrepancies between the Contract Drawings and Specifications, the more stringent or higher quality or higher rated item shall be provided and installed.

**D.** In the event of discrepancies between any regulations or ordinances governing work of these contract documents, the CONTRACTOR shall notify the Owner/Engineer in ample time to permit revisions.

### **1.2 QUALITY ASSURANCE**

**A. 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.

**B. Equivalent Materials and Equipment:**

1. 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.
2. 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.

**C. 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.

**D. Testing**

1. 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.

**E. Pressure Test**

1. After installation, all piping shall be pressure tested. Piping shall be tested in accordance with Section 01660.
2. 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.
3. Provide not less than three-days-notice to the Construction Inspector and the authority having jurisdiction when it is proposed to make the tests.

4. 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.
5. The piping systems may be tested in sections as the work progresses but no joint or portion of the system shall be left untested.
6. All elements within the system that may be damaged by the testing operation shall be removed or otherwise protected during the operation.
7. 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.
8. Repair all damage done to existing or adjacent work or materials due to or on account of the tests.
9. 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.
10. 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.
11. 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.

**F. Acceptance of Materials:**

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 acceptance of the OWNER. No material shall be delivered to the work without prior submittal approval of the Owner/Engineer.
2. 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.

3. 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.
4. The CONTRACTOR shall submit data and samples sufficiently early to permit consideration and acceptance before materials are necessary for incorporation in the work.
5. 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.
6. 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

### **1.3 SUBMITTALS**

- A.** Section 01300: Submittals; and
- B.** Section 01340: Shop Drawing Procedures

### **1.4 PRODUCT DELIVERY, STORAGE AND HANDLING**

- A.** 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.
- B.** 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.
- C.** Nameplate: Each piece of equipment shall be provided with a substantial nameplate of non-corrodible metal, securely fastened in place, and clearly and permanently inscribed with the manufacturer's name, model or type designation, serial number, rated capacity, electrical or other power characteristics and other appropriate nameplate data.
- D.** Responsibility
  - 1.** 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.
  - 2.** 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.
- E.** 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.

1. The CONTRACTOR shall deliver products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.
2. 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.
3. 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.

## **1.5 WARRANTY AND GUARANTEES**

- A. The manufacturer's written warranty shall be submitted for all major pieces of equipment, as specified in Section 01740: Warranties. The manufacturer's warranty period shall be concurrent with the CONTRACTOR'S correction period for one year after the time of completion and acceptance.

## **PART 2 PRODUCTS**

### **2.0 FABRICATION AND MANUFACTURE**

- A. Workmanship and Materials:
  1. 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.
  2. 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.
  3. 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 PAINTING**

- A.** Painting shall include field painting of bare and covered pipes and ducts (including color coding), and, exposed steel and iron work, and primed metal surfaces of equipment.
- B.** Painting shall be done at such times as the CONTRACTOR and ENGINEER may agree upon in order that dust-free and neat work be obtained. Painting shall be done strictly in accordance with the manufacturer's instructions and shall be performed in a manner satisfactory to the ENGINEER.
- C.** Painting or coating and finishing of exterior items, shall be (unless otherwise indicated) as follows:
  - 1.** Paint all exposed surfaces, except as otherwise indicated, whether or not colors are designated.
  - 2.** In all cases, the prime coat and finish coat shall be from the same manufacturer. All paint shall be mildew resistant.
  - 3.** Prime: One coat epoxy primer minimum 3 mils dry film thickness.
  - 4.** Finish: Two coats of a polyamide cured epoxy resin coating applied at the rate of 2.0 mils dry film thickness per coat.
- D.** Fabricated Items:
  - 1.** Equipment and other manufactured items shall have surfaces prepared, primed and finish-coated in accordance with the standard practice of the manufacturer. Finish coat colors shall be as approved by the ENGINEER.
  - 2.** Shop-fabricated items and components for field assembly shall have surfaced prepared and shop-primed. Finish coat colors shall be as approved by the ENGINEER.
  - 3.** The CONTRACTOR shall touch up all scratched, damaged or discolored surfaces and repaint with one coat for color uniformity.
- E.** The CONTRACTOR shall provide a limited 5-year warranty for the “installed” paint system, guaranteeing against premature chipping, fading, peeling, cracking, blistering or any other defects

**PART 3      EXECUTION**

**3.0            INSTALLATION AND OPERATION**

- A.      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.

**3.1            MANUFACTURER'S FIELD SERVICES**

A.      Services Furnished Under This Contract:

1.      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.
2.      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.
3.      All costs for field services shall be included in the Contract amount.

**END OF SECTION**

## **SECTION 15049 - TRACER WIRE AND ALARMING TAPE**

### **PART 1 GENERAL REQUIREMENTS**

#### **1.0 SUMMARY**

- A. Furnish and install identification tape over the centerline of all buried pipelines.

#### **1.1 SUBMITTALS**

- A. Submit manufacture's descriptive literature, illustrations, specifications and other pertinent data.

### **PART 2 PRODUCTS**

#### **2.0 TRACER WIRE**

- A. All pipe (HDPE, PVC and DI) 4-inches and greater installed by open cut shall have one (1) 12-gauge minimum copper tracer wire taped to the top of the pipe at intervals no greater than 4-feet. Copper wire shall have a minimum tensile strength/ break load of 452 lbs.
- B. All pipe (HDPE, PVC or DI) installed by directional bore shall have two (2) 12-gauge extra high strength (EHS) carbon steel inner core reinforcement directional drilling tracer wires taped to the top of the pipe at intervals no greater than 4-feet. The wire shall have a minimum tensile strength/break load of 1,150 lbs.
- C. The tracer wires shall have colored insulation matching the type of service provided in the main and be acceptable for direct burial.
- D. The wire shall be tied to all valves, tees and fittings.
- E. The tracer wires shall be brought up to the surface through a valve box or a 2-inch PVC pipe under direction of a City's Representative.
- F. The wires shall each be continuous throughout the project, with splices made only by methods approved by the City's Project Representative.
- G. All splices of the wires shall be made with watertight connections, utilizing direct bury splice kits as manufactured by 3M or approved equal. Bury splice kits shall be installed in accordance with manufacturer's recommendations.
- H. Tracer wire manufacturer shall be either Copperhead Industries or Proline Safety Products or approved equal.



**2.1 ALARMING TAPE**

- A.** Identification Tape for Ductile Iron and Steel Pipe Identification tape shall be metallic and manufactured of polyethylene so as to be highly resistant to alkalis, acids and other destructive agents found in soil, and shall have a minimum thickness of 5 mils with a minimum tensile strength of 22 pounds per inch and maximum adhesive factor of 40 ounces per inch. 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.
- B.** Identification Tape for Polyvinyl Chloride Pipe Identification tape shall be metallic and manufactured of polyethylene with minimum thickness of 4 mils. The width shall be 3 inches and shall have background color specified below, imprinted with black letters. Imprint shall be as specified below and shall repeat itself a minimum of once every 2 feet for entire length of tape.
- C.** Alarming tape is not needed for pipe installed by horizontal directional drilling with the exception of that installed in an open trench for entry and exit of the drill.
- D.** Tape background colors and imprints shall be as follows

<b><u>Background Imprint</u></b>	<b><u>Color</u></b>
“Caution Caution-Potable Water Line Buried Below”	Blue
“Caution Caution-Wastewater Force Main Buried Below”	Green
“Caution Caution-Reclaimed Water Main Buried Below”	Lavender
“Caution Caution-Raw Water Main Buried Below”	White

**E.** Identification tape shall be “Underground Detectable Warning Tape” as manufactured by Presco, can be purchased at Ferguson Supply 840 Jimmy Ann Drive, Daytona Beach (386) 274-4516 or approved equivalent.

**PART 3 EXECUTION**

**3.0 INSTALLATION OF ALARMING TAPE**

- A. Alarming tape shall be installed for all buried pressure mains in accordance with the manufacturer's installation instructions and specified herein.
- B. For potable, raw, reuse water, and force mains, alarming tape shall be installed 18" below final grade.

**3.1 INSTALLATION OF TRACER WIRE**

- A. Contractor shall perform a 12 -volt DC electrical continuity test on all wires. No more than one volt of loss per 1000 feet of mainline pipe will be acceptable. A continuity test prior to final acceptance of the pipeline shall be required. Any cuts or breaks in the wire shall be repaired by the contractor at his expense.
- B. The tracer wire shall be tested by Contractor and with the City's Representative at the time of pressure testing. If the test fails, the Contractor is responsible for repairing the tracer wire.

**END OF SECTION**

## **SECTION 15050 - WATER PIPING GENERAL**

### **PART 1 GENERAL REQUIREMENTS**

#### **1.0 SUMMARY**

- A. The work covered by this section consists of providing all labor, equipment, material and supplies, and performing all operations required to install the various piping, valves, accessories, and fire hydrant assemblies for potable, reclaimed and raw water lines as specified and shown on the drawings. The work includes all testing and sampling in accordance with governing agencies.

#### **1.1 REFERENCES**

- A. Specification Sections 02641 Pressure Pipe Cleaning, 15066 Polyvinyl Chloride (PVC) Pipe and Conduit, Section 01660 Reclaimed Forcemain Piping Field Testing and the CITY's Utility Department Standard Details, latest edition shall apply

#### **1.2 SUBMITTALS**

- A. Shop drawings or catalog cuts shall be submitted for all miscellaneous structures, valves, boxes, and restrained joints.
- B. The manufacturer shall furnish a sworn affidavit that the pipe, fittings, and lining furnished under the Contract or Agreement comply with all applicable provisions of the ANSI and/or AWWA Standards.
- C. Reports on pressure and leakage tests shall be submitted in duplicate by the CONTRACTOR.

#### **1.3 JOB CONDITIONS**

- A. Interruptions to water service shall be minimized. The CONTRACTOR shall submit plans and schedules to the CITY for approval before any interruption in service takes place.

### **PART 2 PRODUCTS**

(Not Applicable, General Conditions may apply)

### **PART 3 EXECUTION**

#### **3.0 INSTALLATION**

- A. Pipe and fittings shall be strung out along the route of construction with the spigots pointing in the direction of the flow. Pipe shall be placed where it will cause least interference with traffic. Before the pipe is lowered into the trench, it shall be swabbed

or brushed out to ensure that no dirt or foreign material gets into the finished line. Trench waters shall be kept out of the pipe and the pipe kept closed by means of a test plug whenever work is not in progress. The CONTRACTOR shall provide the means for dewatering the trench and the cost thereof shall be included in the price for installing the pipe.

