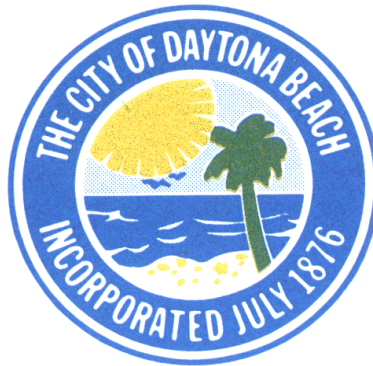


THE CITY OF DAYTONA BEACH
BEACH STREET STREETScape - ORANGE AV TO BAY ST
REVISED

INVITATION TO BID No. 20013
PROJECT SPECIFIC CONSTRUCTION SERVICES

NIGP COMMODITY CODES:

- **91200**
- **91300**
- **96800**
- **91327**
- **91375**
- **91340**



THE CITY OF DAYTONA BEACH
PUBLIC WORKS DEPARTMENT – TECHNICAL SERVICES DIVISION
P.O. BOX 2451
DAYTONA BEACH, FL 32115

ISSUE DATE: September 3, 2019

ITB-Project Specific Construction 8/9/18

Bidders who wish to continue being notified of upcoming bid opportunities and addenda to this solicitation must ensure they have registered at:
<https://vrapp.vendorregistry.com/Vendor/Register/Index/daytona-beach-city-of-fl-vendor-registration>
and have included the Commodity Code(s) listed above to receive updates for this solicitation.

INV-1
ITB 20013

INVITATION TO BID – PROJECT SPECIFIC CONSTRUCTION SERVICES

The City of Daytona Beach will receive bids for the “**BEACH STREET STREETScape - ORANGE AV TO BAY ST REVISED**”, Invitation to Bid No. 20013, 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 October 3, 2019**, 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 BEACH STREET STREETScape - ORANGE AV TO BAY ST REVISED, ITB No. 20013” plainly written on the outside of the envelope.

The work generally consists of demolition of existing concrete paving, curb, sidewalk concrete pavers, light poles, lighting fixtures and landscaping. New construction includes new concrete sidewalks, concrete pavers, concrete base, curbing, landscape and irrigation, conduit for FPL lighting, up lights, maintenance of traffic and pedestrian signals. Other new construction includes storm drain piping and inlet modifications, installation of water and force main piping by HDD directional drilling, and testing and clearance of utilities.

The Contractor or the Significant Task Subcontractor must be Prequalified with FDOT in “39. Traffic Signalization”.

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 Public Works Complex, 950 Bellevue Ave., Large Conference Room, Daytona Beach, Florida 32114, on September 11, 2019 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: September 3, 2019

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. 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.

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. 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. PAYMENT AND PERFORMANCE BONDS. If awarded a contract, the Bidder will be required to provide payment and performance bonds which will each be equal to 100% of the cost of the work.

The bond must be in the form provided by the City and must be accompanied by sufficient evidence of the authority of the issuing agent. Attorneys-in-fact who sign bonds or other surety instruments must attach with each bond or Surety instrument a certified copy of their power of attorney. The bonds must also comply with the requirements of F.S. § 255.05. 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.

In lieu of the required bonds, the Successful Bidder may provide an alternative form of security as specified in F.S. § 255.05(7) upon the City's approval.

The Successful Bidder must provide the required bond or alternative form of security and obtain City approval thereof prior to commencing construction.

In accordance with Section 255.05, the provisions of the General Conditions requiring CONTRACTOR to submit proof of payment of CONTRACTOR's subcontractors and suppliers as a condition of making a required payment are superseded.

SI 2. BASIS OF AWARD. In determining the "lowest responsive bid" as that term is used in Section 30-82(8) of the City's Purchasing Code, the City will review the total cost of the Base Bid, as adjusted by any Additive and/or Deductive Alternates that the City, in its sole discretion, decides to include in the Contract.

SI 3. ASBESTOS MATERIALS. Should Asbestos Materials be found the CONTRACTOR must follow asbestos removal work in compliance with all Legal Requirements, as defined in the General Conditions, including specifically those Legal Requirements applicable to asbestos materials, including the Department of Environmental Protection's asbestos requirements, 40 CFR Part 61, Subpart M, and OSHA Section 29 CFR 1926.38. Additionally, the CONTRACTOR is responsible for properly licensed and/or certified for asbestos removal as required by Legal Requirements.

SI 4. CONTRACTOR RESPONSIBILITIES. The CONTRACTOR will review the site conditions, review the Bid Documents, verify the Summary of Quantities and Bid Schedule, and the inclusion of all items and costs necessary to complete the work and submit a completed and responsive Bid. In reviewing the documents, the CONTRACTOR will notify the ENGINEER of any questionable items prior to the submission of Bids. The

CONTRACTOR shall maintain access to all businesses and homes along the project during construction activities.

SI 5. MINIMUM FINANCIAL QUALIFICATIONS. The BIDDER submitting a Bid for this project must be a Certified General Contractor, certified in the State of Florida and the City of Daytona Beach as necessary to perform the required construction and hold the following criteria:

1. Has been in business for a minimum of five (5) years.
2. Has not filed for bankruptcy 5 years prior to the Bid Opening Date.
3. Has not drawn on the performance guarantee in the 5 years prior to the Bid Opening Date.

In addition, BIDDER must submit the following documentation with Bid:

1. Provide list of references for five (5) projects above \$1,000,000 completed within the 10 years prior to the opening date of the ITB.
2. Provide names and addresses of bonding companies (i.e., sureties) retained in last five (5) years.

City may request additional information that exhibits financial strength and ability to perform on this Contract upon request after bid opening.

SI 6. 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 subcontractors, 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.

1. Definition.

“Task” means the following specific type of construction-related activity:

- Roadway Construction
- Utilities Construction
- Traffic Signalization
- Horizontal Directional Drilling

2. Who Must Meet the Minimum Qualifications

The BIDDER must meet a Minimum Qualification associated with a Task listed below if the BIDDER proposes to perform 50% or more of the Task through the BIDDER’S own forces for the Project. A Significant Task Subcontractor must meet a Minimum

Qualification associated with a Task listed below if the BIDDER proposes to have the Subcontractor perform 50% of the Task in the course of the Project.

3. Minimum Qualifications:

A. Roadway Construction: Successful construction of five roadway projects that total 8 miles in length. One of the projects shall be a minimum of 1 mile in length with utility construction or removal/relocation. Two of the projects shall have included streetscape construction including installation of decorative pavers, landscape, irrigation, and lighting. One of the projects shall include construction of concrete pavement.

Each roadway project must include utility removal/relocation, excavation, subgrade preparation, base construction, pavement installation, curb and gutter construction, sidewalk construction, and curb ramps.

B. Utilities Construction: Successful Completion of three projects totaling 15,000 linear feet or more of pipe length. One of the projects shall be a minimum of one (1) mile of utility work. Utilities shall include potable water, reuse water, sanitary sewer force main, and sanitary gravity sewer. Each project shall include 3 of the 4 utilities.

C. Horizontal Directional Drilling (HDD): Successful installation of at least 10,000 linear feet of large diameter (>12") HDD pipe installed, successfully leak and pressure tested and accepted. Submit 3 projects totaling at least 10,000 linear feet of HDD pipe in aggregate, and including:

i. Long Large Diameter HDD Pipe Runs: Successful completion of a minimum of 1,500 linear feet of large diameter (>12") pipe in a single continuous pull. Submit at least one project with a continuous pull of at least 1,500 LF of HDD.

ii. Subaqueous Installation: Submit at least 1 project which contained an installation of a large diameter pipe (>12") under a body of water.

D. Traffic Signalization Bidder or Significant Task Subcontractor must be Prequalified with FDOT in "39. Traffic Signalization". This item relates to construction of all items listed in Part D: Traffic of the Bid Schedule

Bidder shall include with their bid a copy of the pre-qualification certificate issued by FDOT to Bidder or significant task subcontractor for the type of work indicated. Owner will verify and will rely on FDOT determination of status of bidders prequalification.

E. Undergrounding of Franchise Utilities. The Bidder or significant Task Subcontractor must be authorized to engage in underground distribution work for FPL. This item relates to the installation of underground conduit for the new FPL lights on the East and West sides of Beach Street.

Bidders shall complete the FPL Affidavit for Eligibility included in the Bid Proposal Form. If the Bidder has assigned responsibility for the installation of conduit to a

subcontractor or multiple subcontractors, copies of this affidavit shall be submitted for each subcontractor.

The City will verify eligibility and that affidavit is valid with FPL prior to contract award.

4. Successful Completion Defined. A project will be counted toward meeting the applicable Minimum Qualifications listed above only if, in addition the conditions referenced, both of the following conditions are met: (i) the project was undertaken, or the BIDDER's/Subcontractor's portion of the project commenced no earlier than 2009, and (ii) the BIDDER/Subcontractor performed at least 50% of the Task described for that project.

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 accepted the equipment installed or other result of the Task for the Facility Owner's beneficial use).

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 BIDDER/Subcontractor received any enforcement agency warning letters, administrative fines or penalties, or the BIDDER/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.

5. SUBMITTAL REQUIREMENTS. To help the City determine whether the required Minimum Qualifications are met, the BIDDER must submit the following as part of the signed and sealed Bid. All documents are included at the end of this Section ("Reference Package")

A. A list of Significant Task Subcontractors, including the name of the person or firm, and the 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 ITB number and title as referenced in the Invitation to Bid; the name of the CONTRACTOR, followed by References for the BIDDER and the Significant Task Subcontractor. The References will be tabbed and indexed.

C. Each Project contained within the Reference Package will contain a sufficient number of references to show that the Minimum Qualification have been met. Three references must be provided to show that the Minimum Qualifications is met. For each reference the following must be provided:

(i) 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).

(ii) The name and address of the Facility Owner.

(iii) 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. 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 email address (or both) must be provided.

The BIDDER is encouraged to provide a backup Contact Person in each instance in case the City is unable to reach the primary Contact Person.

6. How will the city use the Information Submitted Above?

In evaluating the Bids received, the City intends to contact each reference listed (and with respect to OSHA violations, the appropriate agencies) to verify that the Minimum Qualifications were met. BIDDERS meeting the Minimum Qualifications (including with respect to their Significant Task Subcontractors) will be considered qualified to perform the work and their Bid considered responsive provided other material requirements of the Bid are met.

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.

Item(s) Required with Submittal	
	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% FOR ALL CONSTRUCTION BIDS)
	LIST OF SIGNIFICANT TASK SUBCONTRACTORS
	FPL AFFIDAVIT OF ELIGIBILITY
	REFERENCE PACKAGE
	FDOT PREQUALIFICATION DOCUMENTATION
	LIST OF REFERENCES FOR 5 PROJECTS >\$1,000,000
	LIST OF SURETIES RETAINED IN LAST 5 YEARS
Label the outer most package with the following:	
	Bid Number
	Date of the Opening
	Contractor Name and Address
Item(s) Required after Bid Submittal	
	<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 & P Bonds acceptable to the City will be sent with Notice of Award</i>)

BID PROPOSAL LETTER - ITB NO.: 20013

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.: 20013, 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.: 20013, 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: _____

BEACH STREET STREETScape - ORANGE AVENUE TO BAY STREET - REVISED

ITB 20013

BID ITEM SCHEDULE

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QTY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>AMOUNT</u>
<u>PART A: STREETScape - ORANGE TO BAY</u>					
1.	Mobilization Max 5.0%	1	LS	\$	\$
2.	Maintenance of Traffic	1	LS	\$	\$
3.	Erosion Control				
a.	Silt Fence	2,600	LF	\$	\$
b.	Inlet Protection/Erosion Control	1	LS	\$	\$
4.	Demolition and Disposal:				
a.	Saw Cut Existing Concrete Roadway	1	LS	\$	\$
b.	Remove Existing Striping	1	LS	\$	\$
c.	Remove and Dispose of Existing Sidewalk and Excess Concrete Pavers	1	LS	\$	\$
d.	Remove and Dispose of Existing 18" Wide Colored Header Curb	1	LS	\$	\$
e.	Remove and Dispose of Arches in Mid Block	1	LS	\$	\$
f.	Remove and Dispose of Existing Concrete Sidewalk	1	LS	\$	\$
g.	Remove Existing Signage	1	LS	\$	\$
h.	Remove and Salvage Existing Light Poles and Fixtures (Deliver to City), and Dispose of Existing Light Pole Concrete Footers	1	LS	\$	\$
i.	Remove and Dispose of Existing Palm Trees including Root Ball	1	LS	\$	\$
j.	Remove and Dispose of Existing 3' Wide Valley Gutters	1	LS	\$	\$
k.	Remove and Dispose of Existing "F" Curb	1	LS	\$	\$
l.	Remove and Dispose of Existing Concrete Pavement	1	LS	\$	\$
m.	Remove and Dispose of Existing Asphalt Pavement	1	LS	\$	\$
n.	Temporary Chain Link Construction Fencing	1	LS	\$	\$
o.	Temporary Walkways, Construcion Signage, Misc. Demolition	1	LS	\$	\$
p.	Open Cut and Repair	1,900	SF	\$	\$
q.	Remove Existing Benches, Bike Rack, Planters, and Trash Receptacles and Deliver to City	1	LS	\$	\$
5.	Paving and Drainage:				
a.	8" Concrete Roadway	5,273	SY	\$	\$
b.	12 x 12 Paver on 6" Concrete	2,176	SY	\$	\$
c.	12 x 12 Paver on 1" Sand	2,526	SY	\$	\$
d.	12 x 8 Paver on 6" Concrete	417	SY	\$	\$
e.	12 x 8 Paver on 1" Sand	1,791	SY	\$	\$
f.	Salvage and Reset Existing Pavers on 6" Concrete	84	SY	\$	\$
g.	3-Foot Valley Gutter	1,415	LF	\$	\$
h.	"F" Curb	4,665	LF	\$	\$
i.	6" Sidewalk with Shell	3,412	SY	\$	\$
j.	18" Wide Concrete Band	200	LF	\$	\$
k.	12" Wide Concrete Band	650	LF	\$	\$

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QTY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>AMOUNT</u>
	l. Handicap Ramp (Concrete with Detectable Warning)	20	EA	\$	\$
	m. Handicap Ramp	8	EA	\$	\$
	n. 6' x 6' Planter with 12" Wide Concrete Band	33	EA	\$	\$
	o. 5' x 5' Planter with 12" Wide Concrete Band	19	EA	\$	\$
	p. 12" x 18" RCP	39	LF	\$	\$
	q. 15" RCP	100	LF	\$	\$
	r. Remove Existing Grate and Replace with Ring and Cover	35	EA	\$	\$
	s. USF 5112 Frame and 6143 Gutter on P Bottom	19	EA	\$	\$
	t. Type "9" Curb Inlet on P Bottom	18	EA	\$	\$
	u. FPL Light Pole 3' x 3' x 6" Concrete	71	EA	\$	\$
	v. As-Built Record Drawings	1	LS	\$	\$
	w. 6" Stabilized Subgrade	2,184	SY	\$	\$
	x. Thermoplastic Striping/Pavement Markings	1	LS	\$	\$
6.	Lighting/Electrical:				
	a. Up Lights	94	EA	\$	\$
	b. Concrete Frame/Collier Uplights	94	EA	\$	\$
	c. Small Handholes	47	EA	\$	\$
	d. Conduit - Orange to Magnolia	600	LF	\$	\$
	e. Wire	2,000	LF	\$	\$
	f. Trenching & Fill - Manual	520	LF	\$	\$
	g. Conduit - Magnolia to ISB	640	LF	\$	\$
	h. Wire	2,150	LF	\$	\$
	i. Trenching & Fill - Manual	550	LF	\$	\$
	j. Conduit - ISB to Bay	900	LF	\$	\$
	k. Wire	3,000	LF	\$	\$
	l. Trenching & Fill - Manual	820	LF	\$	\$
	m. Directional Bores Electrical	1	LS	\$	\$
7.	Tall Median Lights				
	a. Handholes	12	EA	\$	\$
	b. Wire	120	LF	\$	\$
8.	Post Top Lights - Single by FPL				
	Post Top Lights - Double by FPL				
	a. Handholes - Supplied by FPL	74	EA	\$	\$
	b. Conduit - Orange to Magnolia - Supplied by FPL	1,300	LF	\$	\$
	c. Trenching & Fill - Manual	1,220	LF	\$	\$
	d. Conduit - Magnolia to ISB - Supplied by FPL	1,400	LF	\$	\$
	e. Trenching & Fill - Manual	1,100	LF	\$	\$
	f. Conduit - ISB to Bay - Supplied by FPL	1,900	LF	\$	\$
	g. Trenching & Fill - Manual	1,500	LF	\$	\$
	h. Directional Bores Electrical	1	LS	\$	\$

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QTY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>AMOUNT</u>
9.	Cameras				
	a. Handholes	10	EA	\$	\$
	b. Conduit	600	LF	\$	\$
	c. Trenching & Fill - Manual	600	LF	\$	\$
	d. Camera Poles	3	EA	\$	\$
10.	Two Kiosks - Preserve Power	1	LS	\$	\$
11.	Crosswalks-Provide 120 Volts				
	a. Conduit	300	LF	\$	\$
	b. Wire	1,000	LF	\$	\$
	c. Trenching & Fill - Manual	300	LF	\$	\$
12.	Median Outlets for Tall Median Poles and Medjools				
	a. Handholes	60	EA	\$	\$
	b. Conduit - Mostly 2"	2,700	LF	\$	\$
	c. Trenching & Fill - Manual	1,850	LF	\$	\$
	d. Wire #8 AWG	19,050	LF	\$	\$
	e. Wire #10 AWG	1,520	LF	\$	\$
	f. Garden Posts, Outlets	49	EA	\$	\$
	g. Directional Bores Electrical	1	LS	\$	\$
	h. Wiring at Timers	1	LS	\$	\$
13.	West Side Oak Tree Outlets				
	a. Handholes	29	EA	\$	\$
	b. Conduit - Mostly 2"	2,700	LF	\$	\$
	c. Trenching & Fill - Manual	2,300	LF	\$	\$
	d. Wire #8 AWG	23,050	LF	\$	\$
	e. Garden Posts, Outlets	29	EA	\$	\$
	f. Directional Bores Electrical	1	LS	\$	\$
	g. Wiring at Timers	1	LS	\$	\$
14.	Miscellaneous Electrical (includes Adjusting Vaults, Private Utilities, Utility Boxes, Vaults, Handholes to Provided Grades	1	LS	\$	\$
15.	Landscape:				
	a. 4" Caliper Live Oak	27	EA	\$	\$
	b. Date Palm	12	EA	\$	\$
	c. Chinese Palm	14	EA	\$	\$
	d. Mondo Grass - 1 Gallon	612	EA	\$	\$
	e. Annuals - 1 Gallon	1,188	EA	\$	\$
	f. Sod - St. Augustine	2,050	SY	\$	\$
	g. Sod - Bahia	1,110	SY	\$	\$
	h. 2-foot Root Barrier	1,104	LF	\$	\$
	i. River Rock Mulch	14	CY	\$	\$

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QTY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>AMOUNT</u>
16.	Irrigation:				
a.	Irrigation (includes Piping, Electrical Connection to Existing Controllers, Electrical Service, Valves, Electrical Valves, Mains, Soaker Hose, and Heads)	1	LS	\$	\$
17.	Bike Rack	7	EA	\$	\$
18.	Signage (New and Replace Existing)	1	LS	\$	\$
19.	Site Furniture				
a.	Benches	7	EA	\$	\$
b.	Trash Receptacle	7	EA	\$	\$
20.	Mid-Block Archway	9	EA	\$	\$
21.	30" x 30" Planter	44	EA	\$	\$
22.	30" x 17" Planter	22	EA	\$	\$
Part A: Sub-Total:					\$

PART B: UTILITY IMPROVEMENTS - ORANGE TO BAY

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QTY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>AMOUNT</u>
23.	Adjust Sanitary Manhole Tops, Water/Reuse, Valve & Meter Boxes	1	LS	\$	\$
24.	Water Distribution:				
a.	6" x 6" Tapping Sleeve with Valve and Box (F&I)	1	EA	\$	\$
b.	6" x 12" Reducer DIP (Class 350 Cement Lined)	1	EA	\$	\$
c.	6" PVC Water Main (F&I) (PVC C-900 DR-18)	40	LF	\$	\$
d.	8" PVC Water Main (F&I) (PVC-900 DR-18)	70	LF	\$	\$
e.	8" Resilient Seat Gate Valve & Valve Box	3	EA	\$	\$
f.	12" x 8" Tee DIP (Class 350 Cement Lined)	6	EA	\$	\$
g.	8" x 8" Tapping Sleeve with Valve and Box (F&I)	1	EA	\$	\$
h.	8" 45° Bend DIP (Class 350 Cement Lined)	1	EA	\$	\$
i.	8" 90° Bend DIP (Class 350 Cement Lined)	1	EA	\$	\$
j.	8" Plug DIP (Class 350 Cement Lined)	1	EA	\$	\$
k.	12" PVC Water Main (F&I) (PVC C-900 DR-18)	1,500	LF	\$	\$
l.	14" x 12" Reducer DIP (Class 350 Cement Lined)	3	EA	\$	\$
m.	12" 45° Bend DIP (Class 350 Cement Lined)	4	EA	\$	\$
n.	12" x 12" Tee DIP (Class 350 Cement Lined)	2	EA	\$	\$
o.	12" Resilient Seat Gate Valve & Valve Box	7	EA	\$	\$
p.	12" Plug DIP (Class 350 Cement Lined)	3	EA	\$	\$
q.	12" Cap with 2" Blow Off	2	EA	\$	\$
r.	2" Automatic Air Release Valve and Vault	4	EA	\$	\$
s.	14" HDPE Water Main Directional Drill Pipe	540	LF	\$	\$
t.	3/4" Water Meter, Meter Vault and Check Valve	28	EA	\$	\$
u.	1 1/2" Water Meter, Meter Vault and Check Valve	1	EA	\$	\$
v.	2" Water Meter, Meter Vault and Check Valve	7	EA	\$	\$
w.	Pipe Testing and Chlorination	1	LS	\$	\$
x.	As-Built Record Drawings	1	LS	\$	\$
y.	Connections to Existing Pipe	4	EA	\$	\$

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QTY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>AMOUNT</u>
25.	Sanitary Sewer:				
a.	8" PVC DR-18	45	LF	\$	\$
b.	8" Plug	2	EA	\$	\$
26.	Reuse:				
a.	8" x 4" Tapping Sleeve with Valve (Contractor to Tap)	7	EA	\$	\$
b.	6" Purple PVC DR-18 Reuse	275	LF	\$	\$
c.	6" Resilient Seat Gate Valve & Reuse Valve Box	1	EA	\$	\$
d.	6" x 8" Tapping Sleeve with Valve (Contractor to Tap)	1	EA	\$	\$
e.	4" Reuse Service Cap	7	EA	\$	\$
f.	4" Purple PVC	180	LF	\$	\$
g.	6" Reuse Service Cap	1	EA	\$	\$
h.	4" Reuse Valve and Reuse Valve Box	6	EA	\$	\$
Part B: Sub-Total:					\$

PART C: LIFT STATION FORCE MAIN

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QTY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>AMOUNT</u>
27.	14" HDPE Sanitary Force Main Directional Drill	1,110	LF	\$	\$
28.	14" x 12" Reducer	4	EA	\$	\$
29.	2" Sanitary Automatic Air Release Valve and Vault	2	EA	\$	\$
30.	12" PVC DR-18 Force Main	45	LF	\$	\$
31.	16" x 12" Tapping Sleeve with Valve	1	EA	\$	\$
32.	12" 45° Bend	4	EA	\$	\$
33.	12" Plug Valve	2	EA	\$	\$
34.	12" Plug	1	EA	\$	\$
35.	12" 90° Bend	2	EA	\$	\$
36.	2" Automatic Air Release Valve in Sanitary Manhole with 2'x2' Weep Hole with Traffic Bearing Lid	1	EA	\$	\$
Part C: Sub-Total:					\$

PART D: TRAFFIC

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QTY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>AMOUNT</u>
37.	Conduit - Underground (FDOT Item #630-2-11)	402	LF	\$	\$
38.	Conduit - Directional Bore (FDOT Item #630-2-12)	470	LF	\$	\$
39.	Conduit - Above Ground (Riser) (FDOT Item #630-2-14)	100	LF	\$	\$
40.	Signal Cable (FDOT Item #632-7-1)	5	PI	\$	\$
41.	Pull Box (FDOT Item #635-2-11)	37	EA	\$	\$
42.	Electrical Power Service, Underground (FDOT Item #639-1-112)	3	AS	\$	\$
43.	Electrical Service Wire (FDOT Item #639-2-1)	300	LF	\$	\$
44.	Aluminum Pedestal (FDOT Item #646-1-11)	11	EA	\$	\$
45.	Aluminum Pedestal, Button, Sign (FDOT Item #646-1-12)	6	EA	\$	\$
46.	Relocate Red Pole (FDOT Item #646-1-40)	2	EA	\$	\$
47.	Pedestrian Signal Head (FDOT Item #653-1-11)	16	AS	\$	\$
48.	Remove Ped Signal Head (FDOT Item #653-1-60)	14	AS	\$	\$
49.	RRFB, Post, Sign, Controller as Applicable (FDOT Item #654-2-11)	12	AS	\$	\$
50.	Loop Assenbly, Type B (FDOT Item #660-2-102)	3	AS	\$	\$
51.	Adjust Video Detection Zones (FDOT Item #660-4-50)	1	EA	\$	\$

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QTY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>AMOUNT</u>
52.	Pedestrian Detector (FDOT Item #665-1-11)	16	EA	\$	\$
53.	Remove Ped Detector (FDOT Item #665-1-60)	14	EA	\$	\$
54.	Modify Existing Controller (FDOT Item #670-5-410)	2	AS	\$	\$
55.	Sign, Single Post (FDOT Item #700-1-11)	12	AS	\$	\$
Part D: Sub-Total:					\$
(A+B+C+D) GRAND TOTAL:					\$

Contractor's Name: _____

Contractor's Address: _____

Contractor's Signature: _____

Printed Name: _____

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: _____

**LIST OF SIGNIFICANT TASK SUBCONTRACTORS
BEACH STREET STREETScape – ORANGE AV TO BAY ST
REVISED**

Task: Roadway Construction

Name of Firm:

Task: Utilities Construction

Name of Firm:

Task: Horizontal Directional Drilling

Name of Firm:

Task: Traffic Signalization

Name of Firm:

NOTE: FIRM LISTED ON LINE ABOVE (TRAFFIC SIGNALIZATION) MUST SUBMIT
FDOT PREQUALIFICATION CERTIFICATION TRAFFIC SIGNALIZATION WITH BID

Task: Undergrounding of Franchise Utilities

Name of Firm:

NOTE: FOR FIRM LISTED ON LINE, ABOVE AFFIDAVIT OF FPL ELIGABILITY OF
CONTRACTOR MUST BE FILLED OUT AND SUBMITTED WITH BID.

FPL AFFIDAVIT OF ELIGIBILITY
BEACH STREET STREETScape – ORANGE AV TO BAY ST

I certify that my company is eligible to perform concrete and conduit installation work for FPL and meet one of the following conditions.

a. My company is listed on the FPL Contract Crew List; or

b. My company has performed work for FPL in the past and we are in full understanding of all FPL standards and installation techniques.