- B.** Installation of the pipe shall be commenced immediately after the excavation is started. Every means must be used to keep pipe laying closely behind the trenching. The CITY may stop trenching if in its opinion, the trench is open too far in advance of the pipe laying operation. Damaged or unsound pipe or fittings will be removed and replaced by the CONTRACTOR at no additional cost to the CITY.
- C.** Water lines shall be restrained to prevent movement of lines under pressure. Restraints shall be furnished by the CONTRACTOR. For ductile iron pipe, restrained joints shall be installed at all bends, tees, crosses, wyes, plugs, and reducers as shown in standard details of the drawings.
- D.** Where there is no adequate natural foundation upon which to construct a pipe bed, the pipe shall be constructed on a prepared stabilized sub-grade or rock bedding of Class I materials as defined in ASTM D2321. Unsuitable sub-grade materials shall be replaced or stabilized as described in Section 02202.
- E.** Where water mains are stubbed out with a reducer and valve, the stub-outs shall have restrained joints as indicated in the restraining schedule on the standard detail sheet.
- F.** All joints and service connections shall be watertight, and any leaks or defects discovered shall be immediately repaired to the satisfaction of the CITY. Any pipe which has been disturbed after being laid shall be taken up, the joints cleaned and the pipes properly re-laid. Installation of fittings and pipe joints shall be in strict accordance with the manufacturer's recommendations.

### **3.2 WATER AND SEWER MAIN CROSSING**

- A.** Where water and sewer mains cross, the water main shall be installed with at least 18 inches vertical clearance or encase sewer main in concrete 10 feet each side of the water main. The cost of extra depth excavation or encasement is to be included in the cost of furnishing and installing the pipe.

### **3.3 HIGHWAY CROSSINGS**

- A.** All pipe under State and County highways shall be installed in accordance with the requirements of the permits issued by the respective agency.

### **3.4 CUT-IN CONNECTION TO EXISTING MAINS**

- A.** Where cut-in connections are required between new work and existing water mains, the cut-in connections shall be made by the CONTRACTOR. Proper specials and fittings to suit the actual conditions shall be furnished by the CONTRACTOR. The CONTRACTOR shall schedule his work so that digging and locating the existing line can be completed prior to starting trench work on the line. The CONTRACTOR shall verify the dimensions of all pipes before ordering special fittings and couplings.

### **3.5 OTHER UTILITIES**

- A.** The CONTRACTOR shall contact all utilities, private and public, a minimum of one (1) week prior to beginning construction so these utilities can be properly located.

### **3.6 PIPE CLEANING**

- A.** Cleaning of lines less than 6 inches inside diameter shall be accomplished by thorough flushing of the line using a CITY approved water source. Cleaning of lines 6 inches inside diameter or greater shall be accomplished using a flexible polyurethane foam pipeline cleaner, commonly known as a "pig", manufactured for cleaning pressure lines. The pig shall be new and have a turning pattern, for use in water systems. It shall have a resilient peripheral surface that engages with the inner cylindrical wall of the pipe to maintain a sliding seal. The pig may have one or more sealing surfaces. This seal is maintained for propelling and must be abrasive resistant.
- B.** When necessary, the pig shall also have abilities to scratch, scrape, plow and jet to assist in cleaning and flushing the pipe of debris. The pig shall rotate for longer wear and be able to reduce itself to a minimum of 65% of its original cross-sectional area. It must then be able to return to its original form while maintaining its seal and ability to clean.
- C.** The pig shall have the ability to negotiate- fabricated mitered bends, short radius bends, short radius elbows, tees, crosses, and multi-dimensional pipe sizes and valves.
- D.** Follow manufacturer's recommendations for use of "pig" in cleaning the line and conduct cleaning with CITY's representative in attendance. After passing through the pipeline the CITYs shall determine if subsequent pigging must be performed.

### **3.7 WATER MAIN TESTS**

- A.** The CONTRACTOR shall furnish and install suitable temporary testing plugs, filling assemblies or caps for the pipe line, all necessary pressure pumps, hose, pipe connections, meters, gauges, and other similar equipment, and all labor required, all without additional compensation for conducting pressure and leakage tests, flushing and disinfections of the new water lines.

**B.** All tests shall be coordinated in accordance with Section 01660 and shall be conducted with representatives of the CITY's Utilities Department in attendance. The CONTRACTOR is to coordinate the testing thru the CITY's Construction Representative.

**C.** The CONTRACTOR shall de-chlorinate all water used for flushing and disinfection before discharge to the surrounding environment. The cost for de-chlorination shall be part of the testing work and included in the cost of the pipe installation.

### **3.8 PRESSURE TESTS**

**A.** Tests shall be made on the completed pipe installation. The test pressure shall be 150 psi maintained for a period of not less than four (4) hours Pressure shall not vary more than five pounds (5 lbs.). Allowable leakage shall be computed on the basis of AWWA Standard C600 latest edition.

**END OF SECTION**

## **SECTION 15066 - POLYVINYL CHLORIDE (PVC) PIPE AND CONDUIT**

### **PART 1 GENERAL REQUIREMENTS**

#### **1.0 SUMMARY**

- A. This Section sets forth the general requirements for PVC and FPVC pipe and pipe conduit work.

#### **1.1 REFERENCES**

- A. The CITY's Utility Department Standard Details, latest edition and C900-97 and C, ASTM905 standards shall apply.

### **PART 2 PRODUCTS**

#### **2.0 PVC PIPE**

- A. Reclaimed water pipe shall be purple C900/C905 DR-18 pressure class 150. All joints shall meet or exceed the Pressure Class of the pipe.
- B. Fittings and pipe shall be best quality meeting AWWA and ASTM recommended material, performance and manufacturing specifications. Wall thickness must meet established standard.
- C. Plugs for use at the end of service pipe shall be Ductile Iron. Fittings shall meet or exceed the Pressure Class of the pipe.
- D. PVC pipe used for conduit as the protective conveyance for fiber-optic lines, water services under pavement and wiring shall be Schedule 40 with a minimum of 36 inches of stable cover. Schedule 80 shall be used for HDD applications. The CONTRACTOR shall use the jointing system and pipe material recommended and warranted by the manufacturer for HDD applications unless otherwise directed.
- E. An easily accessible mule or pull tape with a minimum pull strength of 1,250 pounds shall be installed in all empty conduits for post-construction use unless otherwise directed.
- F. Installed conduits shall have a smooth internal wall surface and be clean and free of sand and other debris that will interfere with their intended use.

### **PART 3 EXECUTION**

(Not applicable, General Conditions may apply)

**END OF SECTION**

## **SECTION 15067 - RECLAIMED WATER PIPE FOR TRENCH INSTALLATION**

### **PART 1 GENERAL REQUIREMENTS**

#### **1.0 SUMMARY**

- A. This Section sets forth the requirements for materials and operations required to install the various piping for reclaimed water systems as specified and shown on the drawings. This work shall include all services, equipment, materials and labor for the complete and proper installation, testing, restoration of underground utilities and environmental protection and restoration.

#### **1.1 QUALITY ASSURANCE**

- A. The requirements set forth in this document specify a wide range of procedural precautions necessary to ensure that the very basic essential aspects of a proper directional bore installation are adequately controlled. Strict adherence shall be required under this specification or within any associated permit. Adherence to the specifications or review/approval of any aspect of any directional bore operation shall in no way relieve the Contractor of the responsibility for the satisfactory completion of the work authorized under the Contract. The contractor shall be responsible for the repair of all damage to private and/or public property at no expense to the City.

#### **1.2 REFERENCES**

- A. The requirements of the City's Utilities Department Standard Details, latest edition, Specification Section 02641 Pressure Pipe Cleaning and Pigging and Specifications Section 15110 Valves and Accessories – Reclaimed Water shall apply.

#### **1.3 SUBMITTALS**

- A. Submit shop drawing for all materials including pipe, valves and restraining devices. Shop drawings include custom-prepared data of all forms including drawings, diagrams, performance curves, data sheets, schedules, templates, patterns, reports, calculations, instructions, measurements and similar information not in standard printed form applicable to other projects.
- B. Product data include standard printed information on materials, products and systems, not custom-prepared for this project, other than the designation of selections from available choices.
- C. Samples include both fabricated and not fabricated physical examples of materials, products and work both as complete units and as smaller portions of units of work, either for limited visual inspection or (where indicated) for more detailed testing and analysis.



- D. Miscellaneous submittals related directly to the work (non-administrative) include warranties, guarantees, maintenance agreements, workmanship bonds, project photographs/videos, survey data and reports, physical work records, statements of applicability, quality testing and certifying reports, copies of industry standards, record drawings, operating and maintenance materials, overrun stock, security/protection/safety keys and similar information, devices and materials applicable to the work and not defined as shop drawings, product data or samples

## **PART 2 PRODUCTS**

### **2.0 RECLAIMED WATER PIPE**

- A. Polyvinyl Chloride (PVC) pipe shall conform to the requirements of AWWA C900 or C905 pressure Class 150 (DR-18) pipe with ductile iron pipe equivalent outside diameter so connection to ductile iron pipe can occur without special adapters.
- B. Gaskets shall conform to ASTM 03239. Nontoxic gasket lubricant as specified by the pipe manufacturer shall be provided. Joints on all pipe materials shall meet or exceed the Pressure Class of the pipe.
- C. A purple coloring agent shall be added to the PVC piping during the manufacturing process. The color of the pipe shall be protected during the project work.

### **2.1 LOCATOR TAPE AND WIRE**

- A. A three-inch Metalized locator tape and # 12 gage insulated UF copper locator wire shall be used for all pipe installed. The locator tape shall be non-corrodible consisting of polyethylene film with a metallic film to allow detection by electronic means and shall be continuously marked to identify the use of the pipeline. The tape shall be installed eighteen inches directly above the top of the pipe. The locate wire shall be wound around the pipe terminating at each valve box in accordance with the CITY's standard detail.

### **2.2 FITTINGS**

- A. Fittings shall be MJ ductile-iron conforming to the requirements of ANSI/AWWA C153/A21.53 and shall be restrained with EBAA Megalug joints or equal. Fittings shall meet or exceed the Pressure Class of the pipe.
- B. MJ Sleeve for joining PVC pipe shall be ductile iron conforming to the requirements of ANSI/AWWA C153/A21.53. Fittings shall meet or exceed the Pressure Class of the pipe and shall be restrained with EBAA Megalug joints or equal.

### **2.3 RESTRAINED JOINTS**

- A. Restrained joints for use with PVC pipe shall consist of retainer glands fabricated of ductile-iron conforming to ASTM A536 such as Megalugs, boltless restraints or

gripper gaskets in compliance with Ductile Iron Pipe Research Association (DIPRA) guidelines and as appropriate for the material being joined. The gland shall be such that it can replace the standardized mechanical joint gland and can be used with the standardized mechanical joint bell conforming to ANSI/AWWA A21.11/C111 and ANSI/AWWA A21-53/C153. The retainer glands shall have a pressure rating equal to or greater than that of the PVC pipe on which it is used.

### **PART 3 EXECUTION**

#### **3.0 INSTALLATION**

- A. Pipe and fittings shall be strung out along the route of construction with the spigots pointing in the direction of the flow. Pipe shall be placed where it will cause least interference with traffic. Before the pipe is lowered into the trench, it shall be swabbed or brushed out to ensure that no dirt or foreign material gets into the finished line. Trench waters shall be kept out of the pipe and the pipe kept closed by means of a test plug whenever work is not in progress. The CONTRACTOR shall provide the means for dewatering the trench and the cost thereof shall be included in the price for installing the pipe.

#### **3.1 ROADWAY CROSSINGS**

- A. All work within County and State rights of way shall be performed in accordance with the permitted requirements of the owning agency as directed by CITY.

#### **3.2 CUT-IN CONNECTION TO EXISTING MAINS**

- A. Where cut-in connections are required between new work and existing mains, the cut-in connections shall be made by the CONTRACTOR. Proper specials and fittings to suit the actual conditions shall be furnished by the CONTRACTOR. The CONTRACTOR shall schedule his work so that digging and locating the existing line can be completed prior to starting trench work on the line. Cut-ins into lines shall be done by the CONTRACTOR. The CONTRACTOR shall verify the dimensions of all pipes before ordering special fittings and couplings.

#### **3.3 OTHER UTILITIES**

- A. The CONTRACTOR shall contact all utilities, private and public, a minimum of forty-eight (48) hours prior to beginning construction so these utilities can be properly located on site.

### **3.4 RECLAIMED WATER MAIN PRESSURE TESTS**

- A.** Tests shall be made on the completed pipe installation. The test pressure shall be 150 psi maintained for a period of not less than 4 hours Pressure shall not vary more than five pounds (5 lbs.). Allowable leakage shall be computed on the basis of AWWA Standard C600 latest edition.
- B.** The CONTRACTOR shall furnish and install suitable temporary testing plugs or caps for the pipe line, all necessary pressure pumps, hose, pipe connections, meters, gauges, and other similar equipment, and all labor required, all without additional compensation for conducting pressure and leakage tests.
- C.** All tests to be conducted with the CITY in attendance. The CONTRACTOR is to coordinate the testing through the CITY.

**END OF SECTION**

## **SECTION 15110 - VALVES AND ACCESSORIES – RECLAIMED WATER**

### **PART 1 GENERAL REQUIREMENTS**

#### **1.0 SUMMARY**

- A. This Section sets forth the requirements for materials and operations necessary to provide and install valves, taps, and various accessories.

#### **1.1 REFERENCES**

- A. The CITY's Utility Department Standard Details, latest edition and Sections 15000.

### **PART 2 PRODUCTS**

#### **2.0 GATE VALVES**

- A. Gate valves 20" in diameter and larger shall be cast iron bodies, side actuated, bronze mounted, double discs, O-ring type with non-rising stem and opening counterclockwise. Valves shall be manufactured in accordance with AWWA C500-71 for NRS valves and designed for 150 psi working pressure. Valves for buried service shall have mechanical joints ends and operating nut in accord with AWWA C500. One socket valve wrench shall be provided with extension as required.

#### **2.1 VALVE BOXES**

- A. Valve boxes shall be provided for all buried valves. Valve boxes shall consist of cast iron base and adjustable top section with cover that shall be marked "Reclaimed Water". Extensions shall be provided as required to meet grade. All boxes shall be H-20 traffic bearing minimum rated.

#### **2.2 AIR RELEASE/VACUUM VALVE ASSEMBLY**

- A. A combination air release/vacuum valve assembly shall be furnished and installed on the reuse water main as shown on the drawings. Air release valve assembly shall consist of a combination short body, air release vacuum breaker valve, installed as shown on the contract drawings including but not limited to, gate valve, fittings, tapping saddle and connecting piping to the main. The combination valve will air intake and release valving.
- B. Air release/vacuum valves shall be 1" for 16" diameter pipe and smaller and 2" for 18" diameter and above pipe and shall be the automatic type installed in an enclosure as shown on the drawing sized to totally enclose the valve. Pipe, fittings, and valves for the assembly shall be as specified. A corporation stop shall be tapped into the main using the procedures as recommended by the Pipe Manufacturer. The corporation stop shall

be Mueller H-10045, or Hays 5284, or equal. The valve shall ARI Model D-021 suitable for reclaimed water, or equal.

### **2.3 HOSE BIBB WITH VACUUM BREAKER**

- A. Hose bibbs shall be Woodford Model Y24, Mueller, Crane, or approved equal, with inside I.P. thread and wheel handle. A vacuum breaker shall be installed on all hose bibbs. Hose bibb vacuum breaker shall be Woodford Model Nidel NH, Watts No. NFI, A.W. Cash type VB or approved equal.

### **2.4 SETTING VALVES AND BOXES**

- A. Valves and valve boxes as specified in the preceding paragraphs shall be installed where shown on the drawings unless otherwise directed. Valves shall be set plumb with the base of the valve box centered over the valve and resting on compacted backfill. The top section of the box shall be set to allow equal movement above and below finished grade. After being correctly positioned, fill shall be carefully tamped around the valve box for a distance of 4' on all sides of the box. In paved areas, top of the cover shall be flush with the finished paving. In off-street areas, the cover shall be set 1" above existing grade unless otherwise directed by the CITY/ ENGINEER and a concrete pad shall be poured around the top of the box as shown in the standard details.

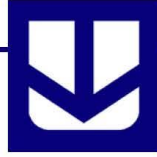
## **PART 3 EXECUTION**

(Not Applicable, General Conditions may apply)

**END OF SECTION**

# APPENDICES

**APPENDIX A - GEOTECHNICAL REPORT - GEOTECHNICAL REPORT DATED  
JANUARY 2018  
(FOR INFORMATION ONLY – NOT PART OF BID SET)**



# UNIVERSAL ENGINEERING SCIENCES

## GEOTECHNICAL EVALUATION

*Williamson Blvd – Dunn Ave to LPGA Blvd  
Reclaimed Water Improvements - Additional Borings  
Daytona Beach, Florida*

UES Project No. 0430.1700255.0000  
UES Report No. 132950

January 10, 2018

*Prepared for:*

**Mr. John Hermann, P.E.**  
**Arminius Consultants, LLC.**  
2501 Bayfront Parkway  
Orlando, FL 32806

*Prepared by:*

**UNIVERSAL ENGINEERING SCIENCES**  
911 Beville Road, Suite 3  
South Daytona, Florida 32119  
Phone (386) 756-1105 FAX (386) 760-4067

### CONSULTANTS:

Geotechnical Engineering • Environmental Engineering • Construction  
Materials Testing Threshold Inspection • Private Provider Inspection •  
Geophysical Studies

---

OFFICES: Daytona Beach, FL • Fort Myers, FL • Fort Pierce, FL • Gainesville, FL • Jacksonville, FL • Leesburg, FL • Miami, FL • Norcross, GA • Ocala, FL • Orange City, Orlando, FL  
Palm Coast, FL • Panama City, FL • Pensacola, FL • Rockledge, FL • Sarasota, FL • St. Augustine, FL • Tampa, FL • West Palm Beach, FL





# UNIVERSAL ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences  
Geophysical Services • Construction Materials Testing • Threshold Inspection  
Building Inspection • Plan Review • Building Code Administration

LOCATIONS:

- Atlanta
- Daytona Beach
- Fort Myers
- Fort Pierce
- Gainesville
- Jacksonville
- Kissimmee
- Leesburg
- Miami
- Ocala
- Orlando (Headquarters)
- Palm Coast
- Panama City
- Pensacola
- Rockledge
- Sarasota
- Tampa
- West Palm Beach

January 10, 2018

Mr. John Hermann, P.E.  
Arminius Consultants, LLC.  
2501 Bayfront Parkway  
Orlando, FL 32806

Reference: **GEOTECHNICAL EVALUATION**  
**Williamson Blvd – Dunn Ave to LPGA Blvd**  
**Reclaimed Water Improvements – Additional Borings**  
**Daytona Beach, Florida**  
**UES Project No. 0430.1700255.0000 and UES Report No. 132950**

Dear Mr. Hermann:

Universal Engineering Sciences, Inc. (UES) has completed the geotechnical evaluation for the subject project located in Daytona Beach. This report contains the results of our investigations, an engineering interpretation of these results with respect to the project characteristics described to us, and general recommendations for directional drilling procedures.

We appreciate the opportunity to have worked with you on this project and look forward to a continued association. Please do not hesitate to contact us if you should have any questions, or if we may further assist you as your plans proceed.

Respectfully submitted,

**UNIVERSAL ENGINEERING SCIENCES**

  
Patrick Clark  
Project Engineer



Attachments

PC/BCP/cme

## 1.0 INTRODUCTION

### 1.1 GENERAL

In this report we present the results of the subsurface evaluation for the proposed Horizontal Directional Drilling project in Daytona Beach, Florida. We have divided this report into the following sections:

- SECTION 2.0 - SCOPE OF SERVICES
- SECTION 3.0 - FINDINGS
- SECTION 4.0 - DIRECTIONAL DRILL RECOMMENDATIONS
- SECTION 5.0 - CONSTRUCTION RELATED SERVICES
- SECTION 6.0 - LIMITATIONS

## 2.0 SCOPE OF SERVICES

### 2.1 PROJECT DESCRIPTION

Project information has been provided to us during correspondence with you. The borings have been performed at the locations selected by you. We were provided with a site plan which indicates the layout of the existing and proposed construction with stationing numbers. UES previously submitted a geotechnical evaluation for the above project, UES Report No. 132178, dated April 25, 2017. Universal Engineering Sciences, Inc. understands two Horizontal Directional Drills (HDD), one spanning approximately 1200 feet, and one 900 feet in linear length are proposed along Williamson Blvd between Station 99+00 and 210+00. The depth of pipe is proposed to bear approximately 25 to 30 feet below existing grade to provide utility improvements.

Our recommendations are based upon the above considerations. If any of this information is incorrect, or if you anticipate any changes, inform Universal Engineering Sciences so that we may review our recommendations.

### 2.2 PURPOSE

The purposes of this investigation were:

- to investigate the general subsurface conditions at the site;
- to interpret and review the subsurface conditions with respect to the proposed construction; and
- to provide geotechnical engineering recommendations for force main installation.

This report presents an evaluation of site conditions on the basis of traditional geotechnical procedures for site characterization. The recovered samples were not



examined, either visually or analytically, for chemical composition or environmental hazards. Universal Engineering Sciences would be pleased to perform these services, at your request.

Our investigation was confined to the zone of soil likely to be stressed by the proposed construction. Our work did not address the potential for surface expression of deep geological conditions, such as sinkhole development related to karst activity. A deep geological evaluation requires a more extensive range of field services than performed in this study.