Company Name: _____

Address: _____

Business or Contractor License Number: _____

Phone Number: _____ Fax Number: _____

Owner's Name: _____ Signature: _____

Sworn to before me this _____ day of _____

Notary Public for State of _____ My Commission Expires _____

Notary Public Signature: _____

Printed Name: _____

To be approved as a bidder, this affidavit of Eligibility must be submitted with your bid Package. Eligibility is provided solely upon confirmation by, and at the discretion of FPL.

Balance of this page intentionally left blank

REFERENCE PACKAGE

MINIMUM QUALIFICATIONS OF PROSPECTIVE BIDDER

CITY SOLICITATION NUMBER: 20013

PROJECT TITLE: Beach Street Streetscape Orange Av to Bay St

TO: City of Daytona Beach Purchasing Department
Attn: Joanne Flick
301 South Ridgewood Avenue, Room 146
P.O. Box 2451 Daytona Beach, FL 32115-2451
flickj@codb.us

BIDDER'S FIRM NAME:

BUSINESS ADDRESS: _____

CITY, STATE, ZIP CODE: _____

PHONE NUMBER: _____ **FAX NUMBER:** _____

EMAIL ADDRESS:

TASK: ROADWAY CONSTRUCTION

One Project Minimum 1 mile

Reference No. 1

Bidder/Major Subcontractor: _____

Name of Project: _____

Location of Project _____

Type of Work on Project: _____

Length of Project expressed in miles: _____

Project Components:

	Yes	No		Yes	No
a. Utility Construction or Removal/Relocation	<input type="checkbox"/>	<input type="checkbox"/>	h Curb Ramps	<input type="checkbox"/>	<input type="checkbox"/>
b. Curb and Gutter Construction	<input type="checkbox"/>	<input type="checkbox"/>	i. Concrete Pavement Construction	<input type="checkbox"/>	<input type="checkbox"/>
c. Excavation	<input type="checkbox"/>	<input type="checkbox"/>	j. Streetscape Construction	<input type="checkbox"/>	<input type="checkbox"/>
d. Subgrade Preparation	<input type="checkbox"/>	<input type="checkbox"/>	k. Decorative Pavers	<input type="checkbox"/>	<input type="checkbox"/>
e. Base Construction	<input type="checkbox"/>	<input type="checkbox"/>	l. Landscaping	<input type="checkbox"/>	<input type="checkbox"/>
f. Pavement installation	<input type="checkbox"/>	<input type="checkbox"/>	m Irrigation	<input type="checkbox"/>	<input type="checkbox"/>
g. Sidewalk Construction	<input type="checkbox"/>	<input type="checkbox"/>	n. Lighting	<input type="checkbox"/>	<input type="checkbox"/>

Dates Work was performed: _____

Work Completion:

- a. Was project undertaken, or Bidder/Subcontractor portion of the project commenced no earlier than 2009?
(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:** _____

TASK: ROADWAY CONSTRUCTION

One Project Minimum 1 mile

Reference No. 2

Bidder/Major Subcontractor: _____

Name of Project: _____

Location of Project _____

Type of Work on Project: _____

Length of Project expressed in miles: _____

Project Components:

	Yes	No		Yes	No
a. Utility Construction or Removal/Relocation	<input type="checkbox"/>	<input type="checkbox"/>	h Curb Ramps	<input type="checkbox"/>	<input type="checkbox"/>
b. Curb and Gutter Construction	<input type="checkbox"/>	<input type="checkbox"/>	i. Concrete Pavement Construction	<input type="checkbox"/>	<input type="checkbox"/>
c. Excavation	<input type="checkbox"/>	<input type="checkbox"/>	j. Streetscape Construction	<input type="checkbox"/>	<input type="checkbox"/>
d. Subgrade Preparation	<input type="checkbox"/>	<input type="checkbox"/>	k. Decorative Pavers	<input type="checkbox"/>	<input type="checkbox"/>
e. Base Construction	<input type="checkbox"/>	<input type="checkbox"/>	l. Landscaping	<input type="checkbox"/>	<input type="checkbox"/>
f. Pavement installation	<input type="checkbox"/>	<input type="checkbox"/>	m Irrigation	<input type="checkbox"/>	<input type="checkbox"/>
g. Sidewalk Construction	<input type="checkbox"/>	<input type="checkbox"/>	n. Lighting	<input type="checkbox"/>	<input type="checkbox"/>

Dates Work was performed: _____

Work Completion:

- a. Was project undertaken, or Bidder/Subcontractor portion of the project commenced no earlier than 2009?
(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:** _____

TASK: ROADWAY CONSTRUCTION

One Project Minimum 1 mile

Reference No. 3

Bidder/Major Subcontractor: _____

Name of Project: _____

Location of Project _____

Type of Work on Project: _____

Length of Project expressed in miles: _____

Project Components:

	Yes	No		Yes	No
a. Utility Construction or Removal/Relocation	<input type="checkbox"/>	<input type="checkbox"/>	h Curb Ramps	<input type="checkbox"/>	<input type="checkbox"/>
b. Curb and Gutter Construction	<input type="checkbox"/>	<input type="checkbox"/>	i. Concrete Pavement Construction	<input type="checkbox"/>	<input type="checkbox"/>
c. Excavation	<input type="checkbox"/>	<input type="checkbox"/>	j. Streetscape Construction	<input type="checkbox"/>	<input type="checkbox"/>
d. Subgrade Preparation	<input type="checkbox"/>	<input type="checkbox"/>	k. Decorative Pavers	<input type="checkbox"/>	<input type="checkbox"/>
e. Base Construction	<input type="checkbox"/>	<input type="checkbox"/>	l. Landscaping	<input type="checkbox"/>	<input type="checkbox"/>
f. Pavement installation	<input type="checkbox"/>	<input type="checkbox"/>	m Irrigation	<input type="checkbox"/>	<input type="checkbox"/>
g. Sidewalk Construction	<input type="checkbox"/>	<input type="checkbox"/>	n. Lighting	<input type="checkbox"/>	<input type="checkbox"/>

Dates Work was performed: _____

Work Completion:

- a. Was project undertaken, or Bidder/Subcontractor portion of the project commenced no earlier than 2009?
(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:** _____

TASK: ROADWAY CONSTRUCTION

One Project Minimum 1 mile

Reference No. 4

Bidder/Major Subcontractor: _____

Name of Project: _____

Location of Project _____

Type of Work on Project: _____

Length of Project expressed in miles: _____

Project Components:

	Yes	No		Yes	No
a. Utility Construction or Removal/Relocation	<input type="checkbox"/>	<input type="checkbox"/>	h Curb Ramps	<input type="checkbox"/>	<input type="checkbox"/>
b. Curb and Gutter Construction	<input type="checkbox"/>	<input type="checkbox"/>	i. Concrete Pavement Construction	<input type="checkbox"/>	<input type="checkbox"/>
c. Excavation	<input type="checkbox"/>	<input type="checkbox"/>	j. Streetscape Construction	<input type="checkbox"/>	<input type="checkbox"/>
d. Subgrade Preparation	<input type="checkbox"/>	<input type="checkbox"/>	k. Decorative Pavers	<input type="checkbox"/>	<input type="checkbox"/>
e. Base Construction	<input type="checkbox"/>	<input type="checkbox"/>	l. Landscaping	<input type="checkbox"/>	<input type="checkbox"/>
f. Pavement installation	<input type="checkbox"/>	<input type="checkbox"/>	m Irrigation	<input type="checkbox"/>	<input type="checkbox"/>
g. Sidewalk Construction	<input type="checkbox"/>	<input type="checkbox"/>	n. Lighting	<input type="checkbox"/>	<input type="checkbox"/>

Dates Work was performed: _____

Work Completion:

- a. Was project undertaken, or Bidder/Subcontractor portion of the project commenced no earlier than 2009?
(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:** _____

TASK: ROADWAY CONSTRUCTION

One Project Minimum 1 mile

Reference No. 5

Bidder/Major Subcontractor: _____

Name of Project: _____

Location of Project _____

Type of Work on Project: _____

Length of Project expressed in miles: _____

Project Components:

	Yes	No		Yes	No
a. Utility Construction or Removal/Relocation	<input type="checkbox"/>	<input type="checkbox"/>	h Curb Ramps	<input type="checkbox"/>	<input type="checkbox"/>
b. Curb and Gutter Construction	<input type="checkbox"/>	<input type="checkbox"/>	i. Concrete Pavement Construction	<input type="checkbox"/>	<input type="checkbox"/>
c. Excavation	<input type="checkbox"/>	<input type="checkbox"/>	j. Streetscape Construction	<input type="checkbox"/>	<input type="checkbox"/>
d. Subgrade Preparation	<input type="checkbox"/>	<input type="checkbox"/>	k. Decorative Pavers	<input type="checkbox"/>	<input type="checkbox"/>
e. Base Construction	<input type="checkbox"/>	<input type="checkbox"/>	l. Landscaping	<input type="checkbox"/>	<input type="checkbox"/>
f. Pavement installation	<input type="checkbox"/>	<input type="checkbox"/>	m Irrigation	<input type="checkbox"/>	<input type="checkbox"/>
g. Sidewalk Construction	<input type="checkbox"/>	<input type="checkbox"/>	n. Lighting	<input type="checkbox"/>	<input type="checkbox"/>

Dates Work was performed: _____

Work Completion:

- a. Was project undertaken, or Bidder/Subcontractor portion of the project commenced no earlier than 2009?
(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:** _____

TASK: UTILITIES CONSTRUCTION
One Project Minimum 1 Mile

Reference No. 1

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	<input type="checkbox"/>	<input type="checkbox"/>
b. Reuse Water Construction	<input type="checkbox"/>	<input type="checkbox"/>
c. Sanitary Sewer Force Main Construction	<input type="checkbox"/>	<input type="checkbox"/>
d. Sanitary Gravity Sewer	<input type="checkbox"/>	<input type="checkbox"/>

Dates Work was Performed: _____

Work Completion:

- a. Was project undertaken, or Bidder/Subcontractor portion of the project commenced no earlier than 2009?
(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:** _____

TASK: UTILITIES CONSTRUCTION
One Project Minimum 1 Mile

Reference No. 2

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	<input type="checkbox"/>	<input type="checkbox"/>
b. Reuse Water Construction	<input type="checkbox"/>	<input type="checkbox"/>
c. Sanitary Sewer Force Main Construction	<input type="checkbox"/>	<input type="checkbox"/>
d. Sanitary Gravity Sewer	<input type="checkbox"/>	<input type="checkbox"/>

Dates Work was Performed: _____

Work Completion:

- a. Was project undertaken, or Bidder/Subcontractor portion of the project commenced no earlier than 2009?
(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:** _____

TASK: UTILITIES CONSTRUCTION
One Project Minimum 1 Mile

Reference No. 3

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	<input type="checkbox"/>	<input type="checkbox"/>
b. Reuse Water Construction	<input type="checkbox"/>	<input type="checkbox"/>
c. Sanitary Sewer Force Main Construction	<input type="checkbox"/>	<input type="checkbox"/>
d. Sanitary Gravity Sewer	<input type="checkbox"/>	<input type="checkbox"/>

Dates Work was Performed: _____

Work Completion:

- a. Was project undertaken, or Bidder/Subcontractor portion of the project commenced no earlier than 2009?
(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:** _____

TASK: HORIZONTAL DIRECTIONAL DRILLING

- One Project a Minimum of 1500 Feet Long with 14” Dia. Pipe in a Single Continuous Pull
- One Project Which Included Subaqueous Installation of a >12” Pipe

Reference No. 1

Bidder/Major Subcontractor: _____

Name of Project: _____

Location of Project: _____

Type of Work on Project: _____

Length of Project: _____ Pipe Diameter: _____

Longest Single Continuous Pull this Project (Ft.): _____

Total Length of Pulls (Ft.): _____

Project Components:

	Yes	No
a. FDOT highway	<input type="checkbox"/>	<input type="checkbox"/>
b. Subaqueous Crossing	<input type="checkbox"/>	<input type="checkbox"/>
c. Successful leak/pressure tested	<input type="checkbox"/>	<input type="checkbox"/>

Dates Work was Performed: _____

Work Completion:

a. Was project undertaken, or Bidder/Subcontractor portion of the project commenced no earlier than 2009?

(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: _____

TASK: HORIZONTAL DIRECTIONAL DRILLING

- One Project a Minimum of 1500 Feet Long with 14” Dia. Pipe in a Single Continuous Pull
- One Project Which Included Subaqueous Installation of a >12” Pipe

Reference No. 2

Bidder/Major Subcontractor: _____
Name of Project: _____
Location of Project: _____
Type of Work on Project: _____
Length of Project: _____ **Pipe Diameter:** _____
Longest Single Continuous Pull this Project (Ft.): _____
Total Length of Pulls (Ft.): _____

Project Components:

	Yes	No
a. FDOT highway	<input type="checkbox"/>	<input type="checkbox"/>
b. Subaqueous Crossing	<input type="checkbox"/>	<input type="checkbox"/>
c. Successful leak/pressure tested	<input type="checkbox"/>	<input type="checkbox"/>

Dates Work was Performed:

Work Completion:

- a. Was project undertaken, or Bidder/Subcontractor portion of the project commenced no earlier than 2009?
(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:** _____

TASK: HORIZONTAL DIRECTIONAL DRILLING

- One Project a Minimum of 1500 Feet Long with 14” Dia. Pipe in a Single Continuous Pull
- One Project Which Included Subaqueous Installation of a >12” Pipe

Reference No. 3

Bidder/Major Subcontractor: _____
Name of Project: _____
Location of Project: _____
Type of Work on Project: _____
Length of Project: _____ Pipe Diameter: _____
Longest Single Continuous Pull this Project (Ft.): _____
Total Length of Pulls (Ft.): _____

Project Components:

	Yes	No
a. FDOT highway	<input type="checkbox"/>	<input type="checkbox"/>
b. Subaqueous Crossing	<input type="checkbox"/>	<input type="checkbox"/>
c. Successful leak/pressure tested	<input type="checkbox"/>	<input type="checkbox"/>

Dates Work was Performed: _____

Work Completion:

- a. Was project undertaken, or Bidder/Subcontractor portion of the project commenced no earlier than 2009?
(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: _____

REFERENCES

Provide names and contact information for owners for whom the Bidder has completed contracts valued in excess of \$1,000,000 within the 10 years prior to the opening date of the ITB

Owner's Name: _____

Scope of Work Summary: _____

Contact Name: _____ Title: _____

Contract Value: \$: _____

Owner's Name: _____

Scope of Work Summary: _____

Contact Name: _____ Title: _____

Contract Value: \$: _____

Owner's Name: _____

Scope of Work Summary: _____

Contact Name: _____ Title: _____

Contract Value: \$: _____

Owner's Name: _____

Scope of Work Summary: _____

Contact Name: _____ Title: _____

Contract Value: \$: _____

Owner's Name: _____

Scope of Work Summary: _____

Contact Name: _____ Title: _____

Contract Value: \$: _____

BONDING COMPANIES / SURETIES

Provide names and addresses of bonding companies (i.e., sureties) retained in last five (5) years from whom the Bidder obtained Payment and Performance Bonds.

Surety Name: _____

Surety Address: _____

Date Bond(s) Issued: _____ Bond Value: \$: _____

Surety Name: _____

Surety Address: _____

Date Bond(s) Issued: _____ Bond Value: \$: _____

Surety Name: _____

Surety Address: _____

Date Bond(s) Issued: _____ Bond Value: \$: _____

Surety Name: _____

Surety Address: _____

Date Bond(s) Issued: _____ Bond Value: \$: _____

Surety Name: _____

Surety Address: _____

Date Bond(s) Issued: _____ Bond Value: \$: _____

Surety Name: _____

Surety Address: _____

Date Bond(s) Issued: _____ Bond Value: \$: _____

**DRAFT
PROJECT-SPECIFIC CONSTRUCTION CONTRACT
ITB 20013**

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 "BEACH STREET STREETScape - ORANGE AV TO BAY ST REVISED" 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 8/15/19 and referenced herein are the plans or drawings prepared by Parker Mynchenberg & Associates, Inc. (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 **275** 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 **\$2712** for each and every day of unexcused delay in achieving Substantial Completion; and

In the amount of **\$1356** 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. The Contractor shall indemnify and hold harmless the City of Daytona Beach, its officers and employees, from liabilities, damages, losses, and costs, including, but not limited to, reasonable attorney's fees, to the extent caused by the negligence, recklessness, or intentional wrongful misconduct of the Contractor and persons employed or utilized by the Contractor in the performance of the construction contract.

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 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.

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.

3. **Umbrella Liability Insurance** in the amount of \$2,000,000 per occurrence/aggregate that is no more restrictive in coverage than all underlying liability coverages listed and described above.

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.

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.

F. Loss Deductible Clause. Any insurance policy required by or pursuant to this Section may contain a reasonable deductible provision provided advance notice of said deductible provision is given by the Contractor to the City and approval from the Risk Manager for the City is given, which approval shall not be unreasonably withheld or delayed.

The City shall be exempt from, and in no way liable for, any sums of money that may represent a deductible in any insurance policy. The payment of such deductible shall be the sole responsibility of the Contractor or sub-contractor providing such insurance.

G. Required Changes in Coverage and Amounts of Coverage. The City may at any time require Contractor to increase the amount of coverage, change the terms of

coverage, and provide additional or different types of coverage, as the City may deem necessary; provided that the changes or increase in coverage are consistent with such requirements for similar operations and businesses then operating within the Central Florida area or are reasonable in light of prior claims made against Contractor's policies. Contractor must comply with such requirements within 30 days after the City's demand.

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: James Nelson, P.E., City Engineer
The City of Daytona Beach
950 Bellevue Ave.
Daytona Beach, FL 32114
Fax: 386-671-8620

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.

1.1.8 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. *[Insert if contract involves landscaping, mowing, or pond maintenance]*

- 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.

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DIVISION

1

GENERAL

REQUIREMENTS

SECTION 01010
SUMMARY OF WORK

PART 1 - GENERAL REQUIREMENTS

1.1 SUMMARY

Work under the CONTRACT for the Beach Street Streetscape – Orange Avenue to Bay Street – Phase 1, shall include furnishing all coordination, labor, materials and construction services to complete the project work unless otherwise noted in the Drawings.

The scope of work includes Demolition of existing Concrete Paving, Curb, Sidewalk Concrete Pavers, Mid-Block Crossings, existing Light Poles, Up Lights and Fixtures, and existing Landscaping. Construction of new Concrete Sidewalk, Concrete Pavers on Concrete Base, Curb Landscape/Irrigation, FPL Lighting, City Owned Up Lights, Water Main, Sanitary Force Main, Gravity Sewer, Reuse and Associated Phasing and Maintenance of Traffic.

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. 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, latest edition, and the Florida Department of Transportation Design Standards, latest edition.

The Project is broken into 6 Phases. Contractor to complete phase improvements prior to beginning subsequent phase unless authorized in writing by the City.

A. 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.

B. 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

**SECTION 01010
SUMMARY OF WORK**

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

1.1 SUMMARY

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

1.2 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.

SECTION 01014
MAINTENANCE OF OPERATIONS

1.3 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

1.1 SUMMARY

- A. Explanation of the Measurement and Payment for the bid and 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 Schedule on the basis of the work actually performed and completed to the configuration and extent 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 Schedule are approximate and are given to establish a uniform basis for the comparison of bids. The CITY 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.

1.2 REFERENCE

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

1.3 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.

SECTION 01025
MEASUREMENT AND PAYMENT

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. Any material or equipment required to be installed and utilized for tests.
12. Concrete encasement.
13. Maintaining the existing quality of service during construction.
14. Cleanup.
15. Field offices.
16. Job signs.
17. Sanitary and potable water supplies.
18. Power.
19. Watchmen.
20. Bonds and Insurance.
21. Any and all Geotechnical testing of backfill, subgrade base material, asphalt and concrete (by City).
22. Testing/Quality Control (by City).
23. Dewatering.
24. Tracer Wire and Tape.
25. Pigging and Pressure Testing.
26. Chlorination.

1.4 SPECIAL BID/PAY ITEM MEASUREMENT & PAYMENT LIST
(Not Applicable)

PART 2 – PRODUCTS

(Not Applicable, General Conditions may apply)

**SECTION 01025
MEASUREMENT AND PAYMENT**

PART 3 – EXECUTION

(Not Applicable, General Conditions may apply)

PART A: STREETScape – ORANGE TO BAY**1. Mobilization Max 5.0%****(Bid Item No. 1)**

Definition. Mobilization shall be the preparatory work and operations in mobilizing for beginning work on the project, including, but not limited to, those operations necessary for the movement of personnel, equipment, supplies and incidentals to the project site, and for the establishment of temporary offices, 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. Demobilization shall be the work of removing temporary facilities from the site.

Payment. Partial payments for this lump sum item shall be made in accordance with the following schedule:

Percent of Original Contract Amount Earned	Allowable Percent of the Lump Sum Price for the Item
After Contract Execution	10
10	25
25	50
50	75
100	100

2. Maintenance of Traffic**(Bid Item No. 2)**

Measurement. The quantity for payment shall be on a Lump Sum basis.

Payment. Partial payments for this lump sum item shall be made in accordance with the following schedule:

Percent of Original Contract Amount Earned	Allowable Percent of the Lump Sum Price for the Item
After Contract Execution	25
25	50
50	75
100	100

**SECTION 01025
MEASUREMENT AND PAYMENT**

3. Erosion Control (Bid Item No.3)

a. **Silt Fence (Bid Item No. 3-A)**

Measurement – The quantity for payment shall be on a Linear Foot basis.

Payment - Payment of the applicable unit price per linear foot price shall be full compensation for supplying all labor, materials and equipment necessary silt fence, as shown on the Contract Drawings.

b. **Inlet Protection/Erosion Control (Bid Item No. 3-B)**

Measurement – The quantity for payment shall be on a Lump Sum basis.

Payment - Payment at the applicable lump sum price will be made based on completion of any additional erosion/turbidity control, silt fencing, floating turbidity barriers, and other means necessary in accordance with the contract plans and specifications directly associated with installation of the Project. Payment will be full compensation for all materials, labor, equipment, and work necessary to complete the additional work in accordance with City/State/Federal requirements and the contract plans and specifications. This item includes the cost to obtain NPDES NOI and NOT permit and Stormwater Pollution Prevention Plan if disturbance is greater than 1 acre.

4. Demolition and Disposal (Bid Item No. 4)

a. **Saw Cut Existing Concrete Roadway (Bid Item No. 4-A)**

Measurement. – The quantity for payment shall be on a Lump Sum basis.

Payment - Payment of the applicable lump sum shall be full compensation for supplying all labor, materials and equipment necessary for the Saw Cut Existing Concrete Roadway, as shown on the Contract Drawings.

b. **Remove Existing Striping (Bid Item No. 4-B)**

Measurement. – The quantity for payment shall be on a Lump Sum basis.

Payment - Payment of the applicable lump sum shall be full compensation for supplying all labor, materials and equipment necessary for the Remove Existing Striping, as shown on the Contract Drawings.

**SECTION 01025
MEASUREMENT AND PAYMENT**

c. **Remove and Dispose of Existing Sidewalk and Excess Concrete Pavers**

(Bid Item No.4-C)

Measurement – The quantity for payment shall be on a Lump Sum basis.

Payment - Payment of the applicable lump sum shall be full compensation for supplying all labor, materials and equipment necessary for Remove and Dispose of Existing Sidewalk and Excess Pavers by Contractor in a legal manner, as shown on the Contract Drawings.

d. **Remove and Dispose of Existing 18” Wide Colored Header Curb** **(Bid Item No. 4-D)**

Measurement – The quantity for payment shall be on a Lump Sum basis.

Payment - Payment of the applicable lump sum shall be full compensation for supplying all labor, materials and equipment necessary for Remove and Dispose of Existing 18” Wide Colored Header Curb, as shown on the Contract Drawings.

e. **Remove and Dispose of Arches in Mid-Block**

(Bid Item No. 4-E)

Measurement – The quantity for payment shall be on a Lump Sum basis.

Payment - Payment of the applicable lump sum shall be full compensation for supplying all labor, materials and equipment necessary for Remove and Dispose of Arches in Mid-Block, as shown on the Contract Drawings.

f. **Remove and Dispose of Existing Concrete Sidewalk**

(Bid Item No. 4-F)

Measurement – The quantity for payment shall be on a Lump Sum basis.

Payment - Payment of the applicable lump sum shall be full compensation for supplying all labor, materials and equipment necessary for Remove and Dispose of Existing Concrete Sidewalk, as shown on the Contract Drawings.

g. **Remove Existing Signage**

(Bid Item No. 4-G)

Measurement – The quantity for payment shall be on a Lump Sum basis.

Payment - Payment of the applicable lump sum shall be full compensation for supplying all labor, materials and equipment necessary for Remove Existing Signage, as shown on the Contract Drawings.

**SECTION 01025
MEASUREMENT AND PAYMENT**

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- h. **Remove and Salvage Existing Light Poles and Fixtures (Deliver to City), and Dispose of Existing Light Pole Concrete Footers** **(Bid Item No. 4-H)**

Measurement – The quantity for payment shall be on a Lump Sum basis.

Payment - Payment of the applicable lump sum shall be full compensation for supplying all labor, materials and equipment necessary for Remove and Salvage Existing Light Poles and Fixtures (Deliver to City), and Dispose of Existing Light Pole Concrete Footers, as shown on the Contract Drawings.

- i. **Remove and Dispose of Existing Palm Trees Including Root Ball** **(Bid Item No. 4-I)**

Measurement – The quantity for payment shall be on a Lump Sum basis.

Payment - Payment of the applicable lump sum shall be full compensation for supplying all labor, materials and equipment necessary for Remove and Dispose of Existing Palm Trees including Root Ball, as shown on the Contract Drawings.

- j. **Remove and Dispose of Existing 3’ Wide Valley Gutters** **(Bid Item No. 4-J)**

Measurement – The quantity for payment shall be on a Lump Sum basis.

Payment - Payment of the applicable lump sum shall be full compensation for supplying all labor, materials and equipment necessary for Remove and Dispose of Existing 3’ Wide Valley Gutters, as shown on the Contract Drawings.

- k. **Remove and Dispose of Existing “F” Curb** **(Bid Item No. 4-K)**

Measurement – The quantity for payment shall be on a Lump Sum basis.

Payment - Payment of the applicable lump sum shall be full compensation for supplying all labor, materials and equipment necessary for Remove and Dispose of Existing “F” Curb, as shown on the Contract Drawings.

- l. **Remove and Dispose of Existing Concrete Pavement** **(Bid Item No. 4-L)**

Measurement – The quantity for payment shall be on a Lump Sum basis.

Payment - Payment of the applicable lump sum shall be full compensation for supplying all labor, materials and equipment necessary for Remove and Dispose of Existing Concrete Pavement, as shown on the Contract Drawings.

SECTION 01025
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- m. **Remove and Dispose of Existing Asphalt Pavement** **(Bid Item No. 4-M)**
Measurement – The quantity for payment shall be on a Lump Sum basis.

Payment - Payment of the applicable lump sum shall be full compensation for supplying all labor, materials and equipment necessary for Remove and Dispose of Existing Asphalt Pavement, as shown on the Contract Drawings.
- n. **Temporary Chain Link Construction Fencing** **(Bid Item No. 4-N)**
Measurement – The quantity for payment shall be on a Lump Sum basis.

Payment - Payment of the applicable lump sum shall be full compensation for supplying all labor, materials and equipment necessary for Temporary Chain Link Construction Fencing, as shown on the Contract Drawings.
- o. **Temporary Walkways, Construction Signage, Misc. Demolition** **(Bid Item No. 4-O)**
Measurement – The quantity for payment shall be on a Lump Sum basis.

Payment - Payment of the applicable lump sum shall be full compensation for supplying all labor, materials and equipment necessary for Temporary Walkways, Construction Signage, Misc. Demolition, as shown on the Contract Drawings.
- p. **Open Cut and Repair** **(Bid Item No. 4-P)**
Measurement - The quantity for payment shall be the number of Square Foot that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per square foot shall be full compensation for supplying all labor, materials and equipment necessary for the Open Cut and Repair, as shown on the Contract Drawings.
- q. **Remove Existing Benches, Bike Rack, Planters, and Trash Receptacles and Deliver to City** **(Bid Item No. 4-Q)**
Measurement – The quantity for payment shall be on a Lump Sum basis.

Payment - Payment of the applicable lump sum shall be full compensation for supplying all labor, materials and equipment necessary for Removal of Existing Benches, Bike Rack, Planters, and Trash Receptacles and Deliver to City, as shown on the Contract Drawings.

SECTION 01025
MEASUREMENT AND PAYMENT

5. Paving and Drainage

(Bid Item No. 5)

a. **8" Concrete Roadway**

(Bid Item No. 5-A)

Measurement. The quantity for payment shall be the number of Square Yards that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per square yards shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the 8" Concrete Roadway, as shown on the Contract Drawings.

b. **12 x 12 Paver on 6" Concrete**

(Bid Item No. 5-B)

Measurement. The quantity for payment shall be the number of Square Yards that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per square yards shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the 12 x 12 Paver on 6" Concrete, as shown on the Contract Drawings.

c. **12 x 12 Paver on 1" Sand**

(Bid Item No. 5-C)

Measurement. The quantity for payment shall be the number of Square Yards that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per square yards shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the 12 x 12 Paver on 1" Sand, as shown on the Contract Drawings.

d. **12 x 8 Paver on 6" Concrete**

(Bid Item No. 5-D)

Measurement. The quantity for payment shall be the number of Square Yards that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per square yards shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the 12 x 8 Paver on 6" Concrete, as shown on the Contract Drawings.

SECTION 01025
MEASUREMENT AND PAYMENT

- e. **12 x 8 Paver on 1” Sand** **(Bid Item No. 5-E)**
Measurement. The quantity for payment shall be the number of Square Yards that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per square yards shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the 12 x 8 Paver on 1” Sand, as shown on the Contract Drawings.
- f. **Salvage and Reset Existing Pavers on 6” Concrete** **(Bid Item No. 5-F)**
Measurement. The quantity for payment shall be the number of Square Yards that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per square yards shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Salvage and Reset Existing Pavers on 6” Concrete, as shown on the Contract Drawings.
- g. **3-Foot Valley Gutter** **(Bid Item No. 5-G)**
Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the 3-Foot Valley Gutter, as shown on the Contract Drawings.
- h. **“F” Curb** **(Bid Item No. 5-H)**
Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the “F” Curb, as shown on the Contract Drawings.

SECTION 01025
MEASUREMENT AND PAYMENT

- i. **6” Sidewalk with Shell** **(Bid Item No. 5-I)**
Measurement. The quantity for payment shall be the number of Square Yards that are satisfactorily furnished and installed.
- Payment.** Payment of the applicable unit price per square yards shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the 6” Sidewalk with Shell, as shown on the Contract Drawings.
- j. **18” Wide Concrete Band** **(Bid Item No. 5-J)**
Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.
- Payment.** Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the 18” Concrete Band, as shown on the Contract Drawings.
- k. **12” Wide Concrete Band** **(Bid Item No. 5-K)**
Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.
- Payment.** Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the 12” Concrete Band, as shown on the Contract Drawings.
- l. **Handicap Ramp (Concrete with Detectable Warning)** **(Bid Item No. 5-L)**
Measurement. The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.
- Payment.** Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Handicap Ramp (Concrete with Detectable Warning), as shown on the Contract Drawings.

**SECTION 01025
MEASUREMENT AND PAYMENT**

- m. **Handicap Ramp** **(Bid Item No. 5-M)**
Measurement. The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.
- Payment.** Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Handicap Ramp, as shown on the Contract Drawings.
- n. **6' x 6' Planter with 12" Wide Concrete Band** **(Bid Item No. 5-N)**
Measurement. The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.
- Payment.** Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the 6' x 6' Planter with 12" Wide Concrete Band, as shown on the Contract Drawings.
- o. **5' x 5' Planter with 12" Wide Concrete Band** **(Bid Item No. 5-O)**
Measurement. The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.
- Payment.** Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the 5' x 5' Planter with 12" Wide Concrete Band, as shown on the Contract Drawings.
- p. **12" x 18" RCP** **(Bid Item No. 5-P)**
Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.
- Payment.** Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the 12" x 18" RCP, as shown on the Contract Drawings.

SECTION 01025
MEASUREMENT AND PAYMENT

- q. **15" RCP** **(Bid Item No. 5-Q)**
Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.
- Payment.** Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the 15" RCP, as shown on the Contract Drawings.
- r. **Remove Existing Grate and Replace with Ring and Cover** **(Bid Item No. 5-R)**
Measurement. The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.
- Payment.** Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary to Remove Existing Grate and Replace with Ring and Cover, as shown on the Contract Drawings.
- s. **USF 5112 Frame and 6143 Gutter on P Bottom** **(Bid Item No. 5-S)**
Measurement. The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.
- Payment.** Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the installation of USF 5112 Frame and 6143 Gutter on P Bottom, as shown on the Contract Drawings.
- t. **Type "9" Curb Inlet on P Bottom** **(Bid Item No. 5-T)**
Measurement. The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.
- Payment.** Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the installation of Type "9" Curb Inlet on P Bottom, as shown on the Contract Drawings.

SECTION 01025
MEASUREMENT AND PAYMENT

- u. **FPL Light Pole 3' x 3' x 6" Concrete** **(Bid Item No. 5-U)**
Measurement. The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.
- Payment.** Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the installation of FPL Light Pole 3' x 3' x 6" Concrete, as shown on the Contract Drawings.
- v. **As-Built Record Drawings** **(Bid Item No. 5-V)**
Measurement. – Measurement of As-Built Drawings/Certified Record Drawings shall be on a lump sum basis.
- Payment -** Payment for As-Built Drawings/Certified Record Drawings shall be at the contract unit price. 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. Please go to the City of Daytona Beach's web site under Utilities Department, Standard Details 2019-2020 see pages 126 thru 132 for more information on As-Built Drawings.
- w. **6" Stabilized Subgrade** **(Bid Item No. 5-W)**
Measurement. The quantity for payment shall be the number of Square Yards that are satisfactorily furnished and installed.
- Payment.** Payment of the applicable unit price per square yards shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the 6" Stabilized Subgrade, as shown on the Contract Drawings.
- x. **Thermoplastic Striping/Pavement Markings** **(Bid Item No. 5-X)**
Measurement – The quantity for payment shall be on a Lump Sum basis.
- Payment -** Payment of the applicable lump sum shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Thermoplastic Striping/Pavement Markings, as shown on the Contract Drawings.

**SECTION 01025
MEASUREMENT AND PAYMENT**

6. Lighting/Electrical

(Bid Item No. 6)

a. **Up Lights**

(Bid Item No. 6-A)

Measurement. The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Up Lights, as shown on the Contract Drawings.

b. **Concrete Frame/Collier Uplights**

(Bid Item No. 6-B)

Measurement. The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Concrete Frame/Collier Uplights, as shown on the Contract Drawings.

c. **Small Handholes**

(Bid Item No. 6-C)

Measurement. The quantity for payment shall be the number of Each basis that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price for each shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Small Handholes, as shown on the Contract Drawings.

d. **Conduit – Orange to Magnolia**

(Bid Item No. 6-D)

Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Conduit – Orange to Magnolia, as shown on the Contract Drawings.

**SECTION 01025
MEASUREMENT AND PAYMENT**

- e. **Wire** **(Bid Item No. 6-E)**
Measurement. The quantity for payment shall be the number of Linear Foot of electrical wire that are satisfactorily furnished and installed.
- Payment.** Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the electrical Wire, as shown on the Contract Drawings.
- f. **Trenching & Fill - Manual** **(Bid Item No. 6-F)**
Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.
- Payment.** Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Trenching and Fill - Manual, as shown on the Contract Drawings.
- g. **Conduit – Magnolia to ISB** **(Bid Item No. 6-G)**
Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.
- Payment.** Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Conduit – Magnolia to ISB, as shown on the Contract Drawings.
- h. **Wire** **(Bid Item No. 6-H)**
Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.
- Payment.** Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Wire, as shown on the Contract Drawings.

**SECTION 01025
MEASUREMENT AND PAYMENT**

- i. **Trenching & Fill – Manual** **(Bid Item No. 6-I)**
Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Trenching and Fill - Manual, as shown on the Contract Drawings.
- j. **Conduit – ISB to Bay** **(Bid Item No. 6-J)**
Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Conduit – ISB to Bay, as shown on the Contract Drawings.
- k. **Wire** **(Bid Item No. 6-K)**
Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Wire, as shown on the Contract Drawings.
- l. **Trenching & Fill – Manual** **(Bid Item No. 6-L)**
Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Trenching and Fill - Manual, as shown on the Contract Drawings.

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- m. **Directional Bores Electrical** **(Bid Item No. 6-M)**
Measurement. The quantity for payment shall be on a Lump Sum basis that are satisfactorily furnished and installed.

Payment. Payment of the applicable lump sum shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Directional Bores Electrical, as shown on the Contract Drawings.

7. **Tall Median Lights** **(Bid Item No. 7)**

- a. **Handholes** **(Bid Item No. 7-A)**
Measurement. The quantity for payment shall be the number of Each basis that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price for each shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Handholes, as shown on the Contract Drawings.

- b. **Wire** **(Bid Item No. 7-B)**
Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Wire, as shown on the Contract Drawings.

8. **Post Top Lights – Single by FPL** **(Bid Item No. 8)**
Post Top Lights – Double by FPL

- a. **Handholes – Supplied by FPL** **(Bid Item No. 8-A)**
Measurement. The quantity for payment shall be the number of Each basis that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price for each shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Handholes – Supplied by FPL, as shown on the Contract Drawings.

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- b. **Conduit – Orange to Magnolia – Supplied by FPL** **(Bid Item No. 8-B)**
Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.
- Payment.** Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Conduit – Orange to Magnolia – Supplied by FPL, as shown on the Contract Drawings.
- c. **Trenching & Fill – Manual** **(Bid Item No. 8-C)**
Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.
- Payment.** Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Trenching and Fill - Manual, as shown on the Contract Drawings.
- d. **Conduit – Magnolia to ISB – Supplied by FPL** **(Bid Item No. 8-D)**
Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.
- Payment.** Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Conduit – Magnolia to ISB – Supplied by FPL, as shown on the Contract Drawings.
- e. **Trenching & Fill – Manual** **(Bid Item No. 8-E)**
Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.
- Payment.** Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Trenching and Fill - Manual, as shown on the Contract Drawings.

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f. **Conduit – ISB to Bay – Supplied by FPL** **(Bid Item No. 8-F)**

Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Conduit – ISB to Bay – Supplied by FPL, as shown on the Contract Drawings.

g. **Trenching & Fill – Manual** **(Bid Item No. 8-G)**

Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Trenching and Fill - Manual, as shown on the Contract Drawings.

h. **Directional Bores Electrical** **(Bid Item No. 8-H)**

Measurement. The quantity for payment shall be on a Lump Sum basis that are satisfactorily furnished and installed.

Payment. Payment of the applicable lump sum shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Directional Bores Electrical, as shown on the Contract Drawings.

9. **Cameras** **(Bid Item No. 9)**

a. **Handholes** **(Bid Item No. 9-A)**

Measurement. The quantity for payment shall be the number of Each basis that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price for each shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Handholes, as shown on the Contract Drawings.

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b. Conduit (Bid Item No. 9-B)

Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Conduit, as shown on the Contract Drawings.

c. Trenching & Fill – Manual (Bid Item No. 9-C)

Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Trenching and Fill - Manual, as shown on the Contract Drawings.

d. Camera Poles (Bid Item No. 9-D)

Measurement. The quantity for payment shall be the number of Each basis that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price for each shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Camera Poles, as shown on the Contract Drawings.

10. Two Kiosks – Preserve Power (Bid Item No. 10)

Measurement. The quantity for payment shall be on a Lump Sum basis that are satisfactorily furnished and installed.

Payment. Payment of the applicable lump sum shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Two Kiosks – Preserve Power, as shown on the Contract Drawings.

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11. Crosswalks-Provide 120 Volts

(Bid Item No. 11)

a. **Conduit**

(Bid Item No. 11-A)

Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Conduit, as shown on the Contract Drawings.

b. **Wire**

(Bid Item No. 11-B)

Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Wire, as shown on the Contract Drawings.

c. **Trenching & Fill – Manual**

(Bid Item No. 11-C)

Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Trenching and Fill - Manual, as shown on the Contract Drawings.

12. Median Outlets for Tall Median Poles and Medjools

(Bid Item No. 12)

a. **Handholes**

(Bid Item No. 12-A)

Measurement. The quantity for payment shall be the number of Each basis that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price for each shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Handholes, as shown on the Contract Drawings.

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b. **Conduit – Mostly 2”** **(Bid Item No. 12-B)**

Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Conduit – Mostly 2”, as shown on the Contract Drawings.

c. **Trenching & Fill – Manual** **(Bid Item No. 12-C)**

Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Trenching and Fill - Manual, as shown on the Contract Drawings.

d. **Wire # 8 AWG** **(Bid Item No. 12-D)**

Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Wire #8 AWG, as shown on the Contract Drawings.

e. **Wire # 10 AWG** **(Bid Item No. 12-E)**

Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Wire #10 AWG, as shown on the Contract Drawings.

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f. **Garden Posts, Outlets** **(Bid Item No. 12-F)**

Measurement. The quantity for payment shall be the number of Each basis that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price for each shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Garden Posts, Outlets, as shown on the Contract Drawings.

g. **Directional Bores Electrical** **(Bid Item No. 12-G)**

Measurement. The quantity for payment shall be on a Lump Sum basis that are satisfactorily furnished and installed.

Payment. Payment of the applicable lump sum shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Directional Bores Electrical, as shown on the Contract Drawings.

h. **Wiring at Timers** **(Bid Item No. 12-H)**

Measurement. The quantity for payment shall be on a Lump Sum basis that are satisfactorily furnished and installed.

Payment. Payment of the applicable lump sum shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Wiring at Timers, as shown on the Contract Drawings.

13. West Side Oak Trees Outlets **(Bid Item No. 13)**

a. **Handholes** **(Bid Item No. 13-A)**

Measurement. The quantity for payment shall be the number of Each basis that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price for each shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Handholes, as shown on the Contract Drawings.

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- b. **Conduit – Mostly 2”** **(Bid Item No. 13-B)**
Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Conduit – Mostly 2”, as shown on the Contract Drawings.
- c. **Trenching & Fill – Manual** **(Bid Item No. 13-C)**
Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Trenching and Fill - Manual, as shown on the Contract Drawings.
- d. **Wire # 8 AWG** **(Bid Item No. 13-D)**
Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Wire #8 AWG, as shown on the Contract Drawings.
- e. **Garden Posts, Outlets** **(Bid Item No. 13-E)**
Measurement. The quantity for payment shall be the number of Each basis that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price for each shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Garden Posts, Outlets, as shown on the Contract Drawings.

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f. **Directional Bores Electrical** **(Bid Item No. 13-F)**

Measurement. The quantity for payment shall be on a Lump Sum basis that are satisfactorily furnished and installed.

Payment. Payment of the applicable lump sum shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Directional Bores Electrical, as shown on the Contract Drawings.

g. **Wiring at Timers** **(Bid Item No. 13-G)**

Measurement. The quantity for payment shall be on a Lump Sum basis that are satisfactorily furnished and installed.

Payment. Payment of the applicable lump sum shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Wiring at Timers, as shown on the Contract Drawings.

14. Miscellaneous Electrical (includes Adjusting Vaults, Private Utilities, Utility Boxes, Vaults, Handholes to Provided Grades **(Bid Item No. 14)**

Measurement. The quantity for payment shall be on a Lump Sum basis that are satisfactorily furnished and installed.

Payment. Payment of the applicable lump sum shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Miscellaneous Electrical (includes Adjusting Vaults, Private Utilities, Utility Boxes, Vaults, Handholes to Provided Grades, as shown on the Contract Drawings.

15. Landscape **(Bid Item No. 15)**

a. **4" Caliper Live Oak** **(Bid Item No. 15-A)**

Measurement – The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the 4" Caliper Live Oak, as shown on the Contract Drawings.

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- b. **Date Palm** **(Bid Item No. 15-B)**
Measurement – The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.
- Payment** - Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the Date Palm, as shown on the Contract Drawings.
- c. **Chinese Palm** **(Bid Item No. 15-C)**
Measurement – The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.
- Payment** - Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the Chinese Palm, as shown on the Contract Drawings.
- d. **Mondo Grass – 1 Gallon** **(Bid Item No. 15-D)**
Measurement – The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.
- Payment** - Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the Mondo Grass – 1 Gallon, as shown on the Contract Drawings.
- e. **Annuals – 1 Gallon** **(Bid Item No. 15-E)**
Measurement – The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.
- Payment** - Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the Annuals – 1 Gallon, as shown on the Contract Drawings.

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f. **Sod – St. Augustine** **(Bid Item No. 15-F)**

Measurement. The quantity for payment shall be the number of Square Yards that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per square yards shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Sod – St. Augustine, as shown on the Contract Drawings.

g. **Sod – Bahia** **(Bid Item No. 15-G)**

Measurement. The quantity for payment shall be the number of Square Yards that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per square yards shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Sod Bahia, as shown on the Contract Drawings.

h. **2-Foot Root Barrier** **(Bid Item No. 15-H)**

Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the 2-Foot Root Barrier, as shown on the Contract Drawings.

i. **River Rock Mulch** **(Bid Item No. 15-J)**

Measurement. The quantity for payment shall be the number of Cubic Yards that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per cubic yards shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the River Rock Mulch, as shown on the Contract Drawings.

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16. Irrigation

(Bid Item No. 16)

- a. **Irrigation (includes Piping, Electrical Connection to Existing Controllers, Electrical Service, Valves, Electrical Valves Mains, Soaker Hose, and Heads) (Bid Item No. 16-A)**
Measurement – The quantity for payment shall be on a Lump Sum basis.

Payment - Payment of the applicable lump sum shall be full compensation for supplying all labor, materials and equipment necessary for Irrigation (includes Piping, Electrical Connection to Existing Controllers, Electrical Service, Valves, Electrical Valves Mains, Soaker Hose, and Heads, as shown on the Contract Drawings.

17. Bike Rack

(Bid Item No. 17)

- Measurement** – The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the Bike Rack, as shown on the Contract Drawings.

18. Signage (New and Replace Existing)

(Bid Item No. 18)

- Measurement** – The quantity for payment shall be on a Lump Sum basis.

Payment - Payment of the applicable lump sum shall be full compensation for supplying all labor, materials and equipment necessary for Signage (New and Replace Existing), as shown on the Contract Drawings.

19. Site Furniture

(Bid Item No. 19)

- a. **Benches**

(Bid Item No. 19-A)

Measurement – The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the Benches, as shown on the Contract Drawings.

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b. **Trash Receptacle** **(Bid Item No. 19-B)**

Measurement – The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the Trash Receptacle, as shown on the Contract Drawings.

20. Mid-Block Archway **(Bid Item No. 20)**

Measurement – The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the Mid-Block Archway, as shown on the Contract Drawings.

21. 30” x 30” Planter **(Bid Item No. 21)**

Measurement – The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the 30” x 30” Planter, as shown on the Contract Drawings.

22. 30” x 17” Planter **(Bid Item No. 22)**

Measurement – The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the 30” x 17” Planter, as shown on the Contract Drawings.

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PART B: UTILITY IMPROVEMENTS – ORANGE TO BAY

23. Adjust Sanitary Manhole Tops, Water/Reuse, Valve & Meter Boxes (Bid Item No. 23)

Measurement – The quantity for payment shall be on a Lump Sum basis.

Payment - Payment of the applicable lump sum shall be full compensation for supplying all labor, materials and equipment necessary for Adjust Sanitary Manhole Tops, Water/Reuse, Valve & Meter Boxes, as shown on the Contract Drawings.

24. Water Distribution

a. **6”x6” Tapping Sleeve with Valve and Box (F&I)** (Bid Item No. 24-A)

Measurement - The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment shall be made at the contract price for each tapping sleeve, valve, valve box, debris cap, and valve marker tag. The City requires that a size on size tapping sleeve be a MECHANICAL JOINT TAPPING SLEEVE FOR CENTRIFUGAL C.I., D.I, & PVC PIPE. The contract price shall be full compensation for all materials, equipment and labor required to complete the installation in accordance with the drawings and specifications. This item includes any joint restraint and the adjustment of valve box to final grade and concrete collar, if required.

b. **6” x 12” Reducer DIP (Class 350 Cement Lined)** (Bid Item No. 24-B)

Measurement - The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment will be made for the installation of the applicable diameter MJ compact fitting at the applicable unit price for each as shown on the plans. The contract unit price will be full compensation for all materials and work necessary to complete the installation in accordance with the drawings and specifications and shall include joint restraints as part of this unit price. The unit price shall be full compensation for all dewatering, excavation, backfill, compaction, materials, equipment, labor, marker tape, locator wire, location wire “continuity testing”, successful hydrostatic testing and all other items necessary to complete installation of the fitting.

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c. **6” PVC Water Main (F&I) (PVC C-900 DR-18)** **(Bid Item No. 24-C)**

Measurement - The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment - Payment shall be made at the contract unit price per linear foot of all applicable pipe diameters as measured along the horizontal centerline of pipe from its origination point to the end of the pipe, regardless of vertical deflection. The unit price shall be full compensation for all dewatering, excavation, backfill, compaction, materials, restrained joints, equipment, labor, marker tape, locator wire, locator wire “continuity testing”, pigging, grout filling of any well point holes, excavation and replacement of any unsuitable materials, and all other items necessary to complete the installation of the pipe. 6” Water main pipe shall be PVC C-900 DR-18. Density testing will be furnished by the City at the direction of the City's project representative. 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, including necessary pavement base removal shall be in the unit price.

d. **8” PVC Water Main (F&I) (PVC-900 DR-18)** **(Bid Item No. 24-D)**

Measurement - The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment - Payment shall be made at the contract unit price per linear foot of all applicable pipe diameters as measured along the horizontal centerline of pipe from its origination point to the end of the pipe, regardless of vertical deflection. The unit price shall be full compensation for all dewatering, excavation, backfill, compaction, materials, restrained joints, equipment, labor, marker tape, locator wire, locator wire “continuity testing”, pigging, grout filling of any well point holes, excavation and replacement of any unsuitable materials, and all other items necessary to complete the installation of the pipe. 8” PVC Water main pipe shall be PVC C-900 DR-18. Density testing will be furnished by the City at the direction of the City's project representative. 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, including necessary pavement base removal shall be in the unit price.

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e. **8” Resilient Seat Gate Valve & Valve Box** **(Bid Item No. 24-E)**

Measurement - The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment will be made for each installation of the applicable diameter resilient seat gate valve at the applicable unit price for the valve and valve box and concrete collar as shown on the plans. The contract unit price will be full compensation for all materials and work necessary to complete the installation in accordance with the drawings and specifications including adjustment of valve box to final grade and shall include joint restraint and attachment of valve to adjacent fittings where shown as part of this unit price. The unit price shall be full compensation for all dewatering, excavation, backfill, compaction, materials, restrained joints, equipment, labor, marker tape, locator wire, location wire “continuity testing”, and all other items necessary to complete the installation of the valve.

f. **12” x 8” Tee DIP (Class 350 Cement Lined)** **(Bid Item No. 24-F)**

Measurement - The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment will be made for the installation of the applicable diameter MJ compact fitting at the applicable unit price for each as shown on the plans. The contract unit price will be full compensation for all materials and work necessary to complete the installation in accordance with the drawings and specifications and shall include joint restraints as part of this unit price. The unit price shall be full compensation for all dewatering, excavation, backfill, compaction, materials, equipment, labor, marker tape, locator wire, location wire “continuity testing”, successful hydrostatic testing and all other items necessary to complete installation of the fitting.

g. **8”x8” Tapping Sleeve with Valve and Box (F&I)** **(Bid Item No. 24-G)**

Measurement - The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment shall be made at the contract price for each tapping sleeve, valve, valve box, debris cap, and valve marker tag. The City requires that a size on size tapping sleeve be a MECHANICAL JOINT TAPPING SLEEVE FOR CENTRIFUGAL C.I., D.I, & PVC PIPE. The contract price shall be full compensation for all materials, equipment and labor required to complete the installation in accordance with the drawings and specifications. This item includes any joint restraint and the adjustment of valve box to final grade and concrete collar, if required.

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h. 8” 45° Bend DIP (Class 350 Cement Lined) (Bid Item No. 24-H)

Measurement - The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment will be made for the installation of the applicable diameter MJ compact fitting at the applicable unit price for each as shown on the plans. The contract unit price will be full compensation for all materials and work necessary to complete the installation in accordance with the drawings and specifications and shall include joint restraints as part of this unit price. The unit price shall be full compensation for all dewatering, excavation, backfill, compaction, materials, equipment, labor, marker tape, locator wire, location wire “continuity testing”, successful hydrostatic testing and all other items necessary to complete installation of the fitting.

i. 8” 90° Bend DIP (Class 350 Cement Lined) (Bid Item No. 24-I)

Measurement - The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment will be made for the installation of the applicable diameter MJ compact fitting at the applicable unit price for each as shown on the plans. The contract unit price will be full compensation for all materials and work necessary to complete the installation in accordance with the drawings and specifications and shall include joint restraints as part of this unit price. The unit price shall be full compensation for all dewatering, excavation, backfill, compaction, materials, equipment, labor, marker tape, locator wire, location wire “continuity testing”, successful hydrostatic testing and all other items necessary to complete installation of the fitting.

j. 8” Plug DIP (Class 350 Cement Lined) (Bid Item No. 24-J)

Measurement - The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment will be made for the installation of the applicable diameter MJ compact fitting at the applicable unit price for each as shown on the plans. The contract unit price will be full compensation for all materials and work necessary to complete the installation in accordance with the drawings and specifications and shall include joint restraints as part of this unit price. The unit price shall be full compensation for all dewatering, excavation, backfill, compaction, materials, equipment, labor, marker tape, locator wire, location wire “continuity testing”, successful hydrostatic testing and all other items necessary to complete installation of the fitting.