## **2.3 FIELD INVESTIGATION**

### **2.3.1 Borings**

The subsurface conditions within the proposed Horizontal Directional Drilling alignment were explored with an additional four (4) Standard Penetration Test (SPT) borings (designated B-1 through B-4) advanced to a depth of approximately 70 feet each below the existing grade. Universal had previously completed four (4) SPT borings at the site for a preliminary evaluation, UES Report No. 132178 dated April 25, 2017. We performed the SPT borings according to the procedures of ASTM D-1586.

The borings were located by our field personnel using taped measurements from existing site features, and should be considered accurate only to the degree implied by the method used. The locations of the borings are presented on the attached Boring Location Plan in Appendix A.

Samples obtained from the borings were transported to our laboratory for further evaluation. Samples of the soils encountered will be held in our laboratory for your inspection for 60 days unless we are notified otherwise.

## **2.4 LABORATORY INVESTIGATION**

The soil samples recovered from the soil borings were returned to our laboratory and then a UES engineer visually examined and reviewed the field descriptions and classified the soils using the Unified Classification System. Tests consisting of percent passing a No. 200 sieve and natural moisture content determinations were performed to aide in classification of the soils. Please see Appendix B for a description of the laboratory testing procedures.

## **3.0 FINDINGS**

### **3.1 SUBSURFACE CONDITIONS**

The boring locations and detailed subsurface conditions are illustrated in Appendix A, Subsurface Profiles. The classifications and descriptions shown on the profiles are based upon visual and laboratory characterizations of the recovered soil samples. Also, see Appendix A: Key to Boring Log, for further explanation of the symbols and placement of data on the Subsurface Profiles. The following discussion summarizes the soil conditions encountered.



The SPT borings generally indicated the presence of topsoil within the upper 1.0 foot underlain by intermittent layers of very loose to medium dense fine sand with silt, trace of roots, gravel and few shell fragments (SP-SM), fine sand with clay (SP-SC), silty fine sand with trace of clay (SM) and clayey fine sand (SC) to approximately 23.5 feet below existing grade. From approximately 23.5 to 43.5 feet, we encountered intermittent layers of very loose to very dense silty fine sand (SM), fine sand with silt and some shell fragments (SP-SM), clayey fine sand with trace of silt and shell fragments (SC) and soft to medium clay with trace of shell fragments (CH). This layer is further underlain by intermittent layers of medium dense to very dense fine sand with trace of silt and many shell fragments (SP), fine sand with silt and some shell fragments (SP-SM), fine sand with clay and some shell fragments (SP-SC), shell with fine sand and soft clay (CH) to approximately 68.5 feet below existing grade. Also, this layer is further underlain by intermittent layers of loose to dense fine sand with silt and many shell fragments (SP-SM), silty fine sand with trace of shell fragments (SM) and very clayey fine sand with trace of shell fragments (SC) to the deepest borings' termination depth of approximately 70 feet below existing grade.

### 3.2 GROUNDWATER

The groundwater levels were recorded at depths varying between 1.0 and 4.5 feet below grade. The depths of the groundwater levels encountered at the boring locations are presented on the Subsurface Profiles.

We recommend positive drainage be established and maintained on the site during construction. We further recommend permanent measures be constructed to maintain positive drainage from the site throughout the life of the project.

## 4.0 DIRECTIONAL DRILL RECOMMENDATIONS

### 4.1 GENERAL

Based on the results of the borings, it is our opinion the soils are conducive for directional drilling procedures. Regardless of the **procedures taken**, the directional drilling procedures should be performed in accordance with FDOT Index No. 555. It should be noted very dense soils were observed between approximately 33.5 and 68.5 feet.

## 5.0 CONSTRUCTION RELATED SERVICES

We recommend the owner retain Universal Engineering Sciences to perform construction materials tests and observations on this project. Field tests and observations include verification of foundation subgrades by monitoring filling operations and performing quality assurance tests on the placement of compacted natural soils and structural fill. We can also perform concrete testing, pavement section testing, structural steel testing and other construction materials testing services.





The geotechnical engineering design does not end with the advertisement of the construction documents. The design is an on-going process throughout construction. Because of our familiarity with the site conditions and the intent of the engineering design, we are most qualified to address problems that might arise during construction in a timely and cost-effective manner.

## 6.0 LIMITATIONS

During the early stages of most construction projects, geotechnical issues not addressed in this report may arise. Because of the natural limitations inherent in working with the subsurface, it is not possible for a geotechnical engineer to predict and address all possible problems. An Association of Engineering Firms Practicing in the Geosciences (ASFE) publication, "Important Information about Your Geotechnical Engineering Report" appears in Appendix C, and will help explain the nature of geotechnical issues. Further, we present documents in Appendix C: Constraints and Restrictions, to bring to your attention the potential concerns and the basic limitations of a typical geotechnical report.

Our field exploration did not find unsuitable or unexpected materials at the time of occurrence. However, borings for a typical geotechnical report are widely spaced and generally not sufficient for reliably detecting the presence of isolated, anomalous surface or subsurface conditions, or reliably estimating unsuitable or suitable material quantities. Accordingly, UES does not recommend relying on our boring information to negate presence of anomalous materials or for estimation of material quantities unless our contracted services specifically include sufficient exploration for such purpose(s) and within the report we so state that the level of exploration provided should be sufficient to detect such anomalous conditions or estimate such quantities. Therefore, UES will not be responsible for any extrapolation or use of our data by others beyond the purpose(s) for which it is applicable or intended.



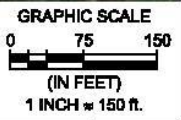
**APPENDIX A**


**BORING LOCATION PLAN  
SUBSURFACE PROFILES  
SOILS CLASSIFICATION CHART**



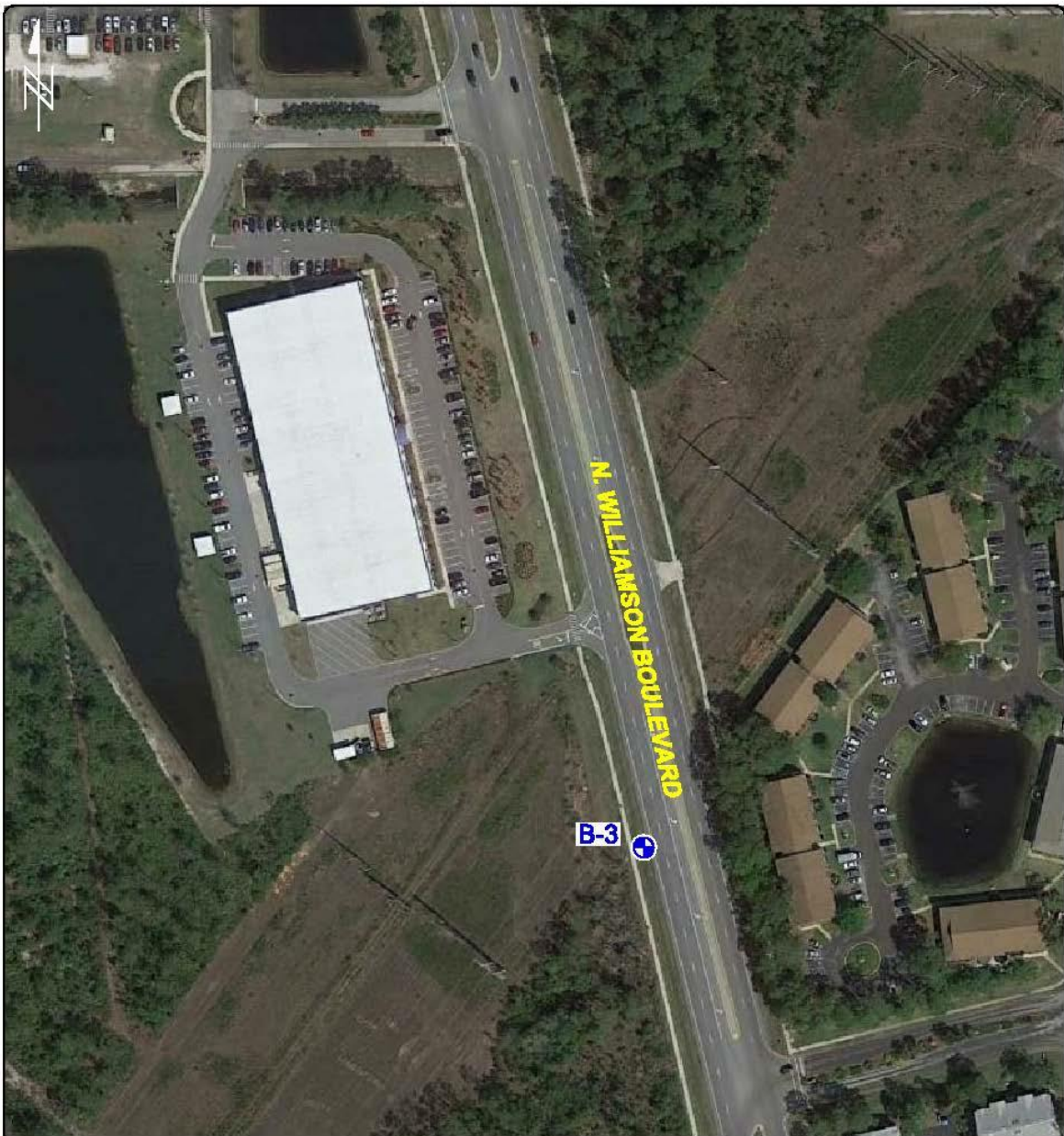
**LEGEND**


 APPROXIMATE LOCATION OF  
 STANDARD PENETRATION TEST (SPT) BORING



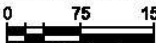
 <b>UNIVERSAL</b> ENGINEERING SCIENCES	<b>TITLE:</b> BORING LOCATION PLAN		<b>SCALE:</b> 1" = 150'	
	<b>PROJECT:</b> GEOTECHNICAL EVALUATION WILLIAMSON BOULEVARD - RECLAIMED WATER DAYTONA BEACH, FLORIDA		<b>PAGE/FIG. NO.:</b>  A-1A	
	<b>DRAWN BY:</b> NKL	<b>DATE:</b> 01/03/18	<b>PROJECT NO.:</b> 0430.1700286.0000	
	<b>CHECKED BY:</b> BP	<b>DATE:</b> 01/03/18	<b>REPORT NO.:</b> 132880	





**LEGEND**

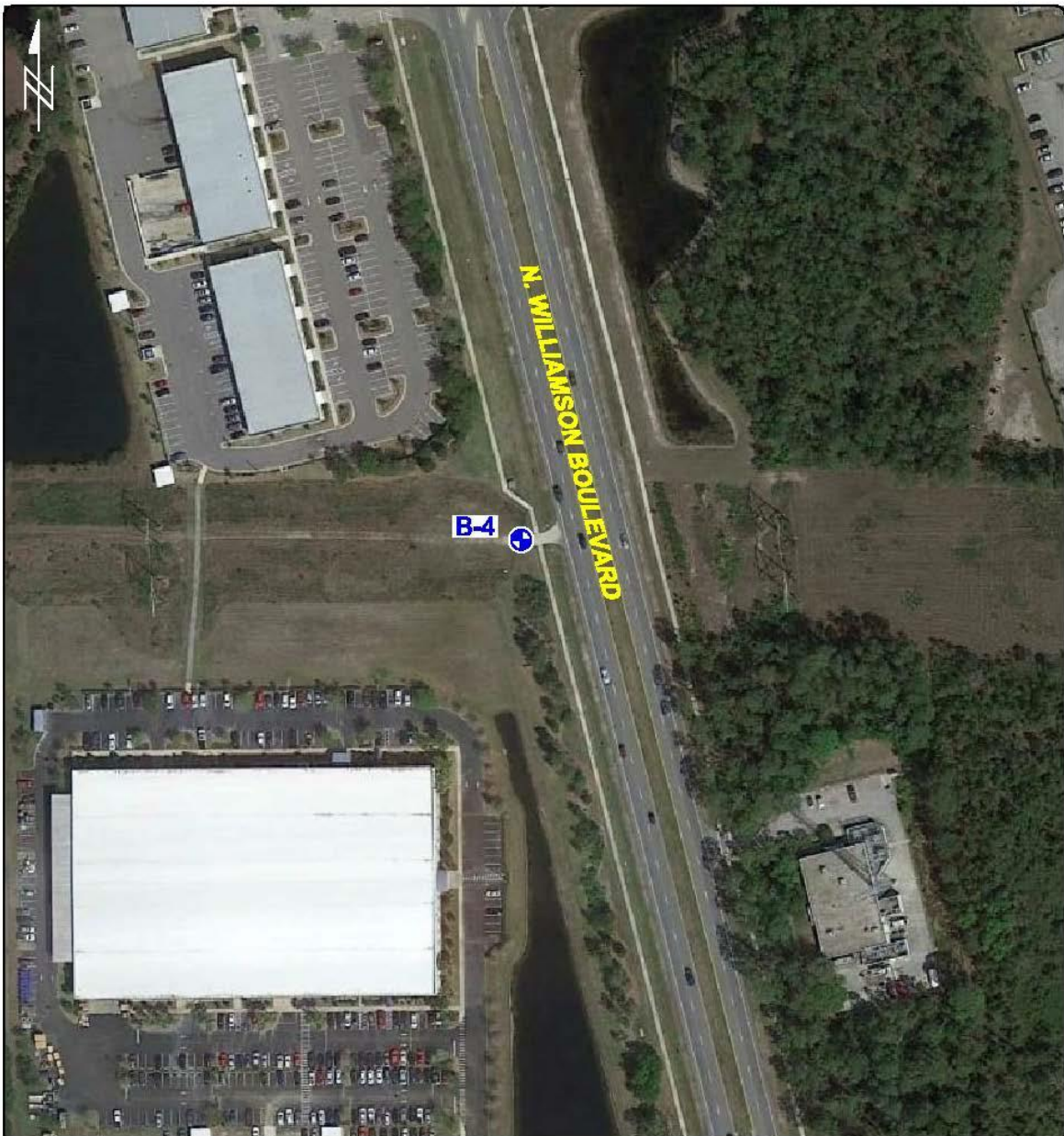
⊕ APPROXIMATE LOCATION OF  
STANDARD PENETRATION TEST (SPT) BORING

**GRAPHIC SCALE**  
  
 0 75 150  
 (IN FEET)  
 1 INCH = 150 ft.



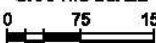
TITLE: <b>BORING LOCATION PLAN</b>		SCALE: 1" = 150'
PROJECT: GEOTECHNICAL EVALUATION WILLIAMSON BOULEVARD - RECLAIMED WATER DAYTONA BEACH, FLORIDA		PAGE/FIG. NO.:  A-1B
DRAWN BY: NKL	DATE: 01/03/18	PROJECT NO.: 0430.1700286.0000
CHECKED BY: BP	DATE: 01/03/18	REPORT NO.: 132880





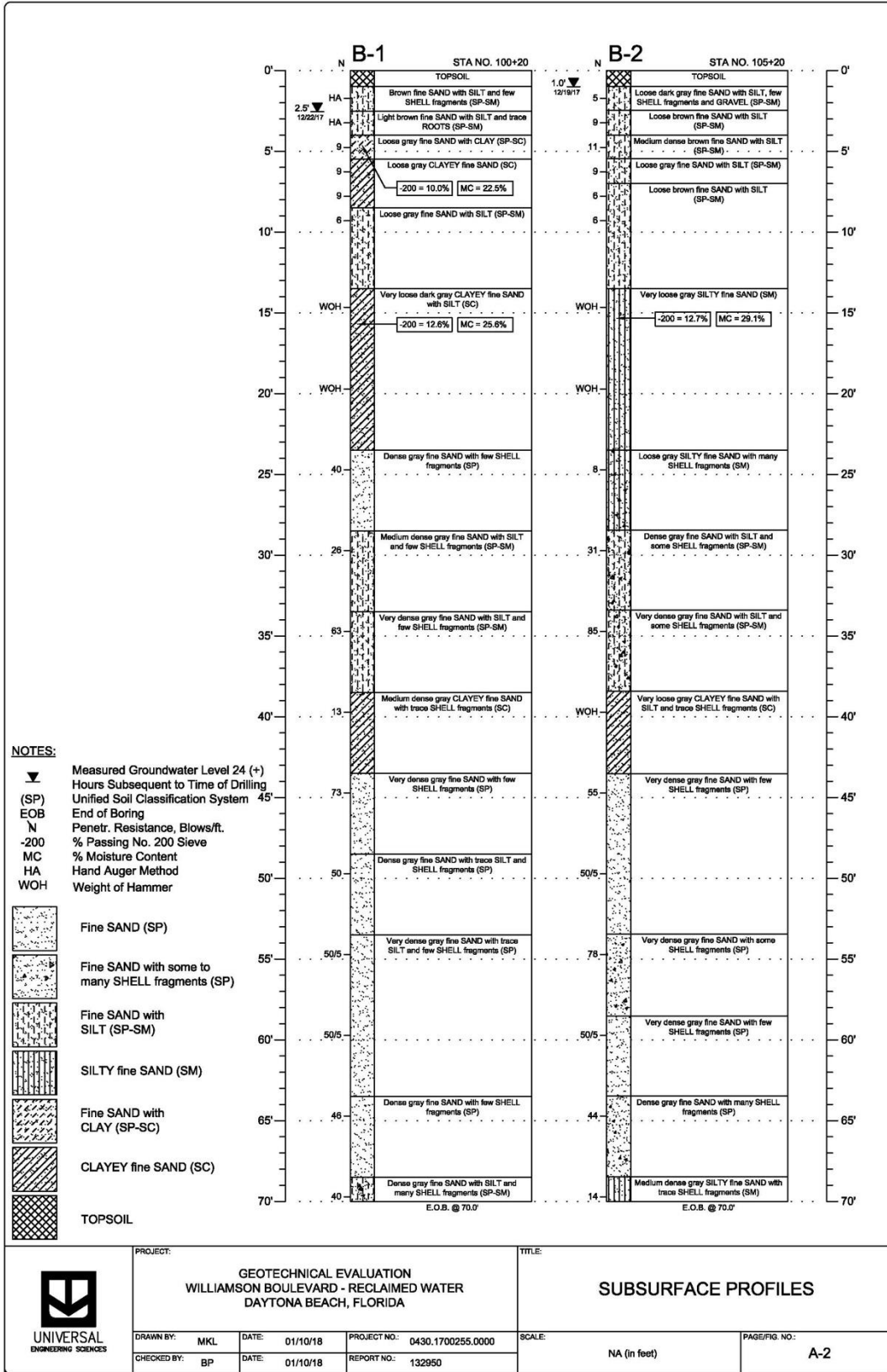
**LEGEND**

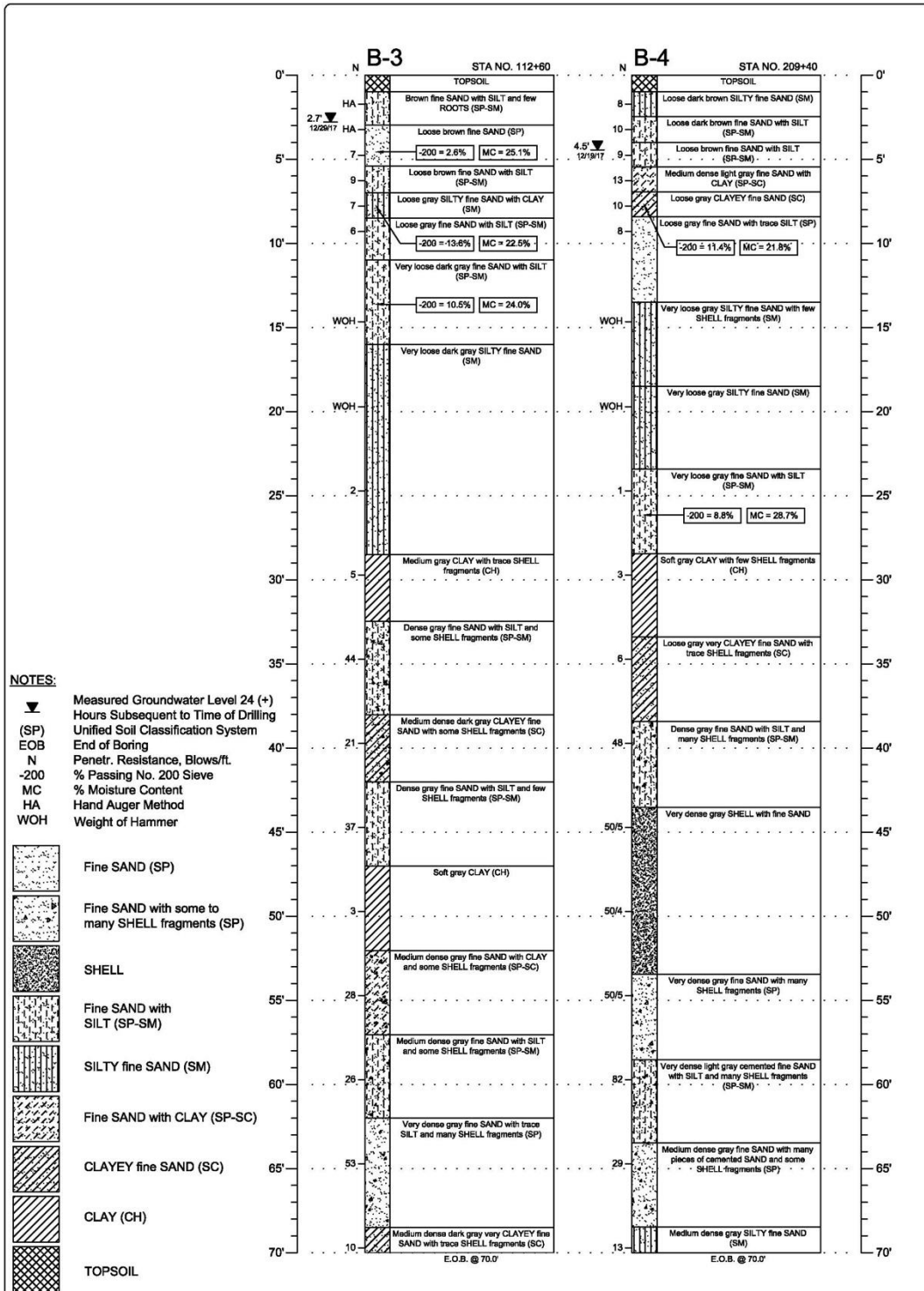
 APPROXIMATE LOCATION OF STANDARD PENETRATION TEST (SPT) BORING

**GRAPHIC SCALE**  
  
 0 75 150  
 (IN FEET)  
 1 INCH = 150 ft.