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k. **12” PVC Water Main (F&I) (PVC C-900 DR-18)** **(Bid item No. 24-K)**

Measurement - The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment - Payment shall be made at the contract unit price per linear foot of all applicable pipe diameters as measured along the horizontal centerline of pipe from its origination point to the end of the pipe, regardless of vertical deflection. The unit price shall be full compensation for all dewatering, excavation, backfill, compaction, materials, restrained joints, equipment, labor, marker tape, locator wire, locator wire “continuity testing”, pigging, grout filling of any well point holes, excavation and replacement of any unsuitable materials, and all other items necessary to complete the installation of the pipe. 12” Water main pipe shall be PVC C-900 DR-18. Density testing will be furnished by the City at the direction of the City's project representative. 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, including necessary pavement base removal shall be in the unit price.

l. **14”x12” Reducer DIP (Class 350 Cement Lined)** **(Bid Item No. 24-L)**

Measurement - The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment will be made for the installation of the applicable diameter MJ compact fitting at the applicable unit price for each as shown on the plans. The contract unit price will be full compensation for all materials and work necessary to complete the installation in accordance with the drawings and specifications and shall include joint restraints as part of this unit price. The unit price shall be full compensation for all dewatering, excavation, backfill, compaction, materials, equipment, labor, marker tape, locator wire, location wire “continuity testing”, successful hydrostatic testing and all other items necessary to complete installation of the fitting.

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m. **12” 45° Bend DIP (Class 350 Cement Lined)** **(Bid Item No. 24-M)**

Measurement - The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment will be made for the installation of the applicable diameter MJ compact fitting at the applicable unit price for each as shown on the plans. The contract unit price will be full compensation for all materials and work necessary to complete the installation in accordance with the drawings and specifications and shall include joint restraints as part of this unit price. The unit price shall be full compensation for all dewatering, excavation, backfill, compaction, materials, equipment, labor, marker tape, locator wire, location wire “continuity testing”, successful hydrostatic testing and all other items necessary to complete installation of the fitting.

n. **12”x12” Tee DIP (Class 350 Cement Lined)** **(Bid Item No. 24-N)**

Measurement - The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment will be made for the installation of the applicable diameter MJ compact fitting at the applicable unit price for each as shown on the plans. The contract unit price will be full compensation for all materials and work necessary to complete the installation in accordance with the drawings and specifications and shall include joint restraints as part of this unit price. The unit price shall be full compensation for all dewatering, excavation, backfill, compaction, materials, equipment, labor, marker tape, locator wire, location wire “continuity testing”, successful hydrostatic testing and all other items necessary to complete installation of the fitting.

o. **12” Resilient Seat Gate Valve & Valve Box** **(Bid Item No. 24-O)**

Measurement - The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment will be made for each installation of the applicable diameter resilient seat gate valve at the applicable unit price for the valve and valve box and concrete collar as shown on the plans. The contract unit price will be full compensation for all materials and work necessary to complete the installation in accordance with the drawings and specifications including adjustment of valve box to final grade and shall include joint restraint and attachment of valve to adjacent fittings where shown as part of this unit price. The unit price shall be full compensation for all dewatering, excavation, backfill, compaction, materials, restrained joints, equipment, labor, marker tape, locator wire, location wire “continuity testing”, and all other items necessary to complete the installation of the valve.

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- p. **12” Plug DIP (Class 350 Cement Lined)** **(Bid Item No. 24-P)**
Measurement - The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.
- Payment** - Payment will be made for the installation of the applicable diameter MJ compact fitting at the applicable unit price for each as shown on the plans. The contract unit price will be full compensation for all materials and work necessary to complete the installation in accordance with the drawings and specifications and shall include joint restraints as part of this unit price. The unit price shall be full compensation for all dewatering, excavation, backfill, compaction, materials, equipment, labor, marker tape, locator wire, location wire “continuity testing”, successful hydrostatic testing and all other items necessary to complete installation of the fitting.
- q. **12” Cap with 2” Blow Off** **(Bid Item No. 24-Q)**
Measurement - The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.
- Payment** - Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the 12” Cap with 2” Blow Off, as shown on the Contract Drawings.
- r. **2” Automatic Air Release Valve and Vault** **(Bid Item No. 24-R)**
Measurement. The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.
- Payment.** Payment will be made at the unit price for each automatic air release valve and vault installed per the City standards including valves, pipe connection, piping, vault and other work/material needed as shown in the plans and specifications. Density testing will be furnished by the City at the direction of the City's project representative.

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- s. **14" HDPE Water Main Directional Drill Pipe** **(Bid Item No. 24-S)**
Measurement - The quantity for payment shall be the actual number of feet of pipe that are satisfactorily furnished, installed and restrained, as measured along the length of the centerline of the completed pipeline, without deduction for the length of valves and fittings.

Payment - Payment of the applicable unit price per linear foot for each crossing listed in the Bid Form shall be full compensation for furnishing all plant, labor, materials, and equipment necessary to install the FPVC 14" Water main by the directional drill method to the elevations and the stationing shown on the Drawings. The cost for transition sleeves, bends, or any mechanical device, two strands of locate wire, and following the requirements found within Section 02619 of the Specifications, shall be included within the cost for this pay item.
- t. **¾" Water Meter, Meter Vault and Check Valve** **(Bid Item No. 24-T)**
Measurement. The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the ¾" Water Meter, Meter Vault and Check Valve, as shown on the Contract Drawings.
- u. **1 ½" Water Meter, Meter Vault and Check Valve** **(Bid Item No. 24-U)**
Measurement - The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the 1 ½" Water Meter, Meter Vault and Check Valve, as shown on the Contract Drawings.
- v. **2" Water Meter, Meter Vault and Check Valve** **(Bid Item No. 24-V)**
Measurement - The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the 2" Water Meter, Meter Vault and Check Valve, as shown on the Contract Drawings.

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w. **Pipe Testing and Chlorination** **(Bid Item No. 24-W)**

Measurement. – The quantity for payment shall be on a Lump Sum basis.

Payment - Payment shall be made at the lump sum unit price for pressure testing, chlorination, and dechlorination of all pressure piping unless otherwise specified or required. Payment shall be for all labor, materials, equipment, excavation and backfill, and any other items necessary to properly and successfully test and bacteriologically clear pressure mains on the Project. Costs to perform this work will also include costs to coordinate with City staff for chlorination and sampling, removal of testing apparatus (including necessary blowoffs), and proper permanent installation of test points, including any required valve boxes, required by the work to remain. Permanently retained test points shall be indicated in the as-builts.

x. **As-Built Record Drawings** **(Bid Item No. 24-X)**

Measurement. – Measurement of As-Built Drawings/Certified Record Drawings shall be on a lump sum basis.

Payment - Payment for As-Built Drawings/Certified Record Drawings shall be at the contract unit price. 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. Please go to the City of Daytona Beach's web site under Utilities Department, Standard Details 2019-2020 see pages 126 thru 132 for more information on As-Built Drawings.

y. **Connections to Existing Pipe** **(Bid Item No. 24-Y)**

Measurement. – The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment shall be made at the per each unit price per applicable diameter to furnish and install a complete connection consisting of an MJ sleeve or Dresser-style coupling (where applicable) where shown on the Project plans. The unit price shall be full compensation for all dewatering, excavation, backfill, compaction, tracer wire connections, materials (sleeves/couplings), necessary restraints, equipment, labor, marker tape and all items necessary to complete the installation of the connection. Fittings and their restraints required for alignment will be paid separately and shall be as otherwise specified. Density testing will be furnished by the City at the direction of the City's project representative.

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25. Sanitary Sewer**(Bid Item No. 25)**a. **8" PVC DR-18****(Bid Item No. 25-A)**

Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the 8" PVC DR-18, as shown on the Contract Drawings. Density testing will be by the City at the direction of the City's project representative.

b. **8" Plug****(Bid Item No. 25-B)**

Measurement. The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the 8" Plug including locator/marker balls, as shown on the Contract Drawings.

26. Reuse**(Bid Item No. 26)**a. **8" x 4" Tapping Sleeve with Valve (Contractor to Tap)****(Bid Item No. 26-A)**

Measurement. The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the 8" x 4" Tapping Sleeve with Valve (Contractor to Tap), as shown on the Contract Drawings.

b. **6" Purple PVC DR-18 Reuse****(Bid Item No. 26-B)**

Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the 6" Purple PVC DR-18 Reuse, as shown on the Contract Drawings. Density testing will be furnished by the City at the direction of the City's project representative. 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, including necessary pavement base removal shall be in the unit price.

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c. **6” Resilient Seat Gate Valve & Reuse Valve Box** **(Bid Item No. 26-C)**

Measurement - The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment will be made for each installation of the applicable diameter resilient seat gate valve at the applicable unit price for the valve and valve box and concrete collar as shown on the plans. The contract unit price will be full compensation for all materials and work necessary to complete the installation in accordance with the drawings and specifications including adjustment of valve box to final grade and shall include joint restraint and attachment of valve to adjacent fittings where shown as part of this unit price. The unit price shall be full compensation for all dewatering, excavation, backfill, compaction, materials, restrained joints, equipment, labor, marker tape, locator wire, location wire “continuity testing”, and all other items necessary to complete the installation of the reuse valve.

d. **6” x 8” Tapping Sleeve with Valve (Contractor to Tap)** **(Bid Item No. 26-D)**

Measurement. The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the 6” x 8” Tapping Sleeve with Valve (Contractor to Tap), as shown on the Contract Drawings.

e. **4” Reuse Service Cap** **(Bid Item No. 26-E)**

Measurement. The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the 4” Reuse Service Cap includes locator/marker ball, as shown on the Contract Drawings.

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f. **4" Purple PVC** **(Bid Item No. 26-F)**

Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the 4" Purple PVC, C-900 DR-18 as shown on the Contract Drawings. Density testing will be furnished by the City at the direction of the City's project representative. 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, including necessary pavement base removal shall be in the unit price.

g. **6" Reuse Service Cap** **(Bid Item No. 26-G)**

Measurement. The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the 6" Reuse Service Cap, as shown on the Contract Drawings.

h. **4" Reuse Valve and Reuse Valve Box** **(Bid Item No. 26-H)**

Measurement. The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the 4" Reuse Valve and Reuse Valve Box, as shown on the Contract Drawings.

PART C: LIFT STATION FORCE MAIN

27. **14" HDPE Sanitary Force Main Directional Drill** **(Bid Item No. 27)**

Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per linear foot for each crossing listed in the Bid Form shall be full compensation for furnishing all plant, labor, materials, and equipment necessary to install the FPVC 14" Sanitary force main by the directional drill method to the elevations and the stationing shown on the Drawings. The cost for transition sleeves, bends, or any mechanical device, two strands of locate wire, and following the requirements found within Section 02619 of the Specifications, shall be included within the cost for this pay item.

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28. 14” x 12” Reducer

(Bid Item No. 28)

Measurement. The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the 14” x12” Reducer, as shown on the Contract Drawings.

29. 2” Sanitary Automatic Air Release Valve and Vault

(Bid Item No. 29)

Measurement. The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the 2” Sanitary Automatic Aire Release Valve and Vault includes fused MJ transitions and wire (2), as shown on the Contract Drawings. Density testing will be by the City at the direction of the City’s project representative.

30. 12” PVC DR-18 Force Main

(Bid Item No. 30)

Measurement - The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment - Payment shall be made at the contract unit price per linear foot of all applicable pipe diameters as measured along the horizontal centerline of pipe from its origination point to the end of the pipe, regardless of vertical deflection. The unit price shall be full compensation for all dewatering, excavation, backfill, compaction, materials, restrained joints, equipment, labor, marker tape, locator wire, locator wire “continuity testing”, pigging, grout filling of any well point holes, excavation and replacement of any unsuitable materials, and all other items necessary to complete the installation of the pipe. Force main pipe shall be PVC DR-18. Density testing will be furnished by the City at the direction of the owner's project representative. 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, including necessary pavement base removal shall be in the unit price.

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31. 16" x 12" Tapping Sleeve with Valve

(Bid Item No. 31)

Measurement - The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment shall be made at the contract price for each tapping sleeve, valve, valve box, debris cap, and valve marker tag. The City requires that a size on size tapping sleeve be a MECHANICAL JOINT TAPPING SLEEVE FOR CENTRIFUGAL C.I., D.I, & PVC PIPE. The contract price shall be full compensation for all materials, equipment and labor required to complete the installation in accordance with the drawings and specifications. This item includes any joint restraint and the adjustment of valve box to final grade and concrete collar, if required.

32. 12" 45° Bend

(Bid Item No. 32)

Measurement - The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment will be made for the installation of the applicable diameter MJ compact fitting at the applicable unit price for each as shown on the plans. The contract unit price will be full compensation for all materials and work necessary to complete the installation in accordance with the drawings and specifications and shall include joint restraints as part of this unit price. The unit price shall be full compensation for all dewatering, excavation, backfill, compaction, materials, equipment, labor, marker tape, locator wire, location wire "continuity testing", successful hydrostatic testing and all other items necessary to complete installation of the fitting.

33. 12" Plug Valve

(Bid Item No. 33)

Measurement. The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the 12" Plug Valve, as shown on the Contract Drawings.

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34. 12” Plug**(Bid Item No. 34)**

Measurement - The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment will be made for the installation of the applicable diameter MJ compact fitting at the applicable unit price for each as shown on the plans. The contract unit price will be full compensation for all materials and work necessary to complete the installation in accordance with the drawings and specifications and shall include joint restraints as part of this unit price. The unit price shall be full compensation for all dewatering, excavation, backfill, compaction, materials, equipment, labor, marker tape, locator wire, location wire “continuity testing”, successful hydrostatic testing and all other items necessary to complete installation of the fitting.

35. 12” 90° Bend**(Bid Item No. 35)**

Measurement - The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment will be made for the installation of the applicable diameter MJ compact fitting at the applicable unit price for each as shown on the plans. The contract unit price will be full compensation for all materials and work necessary to complete the installation in accordance with the drawings and specifications and shall include joint restraints as part of this unit price. The unit price shall be full compensation for all dewatering, excavation, backfill, compaction, materials, equipment, labor, marker tape, locator wire, location wire “continuity testing”, successful hydrostatic testing and all other items necessary to complete installation of the fitting.

36. 2” Automatic Air Release Valve in Sanitary Manhole with 2’ x 2’ Weep Hole with Traffic Bearing Lid**(Bid Item No. 36)**

Measurement. The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the 2” Automatic Air Release Valve in Sanitary Manhole with 2’ x 2’ Weep Hole with Traffic Bearing Lid, as shown on the Contract Drawings.

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PART D: TRAFFIC

37. Conduit – Underground (FDOT Item #630-2-11) **(Bid Item No. 37)**

Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Conduit - Underground, as shown on the Contract Drawings.

38. Conduit – Directional Bore (FDOT Item #630-2-12) **(Bid Item No. 38)**

Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Conduit – Directional Bore, as shown on the Contract Drawings.

39. Conduit – Above Ground (Riser) (FDOT Item #630-2-14) **(Bid Item No. 39)**

Measurement. The quantity for payment shall be the number of Linear Foot that are satisfactorily furnished and installed.

Payment. Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for the installation of the Conduit – Above Ground (Riser), as shown on the Contract Drawings.

40. Signal Cable (FDOT Item #632-7-1) **(Bid Item No. 40)**

Measurement – The quantity for payment shall be on a Per Intersection basis that are satisfactorily furnished and installed.

Payment - Payment of the applicable unit price per intersection shall be full compensation for supplying all labor, materials and equipment necessary for the Signal Cable, as shown on the Contract Drawings.

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41. Pull Box (FDOT Item #635-2-11) (Bid Item No. 41)

Measurement – The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for Pull Box, as shown on the Contract Drawings.

42. Electrical Power Service, Underground (FDOT Item #639-1-112) (Bid Item No. 42)

Measurement – The quantity for payment shall be on a per Assembly basis that are satisfactorily furnished and installed.

Payment - Payment of the applicable unit price per assembly shall be full compensation for supplying all labor, materials and equipment necessary for Electrical Power Service, as shown on the Contract Drawings.

43. Electrical Service Wire (FDOT Item #639-2-1) (Bid Item No. 43)

Measurement – The quantity for payment shall be on a Linear Foot basis that are satisfactorily furnished and installed.

Payment - Payment of the applicable unit price per linear foot shall be full compensation for supplying all labor, materials and equipment necessary for Electrical Service Wire, as shown on the Contract Drawings.

44. Aluminum Pedestal (FDOT Item #646-1-11) (Bid Item No. 44)

Measurement – The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for Aluminum Pedestal, as shown on the Contract Drawings.

45. Aluminum Pedestal, Button Sign (FDOT Item #646-1-12) (Bid Item No. 45)

Measurement – The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for Aluminum Pedestal, Button Sign, as shown on the Contract Drawings.

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46. Relocate Red Pole (FDOT Item #646-1-40) (Bid Item No. 46)

Measurement – The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for Relocate Red Pole, as shown on the Contract Drawings.

47. Pedestrian Signal Head (FDOT Item #653-1-11) (Bid Item No. 47)

Measurement – The quantity for payment shall be on a per Assembly basis that are satisfactorily furnished and installed.

Payment - Payment of the applicable unit price per assembly shall be full compensation for supplying all labor, materials and equipment necessary for Pedestrian Signal Head, as shown on the Contract Drawings.

48. Remove Ped Signal Head (FDOT Item #653-1-60) (Bid Item No. 48)

Measurement – The quantity for payment shall be on a per Assembly basis that are satisfactorily furnished and installed.

Payment - Payment of the applicable unit price per assembly shall be full compensation for supplying all labor, materials and equipment necessary for Remove Ped Signal Head, as shown on the Contract Drawings.

49. RRFB, Post, Sign, Controller as Applicable (FDOT Item #654-2-11) (Bid Item No. 49)

Measurement – The quantity for payment shall be on a per Assembly basis that are satisfactorily furnished and installed.

Payment - Payment of the applicable unit price per assembly shall be full compensation for supplying all labor, materials and equipment necessary for RRFB, Post, Sign, Controllers as Applicable, as shown on the Contract Drawings.

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50. Loop Assembly, Type B (FDOT Item #660-2-102) (Bid Item No. 50)

Measurement – The quantity for payment shall be on a per Assembly basis that are satisfactorily furnished and installed.

Payment - Payment of the applicable unit price per assembly shall be full compensation for supplying all labor, materials and equipment necessary for Loop Assembly, Type B, as shown on the Contract Drawings.

51. Adjust Video Detection Zones (FDOT Item #660-4-50) (Bid Item No. 51)

Measurement – The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for Adjust Video Detection Zones, as shown on the Contract Drawings.

52. Pedestrian Detector (FDOT Item #665-1-11) (Bid Item No. 52)

Measurement – The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for Pedestrian Detector, as shown on the Contract Drawings.

53. Remove Pedestrian Detector (FDOT Item #665-1-60) (Bid Item No. 53)

Measurement – The quantity for payment shall be on a per Each basis that are satisfactorily furnished and installed.

Payment - Payment of the applicable unit price per each shall be full compensation for supplying all labor, materials and equipment necessary for Remove Pedestrian Detector, as shown on the Contract Drawings.

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54. Modify Existing Controller (FDOT Item #670-5-410) (Bid Item No. 54)

Measurement – The quantity for payment shall be on a per Assembly basis that are satisfactorily furnished and installed.

Payment - Payment of the applicable unit price per assembly shall be full compensation for supplying all labor, materials and equipment necessary for Modify Existing Controller, as shown on the Contract Drawings.

55. Sign, Single Post (FDOT Item #700-1-11) (Bid Item No. 55)

Measurement – The quantity for payment shall be on a per Assembly basis that are satisfactorily furnished and installed.

Payment - Payment of the applicable unit price per assembly shall be full compensation for supplying all labor, materials and equipment necessary for Sign, Single Post, as shown on the Contract Drawings.

END OF SECTION

SECTION 01026

SCHEDULE OF VALUES & PAYMENT APPLICATIONS

PART 1- GENERAL REQUIREMENTS

1.1 SUMMARY

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

1.2 SCHEDULE OF VALUES (FOR LUMP SUM ITEM CONTRACTS ONLY)

- A. Coordination: Coordinate preparation of the Schedule of Values on Lump Sum Item Contracts with preparation of CONTRACTOR'S Construction Schedule.
 - 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. Sub-Schedules: Where the Work is separated into phases requiring separately phased payments, provide sub schedules showing values correlated with each phase of payment.
- B. 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.
 - 1. 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:
 - a. Project name and location & Purchase Order Number
 - b. Name of CITY project manager.
 - c. CITY's project number.
 - d. CONTRACTOR's name and address.
 - e. Date of submittal.
 - 2. Submit draft of AIA Document G703 Continuation Sheets.

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

3. 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.
4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
5. 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.
6. 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.
7. Each item in the Schedule of Values and Pay Applications shall be complete and include the total cost.
 - a. 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.
8. 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.

1.3 PAY APPLICATIONS

- A. Each Pay Application shall be consistent with previous applications and payments as certified by ARCHITECT/ ENGINEER and or CITY.
 1. CONTRACTOR to prepare Pay Application after confirming quantities or percent of work completed with CITY's construction field representative in draft form.
- B. 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.
- C. Pay Application Submittal Times: Progress payments shall be submitted to CITY on average at one per thirty-day period.

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

- D. 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.
- E. 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.
1. 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.
 2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
- F. 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.
1. 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...
- G. 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.:
1. List of SUBCONTRACTORS.
 2. Schedule of Values (For Lump Sum Contract).
 3. CONTRACTOR's Construction Schedule (preliminary if not final).
 4. Bid Schedule of unit prices.
 5. Submittals Schedule (preliminary if not final).
 6. List of CONTRACTOR's principal consultants.
 7. Copies of building permits.
 8. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 9. Initial progress report and projected work forecast.

SECTION 01026

SCHEDULE OF VALUES & PAYMENT APPLICATIONS

- H. 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.
 - 1. Include documentation supporting that the Work is substantially complete
 - 2. This application shall reflect Certificates of Partial Substantial Completion issued previously for CITY occupancy or use of designated portions of the Work.

- I. Final Pay Application: Submit final Pay Application in accordance with the requirements of the General Conditions, and may also include the following:
 - 1. Updated final statement, accounting for final changes to the Contract Sum.
 - 2. Evidence that claims have been settled.
 - 3. 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.
 - 4. Final, liquidated damages settlement statement.

PART 2 – PRODUCTS

(Not Applicable, General Conditions may apply)

PART 3 - EXECUTION

(Not Applicable, General Conditions may apply)

END OF SECTION

**SECTION 01040
COORDINATION**

PART 1 – GENERAL

1.1 PROJECT COORDINATION

- A. The CONTRACTOR shall provide for the complete coordination of the construction efforts. This shall include, but not necessarily be limited to, coordination of the following:
1. The work of subcontractors.
 2. The flow of material and equipment from suppliers.
 3. The effort of equipment manufacturers during test and checkout.
 4. Interrelated work with public or private utilities companies.
 5. The interrelated work with the OWNER where tie-ins to existing facilities are required.
 6. The effort of independent testing agencies.
 7. Maintain operation of the existing facilities during tie-ins to piping/equipment.
 8. Maintaining access to business and residences.
 9. Work affecting private property.

1.2 UTILITIES

- A. Prior to construction, the CONTRACTOR shall familiarize himself with the location of all existing utilities and facilities within the Project Site and with the applicable provisions of the General Conditions.

The CONTRACTOR shall notify utility companies at least two weeks, excluding Saturdays, Sundays, and legal holidays, prior to excavation. Utility companies shall be contacted by calling the utility notification center “Sunshine” at 1-800-432-4770. The CITY will furnish to the CONTRACTOR the available records of CITY utilities. The CONTRACTOR shall locate and mark all CITY utilities for his reference and for use by utility companies. The CONTRACTOR shall act as the CITY’s agent for locating and marking CITY underground utilities within the Project limits, in accordance with the Florida Underground Facilities Damage Prevention and Safety Act (FS556).

In all cases where existing utility lines may be interfered with by the Work, the CONTRACTOR shall give a minimum of two weeks’ notice to the owners of such utilities to permit them to relocate the lines prior to construction. Existing utilities have been shown on the Plans insofar as information is reasonably available. However, it will be the CONTRACTOR’s responsibility to preserve all existing utilities whether shown on the Plans or not.

**SECTION 01040
COORDINATION**

Contractor is required to regularly update and coordinate with the franchise utilities a minimum of once per month.

Contractor is solely responsible for franchise utility coordination.

1.3 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. 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. 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.

1.4 REFERENCE

- A. Section 02240: Dewatering (During Construction)

PART 2 – PRODUCTS

(Not Applicable, See General Conditions)

PART 3 – EXECUTION

(Not Applicable, See General Conditions)

Contractor is required to regularly update and coordinate with the franchise utilities a minimum of once per month.

Contractor is solely responsible for franchise utility coordination.

Contractor to always be present when sub-contractors are working on-site.

END OF SECTION

**SECTION 01050
FIELD ENGINEERING**

PART 1 - GENERAL REQUIREMENTS

1.1 DESCRIPTION OF WORK

- A. CONTRACTOR shall provide and pay for all field engineering service required for the project. Such work shall include survey work to establish lines and levels and to locate and lay out site improvements, structures, and controlling lines and levels required for the construction of the work. Also included are such Engineering services as are specified or required to execute CONTRACTOR'S construction methods. Engineers and Surveyors shall be licensed professionals under the laws of the state where the project is located.

1.2 GRADES, LINES AND LEVELS

- A. Existing basic horizontal and vertical control points for the project are those designated on the DRAWINGS. CONTRACTOR shall locate and protect control points prior to starting site work and shall preserve all permanent reference points during construction. In working near any permanent property corners or reference markers, CONTRACTOR shall use care not to remove or disturb any such markers. In the event that markers must be removed or are disturbed due to proximity of the construction work, CONTRACTOR shall have them referenced and reset by a Land Surveyor qualified under the laws of the state of the project.

1.3 LAYOUT DATA

- A. CONTRACTOR shall lay out the work at the location and to the lines and grades shown on the DRAWINGS. Survey notes indicating the information and measurements used in establishing locations and grades shall be kept in notebooks and furnished to ENGINEER with the record drawings for the project.
- B. For all pipelines which have grades or elevations required, for all pipelines which are indicated to be installed to clear future construction and for all pipelines for which profile elevations are shown, CONTRACTOR shall prepare cut sheets and lay out lines at the locations shown or as directed. He shall verify lengths between junction points shown on the DRAWINGS, and verify the location and elevations of possible conflicts.

**SECTION 01050
FIELD ENGINEERING**

PART 2 - PRODUCTS
NOT USED

PART 3 - EXECUTION
NOT USED

END OF SECTION

**SECTION 01065
PERMITS AND FEES**

PART 1 – GENERAL

1.1 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 CONTRACTOR: CONTRACTOR will apply for and CITY will pay for the following permits:
 - 1. City of Daytona Beach Building Permit and/or Right-of-Way Permit (if applicable)
- C. Permits by CONTRACTOR: CONTRACTOR will apply for and CONTRACTOR will pay for the following permits:
 - 1. NPDES Construction Permit (through FDEP)
- D. Permits by OWNER: The CITY has applied and paid for the following permits:
 - 1. St Johns River Water Management District (SJRWMD) SWERP
- E. 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 USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01070
CODES, ABBREVIATIONS AND SYMBOLS

PART 1 – GENERAL

1.1 DEFINITIONS

- A. When words which have a well-known technical or trade meaning are used to describe work, materials or equipment such words shall be interpreted in accordance with such meaning unless a specific definition is included in the Contract Documents.

1.2 CODES, STANDARDS AND REGULATORY REQUIREMENTS

- A. This project has been designed in conformance with the requirements of the Florida Department of Environmental Protection and The City of Daytona Beach.
- B. Materials and workmanship shall conform to the requirements of the applicable codes and regulations.

1.3 ABBREVIATIONS AND SYMBOLS

- A. The following is a partial listing of abbreviations and symbols employed in the Contract Documents to identify publications, standards and reference specifications:

AA Aluminum Association, Inc.
 900 19th Street N.W.
 Suite 300
 Washington, D.C. 20006

AAMA American Architectural Manufacturers' Association
 1540 Dundee Road
 Suite 310
 Palatine, Illinois 60067

AASHTO American Association of State Highway and Transportation
 Officials
 2700 River Road
 Des Plaines, Illinois 60018

SECTION 01070
CODES, ABBREVIATIONS AND SYMBOLS

ACI	American Concrete Institute Post Office Box 19150 Detroit, Michigan 48219-0150
AISC	American Institute of Steel Construction, Inc. One East Wacker Drive Suite 3100 Chicago, Illinois 60601-2001
AISI	American Iron and Steel Institute 1101 17th Street N.W. Suite 1300 Washington, D.C. 20005-2701
ANSI	American National Standards Institute, Inc. 1430 Broadway New York, New York 10018
ASME	American Society of Mechanical Engineers United Engineering Center 345 East 47th Street New York, New York 10017
ASTM	American Society for Testing and Materials 1916 Race Street Philadelphia, Pennsylvania 19103
AWS	American Welding Society, Inc. 550 N.W. 42nd Avenue Post Office Box 351040 Miami, Florida 33126
AWWA	American Water Works Association 6666 West Quincy Avenue Denver, Colorado 80235
CPSC	U.S. Consumer Product Safety Commission 5401 Westbard Avenue Room 700 Washington D.C. 20816

SECTION 01070
CODES, ABBREVIATIONS AND SYMBOLS

CS	Commercial Standards and National Bureau of Standards Superintendent of Documents United States Government Printing Office Washington, D.C. 20234
FM	Factory Mutual Research Corp. 1151 Boston Providence Turnpike Norwood, Massachusetts 02062-9102
FS	Federal Specifications Superintendent of Documents Government Printing Office Washington, D.C. 20234
NCMA	National Concrete Masonry Association 2302 Horse Pen Road Post Office Box 781 Herndon, Virginia 22071-3406
NFiPA	National Fire Protection Association 1 Batterymarch Park Post Office Box 9101 Quincy, Massachusetts 02269
NSF	National Sanitation Foundation 3475 Plymouth Road Post Office Box 1468 Ann Arbor, Michigan 48106
PCA	Portland Cement Association 5420 Old Orchard Road Skokie, Illinois 60077
PCI	Precast Prestressed Concrete Institute 175 W. Jackson Boulevard Chicago, Illinois 60604-9773
PS	Product Standards National Institute of Standards and Technology (Department of Commerce) Standards Management Program A625 Administration Gaithersburg, Maryland 20899

SECTION 01070
CODES, ABBREVIATIONS AND SYMBOLS

RCSC	Research Council on Structural Connections c/o Stanley D. Lindsey & Associates, Ltd. 2244 Metro Center Boulevard Suite 208 Nashville, Tennessee 37228-1320
SSPC	Steel Structures Painting Council 4400 Fifth Avenue Pittsburg, Pennsylvania 15213
UL	Underwriters Laboratories, Inc. 333 Pfingsten Road Northbrook, Illinois 60062

1.4 CODES AND GOVERNMENTAL DEPARTMENTS

ANSI/NFiPA-101	Life Safety Code
ARM	(Florida) Accessibility Requirements Manual CFR Code of Federal Regulations
DEP	Department of Environmental Protection (Florida) EPA Environmental Protection Agency
FAC	Florida Administrative Code
NEC	National Electric Code (Published by NFiPA) OSHA Occupational Safety and Health Act

The following are all part of: Southern Building Code Congress International, Inc. (SBCCI)
900 Montclair Road
Birmingham, Alabama 35213-1206

SBC	Standard Building Code
SFPC	Standard Fire Prevention Code
SGC	Standard Gas Code
SMC	Standard Mechanical Code
SPC	Standard Plumbing Code

SECTION 01070
CODES, ABBREVIATIONS AND SYMBOLS

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

1.1 SUMMARY

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.

1.2 PRE-CONSTRUCTION CONFERENCE

A pre-construction conference will be held prior to beginning work in accordance with section 3.5 of the General Conditions

1.3 PROGRESS MEETINGS

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.

1.4 INSTALLATION / DEMOLITION & SPECIAL EVENT CONFERENCES

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. 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.

SECTION 01200
PROJECT MEETINGS AND VIDEO

1.5 PROJECT VIDEO AND PHOTOGRAPHY

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. The video will 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. For some projects, such as parking lots, building structures, water, wastewater facilities, etc., a combination of photographs and DVD video will be required. A copy of the video and photographs shall be provided to the CITY.

PART 2 - PRODUCTS

(Not Applicable, General Conditions may apply)

PART 3 - EXECUTION

(Not Applicable, General Conditions may apply)

END OF SECTION

**SECTION 01300
GENERAL SUBMITTALS**

PART 1 - GENERAL REQUIREMENTS

1.1 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.

1.2 SUBMITTALS

Submittals shall be clear, legible and printed or typed. Submittals not meeting these requirements will be returned for resubmittal.

1. 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.
2. Samples include both fabricated and non-fabricated physical examples of materials, products and work as complete units or as smaller portions of units of work submitted for limited visual inspection or for more detailed testing and analysis as indicated on the submittal.
3. Non-administrative miscellaneous submittals 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, operation 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.
4. All submittals shall be submitted electronically.

1.3 GENERAL SUBMITTAL REQUIREMENTS

- A. 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 different categories of submittals for the same work and for interfacing units of work so that one will not be delayed by the other. No extension of time will be allowed because of failure to properly coordinate and sequence submittals. Do not proceed with the purchase, fabrication or delivery of work related to a submittal until the submittal procedure has been successfully completed.

- B. Provide permanent marking on each submittal to identify it by project, date, CONTRACTOR, SUBCONTRACTOR, submittal name and similar information to distinguish it from other submittals. **Show CONTRACTOR's approval marking and provide space for review marking by ENGINEER and CITY.** Submittals received directly from sources other than through the CONTRACTOR's office will be returned without review. **Reviewed submittals will have CITY and ENGINEER stamps and signatures.**

PART 2 - PRODUCTS

(Not Applicable, General Conditions may apply)

PART 3 - EXECUTION

(Not Applicable, General Conditions may apply)

END OF SECTION

SECTION 01310
CONSTRUCTION SCHEDULES

PART 1 – GENERAL REQUIREMENTS

1.1 GENERAL

- A. Provide construction schedule which conforms to the requirements below, unless otherwise approved by ENGINEER.
- B. Update schedules every month unless otherwise specified or directed by ENGINEER.

1.2 CONTENT

- A. Shop Drawing submittal dates and required approval dates.
- B. Product delivery dates.
- C. Factory and field-testing dates.
- D. Dates for beginning and completing each phase of the Work by activity and by trades.

1.3 FORMAT

- A. Type: Horizontal bar chart.
- B. Sheet Size: 8 1/2-inches by 11-inches.
- C. Time Scale: Indicate first date in each work week.
- D. Organization:
 - 1. Group Shop Drawing submittals and reviews into a separate sub-schedule.
 - 2. Group product deliveries into a separate sub schedule.
 - 3. Group construction work into a separate sub schedule by activity.
 - 4. Group critical activities which dictate the rate of progress into a separate sub- schedule.
 - 5. Organize each sub-schedule by Specification Section number.

SECTION 01310
CONSTRUCTION SCHEDULES

E. Activity Designations: Show title and related Specification Section number.

1.4 SUBMITTALS

- A. Submit initial schedule at least 20 days prior to submitting first application for a progress payment but no later than 30 days after date of execution of Agreement.
- B. Submit updated schedules at progress meetings. If a schedule remains unchanged from one period to the next, submit a written notice to that effect.
- C. Make submittals to ENGINEER.
- D. Unless otherwise specified, submit two copies of each schedule. One copy will be reviewed by the ENGINEER and returned. The other copy will be retained by the ENGINEER.
- E. Attach a letter of transmittal to each submittal and include the following information in the letter:
 - 1. A listing of items which have changed since the last submittal.
 - 2. Discussion of problems causing delays, anticipated length of delays, and proposed countermeasures.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOTE USED)

END OF SECTION

SECTION 01340
SHOP DRAWING PROCEDURES

PART 1 – GENERAL REQUIREMENTS

- A. This Section sets forth the shop drawing submittal procedures. CONTRACTOR shall conform to the general requirements of Section 01300 and this section.

PART 2 – PRODUCTS

- A. 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.
- B. Shop drawings shall be submitted in electronic (PDF) format. Files shall be editable (not locked or protected) to allow for notes, stamps, signatures, etc. to be added electronically.

PART 3– EXECUTION

- A. CONTRACTOR shall review, stamp, sign and electronically submit shop drawings to the ENGINEER. CONTRACTOR will copy CITY on shop drawing correspondence. CONTRACTOR shall review shop drawings from suppliers and SUBCONTRACTORS for conformance with contract requirements and to ensure all required information is included before transmittal to ENGINEER.
- B. CONTRACTOR shall include a letter of transmittal with each shop drawing. The letter of transmittal shall include the following information:
 - 1. CONTRACTOR name and contact information
 - 2. Project name
 - 3. Contract number
 - 4. Project number
 - 5. Shop drawing number
 - 6. Type of shop drawing (i.e., water, sanitary, storm water precast)
 - 7. Description of any deviations from the requirements of the Contract documents
- C. ENGINEER will review, stamp, sign and electronically submit shop drawings to CITY.

- D.** All shop drawings shall be stamped and signed by CONTRACTOR and ENGINEER with evidence of review prior to submittal to CITY. Shop drawings not meeting this requirement will be returned without CITY review with a request for resubmittal.
- E.** A numerical filing system shall be used for shop drawings. The first shop drawing shall be “1” with following shop drawings numbered consecutively. Shop drawing resubmittals shall be identified by the original submittal number followed by the letter A (i.e., 1-A) for the first resubmittal, “B” for the second resubmittal and so on.
- F.** ENGINEER shall review shop drawings for general conformance with Contract documents. Markings or comments do not relieve the CONTRACTOR from compliance with the Contract documents. The CONTRACTOR remains responsible for shop drawing details and accuracy, confirming and correlating all quantities and dimensions, selecting fabrication processes, techniques of assembly and performing work in a safe manner.
- G.** CITY reviewed shop drawings shall be stamped, signed and electronically distributed to CONTRACTOR and ENGINEER.
- H.** A CITY reviewed shop drawing will be stamped “DB City Reviewed” or “DB City Reviewed as Noted.” Upon receipt of a shop drawing stamped as such, CONTRACTOR may order, ship or fabricate the materials provided it is in accordance with any comments noted.
- I.** If a reviewed shop drawing requires extensive corrections or corrections affecting other drawings or work, CITY may require CONTRACTOR to correct and resubmit drawings for record purposes.
- J.** If a shop drawing is unacceptable, it will be returned to CONTRACTOR and ENGINEER stamped “Revise and Resubmit” or “Rejected.” Upon return of a shop drawing marked “Revise and Resubmit,” CONTRACTOR shall make the corrections indicated and repeat the initial approval procedure. Upon return of a shop drawing marked “Rejected,” CONTRACTOR shall repeat the initial approval procedure utilizing acceptable material or equipment.
- K.** 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.

- L.** CONTRACTOR shall furnish shop drawings with complete and accurate information to receive a stamp of “DB City Reviewed” or “DB City Reviewed as Noted” within three submittals. All costs to ENGINEER and CITY involved with subsequent shop drawing reviews will be charged to CONTRACTOR at the rate of 3.0 times the direct technical labor cost by deducting the costs from payments due CONTRACTOR for work completed. In the event CONTRACTOR requests a substitution for a previously approved shop drawing, ENGINEER and CITY costs for the review and approval of the substitution will be charged to CONTRACTOR at the rate of 3.0 times the direct technical labor cost by deducting the costs from payments due CONTRACTOR for work completed unless the need for the substitution is beyond the control of CONTRACTOR.

- M.** 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 01390
COLOR AUDIO-VIDEO PRE-CONSTRUCTION RECORD

PART 1 – GENERAL

1.1 DESCRIPTION

- A. Scope of Work: Prior to commencing the Work, the CONTRACTOR shall have a continuous color audio-video digital recording taken (1) along the entire length of the Project to serve as a record of pre-construction conditions.

1.2 APPROVAL

- A. No construction shall begin prior to review and approval of the audio-video DVD recording covering the Project by the CITY. The CITY shall have the authority to reject all or any portion of the audio-video DVD recordings not conforming to specifications and order that it be redone at no additional charge.
- B. The CONTRACTOR shall reschedule unacceptable coverage within five (5) days after being notified. The CITY shall designate those areas, if any, to be omitted from or added to the audio-video coverage.
- C. The DVD recordings shall not be made more than thirty (30) days prior to construction in any area. All DVD's and written records shall become property of the CITY.

1.3 SUBMITTALS

- A. A copy of the preconstruction video shall be submitted with the first application for payment.

1.4 PROFESSIONAL VIDEOGRAPHERS

- A. The CONTRACTOR shall engage the services of a professional videographer. The color audio-video recording shall be prepared by a responsible commercial firm known to be skilled and regularly engaged in the business of pre-construction color audio- video documentation.
- B. The videographer shall furnish to the CITY, a list of all equipment to be used for the audio-video recording, i.e., manufacturer's name, model number, specifications and other pertinent information.
- C. The videographer shall furnish the CITY with additional information including the names and addresses of two references that the videographer has performed color audio-video recordings for projects of a similar nature within the last twelve (12) months.

SECTION 01390
COLOR AUDIO-VIDEO PRE-CONSTRUCTION RECORD

PART 2 – PRODUCTS

2.1 DVD's

- A. Audio-video DVD's shall be new. The DVD used for the recordings shall be professional quality 12 cm color DVD media that conforms to either DVD-R or DVD+R recording standards using high quality DVD video and audio bitrates. Reprocessed disks will not be acceptable. The recorded DVD's shall be compatible for playback with any standard DVD-R or DVD+R player.

PART 3 – EXECUTION

3.1 EQUIPMENT

- A. All equipment, accessories, materials, and labor to perform this service shall be furnished by the CONTRACTOR or professional videographer.
- B. The total audio-video recording system and the procedures employed in its use shall be such as to produce a finished product that will fulfill the technical requirements of the Project as well as those more subjective requirements of high quality audio and video production. The video portion of the recording shall reproduce bright, sharp, clear pictures with accurate colors and shall be free from distortion, or any other form of picture imperfection. The audio portion of the recording shall reproduce the commentary of the camera operator with proper volume, clarity and be free from distortion.
- C. When conventional wheeled vehicles are used, the distance from the camera lens to the ground shall not be more than ten feet (10'). In some instances, audio-video recording coverage may be required in areas not accessible by conventional wheeled vehicles. Such coverage shall be obtained by walking or special conveyance approved by the CITY.
- D. The color video camera used in the recording system shall record the color signal with a minimum horizontal resolution of 350 lines, a luminance signal to noise ratio of 45 dB, and a minimum illumination requirement of 25-foot candles.

3.2 RECORDED INFORMATION - AUDIO

- A. Each DVD shall begin with the current date, project name and be followed by the general location, i.e., viewing side and direction of progress. The audio tract shall consist of an original live recording. The recording shall contain the narrative commentary of the videographer, recorded simultaneously with its fixed elevation video record of the zone of influence of construction.

SECTION 01390
COLOR AUDIO-VIDEO PRE-CONSTRUCTION RECORD

- B. The CITY reserves the right to supplement the audio portion of the recording as deemed necessary. A representative of the CITY shall be selected to provide such narrative.

3.3 RECORDED INFORMATION - VIDEO

- A. All video recordings shall, by electronic means, display on the screen the time of day, the month, day and year of the recording. This time and date information must be continuously and simultaneously generated with the actual recording.
- B. All DVD's and their storage cases shall be identified by DVD index number, project title, and general project location. Each DVD shall have a log of that recording's contents displayed on the storage case of each DVD. The log shall describe the various segments of coverage contained on that DVD in terms of the names of streets or easements, coverage beginning and end, directions of coverage, video unit counter numbers, engineering stationing numbers and the date.

3.4 LIGHTING

- A. All recordings shall be done during times of good visibility. No recording shall be done during precipitation, mist or fog. The recording shall only be done when sufficient sunlight is present to properly illuminate the subjects of recording and to produce bright, sharp video recordings of those subjects.

3.5 SPEED OF TRAVEL

- A. The rate of speed in the general direction of travel of the vehicle used during taping shall not exceed 440 feet per minute (5 mph). Panning, zoom-in and zoom-out rates shall be sufficiently controlled to maintain a clear view of the object.

3.6 AREA OF COVERAGE

- A. Recordings shall include all surface features located within the zone of influence of construction supported by appropriate audio coverage. Such coverage shall include, but not be limited to, existing driveways, sidewalks, curbs, pavements, ditches, mailboxes, landscaping, culverts, buildings, vaults, concrete pads, fences, signs, and headwalls within the area covered.

END OF SECTION

SECTION 01400
GENERAL QUALITY CONTROL

PART 1 - GENERAL REQUIREMENTS

1.1. SUMMARY

Specific quality control requirements for the work are indicated throughout the contract documents. The requirements of this section are primarily related to the performance of the work beyond the furnishing of manufactured products. The term "Quality Control" includes, but is not necessarily limited to inspection and testing and associated requirements. This section does not specify or modify the CITY's duties relating to quality review and Contract surveillance."

1.2 TESTING LABORATORY SERVICES

Arrangements for testing laboratory services will be made by CITY. Payment for testing to show compliance with specified requirements will be paid for by CITY. The cost of retesting when materials and workmanship fail to meet specified requirements will be deducted from monies due CONTRACTOR.

1.3 LABORATORY STANDARDS

Testing laboratories shall conform to the applicable requirements of ASTM E329-77 (1983) 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.

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.

1.4 ACCESS FOR INSPECTION

CITY, ENGINEER and their authorized representatives shall be permitted free access and every reasonable facility for the inspection of all Work, materials and equipment. CITY and his authorized representatives shall also be permitted to inspect payrolls, invoices for materials and equipment. CITY and his authorized representatives shall also be permitted to inspect payrolls, invoices for materials and equipment and other relevant data and records.

SECTION 01400
GENERAL QUALITY CONTROL

Authorized representatives of Federal, State or local agencies shall be permitted access to inspect for compliance with applicable laws, regulations and permit requirements.

On projects where Federal or State agency funding is used, authorized representatives of those agencies shall be permitted to inspect all work, materials, equipment, payrolls, records of personnel, invoices for materials and equipment and other relevant data and records.

1.04 INSPECTION OF WORK AWAY FROM SITE

When work to be done away from the construction site is to be inspected on behalf of CITY during its fabrication, manufacture or testing or before shipment, CONTRACTOR shall give notice to ENGINEER of the time and place where such fabrication, manufacturing, testing or shipping is to be done. Such notice shall be in writing and delivered to ENGINEER in ample time so that the necessary arrangements for the inspection can be made.

1.2 RESPONSIBILITY FOR INSPECTIONS AND TESTS

- A. The CITY will employ and pay for the services of independent testing laboratories to perform required onsite inspections, sampling and tests to include but not be limited to soil density, asphalt density and / or stability, road base and sub grade compaction, stability, etc.
- B. No failure of test agencies, whether engaged by the CITY or CONTRACTOR, to perform adequate inspections of tests or to properly analyze or report results, shall relieve the CONTRACTOR of responsibility for the fulfillment of the requirements of the contract documents. It is recognized that the required inspection and testing program is intended to assist the CONTRACTOR, CITY and governing authorities in the determination of probable compliance with requirements for certain crucial elements of work. The program is not intended to limit the CONTRACTOR in his regular quality control program, as needed for general assurance of compliance.
- C. The CONTRACTOR is responsible for providing all data required by the CITY to ensure that the construction materials and equipment used are in compliance with the contract bid documents and subsequent changes.

SECTION 01400
GENERAL QUALITY CONTROL

1.3 QUALITY ASSURANCE

General Workmanship Standards: It is a requirement that each category of management, tradesman or installer performing the work be prequalified, to the extent of being familiar with the applicable and recognized quality standards for his category of work, and being capable of workmanship complying with those standards. All errors, omissions or ambiguities that will materially affect the work shall be brought to the CITY's attention as soon as they are discovered.

PART 2 – PRODUCTS

(Not Applicable—see General Conditions)

PART 3 - EXECUTION

3.1 SUBMITTAL

(Not Applicable—see General Conditions)

3.2 LABORATORY STANDARDS

- A. Testing laboratories shall conform to the applicable requirements of ASTM E329-77 (latest) 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, or shall be licensed Professional Engineer.

3.3 ACCESS FOR INSPECTION

CITY/ ENGINEER and their authorized representatives shall be permitted free access and every reasonable facility for the inspection of all work, materials and equipment. CITY and his authorized representatives shall also be permitted to inspect payrolls, invoices for materials and equipment. CITY and authorized representatives shall also be permitted to inspect payrolls, invoices for materials and equipment and other relevant data and records. Authorized representatives of Federal, State or local agencies shall be permitted access to inspect for compliance with applicable laws, regulations and permit requirements. On projects where Federal or State agency funding is used, authorized representatives of those agencies shall be permitted to inspect all work, materials, equipment, payrolls, records of personnel, invoices for materials and equipment and other relevant data and records.

SECTION 01400
GENERAL QUALITY CONTROL

3.4 PRODUCT DELIVERY-STORAGE HANDLING

CONTRACTOR shall handle, store and protect new and salvaged project materials and products, including fabricated components, by methods and means which will prevent damage, deterioration and losses (and resulting delays), thereby ensuring highest quality results as the performance of the work progresses. Control delivery schedules so as to minimize unnecessary long-term storage at the project site prior to installation.

3.5 PREPARATION FOR INSTALLATION

- A. Pre-Installation Conferences: Well in advance of the installation of every major unit of work which requires coordination with other work, meet at the project site with installers and representatives of manufacturers and fabricators, utility owners and 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 of scheduled meeting dates. 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, and the agreements and disagreements, along with the final plan of action. Distribute record of meeting promptly to everyone concerned, including the CITY.
- B. Do not proceed with the work if the associated pre-installation conference cannot be concluded successfully, investigate actions to resolve impediments to the performance of the work, and reconvene the conference at the earliest date feasible.
- C. Installer's Inspection of Conditions; Require the Installer of each major unit of work to inspect the substrate to receive the work, and the conditions under which the work will be performed, and to report (in writing to the CONTRACTOR and CITY) unsatisfactory conditions. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the Installer.

3.6 COORDINATION OF TEST AGENCY WORK

- A. Afford access and reasonable time in the construction sequence for CITY's inspections and tests to be performed. Cooperate with agencies and provide incidental labor and services needed for the removal and delivery of test samples, and for inspections and taking measurements. Provide patching and restoration services where test samples have been removed. Test agencies, regardless of whether engaged by the CITY or CONTRACTOR, are not authorized to change or negate the requirements of the contract

SECTION 01400
GENERAL QUALITY CONTROL

documents. Each agency shall coordinate its assigned work with the construction schedule as maintained by the CONTRACTOR, and shall perform its work promptly so as not to delay the work avoidably. observances (by agencies) having a bearing on the work shall be reported to the CITY, in the most expeditious way possible, and shall be recorded in writing by the agency. Test agency personnel shall not interfere with or assume the duties of the CONTRACTOR.

3.6 PROJECT PHOTOGRAPHS/ VIDEOS

CONTRACTOR shall make provisions at his expense to video preconstruction and post-construction site conditions (i.e., roadway, sidewalk, walls, ground surface over utilities, etc.) within and adjacent to project boundaries. 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. For some projects, such as parking lots, building structures, water facilities, wastewater facilities, etc., a combination of photographs and DVD video will be required. A copy of the video and photographs shall be provided to the CITY.

3.7 INSTALLATION QUALITY CONTROL

- A. Manufacturer's Instructions: Where installations include manufactured products, comply with the manufacturer's applicable instructions and recommendations for installation, to whatever extent these are more explicit or more stringent than applicable requirements indicated in the contract documents.
- B. Inspect each item of materials or equipment immediately prior to installation, and reject damaged and defective items.
- C. Recheck measurements and dimensions of work, as an integral step of starting each installation.
- D. Install work during conditions of temperature, humidity, exposure, forecasted weather, and status of project completion which will ensure the best possible results for each unit of work, in coordination with the entire work. Isolate each unit of work from non-compatible work, as required to prevent deterioration.

END OF SECTION

SECTION 01500
TEMPORARY UTILITY FACILITIES

PART 1 - GENERAL REQUIREMENTS

1.1 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.

1.2 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)

SECTION 01500
TEMPORARY UTILITY FACILITIES

PART 3- EXECUTION

3.3 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. Temporary provisions shall be made by the CONTRACTOR to insure that sidewalks are usable and A.D.A compliant and that all gutters, sewer inlets, drainage ditches, and irrigation ditches are properly functioning. 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

1.1 SUMMARY:

- A. 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.

1.2 TREE AND PLANT PROTECTION:

- A. 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.
- B. Materials, fuels, lubricants, chemicals, fire or equipment shall not be stored or parked within the drip line.
- C. 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.
- D. 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.
- E. 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
- F. 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.
- G. 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.

**SECTION 01541
PROTECTION OF THE WORK AND PROPERTY**

1.4 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.

1.5 PROTECTION OF UNDERGROUND AND SURFACE STRUCTURES:

- A. 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.

1.6 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.
- C. Contractor to water landscaping and sod until permanent irrigation is operational.

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

1.1 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.

1.2 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.
 - 1. 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.
 - 2. The CONTRACTOR shall submit to CITY in writing the plan of action to prevent erosion and sedimentation problems cited during the project duration

JOB CONDITIONS

Prior to placing a bid for this project, the bidder/contractor should 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.

SECTION 01568
EROSION & SEDIMENTATION CONTROL

PART 2 – PRODUCTS

(Not Applicable, General Conditions may apply)

PART 3– EXECUTION

3.1 GENERAL

- A. 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.
- B. 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.
- C. 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.
- D. 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.
- E. Hay bales shall not be used for silt barriers, unless maintained during rain events.
- F. Inlet sediment protection barrier systems shall be maintained in place until all risk of erosion has passed.
- G. Sandbagging shall consist of furnishing and placing sandbags in a configuration that prevents or contains erosion.
- H. Sediment basins shall be constructed as necessary to prevent erosion from leaving the project limits.

**SECTION 01568
EROSION & SEDIMENTATION CONTROL**

- I. Berms with appropriate sod or all-weather coverings shall be constructed as necessary to divert the flow of water from causing erosion.
- J. Temporary grassing, chemical soil stabilizers or non-erodable coverings will be required to prevent erosion from soil surfaces with an anticipated unprotected exposure to sun and wind of more than 30 days.

3.2 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. Should such preventative measures fail, CONTRACTOR shall immediately take all action as necessary to effectively remediate erosion and sedimentation damage. 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

1.1 SUMMARY

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.

1.2 SUBMITTALS

The CONTRACTOR shall submit three maintenance of traffic plan sets 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 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. 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

- A. 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.
- B. 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.
- C. 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.

SECTION 01570
TRAFFIC CONTROL

- D. 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.
- E. The CONTRACTOR shall comply with the requirements and permits of the respective right of way owners while working within their right of ways.
- F. Payment for lump sum price for maintenance of traffic includes compensation for all requirements of this section.

END OF SECTION

SECTION 01600
MATERIALS AND EQUIPMENT

PART 1 - GENERAL REQUIREMENTS

1.1 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.