TITLE: <b>BORING LOCATION PLAN</b>		SCALE: 1" = 150'
PROJECT: GEOTECHNICAL EVALUATION WILLIAMSON BOULEVARD - RECLAIMED WATER DAYTONA BEACH, FLORIDA		PAGE/FIG. NO.:  A-1C
DRAWN BY: NKL	DATE: 01/03/18	PROJECT NO.: 0430.1700286.0000
CHECKED BY: BP	DATE: 01/03/18	REPORT NO.: 132880





<p>UNIVERSAL ENGINEERING SCIENCES</p>	PROJECT: GEOTECHNICAL EVALUATION WILLIAMSON BOULEVARD - RECLAIMED WATER DAYTONA BEACH, FLORIDA		TITLE: SUBSURFACE PROFILES	
	DRAWN BY: MKL CHECKED BY: BP	DATE: 01/10/18 DATE: 01/10/18	PROJECT NO.: 0430.1700255.0000 REPORT NO.: 132950	SCALE: NA (in feet)



**SYMBOLS**

SYMBOL	DESCRIPTION
N	No. of blows of a 140-lb weight falling 30 inches required to drive standard spoon 1 foot.
WOR	Weight of Drill Rods
WOH	Weight of Drill Rods and Hammer
% REC	Percent Core Recovery from Rock Core Drilling
RQD	Rock Quality Designation
EOB	End Of Boring
BT	Boring Terminated
-200	Fines Content or % Passing No. 200 Sieve
MC	Moisture Content
LL	Liquid Limit
PI	Plasticity Index
K	Coefficient of Permeability
O.C.	Organic Content
∇	Estimated seasonal high groundwater level
▼	Measured groundwater level at time of drilling

**RELATIVE DENSITY**  
(sand-silt)

Very Loose - Less Than 4 Blows/Ft.  
Loose - 4 to 10 Blows/Ft.  
Medium - 11 to 30 Blows/Ft.  
Dense - 31 to 50 Blows/Ft.  
Very Dense - More Than 50 Blows/Ft.

**CONSISTENCY**  
(clay)

Very Soft - Less than 2 Blows/Ft.  
Soft - 2 to 4 Blows/Ft.  
Medium - 5 to 8 Blows/Ft.  
Stiff - 9 to 15 Blows/Ft.  
Very Stiff - 16 to 30 Blows/Ft.  
Hard - More Than 30 Blows/Ft.

**RELATIVE HARDNESS**  
(Limestone)

Soft - 100 Blows for more than 2"  
Hard - 100 Blows for less than 2"

**UNIFIED CLASSIFICATION SYSTEM**

MAJOR DIVISIONS		GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS More than 50% retained on No. 200 sieve*	GRAVELS 50% or more of coarse fraction retained on No. 4 sieve	CLEAN GRAVELS	GW Well-graded gravels and gravel-sand mixtures, little or no fines
		GRAVELS WITH FINES	GP Well-graded gravels and gravel-sand mixtures, little or no fines
	SANDS More than 50% of coarse fraction passes No. 4 sieve	CLEAN SANDS	GM Silty gravels, gravel-sand-silt mixtures
			GC Clayey gravels, gravel-sand-clay mixtures
		SANDS WITH FINES	SW** Well-graded sands and gravelly sands, little or no fines
			SP** Well-graded sands and gravelly sands, little or no fines
FINE-GRAINED SOILS 50% or more passes No. 200 sieve*	SILTS AND CLAYS Liquid limit 50% or less	SM** Silty sands, sand-silt mixtures	
		SC** Clayey sands, sand-clay mixtures	
		ML Inorganic silts, very fine sands, rock flour, silty or clayey fine sands	
	SILTS AND CLAYS Liquid limit greater than 50%	CL Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	
		OL Organic silts and organic silty clays of low plasticity	
		MH Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts	
		CH Organic clays or high plasticity, fat clays	
		OH Organic clays of medium to high plasticity	
PT Peat, muck and other highly organic soils			

\* Based on the material passing the 3-in. (75 mm) sieve.  
\*\* Use dual symbol (such as, SP-SM and SP-SC) for soil with more than 5% but less than 12% passing through No. 200 sieve.

**MODIFIERS**

These modifiers provide our estimate of the amount of minor constituents (SILT or CLAY sized particles) in the soil sample.

Trace - 5% or less  
With SILT or with CLAY - 6% to 11%  
SILTY or CLAYEY - 12% to 30%  
Very SILTY or Very CLAYEY - 31% to 50%

These modifiers provide our estimate of the amount of organic components in the soil sample.

Trace - 1% to 2%  
Few - 3% to 4%  
Some - 5% to 8%  
Many - Greater than 8%

These modifiers provide our estimate of the amount of other components (Shell, Gravel, Etc.) in the soil sample

Trace - 5% or less  
Few - 6% to 12%  
Some - 13% to 30%  
Many - 31% to 50%

**APPENDIX B**

**LABORATORY TESTING PROCEDURES**

## **DESCRIPTION OF LABORATORY TESTING PROCEDURES**

### **LABORATORY PERMEABILITY TEST**

The laboratory permeability test is a Falling Head Test that is performed on soil samples recovered from this site. The data recovered from this test are used to calculate Darcy's Coefficient of Permeability (k) of the soil.

### **WASH 200 TEST**

The Wash 200 test is performed by passing a representative soil sample over a No. 200 sieve and rinsing with water. The percentage of the soil grains passing this sieve is then calculated.

### **ORGANIC CONTENT TESTS**

The organic content test is performed by weighing a sample before and after placing in a high temperature oven which burns the organic material in the sample. The percent of organic material by weight is then calculated.

### **MOISTURE CONTENT DETERMINATION ASTM D-2216**

Moisture content is the ratio of the weight of water to the dry weight of soil. Moisture content is measured by drying a sample at 105 degrees Celsius. The moisture content is expressed as a percent of the oven dried soil mass.

### **ATTERBERG LIMITS**

The Atterberg Limits consist of the Liquid Limit (LL) and the Plastic Limit (PL). The LL and PL were determined in general accordance with the latest revision of ASTM D-4318. The LL is the water content of the material denoting the boundary between the liquid and plastic states. The PL is the water content denoting the boundary between the plastic and semi-solid states. The Plasticity Index (PI) is the range of water content over which a soil behaves plastically and is denoted numerically by as the difference between the LL and the PL. The water content of the sample tested was determined in general accordance with the latest revision of ASTM D-2216. The water content is defined as the ratio of "pore" or "free" water in a given mass of material to the mass of solid material particles.

### **CONSOLIDATION TESTING**

A single selected portion of the undisturbed sample was extruded from the 3-inch diameter sample tube for consolidation testing. The selected sample was trimmed and confined into a stainless steel disc having a diameter of 2.5 inches and a height of 1 inch. The disc was then "sandwiched" between 2 porous stones, saturated and subjected to incrementally increasing loads. The resulting deformation of the sample within the steel disc was measured using a micrometer gauge.

## **APPENDIX C**

**GENERAL CONDITIONS  
CONSTRAINTS AND RESTRICTIONS AND  
IMPORTANT INFORMATION ABOUT YOUR  
GEOTECHNICAL ENGINEERING REPORT**



*Universal Engineering Sciences, Inc.*  
**GENERAL CONDITIONS**

**SECTION 1: RESPONSIBILITIES**

- 1.1 *Universal Engineering Sciences, Inc.*, ("UES"), has the responsibility for providing the services described under the Scope of Services section. The work is to be performed according to accepted standards of care and is to be completed in a timely manner. The term "UES" as used herein includes all of *Universal Engineering Sciences, Inc.*'s agents, employees, professional staff, and subcontractors.
- 1.2 The Client or a duly authorized representative is responsible for providing UES with a clear understanding of the project nature and scope. The Client shall supply UES with sufficient and adequate information, including, but not limited to, maps, site plans, reports, surveys and designs, to allow UES to properly complete the specified services. The Client shall also communicate changes in the nature and scope of the project as soon as possible during performance of the work so that the changes can be incorporated into the work product.
- 1.3 The Client acknowledges that UES's responsibilities in providing the services described under the Scope of Services section is limited to those services described therein, and the Client hereby assumes any collateral or affiliated duties necessitated by or for those services. Such duties may include, but are not limited to, reporting requirements imposed by any third party such as federal, state, or local entities, the provision of any required notices to any third party, or the securing of necessary permits or permissions from any third parties required for UES's provision of the services so described, unless otherwise agreed upon by both parties.
- 1.4 Universal will not be responsible for scheduling our services and will not be responsible for tests or inspections that are not performed due to a failure to schedule our services on the project or any resulting damages.
- 1.5 **PURSUANT TO FLORIDA STATUTES §558.0035, ANY INDIVIDUAL EMPLOYEE OR AGENT OF UES MAY NOT BE HELD INDIVIDUALLY LIABLE FOR NEGLIGENCE.**

**SECTION 2: STANDARD OF CARE**

- 2.1 Services performed by UES under this Agreement will be conducted in a manner consistent with the level of care and skill ordinarily exercised by members of UES's profession practicing contemporaneously under similar conditions in the locality of the project. No other warranty, express or implied, is made.
- 2.2 The Client recognizes that subsurface conditions may vary from those observed at locations where borings, surveys, or other explorations are made, and that site conditions may change with time. Data, interpretations, and recommendations by UES will be based solely on information available to UES at the time of service. UES is responsible for those data, interpretations, and recommendations, but will not be responsible for other parties' interpretations or use of the information developed.
- 2.3 Execution of this document by UES is not a representation that UES has visited the site, become generally familiar with local conditions under which the services are to be performed, or correlated personal observations with the requirements of the Scope of Services. It is the Client's responsibility to provide UES with all information necessary for UES to provide the services described under the Scope of Services, and the Client assumes all liability for information not provided to UES that may affect the quality or sufficiency of the services so described.
- 2.4 Should UES be retained to provide threshold inspection services under Florida Statutes §553.79, Client acknowledges that UES's services thereunder do not constitute a guarantee that the construction in question has been properly designed or constructed, and UES's services do not replace any of the obligations or liabilities associated with any architect, contractor, or structural engineer. Therefore it is explicitly agreed that the Client will not hold UES responsible for the proper performance of service by any architect, contractor, structural engineer or any other entity associated with the project.