1.2 TRANSPORTATION AND HANDLING

- A. Materials and equipment shall be loaded and unloaded by methods affording adequate protection against damage. Every precaution shall be taken to prevent injury to the materials or equipment during transportation and handling. Suitable power equipment will be used and the materials or equipment shall be under control at all times. Under no condition shall the materials or equipment be dropped, bumped or dragged. When a crane is used, a suitable hook or lift sling shall be used. The crane shall be so placed that all lifting is done in a vertical plane. Materials or equipment skid loaded, palletized or handled on skid ways shall not be skidded or rolled against materials or equipment already unloaded.
- B. 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

- A. The CONTRACTOR shall provide anchor bolts and weather exposed structural attachments in stainless steel 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

1.1 SUMMARY

- A. 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.

1.2 UNCOVERED STORAGE

- A. 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.

1.3 COVERED STORAGE

- A. 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.

1.4 FULLY PROTECTED STORAGE

- A. 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.

1.5 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.

SECTION 01611
STORAGE OF MATERIAL

- 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 01660
UTILITY PIPING & EQUIPMENT- GENERAL FIELD TESTING

PART 1 - GENERAL REQUIREMENTS

1.1 SUMMARY

- A. This Section work includes the performance of general field testing to demonstrate that the new equipment and piping is constructed as specified, meets the manufacturer's and CITY's operating recommendations and is clean and safe to use for its intended purpose.

1.2 REFERENCES

- A. The CITY Utilities Department Standard Details, latest edition, AWWA C 651 and ancillary applicable standards and manufacturer's recommended standards shall apply.

1.3 SUBMITTALS

- A. The CONTRACTOR shall submit to the CITY the results of field tests.

1.4 PRELIMINARY TESTING

- A. The CONTRACTOR shall make preliminary field tests of all equipment and piping as conditions permit.
- B. Purpose of testing shall be to establish that the equipment and piping was delivered to the site in good condition, properly installed, complies with operating cycle, does not overheat or overload, vibrate or operate in an unacceptable manner.
- C. CONTRACTOR shall furnish all labor, materials, instruments, fuel, Incidentals and expendables required, unless otherwise provided.
- D. CONTRACTOR shall make all changes, adjustments and replacements required to place equipment in service and provide verification testing.
- E. The CITY shall be given sufficient prior notice to prepare for and witness tests.

SECTION 01660
UTILITY PIPING & EQUIPMENT- GENERAL FIELD TESTING

1.5 JOB CONDITIONS

- A. CONTRACTOR shall review the field conditions prior to placing a bid for this project and evaluate the testing schedule that will be required. 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.
- B. Review any planned partial system disinfection with the CITY a minimum, of two weeks in advance to verify that a partial clearance or approval will be allowed.

PART 2 – PRODUCTS

(Not Applicable, General Conditions may apply)

PART 3 - EXECUTION

3.1 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. 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.
- C. 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.
- D. All disinfection water shall be de-chlorinated and flushing, pigging and miscellaneous testing water shall be free of pollutants prior to discharge to any stormwater system, wetland, waterway or water-body.
- E. Pigging will be required for all pressure piping that has a 6" or greater inside diameter. At the CITY's direction flushing without pigging will be used on gravity systems and pipes with an inside diameter less than 6".

SECTION 01660
UTILITY PIPING & EQUIPMENT- GENERAL FIELD TESTING

- F. **CONTRACTOR shall seek approval from the CITY for scheduling tests at least three (3) business days in advance of the desired timeframe.** 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.

3.2 WATER MAINS

- A. **The CONTRACTOR shall provide an AWWA C651 compliant disinfection/de-chlorination/disposal plan for CITY approval a minimum of two weeks prior to the proposed disinfection test date.** The disinfection test date shall be scheduled in coordination with the CITY Utilities Department Testing Laboratory to ensure that adequate staff is available for sampling and analysis and to determine if the test will need to occur after normal daytime working hours.
- B. Pressure tests shall be conducted with the pipe system in-place after pigging has occurred and to the extent practicable before backfilling. Pressure piping and valves shall be statically tested at 150 psig. The test pressure shall be maintained for a minimum of four (4) uninterrupted hours and be measured at the high point in the line. Hydrostatic Testing per Section 5.2 ANSI/AWWA C600-99 (Contact the CITY for a copy of same) All air shall be expelled from the line before applying the test pressure. Exposed pipe, joints and other potential leak sources shall be carefully examined for leaks.
- C. Acceptance of the piping installation shall be determined on the basis of testing allowances for the pipe material used in accordance with 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 or replacements shall be accomplished in accordance with these specifications
- D. The CITY will conduct random operational inspections of the in-line valves and water services to be certain that the total water main has been fully pressure tested.

SECTION 01660
UTILITY PIPING & EQUIPMENT- GENERAL FIELD TESTING

3.3 SANITARY, STORMWATER & RECLAIMED FORCE MAINS

- A. 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 two (2) uninterrupted hours and the test pressure shall be 100 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.
- B. 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.
- C. 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

3.4 SANITARY & STORMWATER GRAVITY MAINS

- A. Acceptance of the sewer piping installation shall be determined on the basis of the CONTRACTOR conducting a televised inspection of the mains and laterals with a copy to be provided at no additional cost the CITY. CITY personnel will also conduct a visual inspection of all structures including manholes and piping.
- B. Acceptance of the piping installation shall be determined on the basis of zero (0) infiltration or inflow being detected and no deflections or deviation from the design grade. When defects in sewer piping are discovered the CITY will advise the CONTRACTOR in writing of the most acceptable course of action which may include the total removal and replacement of the defective system installation.

END OF SECTION

SECTION 01700
SUBSTANTIAL COMPLETION OF FACILITIES

PART 1 - GENERAL REQUIREMENTS:

1.1 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

3.1 COMPLETION PROCEDURES:

General operating/Maintenance Instructions: 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. Include instructions by manufacturer's representatives where installers are not expert in the required procedures. Review maintenance manuals, record documentation, tools, spare parts and materials, lubricants, fuels, identification system, control sequences, hazards, cleaning and similar procedures and facilities. For operational equipment, demonstrate start-up shutdown, emergency operations, noise and vibration adjustments, safety, economy/efficiency adjustments, and similar operations. Review maintenance and operations in relation with applicable guarantees, warranties, agreements to maintain, bonds, and similar continuing commitment.

3.2 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:

1. Remove labels, which are not, required as permanent labels.
2. Wipe surfaces of mechanical and electrical equipment clean; remove excess lubrication and other substances.
3. Clean concrete floors in non-occupied spaces broom clean.

SECTION 01700
SUBSTANTIAL COMPLETION OF FACILITIES

4. Clean project site (yard and grounds), including landscape, development areas, of litter and foreign substances. 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.

3.3 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.

3.4 Compliancy:

- A. Comply with safety and erosion control standards and governing regulations for cleaning operations. 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. Remove waste materials from the site and dispose of them in a timely and lawful manner.
- B. 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 01710
FINAL CLEANING**

PART 1 – GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

- A. The CONTRACTOR shall execute cleaning, during progress of the work, and at the completion of the work, as required by General Conditions.
- B. Cleaning and disposal operations shall comply with codes, ordinances, regulations, and anti-pollution laws.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. The CONTRACTOR shall:
 - 1. Use only those cleaning materials which will not create hazards to health or property and which will not damage surfaces.
 - 2. Use only those cleaning materials and methods recommended by manufacturer of the surfaces recommended by manufacturer of the surface material to be cleaned.
 - 3. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 – EXECUTION

3.1 DURING CONSTRUCTION

- A. The CONTRACTOR shall:
 - 1. Execute periodic cleaning to keep the work, the site and adjacent properties free from accumulations of waste materials, rubbish and windblown debris, resulting from construction operations.

Provide on-site containers for the collection of waste materials, debris and rubbish.

- 1. Remove waste materials, debris and rubbish from the site periodically and dispose of at legal disposal areas away from the site.

**SECTION 01710
FINAL CLEANING**

3.2 FINAL CLEANING

A. The CONTRACTOR shall:

1. Employ skilled workmen for final cleaning.
2. Broom clean exterior paved surface; rake clean other surfaces of the grounds.
3. Prior to final completion, or OWNER occupancy, CONTRACTOR shall conduct an inspection of sight-exposed exterior surfaces, and all work areas, to verify that the entire work is clean.

END OF SECTION

SECTION 01720
AS-BUILTS / RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. 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.

1.2 REFERENCE

- A. 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.

1.3 AS – BUILT/RECORD DRAWINGS

- A. 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. 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:
1. 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).
 2. All radii at intersections shall be verified and dimensioned. This information is to be clearly indicated on the as-built/record drawings.
 3. 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.

SECTION 01720
AS-BUILTS / RECORD DOCUMENTS

4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. Actual materials used and elevations and dimensions of overflow weir structures and skimmers shall be noted on the as-built.
11. 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.

SECTION 01720
AS-BUILTS / RECORD DOCUMENTS

12. 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.
13. 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.
14. 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.
15. 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 clean out shall be provided, and be located by sub meter GPS with latitude, longitude and elevation data
16. 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 provided.
17. Curb cuts or metal tabs, used to mark sewer laterals, water services and water valves, shall be verified for presence and accuracy of location.
18. 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.

SECTION 01720
AS-BUILTS / RECORD DOCUMENTS

19. 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 provided.
20. 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.
21. 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.
22. 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.
23. 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.
24. 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. A Mylar set of as-built record drawings shall be provided with a digital copy in a compatible AutoCAD format.
25. 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.
26. Benchmark Datum utilizes monumentation from the North American Vertical Datum of 1929 with elevations adjusted to NGVD 1988 data. Any NAVD 1929 monument within the limits of construction is to be protected.

SECTION 01720
AS-BUILTS / RECORD DOCUMENTS

1.4 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 Record Drawings on CD and Mylar. When the As-Builts are delivered for clearance of water lines (two paper copies), they will be scheduled for chlorination. CITY will not release the drinking water bacteriological laboratory report to Volusia County Health Department until the As-built information meets CITY requirements. CONTRACTOR will have 60 days from the time the bacteriological samples are collected to submit the as-built Mylar and CD to CITY. Send the two paper copies for approval before making the Mylar. If CONTRACTOR goes past the 60 days re-chlorination will be required and pay for the bacteriological laboratory report will be 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

20" GATE VALVE
 STA. 22+33 (LT.55.0')
 LAT. = 29°12'53.009"N
 LONG. = 81°04'03.355"W
 TOP ELEV. = 27.50
 FINISH GROUND ELEV. = 30.50

Pipes Example:

20" DIP WATER MAIN
 STA. 22+00 (RT.55.0')
 LAT. = 29°12'50.009"N
 LONG. = 81°04'26.355"W
 TOP OF PIPE ELEV. = 27.50
 FINISH GROUND ELEV. = 30.50

SECTION 01720
AS-BUILTS / RECORD DOCUMENTS

(All Bench Marks used must be shown on the plans)

Bench Mark Example:

BM#13
STA. 20+33 (LT. 85.5')
3/4" Iron Rod with Plastic Cap...
N = 1,774,373.4058
E = 634,602.7566
LAT. = 29°04'53.355" W
LONG. = 81°04'53.355" W
ELEV. = 32.55

PART 2 - EXECUTION

2.1 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.

SECTION 01720
AS-BUILTS / RECORD DOCUMENTS

- C. THE CONTRACTOR SHALL PROVIDE THE UTILITIES DEPARTMENT ENGINEERING DIVISION THE FINAL AS BUILT/RECORD DRAWINGS ON CD AND MYLARS. THE AS-BUILT RECORD DRAWINGS SHALL BE PREPARED USING AUTOCAD FORMAT 2010 OR LATER. 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 MYLAR SIGNED AND SEALED AS ALLOWED BY STATE OF FLORIDA REGULATIONS. 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 MYLARS.
- D. Identify the source markers for the survey used for Record Drawings.

END OF SECTION

**SECTION 01740
UTILITY WARRANTIES**

PART 1 – GENERAL REQUIREMENTS

1.1 WARRANTY

- A. All Utility 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 CITY.
- 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 CITY.

1.2 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. Manufacturer's disclaimers and limitations on product warranties do not relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the CONTRACTOR.

1.3 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.

1.4 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.

**SECTION 01740
UTILITY WARRANTIES**

1.5 REPLACEMENT COST

PART 1 - 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 CITY has benefited from use of the Work through a portion of its anticipated useful service life.

1.6 CITY'S RECOURSE

- A. Expressed warranties made to the CITY 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 CITY can enforce such other duties, obligations, rights, or remedies.

1. Rejection of Warranties

- a. The CITY reserves the right to reject warranties and to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
- b. Where the Contract Documents require a special warranty, or similar commitment, the CITY 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.

1.7 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.
1. When a designated portion of the Work is completed and occupied or used by the CITY, 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.

SECTION 01740
UTILITY WARRANTIES

- B. 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 CITY, through the ENGINEER, for approval prior to final execution.
1. Refer to Technical Special Provisions for specific content requirements and particular requirements for submitting special warranties.
- C. Bind warranties and bonds in heavy-duty, commercial-quality, durable 3-ring, vinyl covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (115-by-280-mm) paper.
1. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product, and the name, address, and telephone number of the Installer.
 2. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project title or name, and name of the CONTRACTOR.
 3. When warranted construction requires operation and maintenance manuals, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

PART 2 – PRODUCTS

(Not Applicable, See General Conditions)

PART 3 – EXECUTION

(Not Applicable, See General Conditions)

END OF SECTION

SECTION 01760
SPARE PARTS AND MAINTENAMCE MATERIALS

PART 1 – GENERAL REQUIREMENTS

1.1 DESCRIPTION OF REQUIREMENTS

- A. The CONTRACTOR shall be responsible for submitting all required spare parts and maintenance materials prior to the completion of the project.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. The CONTRACTOR shall submit the required parts and materials that are described in the individual specification sections.

PART 3 – EXECUTION

3.1 PACKAGING

- A. All materials shall be submitted in separate containers/cartons which shall clearly indicate the specification section and the contents of the containers/cartons.

3.2 SUBMITTAL

- A. Submit to the CITY as soon as possible after receipt has been made by the CONTRACTOR. All spare parts shall be submitted to the CITY prior to the completion of the project.

END OF SECTION

DIVISION

2

SITE

WORK

SECTION 02010
SUBSURFACE INVESTIGATION

PART 1 – GENERAL REQUIREMENTS

1.1 DESCRIPTION

- A. A geotechnical stormwater evaluation 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, it is for information purposes only.

1.2 QUALITY ASSURANCE

- A. Bidders should visit the site and acquaint themselves with all existing conditions. Prior to bidding, bidders may make their own subsurface investigations to satisfy themselves as to site and subsurface conditions, but all such investigations shall be performed under time schedules and arrangements approved in advance by the CITY.

PART 2 – PRODUCTS
(Not Applicable)

PART 3 – EXECUTION
(Not Applicable)

END OF SECTION

SECTION 02115
TREE PROTECTION

PART 1 – GENERAL

1.1 TREE BARICADES

- A. A protective barrier shall be placed around all protected trees and palms prior to land preparation or construction activities within or adjacent to the work zone, including all staging and/or lay down areas. Protective barriers shall be installed as follows:
1. At or greater than the full dripline of all species of Cabbage Palms.
 2. At or greater than the full dripline or all protected native pine trees and other conifer species.
 3. At or greater than two-thirds of the dripline of all other protected species.
 4. At or greater than the full dripline of trees within a specimen tree stand.
- B. Protective barriers shall be constructed using no less than two-inch lumber for upright posts. Upright posts shall be at least four feet in length with a minimum of one foot anchored in the ground. Upright posts shall be placed at a maximum distance of eight feet apart. Horizontal rails shall be constructed using no less than one inch by four- inch lumber and shall be securely attached to the top of the upright post. The project City's representative must approve any variation from the above requirements.
- C. Whenever a protective barrier is required, it shall be in place until all construction activity is terminated. The area within the barrier limits shall remain undisturbed by any activity during construction. Native ground cover and understory vegetation existing within the barriers shall remain throughout construction. Exotic plant species may only be removed by manual labor utilizing hand tools or by other means if authorized in writing by the City's representative.
- D. Prior to the erection of any required protective barrier, all surface foreign material, trash or debris shall be removed from the area enclosed by the barrier, and after erection of the barrier no such material or litter shall be permitted to remain within the protected area. No equipment, chemicals, soil deposits or construction materials shall be placed within such protective barriers.
- E. No signs, building permits, wires, or other attachments of any kind shall be attached to any protected tree or palm.

SECTION 02115
TREE PROTECTION

- F. At all times, due care shall be taken to protect the critical root zone of trees protected by this section, and root pruning requirements shall apply to such trees.

1.2 ROOT PRUNING

- A. Conduits installed under the dripline shall be directionally drilled with a minimum depth of three (3) feet.
- B. Sidewalks under the dripline shall be four (4) inches thick.
- C. If roots are present beyond the limits of the directional drill, the following shall apply:
 - 1. Where proposed construction improvements involve excavation, sidewalk construction, conduit installation and/or impacts to the critical root zone of protected trees, the Contractor shall be required to have an International Society of Arboriculture (ISA) certified arborist perform, or directly supervise root pruning to reduce the impacts of construction. The critical root zone is equivalent to the tree's dripline. Prior to any clearing, grubbing or excavation activities, the affected roots must be severed by clean pruning cuts at the point where grubbing or excavation impacts the root system. Roots can be pruned utilizing specified root pruning equipment designed for that purpose or by hand digging a trench and pruning roots with a pruning saw, chain saw or other equipment designed for tree pruning. Root pruning by trenching equipment or excavation equipment is strictly prohibited. Roots located in the critical root zone that will be impacted by construction activities shall be pruned to a minimum depth of 18 inches below existing grade or to the depth of the proposed impact if less than 18 inches from existing grade.
 - 2. Root pruning shall only be performed by or under the direct supervision of an International Society of Arboriculture (ISA) certified arborist.
 - 3. Root pruning shall be performed using a Doscocil Root Cutting Machine or equivalent. Alternate equipment or techniques must be approved by the City's representative, prior to any work adjacent to trees to be preserved.
 - 4. Tree roots shall not be exposed to drying out. Root ends shall be covered with native soil or burlap and kept moist until final backfill or final grades has been established.

**SECTION 02115
TREE PROTECTION**

1.3 PROPER TREE PRUNING

All tree pruning and/or root pruning on existing trees to remain shall only be performed by or under the direct supervision of an International Society of Arboriculture (ISA) certified arborist. Furthermore, all tree work shall conform to the American National Standards Institute (ANSI) 2001, American National Standard for tree care operations – Tree, Shrub and other Woody Plant Maintenance – Standard practices (pruning) ANSIA-300.

- A. Proper pruning techniques for all lateral branches of protected trees are required. Flush cuts (pruning cuts that remove the branch collar) and stub cuts (cuts that leave a stub on the tree) are improper techniques. Any protected tree that has been improperly pruned will not be recognized as a tree left on the project in a healthy growing condition, and will require replacement consistent with the current City Codes and Ordinances.
- B. No protected tree shall have more than 30 percent of its foliage removed.
- C. No protected tree shall be topped, hat raked or lion-tailed. Any protected tree that has been improperly pruned will not be recognized as a tree left on the project in a healthy growing condition, and will require replacement consistent with the current City Codes and Ordinances.
- D. Tree trunks and limbs shall be protected. The use of tree spikes or other devices that damage trunk and bark tissue on protected trees shall be prohibited. Any protected tree that has been damaged in such a manner will not be recognized as a tree left on the project in a healthy growing condition, and will require replacement consistent with the current City Codes and Ordinances.

PART 2 – PRODUCTS

(Not Applicable, See General Conditions)

PART 3 – EXECUTION

(Not Applicable, See General Conditions)

END OF SECTION

SECTION 02202
EXCAVATING, BACKFILLING AND COMPACTING

PART 1 – GENERAL REQUIREMENTS

1.1 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.

1.2 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

(Not Applicable, General Conditions may apply)

PART 3– EXECUTION

3.1 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

SECTION 02202
EXCAVATING, BACKFILLING AND COMPACTING

equipment clearance, all severed root ends or cuts to branches over ½" 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.
1. Methods and materials used for replacement shall be one of the following as directed by the CITY in writing:
 - a. Suitable earth or sand compacted in the trench. Materials shall be furnished and paid for as a part of the pipe or structure bid item.
 - b. Gravel or crushed limerock compacted in the trench. Materials shall be furnished and paid for as part of the pipe or structure bid item.
 - c. 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.
- E. **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 safe-guarded 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

SECTION 02202
EXCAVATING, BACKFILLING AND COMPACTING

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.

F. 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.

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G. 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.

H. 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.

I. 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. 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.
2. 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, puddling may be used for backfill consolidation after tamping to one foot over the pipe, as specified, provided

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the method is first approved by the CITY and the density requirements are met.

3. In areas to be paved, density tests for determination of the specified compaction shall be made by a testing laboratory and spaced one in every 300 feet of trench cut. 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.

J. 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.

K. 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.

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EXCAVATING, BACKFILLING AND COMPACTING

L. 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.

M. 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 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.

N. 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 all-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.

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.

O. Cleanup: Debris and waste materials shall be lawfully removed from the site and disposed of as work progresses.

END OF SECTION

SECTION 02240
DEWATERING (DURING CONSTRUCTION)

PART 1 – GENERAL REQUIREMENTS

1.1 DESCRIPTION

- A. Scope of Work: The work to be performed under this Section shall include the design and installation of a temporary wellpoint system to dewater subsurface waters 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

1.2 QUALITY ASSURANCE

- A. Qualifications
 - 1. The temporary dewatering system shall be designed by a firm who regularly engages in the design of dewatering systems and who is fully experienced, reputable and qualified in the design of such dewatering systems. The firm shall have a successful record of operation for a minimum of five (5) years prior to bid date.
 - 2. In lieu of experience, the dewatering firm shall provide a performance and warranty bond for 1.5 times the total installed cost of the temporary dewatering system. This bond shall be executed prior to award and/or contract execution.

- 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.

1.3 SUBMITTALS

- A. Materials and Shop Drawings: Shop drawings required to establish compliance with the specifications shall be submitted in accordance with the provisions of Section 01300:

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Submittals, and Section 01340: Shop Drawing Procedures. Submittals shall include at minimum the following:

1. Design notes and drawings.
2. Descriptive literature of the temporary dewatering system.
3. Layout of all piping involved.
4. Bill of materials.

1.4 CRITERIA

- A. The wellpoint system shall be developed to the point that is capable of dewatering such that pipe can be laid and compacted satisfactorily as shown on the Drawings. Each wellpoint system shall be capable of dewatering and maintaining groundwater levels at the respective structures.
- B. Groundwater shall be lowered to be a minimum of 30 inches below the bottom of the pipeline trench.

PART 2 – PRODUCTS

2.1 GENERAL

- A. The equipment specified herein shall be standard wellpoint dewatering equipment of proven ability as designed and manufactured by firms having experience in the design and production of such equipment. The equipment furnished shall be designed, constructed and installed in accordance with the best practices and methods.
- B. The use of wrapped underdrains or “socks” for dewatering shall not be allowed unless approval is obtained by the CITY.
- 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

3.1 INSTALLATION

- A. Dewatering: The CONTRACTOR shall install a temporary wellpoint dewatering system for the removal of subsurface water encountered during construction of the proposed structures and/or piping.

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3.2 PROTECTION AND SITE CLEAN-UP

- A. At all times during the progress of the Work the CONTRACTOR shall use all reasonable precautions to prevent either tampering with the wellpoints or the entrance of foreign material.
- B. In the event that satisfactory dewatering cannot be accomplished due to subsurface conditions or where dewatering could damage existing structures, the CONTRACTOR shall obtain the CITY/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 CITY/ENGINEER.

3.3 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 CITY 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 CITY/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

1.1 SCOPE OF WORK

- A. 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.

1.2 REFERENCES

- A. 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.

1.3 SUBMITTALS

- A. 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.

1.4 JOB CONDITIONS

- A. 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 2 - PRODUCTS

2.1 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.

**SECTION 02489
GRASSING**

- 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. Dead or insect infested sod shall be replaced by the Contractor at no cost to the Owner if manifestation of damage becomes apparent within the one-month maintenance period.

PART 3 - EXECUTION

3.1 INSTALLATION AND MAINTENANCE

- A. 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. 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. Storage of sod within the street right of ways shall be kept at a minimum. 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 02492
FENCING**

PART 1 - GENERAL

1.1 SCOPE OF WORK

The work specified in this Section consists of furnishing and installing new fencing as herein specified for locations directed by the CITY'S CONTRACT ADMINISTRATOR.

1.2 SUBMITTALS

The CONTRACTOR may be required to provide proof that the materials being used meet the standards defined herein.

1.3 JOB CONDITIONS

The CONTRACTOR is hereby advised that the existing fencing that must be removed as required during the construction is disposed of properly. If directed, the CONTRACTOR shall furnish and install new like kind fence. The OWNER reserves the right to not authorize the construction of fencing.

PART 2 - PRODUCTS

2.1 FENCING

The work specified in this Section consists of furnishing and installing temporary construction fencing as shown on plan, or as directed in field. Construction and relocation of temporary construction fences shall conform to the requirements of Section 550 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, dated 2000, and Florida Department of Transportation Design Standards, Indexes No. 801 and 802, dated 2008, except as amended herein (includes concrete).

The work specified in this Section consists of furnishing and erecting temporary construction fence of the type like kind as required in accordance with these specifications and in conformity with the existing lines, grades, notes and typical sections.

END OF SECTION

**SECTION 02610
PAVING, MILLING & RESURFACING**

PART 1 - GENERAL

1.1 SUMMARY

This Section sets forth the material and work requirements necessary to construct a complete finished compacted structural support base, stabilized subgrade and flowable fill.

1.2 REFERENCES

FDOT Standard Specifications for Road and Bridge Construction latest edition, 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.

END OF SECTION

**SECTION 02611
BASE, STABILIZED SUBGRADE AND FLOWABLE FILL**

PART 1 - GENERAL

1.1 SUMMARY

This Section sets forth the material and work requirements necessary to construct a complete finished compacted structural support base, stabilized subgrade and flowable fill.

1.2 REFERENCES

The FDOT Standard Specifications for Road and Bridge Construction 2000 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.

1.3 FDOT BASE SECTIONS

Sections 200 (@ LBR 100), 204 (in the form of recycled concrete @ LBR 130) and 280 (@ LBR 100)

1.4 FDOT STABILIZED SUBGRADE SECTION

Section 160 (Type B stabilizing only)

1.5 FDOT FLOWABLE FILL SECTION

Section 121

END OF SECTION

**SECTION 02616
FITTINGS FOR PRESSURE SERVICE**

PART 1 - GENERAL REQUIREMENTS

1.1 SUMMARY

This Section sets forth the requirements for materials and methods to furnish and install buried fittings on ductile iron wastewater force mains and HDPE wastewater force mains.

1.2 REFERENCES

Utility Department Standard Details latest edition and Sections 15066 and 15101.

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

(Not Applicable, General Conditions may apply)

PART 3 - EXECUTION

3.1 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.

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- 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.

END OF SECTION

SECTION 02619

DIRECTIONAL DRILLING

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. The CONTRACTOR shall provide all necessary tools, materials and equipment to successfully complete the installation of directionally drilled piping as specified herein and shown on the drawings. The CONTRACTOR shall be responsible for the final constructed product, and for furnishing the qualified labor and supervision necessary for this method of construction.
- B. The CONTRACTOR shall furnish all items necessary to perform the horizontal directional drilling operation and construct the pipe to the lines and grade shown on the drawings. Directional boring operations shall be performed within the right-of-way and/or easements shown on the drawings.
- C. Boring must use techniques of creating or directing a borehole along a predetermined path to a specified target location. This must involve use of mechanical and hydraulic deviation equipment to change the boring course and must use instrumentation to monitor the location and orientation of the boring head assembly along a predetermined course.
- D. Drilling must be accomplished with fluid-assisted mechanical cutting. Boring fluids shall be a mixture of bentonite and water or polymers and additives. Bentonite sealants and water will be used to lubricate and seal the mini-tunnel. It is mandatory that minimum pressures and flow rates be used during drilling operation as not to fracture the sub-grade material around and or above the bore.
- E. The mobile drilling system shall utilize small diameter fluid jets to fracture and mechanical cutters to cut and excavate the soil as the head advances forward.
- F. Steering shall be accomplished by the installation of an offset section of drill stem that causes the cutterhead to turn eccentrically about its centerline when it is rotating. When steering adjustments are required, the cutterhead offset section is rotated toward the desired direction of travel and the drill stem is advanced forward without rotation.
- G. The mobile drilling system must be capable of being launched from the surface at an inclined angle and drilling a pilot hole. The pilot hole will then be enlarged with reamers as required.
- H. Take all measures necessary to protect surrounding public and private property, adjacent buildings, roads, drives, and appurtenances from damage due to

directional boring work. Protection shall include the environment including wetlands and the Halifax River. The CONTRACTOR shall be responsible for any impact or damages to surrounding facilities and businesses.

1.02 REFERENCE STANDARDS

- A. American Association of State Highway and Transportation Officials (AASHTO).
- B. Occupational Safety and Health Administration (OSHA).
- C. American Water Works Associations (AWWA).
- D. API Specifications 13A, 1993. Specification for Drilling Fluid Materials, Fifteenth Edition, Dallas, Texas. American Petroleum Institute.
- E. Horizontal Directional Drilling Good Practices Guideline, HDD Industry Consortium, 300pp, 2nd ed., 2004.

1.03 DEFINITIONS

- A. CONTRACTOR's Construction Drawings shall be defined as drawings by which the CONTRACTOR proposes to construct, operate, build, etc., the referenced item. The submission of these drawings shall be required for the sole purpose of providing the sufficient details to verify that the CONTRACTOR's work in progress is in accordance with the intent of the design.

1.04 SUBMITTALS

- A. In accordance with Division 1, CONTRACTOR shall:
 - 1. Submit for review complete construction drawings and/or complete written description identifying details of the proposed method of construction and the sequence of operations to be performed during construction, as required by the method of tunnel excavation approved. The drawings and descriptions shall be sufficiently detailed to demonstrate to the Engineer whether the proposed materials and procedures will meet the requirements of this specification. CONTRACTOR shall submit arrangement drawings and technical specifications of the machine and trailing equipment.
 - a. Complete details of the equipment, methods and procedures to be used, including but not limited to primary lining installation, timing of installation in relation to the excavation plan and sequence, proposed night work, maintaining access to residential and commercial properties, access for blocked driveways, pipe layout and staging, bulkheads, etc.

- b. Grouting techniques, including equipment, pumping procedures, pressure grout types, mixtures and plug systems.
 - c. Method of controlling line and grade of excavation.
 - d. Details of muck removal, including equipment type, number, and disposal location.
 - e. Proposed contingency plans for critical phases and areas of directional drilling.
- B. The CONTRACTOR shall prepare an installation plan which describes the following activities.
- a. Noise reduction program.
 - b. Solids control, fluids recycling, and fluids handling.
 - c. Pilot hole drilling procedure.
 - d. Reaming operation.
 - e. Pullback and insertion plan.
 - i. The installation plan shall consist of drawings showing the proposed layout of equipment and product within the allowable work space.
 - ii. The plan shall include a listing of major equipment.
 - iii. The plan shall list the resumes of the supervisory personnel to be used.
 - f. Ballasting operation.
 - i. Ballasting and buoyancy modification plan shall include the use of clean water for the ballasting media.
 - ii. Ballast water shall only be applied to pipe that is below mud line.
 - iii. Submit a fill plan listing of equipment and materials to be used for ballasting operation, including water source, water volume required, ballast pipe details, water meter details, pump if required, and any other appurtenances required to complete the operation.
 - g. Use of rollers, sidebooms, and side rollers.
 - i. Include type, size, spacing and layout of supports
 - ii. Provide appropriately sized supports for the weight of pipe required.
 - iii. Support layout shall adhere to the pipe supplier's guidelines.

- h. Use of steel conductor casing
 - i. Include size, material and joint type
 - ii. Proposed depth of installation
 - iii. Use of centralizers
 - iv. Installation depth
 - v. Limits of casing removal
 - vi. Submit casing installation plan listing equipment, materials and any other appurtenances required to complete the operations.

- i. Insertion pit and alignment.
 - i. Insertion pit dimensionality shall be designed for the insertion angle and minimum bend requirements of the product pipe.
 - 1. Support roller(s) location and elevation per recommendation of pipe supplier
 - ii. Insertion alignments shall conform to the recommendations of the pipe supplier.

- j. Coating protection (as required per pipe material being used).
- k. Internal cleaning and/or gauging.
- l. Hydrostatic test.
- m. Tracer wire installation and testing.
- n. Sheeting, shoring, and dewatering as required.
- o. All required support systems, including drilling tool suppliers, survey systems, mud cleaning, mud disposal, and other required support systems used during this operation shall be provided by the CONTRACTOR.

C. The contingency plan to be submitted shall describe the CONTRACTOR's proposed actions to the following events:

- 1. Hydrofracture Plan per Section 3.15- drilling fluids entering ground surface or waterway.
- 2. Loss of return or circulation of drilling fluids.
- 3. Pilot bore, reaming or product pullback obstruction.
- 4. Design line and grade deviations.
- 5. Loss of drill pipe or product.
- 6. Product collapse.

- D. The installation plan shall include a detailed plan and profile of the bores plotted at a scale no smaller than one inch equals 20 feet horizontal and one inch equals 5 feet vertical. The CONTRACTOR shall provide anticipated drilling rates for pilot bore, reaming, number of pipe segments and pullback procedures. These drilling rates shall be used to calculate drilling fluid volumes required for pilot hole, each reaming pass and pullback. The CONTRACTOR shall guarantee pump capacity and that the drilling fluid cleaning system is capable of sustaining the anticipated drilling rates during the pilot bore, reaming and pullback. The CONTRACTOR shall have redundant or back-up equipment of at least equivalent size available within 24 hours or less.
- E. Detailed descriptions, information, and catalog cuts for FPVC pipe, fittings, and transition fittings, and drilling fluids shall be submitted.
- G. Quality Control Methods. At least 10 days prior to the start of directional drilling, CONTRACTOR shall submit a description of his quality control methods he proposes to use in his operations to the Engineer. The submittal shall describe:
1. Procedures for controlling and checking line and grade
 2. Field forms for establishing and checking line and grade
- H. The CONTRACTOR shall submit a detailed schedule for the HDD installation at least fifteen (15) days prior to mobilization. The detailed schedule shall identify all major construction activities and durations, with beginning and completion dates shown. The detailed schedule shall be updated at least every week or more frequently, as directed by the Engineer, and shall include but not limited to the following items:
1. Pre-construction walk over and inspection.
 2. Regular Mobilization and set-up.
 3. Pilot bore
 4. Pre-reaming and reaming.
 5. Layout and thermal butt fusing of pipe.
 6. Low-pressure air-testing, per the recommendations of the pipe supplier, of pipe prior to pullback when practical or as directed by the Engineer.
 7. Final reaming and pullback of product pipe.
 8. Annulus grouting after installation (if required).
 9. Installation of temporary pig launch and receiving locations per Section 02661.
 10. Pig test to confirm that deformations of product pipe are within allowable tolerances and to clean the line.
 11. Cleanup, surface restoration, and demobilization.
- I. A Frac-out and Surface Spill Contingency Plan shall be prepared for the installation of pipelines using HDD. This plan shall be submitted to the Engineer

prior to construction. A draft Frac-out plan is provided below for use by the CONTRACTOR to update and modify as necessary to meet the requirements of this specification and permit contingencies. This plan represents a minimum standard and the CONTRACTOR is urged to provide enhanced detail to assure no violations are committed. The CONTRACTOR shall submit a letter of intent signed by an authorized representative of the CONTRACTOR, confirming that the plan will be followed. The contingency plan for inadvertent returns/hydrofracture shall address all potential pathways for release of drilling fluid, and shall address containment, cleanup, and mitigation measures as well as reporting procedures and points of contact for the CONTRACTOR, City, regulatory and permitting agencies. The Plan shall address releases to the ground surface, wetlands, and to waterways. A list of the stand-by equipment, to be located on-site during the complete boring operation, shall be provided by the CONTRACTOR to recover fluids from the waterway via truck and via boat. Floating turbidity barriers shall be part of the stand-by equipment to minimize dispersion in the event that drilling fluids reach the waterway.

- J. Safety. Procedures including, but not limited to, monitoring for gases encountered shall be submitted.
- K. Hazardous chemical list as well as all MSDS and technical data sheets.
- L. Details of mud properties proposed during all phases of the HDD including the name of the mud engineer who will periodically sample and review the mud and recommend adjustments if necessary.

1.05 DESIGN CRITERIA

A. Compatibility of Methods

- 1. The methods of excavation, lining, and groundwater control shall be compatible.

1.06 JOB CONDITIONS

A. Safety Requirements

- 1. Perform work in a manner to maximize safety and reduce exposure of men and equipment to hazardous and potentially hazardous conditions, in accordance with applicable safety standards.
- 2. Whenever there is an emergency or stoppage of work which is likely to endanger the excavation or adjacent structures, operate a full work force for 24 hours a day, including weekends and holidays, without intermission until the emergency or hazardous conditions no longer jeopardize the stability and safety of the work.

B. Air Quality

1. Conduct directional drilling operations by methods and with equipment, which will positively control dust, fumes, vapors, gases or other atmospheric impurities in accordance with applicable safety requirements.

1.07 PERMITS

- A. Obtain any and all other permits required for prosecution of the work.

1.08 PROJECT RECORD DOCUMENTS

- A. The CONTRACTOR shall provide seven (7) copies of the "Record Drawing" plans with record x-y-z coordinates within 15 days of construction of the Horizontal Directional Drilling Crossing. X-Y-Z coordinates shall be relative to the horizontal and vertical control for this project.

1.09 FIELD ENGINEERING AND SURVEYING

- A. The CONTRACTOR shall employ registered land surveyors to locate the positions of the Horizontal Directional Drilling entry and exit points, establish elevation and horizontal datum for the bore head control, and lay out the pipe assembly area.

1.10 NOISE LEVELS

- A. The CONTRACTOR shall perform work and operate equipment in a manner to minimize disturbances to the nearby residents and businesses.

1.11 ENVIRONMENTAL CONSIDERATIONS

- A. The Horizontal Directional Drilling operation is to be operated in a manner to eliminate the discharge of water, drilling mud and cuttings during the construction process. CONTRACTOR shall provide equipment and procedures to maximize the recirculation or reuse of drilling mud to minimize waste. All excavated pits used in the drilling operation shall be lined by the CONTRACTOR with heavy duty plastic sheeting with sealed joints to prevent the migration of drilling fluids and/or ground water.
- B. The CONTRACTOR shall visit the site and must be aware of the proximity of structures along and on either side of the crossings and provide the City with a drilling plan outlining procedures to prevent drilling fluid from adversely affecting these structures, including contingency plans for containing and cleaning up any spills or inadvertent returns.

- C. Waste cuttings and drilling mud shall be processed through a solids control plant comprised as a minimum of sumps, pumps, tanks, desilter/desander, centrifuges, material handlers, and haulers all in a quantity sufficient to perform the cleaning/separating operation without interference with the drilling program. The cuttings and excess drilling fluids shall be dewatered and dried by CONTRACTOR to the extent necessary for disposal in off-site landfills. Water from the dewatering process shall be treated by CONTRACTOR to meet permit requirements and disposed of locally. The cuttings and water for disposal are subject to being sampled and tested. The construction site and adjacent areas will be checked frequently for signs of unplanned leaks or seeps.
- D. Equipment (graders, shovels, etc.) and materials (such as groundsheets, haybales, booms, and absorbent pads) for cleanup and contingencies shall be provided in sufficient quantities by CONTRACTOR and maintained at the site for use in the event of inadvertent leaks, seeps or spills.

PART 2 – PRODUCTS

2.01 GENERAL

- A. Refer to Section 02733 for FPVC pipe material
- B. CONTRACTOR shall install tracer wire with directional drilled FPVC pipe for location purposes.

2.02 DIRECTIONAL BORING EQUIPMENT

- A. The directional boring equipment shall be steerable by means of an electronic tool directional system. The directional boring equipment shall have thrust, pullback, and torque capacities greater than the required values of thrust, pullback, and torque calculated and submitted by the CONTRACTOR as necessary for the installation. The gage readings for thrust that correspond to the design maximum pullback stress of the FPVC will be submitted by the CONTRACTOR. The CONTRACTOR shall submit these calculations and supplemental records from similar projects to verify the reasonableness of the calculations. Similar projects will be deemed those with diameters, depths, installed lengths, and ground conditions similar to those of the specified project. Project owner, point of contact, and telephone number and address shall be submitted for such projects.
- B. Drill pipe shall be API steel drill pipe, Range 2, Premium Class or higher, Grade S-135 in a diameter sufficient for the torque and longitudinal loads and fluid capacities required for the work. Only drill pipe inspected under API's Recommended Practice Specification API RP 7G within 30 days prior to start and certified as double white band or better shall be used.
- C. Bentonite shall be provided as specified in API Specifications 13A, Specification for Oil Well Drilling Fluids Materials for fresh water drilling fluids. Any modification to the basic drilling fluid involving additives must describe the type

of material to be used and be included in CONTRACTOR's drilling plan presented to the City. The City retains the right to sample and monitor the waste drilling mud, cuttings and water. The composition of the drill fluid is determined by the results of the geotechnical investigation executed in line with the framework of the project planned before construction.

2.03 PIPE PULL HEAD

- A. Pull head used to install the product pipe shall be designed especially for the product pipe being used. It shall conform to the recommendations of the pipe supplier.

PART 3 – EXECUTION

3.01 GENERAL

- A. The CONTRACTOR shall be responsible for his means and methods of directional drilling construction and shall ensure the safety of the work, the CONTRACTOR's employees, the public, and adjacent property, whether public or private.
- B. CONTRACTOR should anticipate that portions of the drilled excavation will be below the groundwater table.
- C. Comply with all local, state and federal laws, rules and regulations at all times to prevent pollution of the air, ground and water.

3.02 EQUIPMENT

- A. Diesel, electrical, or air-powered equipment will be acceptable, subject to applicable federal and state regulations.
- B. Any method or equipment that the CONTRACTOR can demonstrate will produce the specified results will be considered.
- C. CONTRACTOR shall employ equipment that will be capable of handling the various anticipated ground conditions. In addition, the equipment shall:
 - 1. Be capable of minimizing loss of ground ahead of and around the machine and providing satisfactory support of the excavated face at all times.
 - 2. Provide a system to indicate whether the amount of earth material removed is equivalent to that displaced by the advance of the machine such that the advance rate may be controlled accordingly.
- D. Provide adequate secondary containment for any and all portable storage tanks.
- E. Redundant directional boring equipment of equal or larger capacity, which can be mobilized to the site in less than 4 hours after the documented failure, shall be owned or retained by the CONTRACTOR.

3.03 SITE CONDITIONS

- A. Exposure of product pipe to sunlight shall be limited to one year or less.

3.04 DIRECTIONAL DRILLING DATA

- A. Daily logs of construction events and observations shall be submitted on at least the following:
 1. Location and elevation of significant soil strata boundaries and brief soil descriptions.
 2. Drill rig pressures and torsional forces, if applicable

3.05 CONTROL OF THE DRILL LINE AND GRADE

- A. Construction Control.
 1. The CONTRACTOR shall establish and be fully responsible for the accuracy of his own control for the construction of the entire project, including structures, drill line and grade.
 2. The CONTRACTOR's control points shall be established sufficiently far from the drilling operation not to be affected by construction operations.
 3. The CONTRACTOR shall maintain daily records of alignment and grade and shall submit three copies of these records to the Engineer. However, the CONTRACTOR remains fully responsible for the accuracy of his work and the correction of it, as required.
 4. The CONTRACTOR shall submit records of equipment calibrations and certifications for all equipment used for downhole wireline surveys and tracking of the drill head. Procedures for operating the downhole wireline survey tools shall be described, including measures to verify the accuracy of the equipment readings. The CONTRACTOR shall submit a drawing with the surveyed location of the surface wire grid system for the "Paratrack" or approved alternate equipment tracking system. The CONTRACTOR shall submit methods for surveying the coordinates of the surface wire grid system both on shore and across or under the waterway.

3.06 MONITORING

- A. The position of the drill string shall be monitored by the CONTRACTOR with the downhole survey instruments. CONTRACTOR shall compute the position in the X, Y and Z axis relative to an above ground undisturbed reference from downhole survey data a minimum of once per drill pipe length, 15 feet or 15 minutes whichever is more frequent. Serious deviations between the design positions which may affect the installation of the pipeline shall be documented and

immediately brought to the attention of the City for discussion and/or approval. The profile and alignment designed on the construction drawings for the bores define the minimum depth and radius of curvature. The CONTRACTOR shall furnish a "Directional Bore Log" for each bore completed.

- B. Between the entry or exit point the CONTRACTOR shall provide and use a steering system employing magnetic steering with wireline tracking and shall be supplemented by a "Paratrack" or equivalent tracking system installed that completely encompasses the area between the entry and exit point including subaqueous areas. A gyro steering tool such as Drillguide GST by SlimDril International or equivalent may also be used as an alternative to magnetic steering. The exit point shall fall within a 3-foot radius of the planned exit point and must be within right-of-way.

3.07 EXISTING UTILITIES

- A. The drawings show existing buried utilities that are believed to be near the directional drill alignment. There is no guarantee that these utilities are located as shown or that other utilities may be present. It will be the CONTRACTOR's responsibility to locate all nearby utilities or other subsurface obstructions that may interfere with the work. The CONTRACTOR shall notify the One-Call Service for locating all utilities within the alignment. The CONTRACTOR shall also be responsible for locating all tie-backs and anchors that may interfere with the work and provide a solution to overcome the interference.

3.08 TOLERANCES

- A. Pipe installed by the directional drilled method must be located in plan as shown on the Drawings, and must be no shallower than shown on the Drawings unless otherwise approved. The CONTRACTOR shall plot the actual horizontal and vertical alignment of the pilot bore at intervals not exceeding 15 feet. This "as-built" plan and profile shall be up-dated as the pilot bore is advanced. The CONTRACTOR will at all times provide and maintain instrumentation that will accurately locate the pilot hole and measure drilling fluid flow and pressure. The CONTRACTOR shall grant the Engineer access to all data and readout pertaining to the position of the bore head and the fluid pressures and flows. When requested, the CONTRACTOR shall provide explanations of this position monitoring and steering equipment. The CONTRACTOR shall employ experienced personnel to operate the directional drilling equipment and, in particular, the position monitoring and steering equipment. No information pertaining to the position or inclination of the pilot bores shall be withheld from the Engineer.
- B. The exit point shall be located as shown with an overall alignment tolerance of 3-feet left/right and within right-of-way. The alignment of each pilot bore must be approved by the Engineer before pipe can be pulled. If the pilot bore fails to conform to the above tolerances, the Engineer may, at his option, require a new pilot boring to be made at the CONTRACTOR's expense.

3.09 REAM AND PULL BACK

- A. Upon approval of the pilot hole location by the Engineer, the hole opening or enlarging phase of the installation shall begin. The borehole diameter shall be increased to accommodate the pullback operation of the FPVC pipe. The type of hole opener or back reamer to be utilized in this phase shall be determined by the types of subsurface soil conditions that have been encountered during the pilot hole drilling operation. The reamer type and the number and size of such reaming operations shall be at the CONTRACTOR's discretion with the final hole opening diameter being a minimum of 12 inches larger and a maximum of 50 percent larger than the outside diameter of the product pipe to be installed in the borehole. The hole shall be swabbed prior to pipe pullback. The forces during the final reaming pass and swab pass shall be monitored and recorded to verify the suitability of borehole preparation. Data monitored shall include rod number, time to pull each rod, pull back force and peak torque a minimum of once per rod. This data shall be submitted to the Engineer for review. The Contractor shall demonstrate that the hole is adequately prepared as a prerequisite for commencing pullback operations.
- B. Pulling Loads: The maximum pull (axial tension force) exerted on the FPVC pipelines shall be measured continuously and limited to the maximum allowed by the pipe supplier.
- C. Torsion and Stresses: A swivel shall be used to connect the pipeline to the drill pipe to prevent torsional stresses from occurring in the pipe.
- D. Pipeline Support: The pipelines shall be adequately supported during installation so as to prevent overstressing or buckling in accordance with Specification 02773 – Fusible Polyvinylchloride pipe (FPVCP) or the pipe supplier's recommendations. The CONTRACTOR shall provide adequate support/rollers along the stringing area to support the required length of the FPVCP. Support/rollers spacing, roller size/type and number of rollers shall be submitted for review during Horizontal Directional Drill installation and for protection of the FPVCP pipe from damage. Rollers shall be comprised of a non-abrasive material arranged in a manner to provide support to the bottom and bottom quarter points of the pipeline allowing for free movement of the pipeline during pullback.
- E. All prepared pipe that is being used for installation shall be adequately supported off the ground along the entire length to avoid damaging of the material during pullback due to ground surface conditions. Surface cuts or scratches greater than or equal to 10% of the wall thickness are not acceptable.
- F. Damaged Pipe: If at any time when the product is pulled back and any exposed areas have a greater than allowable "gouging" or visible marring of the pipe per Specification 02773 – Fusible Polyvinylchloride Pipe, the damaged section shall be removed and replaced by the CONTRACTOR at his expense.

- G. Each length of pipe shall be inspected and cleaned as necessary to be free of debris immediately prior to joining.
- H. The CONTRACTOR shall at all times handle the FPVCP pipe in a manner that does not overstress the pipe in accordance with Specification 02773 – Fusible Polyvinylchloride Pipe or the manufacturer’s recommendations. Vertical and horizontal curves shall be limited so that wall stresses do not exceed 50% of yield stress for flexural bending of the FPVCP. If the pipe is buckled or otherwise damaged, the damaged section shall be removed and replaced by the CONTRACTOR at his expense. The CONTRACTOR shall take appropriate steps during pullback to ensure that the FPVC pipe and tracer wires will be installed without damage.
- I. After the carrier pipe is completely pulled through the tunnel, a sufficient relaxation period as recommended by the specified pipe supplier shall be provided prior to the final pipe tie-in.

3.10 HANDLING, DRILLING FLUIDS AND CUTTINGS

- A. During the drilling, reaming, or pullback operations, the CONTRACTOR shall make adequate provisions for handling the drilling fluids, or cuttings at the entry and exit pits. These fluids must not be discharged into the waterway. When the CONTRACTOR’s provisions for storage of the fluids or cuttings on site are exceeded, these materials shall be hauled away to a suitable legal disposal site. The CONTRACTOR shall conduct his directional drilling operation in such a manner that drilling fluids are not forced through the subbottom into the waterway. After completion of the directional drilling work, the entry and exit pit locations and all other areas affected by the directional drilling operation shall be restored to original conditions. The CONTRACTOR shall comply with all permit provisions.
- B. Pits and berms constructed at the entry or exit point area shall be so constructed to completely contain the drill fluid and prevent its escape to the waterway.
- C. As part of the installation plan herein specified, the CONTRACTOR shall submit a drilling fluid plan which details types of drilling fluids, cleaning and recycling equipment, estimated flow rates, pit and berm construction and procedures for minimizing drilling fluid escape.

3.11 LAYOUT OF ENTRY AND EXIT PIT AREAS

- A. The CONTRACTOR shall provide access around the construction staging area identified on the plans to facilitate pedestrian and vehicular access within the property.
- B. The CONTRACTOR shall coordinate with the City and inform property owners of vehicular access to the property driveways during drilling activities. The CONTRACTOR shall submit a staging plan for FPVC stringing prior to pipe pull

back for approval by the Engineer in accordance with Section 1.4. The pipe fusing and stringing shall be coordinated with the completing of the bore to limit the amount of time the FPVC pipe string will impact the residents.

- C. The pipes shall be laid and assembled in a manner that does not obstruct adjacent roads or City or Public activities adjacent to the layout areas except as shown otherwise or approved in the staging and layout plan.
- D. The CONTRACTOR shall erect temporary fencing around the entry and at the exit used for construction and pipe staging areas.

3.13 COMPLETION OF DIRECTIONAL DRILLING

- A. In the event of failure to install the directional drilled pipeline, the CONTRACTOR shall retain possession of any CONTRACTOR supplied FPVCP and remove it from the site. The bore holes shall be completely filled with grout to prevent future problems. If the pipe cannot be removed from the bore it shall be cut off 5 feet below ground and the pipe and annular space shall be grouted.

3.14 DISPOSAL OF EXCESS MATERIAL

- A. Where such effort is necessary, cost for groundwater control during the course of the drilling work shall be included in the unit contract price for the work.
- B. Dewatering required during the course of the project to lower water table, to remove standing water, surface drainage seepage, or to protect ongoing work against rising waters or floods shall be considered incidental to the work being performed.
- C. CONTRACTOR shall remove all puddled bentonite (drillers mud), all soil cuttings (suitable and unsuitable material) and dispose of off-site in a legal manner, at no additional cost to the City.

3.15 HYDROFRACTURE MONITORING & EMERGENCY MANAGEMENT PLAN BEST MANAGEMENT PRACTICES (BMPs)

An emergency response shall be rendered by the CONTRACTOR in the event of a bentonite spill (hydrofracture) during directional drill operations utilized during the construction. The CONTRACTOR is responsible for modifying and adding detail to this draft plan, as necessary for the subject project, and submitting it for review and approval prior to work in accordance with Division 1.

The draft bentonite spill management plan is outlined and characterized as follows. The CONTRACTOR will implement all Best Management Practices (BMPs) described in this section to minimize the potential for adverse environmental impacts during the HDD Process. BMPs for erosion control within the staging areas will be implemented and properly maintained at all times during construction of the upland entrance/exit shafts and drilling operations to prevent siltation and turbid discharges in excess of State water

quality standards in accordance with Florida Statutes 62-302 F.A.C. Methods will include, but are not limited to, the use of staked hay bales, staked filter cloth, sodding, seeding and mulching as appropriate; staged construction; and the installation and maintenance of turbidity screens around the immediate project site when adjacent or near to open water.

The site supervisor/foreman will be familiar with all aspects of the drilling activity including the contents of the Hydrofracture Monitoring Plan. The draft bentonite spill management plan is outlined and characterized as follows. The CONTRACTOR will implement all Best Management Practices (BMPs) described in this section to minimize the potential for adverse environmental impacts during the HDD Process. BMPs for erosion control within the staging areas will be implemented and properly maintained at all times during construction of the upland entrance/exit shafts and drilling operations to prevent siltation and turbid discharges in excess of State water quality standards in accordance with Florida Statutes 62-302 F.A.C. Methods will include, but are not limited to, the use of staked hay bales, staked filter cloth, sodding, seeding and mulching as appropriate; staged construction; and the installation and maintenance of turbidity screens around the immediate project site when adjacent or near to open water.