**SECTION 3: SITE ACCESS AND SITE CONDITIONS**

- 3.1 Client will grant or obtain free access to the site for all equipment and personnel necessary for UES to perform the work set forth in this Agreement. The Client will notify any and all possessors of the project site that Client has granted UES free access to the site. UES will take reasonable precautions to minimize damage to the site, but it is understood by Client that, in the normal course of work, some damage may occur, and the correction of such damage is not part of this Agreement unless so specified in the Proposal.
- 3.2 The Client is responsible for the accuracy of locations for all subterranean structures and utilities. UES will take reasonable precautions to avoid known subterranean structures, and the Client waives any claim against UES, and agrees to defend, indemnify, and hold UES harmless from any claim or liability for injury or loss, including costs of defense, arising from damage done to subterranean structures and utilities not identified or accurately located. In addition, Client agrees to compensate UES for any time spent or expenses incurred by UES in defense of any such claim with compensation to be based upon UES's prevailing fee schedule and expense reimbursement policy.

**SECTION 4: SAMPLE OWNERSHIP AND DISPOSAL**

- 4.1 Soil or water samples obtained from the project during performance of the work shall remain the property of the Client.
- 4.2 UES will dispose of or return to Client all remaining soils and rock samples 60 days after submission of report covering those samples. Further storage or transfer of samples can be made at Client's expense upon Client's prior written request.
- 4.3 Samples which are contaminated by petroleum products or other chemical waste will be returned to Client for treatment or disposal, consistent with all appropriate federal, state, or local regulations.

**SECTION 5: BILLING AND PAYMENT**

- 5.1 UES will submit invoices to Client monthly or upon completion of services. Invoices will show charges for different personnel and expense classifications.
- 5.2 Payment is due 30 days after presentation of invoice and is past due 31 days from invoice date. Client agrees to pay a finance charge of one and one-half percent (1 ½ %) per month, or the maximum rate allowed by law, on past due accounts.
- 5.3 If UES incurs any expenses to collect overdue billings on invoices, the sums paid by UES for reasonable attorneys' fees, court costs, UES's time, UES's expenses, and interest will be due and owing by the Client.

**SECTION 6: OWNERSHIP AND USE OF DOCUMENTS**

- 6.1 All reports, boring logs, field data, field notes, laboratory test data, calculations, estimates, and other documents prepared by UES, as instruments of service, shall remain the property of UES.
- 6.2 Client agrees that all reports and other work furnished to the Client or his agents, which are not paid for, will be returned upon demand and will not be used by the Client for any purpose.
- 6.3 UES will retain all pertinent records relating to the services performed for a period of five years following submission of the report, during which period the records will be made available to the Client at all reasonable times.
- 6.4 All reports, boring logs, field data, field notes, laboratory test data, calculations, estimates, and other documents prepared by UES, are prepared for the sole and exclusive use of Client, and may not be given to any other party or used or relied upon by any such party without the express written consent of UES.



#### **SECTION 7: DISCOVERY OF UNANTICIPATED HAZARDOUS MATERIALS**

- 7.1 Client warrants that a reasonable effort has been made to inform UES of known or suspected hazardous materials on or near the project site.
- 7.2 Under this agreement, the term hazardous materials include hazardous materials (40 CFR 172.01), hazardous wastes (40 CFR 261.2), hazardous substances (40 CFR 300.6), petroleum products, polychlorinated biphenyls, and asbestos.
- 7.3 Hazardous materials may exist at a site where there is no reason to believe they could or should be present. UES and Client agree that the discovery of unanticipated hazardous materials constitutes a changed condition mandating a renegotiation of the scope of work. UES and Client also agree that the discovery of unanticipated hazardous materials may make it necessary for UES to take immediate measures to protect health and safety. Client agrees to compensate UES for any equipment decontamination or other costs incident to the discovery of unanticipated hazardous waste.
- 7.4 UES agrees to notify Client when unanticipated hazardous materials or suspected hazardous materials are encountered. Client agrees to make any disclosures required by law to the appropriate governing agencies. Client also agrees to hold UES harmless for any and all consequences of disclosures made by UES which are required by governing law. In the event the project site is not owned by Client, Client recognizes that it is the Client's responsibility to inform the property owner of the discovery of unanticipated hazardous materials or suspected hazardous materials.
- 7.5 Notwithstanding any other provision of the Agreement, Client waives any claim against UES, and to the maximum extent permitted by law, agrees to defend, indemnify, and save UES harmless from any claim, liability, and/or defense costs for injury or loss arising from UES's discovery of unanticipated hazardous materials or suspected hazardous materials including any costs created by delay of the project and any cost associated with possible reduction of the property's value. Client will be responsible for ultimate disposal of any samples secured by UES which are found to be contaminated.

#### **SECTION 8: RISK ALLOCATION**

- 8.1 Client agrees that UES's liability for any damage on account of any breach of contract, error, omission or other professional negligence will be limited to a sum not to exceed \$50,000 or UES's fee, whichever is greater. If Client prefers to have higher limits on contractual or professional liability, UES agrees to increase the limits up to a maximum of \$1,000,000.00 upon Client's written request at the time of accepting our proposal provided that Client agrees to pay an additional consideration of four percent of the total fee, or \$400.00, whichever is greater. The additional charge for the higher liability limits is because of the greater risk assumed and is not strictly a charge for additional professional liability insurance.

#### **SECTION 9: INSURANCE**

- 9.1 UES represents and warrants that it and its agents, staff and consultants employed by it, is and are protected by worker's compensation insurance and that UES has such coverage under public liability and property damage insurance policies which UES deems to be adequate. Certificates for all such policies of insurance shall be provided to Client upon request in writing. Within the limits and conditions of such insurance, UES agrees to indemnify and save Client harmless from and against loss, damage, or liability arising from negligent acts by UES, its agents, staff, and consultants employed by it. UES shall not be responsible for any loss, damage or liability beyond the amounts, limits, and conditions of such insurance or the limits described in Section 8, whichever is less. The Client agrees to defend, indemnify and save UES harmless for loss, damage or liability arising from acts by Client, Client's agent, staff, and other UESs employed by Client.

#### **SECTION 10: DISPUTE RESOLUTION**

- 10.1 All claims, disputes, and other matters in controversy between UES and Client arising out of or in any way related to this Agreement will be submitted to alternative dispute resolution (ADR) such as mediation or arbitration, before and as a condition precedent to other remedies provided by law, including the commencement of litigation.
- 10.2 If a dispute arises related to the services provided under this Agreement and that dispute requires litigation instead of ADR as provided above, then:
- (a) the claim will be brought and tried in judicial jurisdiction of the court of the county where UES's principal place of business is located and Client waives the right to remove the action to any other county or judicial jurisdiction, and
  - (b) The prevailing party will be entitled to recovery of all reasonable costs incurred, including staff time, court costs, attorneys' fees, and other claim related expenses.

#### **SECTION 11: TERMINATION**

- 11.1 This agreement may be terminated by either party upon seven (7) days written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof. Such termination shall not be effective if that substantial failure has been remedied before expiration of the period specified in the written notice. In the event of termination, UES shall be paid for services performed to the termination notice date plus reasonable termination expenses.
- 11.2 In the event of termination, or suspension for more than three (3) months, prior to completion of all reports contemplated by the Agreement, UES may complete such analyses and records as are necessary to complete its files and may also complete a report on the services performed to the date of notice of termination or suspension. The expense of termination or suspension shall include all direct costs of UES in completing such analyses, records and reports.

#### **SECTION 12: ASSIGNS**

- 12.1 Neither the Client nor UES may delegate, assign, sublet or transfer their duties or interest in this Agreement without the written consent of the other party.

#### **SECTION 13. GOVERNING LAW AND SURVIVAL**

- 13.1 The laws of the State of Florida will govern the validity of these Terms, their interpretation and performance.
- 13.2 If any of the provisions contained in this Agreement are held illegal, invalid, or unenforceable, the enforceability of the remaining provisions will not be impaired. Limitations of liability and indemnities will survive termination of this Agreement for any cause.

#### **SECTION 14. INTEGRATION CLAUSE**

- 14.1 This Agreement represents and contains the entire and only agreement and understanding among the parties with respect to the subject matter of this Agreement, and supersedes any and all prior and contemporaneous oral and written agreements, understandings, representations, inducements, promises, warranties, and conditions among the parties. No agreement, understanding, representation, inducement, promise, warranty, or condition of any kind with respect to the subject matter of this Agreement shall be relied upon by the parties unless expressly incorporated herein.
- 14.2 This Agreement may not be amended or modified except by an agreement in writing signed by the party against whom the enforcement of any modification or amendment is sought.

## **CONSTRAINTS AND RESTRICTIONS**

### **WARRANTY**

Universal Engineering Sciences has prepared this report for our client for his exclusive use, in accordance with generally accepted soil and foundation engineering practices, and makes no other warranty either expressed or implied as to the professional advice provided in the report.

### **UNANTICIPATED SOIL CONDITIONS**

The analysis and recommendations submitted in this report are based upon the data obtained from soil borings performed at the locations indicated on the Boring Location Plan. This report does not reflect any variations which may occur between these borings.

The nature and extent of variations between borings may not become known until excavation begins. If variations appear, we may have to re-evaluate our recommendations after performing on-site observations and noting the characteristics of any variations.

### **CHANGED CONDITIONS**

We recommend that the specifications for the project require that the contractor immediately notify Universal Engineering Sciences, as well as the owner, when subsurface conditions are encountered that are different from those present in this report.

No claim by the contractor for any conditions differing from those anticipated in the plans, specifications, and those found in this report, should be allowed unless the contractor notifies the owner and Universal Engineering Sciences of such changed conditions. Further, we recommend that all foundation work and site improvements be observed by a representative of Universal Engineering Sciences to monitor field conditions and changes, to verify design assumptions and to evaluate and recommend any appropriate modifications to this report.

### **MISINTERPRETATION OF SOIL ENGINEERING REPORT**

Universal Engineering Sciences is responsible for the conclusions and opinions contained within this report based upon the data relating only to the specific project and location discussed herein. If the conclusions or recommendations based upon the data presented are made by others, those conclusions or recommendations are not the responsibility of Universal Engineering Sciences.

### **CHANGED STRUCTURE OR LOCATION**

This report was prepared in order to aid in the evaluation of this project and to assist the architect or engineer in the design of this project. If any changes in the design or location of the structure as outlined in this report are planned, or if any structures are included or added that are not discussed in the report, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and the conclusions modified or approved by Universal Engineering Sciences.

### **USE OF REPORT BY BIDDERS**

Bidders who are examining the report prior to submission of a bid are cautioned that this report was prepared as an aid to the designers of the project and it may affect actual construction operations.

Bidders are urged to make their own soil borings, test pits, test caissons or other investigations to determine those conditions that may affect construction operations. Universal Engineering Sciences cannot be responsible for any interpretations made from this report or the attached boring logs with regard to their adequacy in reflecting subsurface conditions which will affect construction operations.

### **STRATA CHANGES**

Strata changes are indicated by a definite line on the boring logs which accompany this report. However, the actual change in the ground may be more gradual. Where changes occur between soil samples, the location of the change must necessarily be estimated using all available information and may not be shown at the exact depth.

### **OBSERVATIONS DURING DRILLING**

Attempts are made to detect and/or identify occurrences during drilling and sampling, such as: water level, boulders, zones of lost circulation, relative ease or resistance to drilling progress, unusual sample recovery, variation of driving resistance, obstructions, etc.; however, lack of mention does not preclude their presence.

### **WATER LEVELS**

Water level readings have been made in the drill holes during drilling and they indicate normally occurring conditions. Water levels may not have been stabilized at the last reading. This data has been reviewed and interpretations made in this report. However, it must be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall, temperature, tides, and other factors not evident at the time measurements were made and reported. Since the probability of such variations is anticipated, design drawings and specifications should accommodate such possibilities and construction planning should be based upon such assumptions of variations.

### **LOCATION OF BURIED OBJECTS**

All users of this report are cautioned that there was no requirement for Universal Engineering Sciences to attempt to locate any man-made buried objects during the course of this exploration and that no attempt was made by Universal Engineering Sciences to locate any such buried objects. Universal Engineering Sciences cannot be responsible for any buried man-made objects which are subsequently encountered during construction that are not discussed within the text of this report.

### **TIME**

This report reflects the soil conditions at the time of investigation. If the report is not used in a reasonable amount of time, significant changes to the site may occur and additional reviews may be required.

## Important Information about This

# Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

### Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a civil engineer may not fulfill the needs of a constructor — a construction contractor — or even another civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. No one except you should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you — should apply this report for any purpose or project except the one originally contemplated.*

### Read the Full Report

Serious problems have occurred because those relying on a geotechnical-engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

### Geotechnical Engineers Base Each Report on a Unique Set of Project-Specific Factors

Geotechnical engineers consider many unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk-management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical-engineering report that was:

- not prepared for you;
- not prepared for your project;
- not prepared for the specific site explored; or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical-engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an

assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

### Subsurface Conditions Can Change

A geotechnical-engineering report is based on conditions that existed at the time the geotechnical engineer performed the study. *Do not rely on a geotechnical-engineering report whose adequacy may have been affected by:* the passage of time; man-made events, such as construction on or adjacent to the site; or natural events, such as floods, droughts, earthquakes, or groundwater fluctuations. *Contact the geotechnical engineer before applying this report to determine if it is still reliable.* A minor amount of additional testing or analysis could prevent major problems.

### Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ — sometimes significantly — from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide geotechnical-construction observation is the most effective method of managing the risks associated with unanticipated conditions.

### A Report's Recommendations Are Not Final

Do not overrely on the confirmation-dependent recommendations included in your report. *Confirmation-dependent recommendations are not final*, because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations *only* by observing actual subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's confirmation-dependent recommendations if that engineer does not perform the geotechnical-construction observation required to confirm the recommendations' applicability.*

### A Geotechnical-Engineering Report Is Subject to Misinterpretation

Other design-team members' misinterpretation of geotechnical-engineering reports has resulted in costly



problems. Confront that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Constructors can also misinterpret a geotechnical-engineering report. Confront that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing geotechnical construction observation.

#### **Do Not Redraw the Engineer's Logs**

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical-engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

#### **Give Constructors a Complete Report and Guidance**

Some owners and design professionals mistakenly believe they can make constructors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give constructors the complete geotechnical-engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise constructors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure constructors have sufficient time to perform additional study.* Only then might you be in a position to give constructors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

#### **Read Responsibility Provisions Closely**

Some clients, design professionals, and constructors fail to recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help

others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

#### **Environmental Concerns Are Not Covered**

The equipment, techniques, and personnel used to perform an *environmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical-engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. *Do not rely on an environmental report prepared for someone else.*

#### **Obtain Professional Assistance To Deal with Mold**

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold-prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, many mold-prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical-engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; *none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.*

#### **Rely, on Your GBC-Member Geotechnical Engineer for Additional Assistance**

Membership in the Geotechnical Business Council of the Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project. Confer with your GBC-Member geotechnical engineer for more information.



8811 Colesville Road/Suite G106, Silver Spring, MD 20910

Telephone: 301/565-2733 Facsimile: 301/589-2017

e-mail: [info@geoprofessional.org](mailto:info@geoprofessional.org) [www.geoprofessional.org](http://www.geoprofessional.org)

Copyright 2015 by Geoprofessional Business Association (GBA). Duplication, reproduction, or copying of this document, or its contents, in whole or in part, by any means whatsoever, is strictly prohibited, except with GBA's specific written permission. Excerpting, quoting, or otherwise extracting wording from this document is permitted only with the express written permission of GBA, and only for purposes of scholarly research or book review. Only members of GBA may use this document as a complement to or as an element of a geotechnical-engineering report. Any other firm, individual, or other entity that so uses this document without being a GBA member could be committing negligent or intentional (fraudulent) misrepresentation.

**APPENDIX B – VOLUSIA COUNTY RIGHT OF WAY USE PERMIT**



Growth and Resource Management Department  
Land Development Office

### VOLUSIA COUNTY USE PERMIT

Dear Applicant,

Please find attached the Volusia County Use Permit placard and approved plan required by Division 6 of the Volusia County Code of Ordinances for work being done in the Volusia County right-of-way. According to Section 72-699(b).... "this permit placard must be available at all times at the work site while work is being performed".

You also need to have the contractor's name and contact information posted with the permit package on-site during the time the work is being performed.

Per Section 72-699(e), "The Volusia County Inspector has the right to inspect and approve materials and/or phases of permitted work at any time. Final inspection and approval of the permitted work by the inspector must be obtained prior to completion of the work. Work will be considered incomplete until that portion of the permit indicating final inspection and approval has been signed and dated by the inspector.

Please call County Development Engineering staff at (386)736-5926, a minimum of 24 hours prior to commencement of work, to schedule the inspection using the inspection codes and the permit number found on the face of the placard. *If you are a registered contractor through Connect Live, you may schedule your inspections directly at: [www.connectivepermits.org](http://www.connectivepermits.org).*

---

123 West Indiana Avenue, Room 202 • DeLand, FL 32720-4604  
Tel: 386-736-5942 • 386-248-8157 • 386-423-3872  
Fax: 386-740-5136  
[www.volusia.org](http://www.volusia.org)



## USE PERMIT

Permit Number: 2018-P-USE-0190

Issued: June 14, 2018

Expiration: June 14, 2019

**Project Name:** City of Daytona Beach - Williamson Blvd between Mason Ave and Dunn Ave

**Applicant**

Mr. John Drago  
City of Daytona Beach Utilities  
125 Basin Street, Suite 204  
Daytona Beach, FL 32114

**Location:** Williamson Boulevard between Mason Avenue and Dunn Avenue

**Scope of Work**

Two pipe sections - open cut along 960 feet in County ROW plus 1200 LF directional bore - electronic plans to be submitted

**Required Inspections**

30562 - ROW Final  
30536 - Directional Final

**\*\*Specific Conditions and Stipulations\*\***

None.

**Fees:** Outstanding

**Total:** \$138.00 Inspection Fee



### **\*\*Conditions and Stipulations\*\***

**A copy of this permit, approved plans and any attachments, to include the name and contact information for the permit contractor, shall be on the job site at all times.**

#### **Call Before You Dig**

- Permittee is cautioned that existing utilities may be located within the construction areas.
- Pursuant to Chapter 556, Florida Statutes, as amended, an excavator of the work performed under the scope of this application shall call the "Sunshine State One-Call of Florida, Inc." at 1-800-432-4770, not less than two or more than five business days before beginning excavation.
- Volusia County Traffic Engineering is not a member of Sunshine One-Call. All signal locates will need to be requested from Traffic Engineering at (386) 736-5968, at least **TWO BUSINESS DAYS** prior to beginning work authorized in this permit.

#### **Required Notifications**

- Any sidewalk, lane or road closure requires review and approval in advance and a **SEVEN (7) DAY MINIMUM** notice to Traffic Operations at (386) 239-6535. Some lane closure operations may be restricted to 9:00 AM to 3:30 PM based on traffic volume and/or location.
- By accepting this Use Permit, the applicant agrees to notify/contact the Development Engineering office at (386) 736-5926 **ONE BUSINESS DAY** prior to beginning work authorized in this permit. Failure to provide the required notice may result in the issuance of a stop work order and/or the suspension or cancellation of this permit.
- Notify/contact the Development Engineering office at (386) 736-5926 when the work in this permit is complete.

#### **Site Requirements**

- All construction signs and barricades in compliance with Florida D.O.T. specifications must be on the job site and in place before work begins (post mounted may be required).



- No open cuts or excavated work areas are allowed to remain open in the clear zone except while work is actively being performed.
- All disturbed areas within the County of Volusia right-of way are required to be restored with sod.

#### **Work Days and Hours**

- All work authorized in this permit must be conducted between the hours of 7:00 AM – 3:30 PM Monday-Friday unless other arrangements have been made and agreed upon in advance with the County Development Engineer and/or his staff.
- **No jack and bores, directional drills, or open cuts are permitted on weekends and holidays unless prior approval from the County Development Engineer or designee is obtained.**

#### **Advisory**

- During major events in Volusia County that generate heavy traffic volumes, such as but not limited to, Race Week and Bike Week, work may be curtailed as directed by the County of Volusia.
- All construction and/or maintenance on the County of Volusia right-of-way shall conform to:
  - The Federal Manual on Uniform Traffic Control Devices (MUTCD) <http://mutcd.fhwa.dot.gov/>
  - The Department's Roadway and Traffic Design Standards <http://www.dot.state.fl.us/rddesign/DesignStandards/Standards.shtml>

The Standard Specifications for Road and Bridge Construction and Qualified Products List <http://www.dot.state.fl.us/programmanagement/default.shtml>