All entry and exit pit locations have been located in uplands. The area contains asphalt roadway with overhead wires. All construction staging will also occur in these upland areas. Exit and entry pits are also a part of the work areas and will be enclosed by silt fences and other sediment and erosion control as appropriate. A spill kit will be onsite and used if a hydrofracture occurs. A vacuum truck will be readily available within fifteen minutes of the job site during all drilling operations at the work site. Containment materials (hay bales, silt fencing, sand bags, hydrofracture spill kits, etc.) will be staged onsite at locations where they are readily available and easily mobilized for immediate use in the event of an accidental release of drilling mud (hydrofracture). The site supervisor/foreman will have the authority to stop work and commit the resources (personnel and equipment) necessary to implement this plan. The site supervisor/foreman will assure that a copy of this plan is available onsite and accessible to all construction personnel.

EQUIPMENT

The site supervisor/foreman will ensure that:

1. All equipment and vehicles are being checked and maintained daily to prevent leaks of hazardous materials.
2. Spill kits and spill containment materials are available onsite at all times and that the equipment is in good working order.
3. Equipment required to contain and clean up a hydrofracture release on land or under water, including vacuum devices and hoses, will either be available at the work site or readily available at an offsite location.
4. Silt fences, absorbent pads and plastic sheeting for placement beneath motorized equipment will be used to protect local waterways or wetlands from engine fluids.

5. Water containing mud, silt, bentonite, or pollutants from equipment washing or other activities will not be allowed to enter adjacent wetlands. The bentonite used in the drilling process will either be disposed of at an approved disposal facility or recycled in an approved manner. Other construction materials and wastes will be recycled, or disposed of, as appropriate.
6. A vacuum truck will be available at a location from which it can be mobilized to the job site within fifteen minutes.

TRAINING

Prior to the start of construction, the site supervisor/foreman will ensure that crew members receive training in the following:

1. The provisions of the Hydrofracture Monitoring & Emergency Management Plan, equipment maintenance and site-specific permit and monitoring requirements.
2. Inspection procedures for release prevention and containment equipment and materials.
3. Contactor/crew member responsibilities in the event of a release.
4. Operation of release prevention and control equipment and the location of the release control materials, as necessary and appropriate.
5. Protocols for communication with agency representatives who might be onsite during the clean-up effort.
6. Environmental regulations and requirements (see below)

HYDROFRACTURE MONITORING

The following procedures will be followed each day, prior to the start of work. The Hydrofracture Monitoring & Emergency Management Plan will be available onsite throughout construction. The site supervisor/foreman will ensure that a job briefing meeting is held at the start of each day of drilling to review the appropriate procedures to be followed in case of a hydrofracture. Questions will be answered and clarification given on any point about which the drilling crew or other project staff has concerns.

PRESSURE MONITORING

Drilling pressures will be closely and continuously monitored to determine the possibility that a hydrofracture is occurring.

Once the drill rig is in place and the drilling begins, the drill operator will stop work whenever the pressure in the drill rig drops or there is a lack of returns in the entrance pit. At this time the site supervisor/foreman will be informed of the potential hydrofracture. The site supervisor/foreman and the drill rig operator(s) will identify the likely location of the hydrofracture. The location of the hydrofracture will be recorded and notes made on the location and measures taken to address the concern. The following subsections will be adhered to when addressing a hydrofracture situation.

Drilling operations will be halted by the drill rig operators immediately upon detection of a drop in drilling pressure or other evidence of a hydrofracture. The clean-up of all spills will begin immediately. The CITY will be notified immediately of any spills and will be consulted regarding clean-up procedures. A spill kit will be onsite and be used if a hydrofracture occurs. A vacuum truck, hose(s), and containment materials such as straw bales, will also be onsite or offsite prior to and during all operations. The information will include the location of the hydrofracture and an estimate of the volume of drilling fluids accidentally released. See the 'Notification' Section below, for all agency points of contact, as well as all information to be included in written reports.

The site supervisor/foreman will be immediately notified. In the event of a hydrofracture, the site supervisor/ foreman will conduct an evaluation of the situation and direct recommended actions in accordance with the following sections.

HYDROFRACTURE CONTINGENCY PLAN

1. Field Response to Hydrofracture

The response of the field crew to a hydrofracture release will be immediate and in accordance with procedures identified in this Plan. All appropriate emergency actions that pose additional threats to sensitive resources will be taken, as follows:

- A. Drilling will stop immediately.
- B. At the discretion of the site supervisor/foreman the drill pipe will be pulled back to relieve pressure on hydrofracture.
- C. The site supervisor/foreman will be notified to ensure that management and the safety department is notified, adequate response actions are taken and notifications are made.
- D. The site supervisor/foreman will evaluate the situation and recommend the type and level of response warranted, including the level of notification required.
- E. All agency contacts will be notified as identified in the 'Notification' Section below.
- F. If the hydrofracture is minor, easily contained, has not reached the surface and is not threatening sensitive resources, the properties of the drilling fluids may be changed and/or a loss of circulation material (LCM) previously approved by the Florida Department of Environmental Protection (FDEP) may be used to eliminate or reduce the severity of the hydrofracture. If a hydrofracture has reached the surface, any material contaminated with bentonite will be removed by hand, contained and properly disposed of, as required by law. A dike or berm may be

constructed around the hydrofracture to entrap released drilling fluid, if necessary. Clean sand will be placed and the area returned to pre-project contours.

- G. If a hydrofracture occurs on land, reaches the surface and becomes widespread, the site supervisor/foreman will authorize a readily-accessible vacuum truck or other equipment stored offsite to be mobilized. The vacuum truck or other equipment may be positioned at either end of the line of the drill so that the hydrofracture can be reached by crews on foot, or may be located so that contaminated soils can be vacuumed up or removed.
- H. If possible, a turbidity curtain will be installed surrounding the hydrofracture location. When the area of the hydrofracture is determined, a hydraulic vacuum hose is deployed down to the hydrofracture site within 24 hours. The pump will be turned on and start vacuuming up the bentonite into Dirt Bags. Once a 10-yard bag is filled, it will be placed onto a cargo net, lift bags will be attached to the net, and the filter bag will be brought over to land where it will be picked up and placed it into a waiting dump truck or roll-off container. All clean-up material will be properly disposed of in an approved upland disposal site in accordance with FDEP's solid waste rules and criteria.
- I. Once the site is cleaned up, the area will be photographed and all appropriate agencies will be notified for further instruction, if needed. All of the parties will meet onsite and determine if a chemical plug will be used to attempt to close the hydrofracture or if the bore should be tripped out of the ground and a deeper bore path should be used.

2. Use of Viscosity-Increasing or Leak Stopping Compounds

If the hydrofracture is minor, easily contained, has not reached the surface and is not threatening sensitive resources, the properties, such as viscosity, of the drilling fluids may be changed and/or a leak stopping compound (LCM) will be used to mitigate the hydrofracture. The viscosity of the drilling fluid can be increased by the use of a viscosifier such as Max Gel, which has been approved by FDEP for use as an HDD additive. Max Gel promotes the stability of the bore hole and can more than double the viscosity of the drilling fluid to help control lost circulation. One of the leak-stopping compounds proposed for use in this project, if necessary, is Magma Fiber, which has also been previously approved by FDEP for use as an additive for HDD. Magma Fiber acts to plug voids and fractures encountered along the borehole by forming an interlocking matrix. It has been formulated to migrate to areas of high permeability to seal off voids and control the loss of drilling fluids.

NOTIFICATIONS

In the event a hydrofracture reaches a nearby surface water, the CONTRACTOR will immediately notify the appropriate resource agencies. Agencies to be notified include the U.S. Army Corps of Engineers and FDEP. All agency notifications will occur within 24 hours and proper written documentation will be submitted to agencies within 10 business days. The following information will be provided in these written reports:

1. Name and telephone number of person reporting
2. Location of the release
3. Date and time of the release
4. Type, quantity, and estimated size of drilling fluid release
5. How the release occurred
6. The type of activity that was occurring around the area of the hydrofracture
7. Description of any sensitive areas and their location in relation to the hydrofracture
8. Description of the methods used to clean up or secure the site
9. Listing of the current permits obtained for the project

CONTINGENCY MITIGATION PLAN

Following the clean-up of a hydrofracture, the CONTRACTOR will conduct an evaluation of the situation and coordinate with all environmental regulatory agencies to develop a mitigation plan to fully offset any impacts to protected benthic and/or aquatic resources. A functional assessment (UMAM) that describes how proposed mitigation would offset both direct and indirect impacts to impacted resources will be prepared as part of a remediation/mitigation plan. The mitigation plan will also include restoration actions and biological monitoring with clearly-defined tasks, schedules and performance standards.

RESPONSE CLOSE-OUT PROCEDURES

When the release has been contained and cleaned up, response closeout activities will be conducted at the direction of the site supervisor/foreman and will include the following:

1. The recovered drilling fluid will either be recycled or hauled to an approved facility for disposal. No recovered drilling fluids will be discharged into adjacent surface waters, or any other water/drainage structure.

2. All hydrofracture excavation and clean-up sites will be returned to pre-project contours using clean fill for upland areas, as necessary.
3. All containment measures (fiber rolls, straw bales, etc.) will be removed, unless otherwise specified by the site supervisor/foreman.

CONSTRUCTION RE-START

For small releases not requiring external notification, drilling may continue if 100-percent containment is achieved through the use of a FDEP-approved leak-stopping compound or redirection of the drill path and the clean-up crew remains at the hydrofracture location throughout the construction period.

END OF SECTION

**SECTION 02641
PRESSURE PIPE CLEANING**

PART 1 - GENERAL REQUIREMENTS

1.1 SUMMARY

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.

1.2 REFERENCES

The City Utilities Department Standard Details, latest edition and Section 01660.

1.3 SUBMITTALS

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.

1.4 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.

1.5 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

3.1 PREPARATION:

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

**SECTION 02641
PRESSURE PIPE CLEANING**

to the additional water resource demand on the CITY system. At CITY discretion night time operations may be specified.

3.2 PIGGING & FLUSHING:

- 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 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 02650
DISINFECTION OF WATER MAINS**

PART 1 - GENERAL

1.1 SCOPE OF WORK

This Section sets forth the specific requirements including materials and methods to disinfect potable water mains, document the process and acquire a State of Florida Department of Environmental Protection/Volusia County Health Department clearance for use.

1.2 REFERENCES

Section 01660, Section 02641, CITY Utilities Department Standard Details, latest edition, AWWA C 651 and ancillary applicable standards shall apply.

PART 2 – PRODUCTS

(Not Applicable, General Conditions may apply)

PART 3 - EXECUTION

3.1 PROCESS

- A. Upon completion of new pipe line, it shall be cleaned and pressure tested in accordance with the latest edition of the CITY Utilities Department Standard Details and Sections 01660 and 02641
- B. Provide two paper copies of the water as-built/Record Drawings and one CD of the AutoCAD file for approval ***before*** disinfection/chlorination can be scheduled.
- C. Once the as-built/ Record Drawings have been approved disinfection/chlorination can be scheduled and will be coordinated through the Utility Inspector and Utilities Department Laboratory. CITY staff will operate all existing system valves.
- D. The CONTRACTOR is responsible for the installation of sampling points and onsite work associated with testing and sampling points.

**SECTION 02650
DISINFECTION OF WATER MAINS**

- E. The CITY Utilities Department staff will collect samples only for water mains within the right of way or utility easements that will be public. Private water systems will not be sampled by CITY staff.
- F. Once the samples have passed in accordance with State of Florida Department of Environmental Protection/Volusia County Health Department regulations, a PDF copy of the bacteriological test report will be sent to the Engineer of Record. The Engineer of Record will then fill out a water main clearance application for the CITY's Utilities Department to file for water main clearance.
- G. Furnish set of the Water As-Builts/ Record Drawings to the City's Utilities Department Per Section 01720.
- H. Upon clearance by Volusia County Health Department, the water line may be placed in service by CITY.

3.2 JOB CONDITIONS

- A. The CONTRACTOR shall review the field conditions prior to placing a bid for this project and evaluate the testing schedule that will be required. To the maximum extent possible the CONTRACTOR shall schedule field tests as soon as possible to allow segments of the system to be cleared for use and to allow pavement replacement to begin.
- B. The CONTRACTOR shall submit a chlorination/disinfection testing plan to the CITY for each segment of the new system to be tested prior to moving on to another section. The plan shall be coordinated with and found to be acceptable by the CITY a minimum of two (2) weeks in advance of the requested testing time to verify that a partial clearance or approval will be allowed.

3.3 FINAL FIELD TESTING

The CONTRACTOR shall notify the CITY at least three (3) business days in advance of beginning tests. In the case of water main pigging operations, chlorination operations and tests the CONTRACTOR must secure advance approval from the Utilities Department Water System Manager. (NOTE: BECAUSE WATER MAIN FLUSHING INCREASES WATER DEMANDS THE WATER MANAGER MAY NOT ALLOW TESTS TO BE PERFORMED DURING NORMAL WORKING HOURS.)

**SECTION 02650
DISINFECTION OF WATER MAINS**

3.4 FIELD TEST STANDARDS FOR WATER MAINS

- A. The CONTRACTOR shall take adequate regulatory agency compliant precautions to prevent water pollution from the discharge of pigging and disinfection water offsite. Appropriate treatment shall be provided onsite. **A plan for de-chlorinating the super-chlorinated disinfection water shall be provided to the CITY for review and acceptance a minimum of seven (7) days prior to disinfection taking place.** The super-chlorinated disinfection water shall not be allowed to remain in the water main for more than seventy-two (72) hours. If the super-chlorinated disinfection water remains in residence for more than seventy-two (72) hours the water main system will be considered damaged and will require replacement and re-testing by the CONTRACTOR at no additional cost to the CITY.
- B. Pressure tests shall be conducted after laying and to the extent practicable on the entire system before backfilling. **Pressure piping and valves shall be statically tested at 150 psig. The test pressure shall be maintained for an uninterrupted minimum time period of four (4) hours and be measured at the high point in the line. Hydrostatic Testing per Section 5.2 ANSI/AWWA C600-99** All air shall be expelled from the line before applying the test pressure. Exposed pipe, joints and other potential leak sources shall be carefully examined for leaks.
- C. 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 or replacements shall be accomplished in accordance with these specifications
- D. The CITY will conduct random reviews of the in line valves and water services to be certain that the total water main has been fully pressure tested.

END OF SECTION

SECTION 02810
LANDSCAPE IRRIGATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK:

- A. Extent of underground irrigation system is shown on drawings. The drawings are schematic. All lines and heads are approximate in location. Contractor to provide 100% coverage with approximately 50% overlap. All control valves to be placed in areas not interfering with walk paths, ballfield areas, or play areas.
- B. Refer to Division-16 sections for electrical service for automatic control system.

1.3 QUALITY ASSURANCE:

- A. Manufacturer Qualifications: Provide underground irrigation system as a complete unit produced by acceptable manufacturers, including but not limited to heads, valves, controls, backflow preventers, fittings, pipe, meter, and accessories as shown and/or needed. All equipment shall be of the type and marked "For Re-use Water (Gray Water) Only". All visible equipment shall also be visually marked.

1.4 SUBMITTALS:

- A. Product Data: Submit manufacturer's technical data and installation instructions for underground sprinkler system.
- B. Shop Drawings: Submit shop drawings for underground irrigation system including plan layout and details illustrating location and type of heads, valves, piping circuits, controls, and accessories.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS:

- A. Manufacturer: Subject to compliance with requirements, provide products of the following:
 - 1. Hunter Industries, San Marcos, California

SECTION 02810
LANDSCAPE IRRIGATION

2.2 MATERIALS:

A. General:

1. Provide only new materials, without flaws or defects and of the highest quality of their specified class and kind.
2. Provide pipe continuously and permanently marked with manufacturer's name and trademark, size schedule and type of pipe, working pressure at 73 degrees F., and National Sanitation Foundation (NSF) approval
3. All sleeving under driveways, walks, and parking area to be schedule 40 PVC pipe.
4. All main lines and lateral lines to the valve to be schedule 40 PVC pipe.
5. All other lateral lines after the valve to be class 1120/160 p.s.i. PVC test pipe.
6. All 4" to 8" diameter purple DR-18 PVC to have restrained joints.

B. Plastic pipe, fittings, and connections:

1. Polyvinylchloride pipe: ASTM D2241, rigid, unplasticized PVC, extruded from virgin parent material. Provide pipe homogeneous throughout and free from visible cracks, holes, foreign materials, blisters, wrinkles, and dents.
2. PVC pipe fittings: ASTM D2241 schedule 40 PVC model fittings suitable for solvent weld, slip joint ring tite seal, or screwed connections. Fittings made of other materials are not permitted.
 - a. Size slip fitting socket taper to permit a dry unsoftened pipe end to be inserted no more than halfway into the socket. Saddle and cross fittings are not permitted.
 - b. Use male adapters for plastic to metal connections. Hand tighten male adapters plus one turn with a strap wrench.

C. Meter and Main Line Sizing:

1. With a minimum of two (2) zones operating at the same time, and given the P.S.I. and G.P.M. for each zone as shown on the irrigation plans, the irrigation contractor shall be responsible for sizing the meter and main line.

D. Meter shall be marked "For Re-use, Gray Water Only".

2.3 ACCESSORIES:

A. Fill: Clean soil free of stones larger than 2" in diameter, foreign matter, organic material, and debris.

B. Suitable excavated materials removed to accommodate the irrigation system work may be used as fill material subject to the Landscape Architect's review and acceptance.

C. Low voltage wire connectors: Socket seal type wire connectors and waterproof sealer.

D. Valve access boxes: Tapered enclosure of rigid plastic material comprised of fibrous components chemically inert and unaffected by moisture corrosion and temperature changes. Provide lid of same material, purple in color, with proper identification of zones and application, showing purple, "Re-use Gray Water".

SECTION 02810
LANDSCAPE IRRIGATION

- E. Valves: Manufacturer's standard, of type and size as needed for project, such as "Rainbird" electric remote control valve with bleed screw and flow control - plastic 26v volt in a "meter" valve box. Other valves to be brass gate valves in "meter" valve box. Valves shall be of the type and marked "For Re-use, Gray Water".
- F. Automatic Circuit Valves: Globe valves operated by low-power solenoid, normally closed, manual flow adjustment as stated above.
- G. Backflow Preventer: Manufacturer's standard, to suit sprinkler system and local/state codes.
- H. Sprinkler Heads: Manufacturer's standard unit designed to provide uniform coverage over entire area of spray shown on drawings at available water pressure and shall be of a type for use of and marked visually "For Re-use Water Only".

2.4 INSTALLATION:

- A. Unless otherwise indicated, comply with requirements of Uniform Plumbing Code.
- B. Excavating and backfilling:
 - 1. All excavation shall be considered unclassified excavation and include all materials encountered.
 - 2. Excavate trenches of sufficient depth and width to permit proper handling and installation of pipe and fittings.
 - 3. All sleeves under asphalt pavement shall be buried a minimum of 24" below pavement surface. All sleeves under sidewalk shall be buried a minimum of 6"-12" below walk surface. Sand shall be used as a filler around all sleeves.
 - 4. Excavate to depths and widths required above and to provide 12" minimum depth of earth fill or sand bedding for piping when rock or other unsuitable bearing material is encountered.
 - 5. Fill to match adjacent grade elevations with approved earth full material. Place and compact fill in layers not greater than 6" depth.
 - a. Provide approved earth fill or sand to a point 4" above the top of pipe.
 - b. Fill to within 6" of final grade with approved excavated or borrow fill materials free of lumps or rocks larger than 3" in any dimension.
 - 6. Install irrigation lines as stated above and with a minimum cover of 12" based on finished grades.
- C. Plastic Pipe: All pipe shall be marked physically and visually "For Re-use, Gray Water".
- D. Install plastic pipe in accordance with manufacturer's installation instructions. Provide for thermal expansion and contraction.

SECTION 02810
LANDSCAPE IRRIGATION

- E. Saw cut plastic pipe. Use a square-in-sawing vice, to ensure a square cut. Remove burrs and shavings at cut ends prior to installation.
- F. Make plastic to plastic joints with solvent weld joints or slip seal joints. Use only solvent recommended by the pipe manufacturer. Install plastic pipe fittings in accordance with pipe manufacturer's instructions. Contractor shall make arrangements with pipe manufacturer for all necessary field assistance.
- G. Make plastic to metal joints with plastic male adapters.
- H. Make solvent weld joints in accordance with manufacturer's recommendations.
- I. Allow joints to set at least 24 hours before pressure is applied to the system.
- J. Sprinklers, fittings, valves and accessories:
 - 1. Install fittings, valves, sprinkler heads, risers and accessories in accordance with manufacturer's instructions, except as otherwise indicated. All equipment shall be physically and visibly marked "For Re-use Water" (Gray Water).
 - 2. Provide pop-up spray heads with an adjustable double swing joint riser assembled by the use of at least 3 standard 90 degree ells. Fabricate double swing joint risers of schedule 80 PVC nipples and schedule 40 PVC elbows.
 - 3. Locate sprinkler heads to assure proper coverage of indicated areas. Do not exceed sprinkler head spacing distances required. Keep placement away from walks and other pedestrian circulation areas.
 - 4. Install risers for spray heads in shrub or flower bed areas and planters of sufficient height to prevent interruption of the stream by plant material, but not next to walks.
 - a. Provide risers of 1/2" SDR 21 class 200 PVC pipe with schedule 40 PVC male adapters.
 - b. Set risers in row with top level and in-line.
 - 5. Install gear driven sprinklers with an adjustable double swing joint riser of at least 3 standard 90 degree elbows. Fabricate double swing joint risers of schedule 80 PVC nipples and schedule 40 PVC elbows. The horizontal nipple connected directly into the side of the lateral line shall be a minimum of 3" long. All other nipples of the swing joint riser shall be of length as required for proper installation of the sprinkler head.
 - 6. Install backflow prevention valve, meter, suction line, fittings, and accessories as required to complete the system. All equipment shall be "For Re-use Water".
 - 7. Install in-ground control valves in a valve access box as required.
 - 8. Install valve access boxes on a suitable base of gravel to provide a level foundation at proper grade and to provide drainage of the access box.
 - 9. Seal threaded connections on pressure side of control valves with teflon tape or approved plastic joint type compound.

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K. Control wiring:

1. All low voltage wiring shall be #14 direct burial wire.
2. Install electric control cable in the piping trenches and in PVC conduit wherever possible. Place wire in trench adjacent to pipe. Install wire with slack to allow for thermal expansion and contraction. Expansion joints in wire may be provided at 200-foot intervals by making 5-6 turns of the wire around a piece of 1/2" pipe instead of slack. Where necessary to run wire in a separate trench, provide a minimum cover of 12".
3. Provide sufficient slack at site connections at remote control valves in control boxes, and at all wire splices to allow raising the valve bonnet or splice to the surface without disconnecting the wire when repair is required.
4. Connect each remote control valve to one station of a controller except as otherwise indicated. Mark valve number on valve and/or box cover.
5. Connect remote control valves to a common ground wire system independent of all other controllers.
6. Connect remote control valves to common ground wire system.
7. Make wire connections to remote control electric valves and splices of wire in the field, using wire connectors and sealing cement in accordance with manufacturer's recommendations.
8. Provide tight joints to prevent leakage of water and corrosion build-up on the joint.

L. Flushing, Testing, and Adjustment:

1. After sprinkler piping and risers are installed and before sprinkler heads are installed, open control valves and flush out the system with full head of water. Pressure test through all pipes @ 100 psi-4 hours.
2. Perform system testing upon completion of each section. Make necessary repairs and retest repaired sections as required.
3. Adjust sprinklers after installation for proper and adequate distribution of the water over the coverage pattern. Adjust for the proper arc of coverage.
4. Tighten nozzles on spray type sprinklers after installation. Adjust sprinkler adjusting screw on lateral line or circuit as required for proper radius. Interchange nozzle patterns as directed by the Landscape Architect, to give best arc of coverage.
5. Adjust all electric remote control valve pressure regulators and flow control stems for system balance and optimum performance.
6. Test and demonstrate the controller by operating appropriate day, hours, and station selection features as required to automatically start and shut down irrigation cycles to accommodate plant requirements and weather conditions.

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2.5 ACCEPTANCE:

- A. Test and demonstrate to the Landscape Architect and Owner the satisfactory operation of the system, free of leaks.
- B. Instruct the Owner's designated personnel in the operation of the system, including adjustment of sprinklers, controller(s), valves, and controls.
- C. Upon acceptance, the Owner will assume operation of the system.

2.6 CLEANING:

- A. Perform cleaning during installation of the work and upon completion of the work. Remove from site all excess materials, soil, debris, and equipment. Repair damage resulting from irrigation system installation.

2.7 AUTOMATIC CONTROL SYSTEM:

- A. General: Furnish low voltage system manufactured expressly for control of automatic circuit valves of underground irrigation systems. Provide unit of capacity to suit number of circuits as indicated, plus 2 extra not used.
- B. Interior Control Enclosure: Manufacturer's standard with locking cover, complying with NFPA 70.
- C. Transformer: To convert building service voltage to control voltage of 24 volts.
- D. Circuit Control: Each circuit variable from approximately 5 to 60 minutes. Include switch for manual or automatic operation of each circuit.
- E. Timing Device: Adjustable, 24-hour and 7 or 14 day clocks to operate any time of day and skip any day in a 7 or 14 day period.
- F. Allow for manual or semi-automatic operation without disturbing preset automatic operation.

2.8 RECORD DRAWINGS:

- A. Contractor shall furnish owner with an "as-built" set of drawings showing all changes made during actual installation of the system.

**SECTION 02810
LANDSCAPE IRRIGATION**

PART 3 - EXECUTION

3.1 INSPECTION:

- A. Examine final grades and installation conditions. Do not start irrigation system work until unsatisfactory conditions are corrected.

3.2 SYSTEM DESIGN:

- A. Design Pressures: As needed per drawings, at connection to building system and at last head in circuit.
- B. Location of Heads: Design location is schematical. Make adjustments as necessary to avoid plantings and other obstructions.
- C. Place steel sleeves PVC conduit as required for installation of piping and control wire prior to paving and pouring concrete pads or walks.

3.3 MINIMUM WATER COVERAGE:

- A. Turf areas, 95%.
- B. Other planting areas, 85%.
- C. Layout may be modified, if necessary, to obtain coverage, to suit manufacturers' standard heads. Do not decrease number of heads indicated unless otherwise acceptable to Engineer. Notify Landscape Architect of any changes prior to any work beginning.
- D. After completion of grading, seeding or sodding, and rolling of grass areas, carefully adjust lawn sprinkler heads so they will be flush with or not more than 1/2" above finish grade.

END OF SECTION

DIVISION

3

CONCRETE

SECTION 03250
CONCRETE JOINTS AND JOINT ACCESSORIES

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required and install accessories for concrete joints as shown on the Drawings and as specified herein.

1.2 SUBMITTALS

- A. Submit, in accordance with Section 01300, shop drawings and product data. Submittals shall include the following:
1. Standard Waterstops: Product data including catalogue cut, technical data, storage requirements, splicing methods and conformity to ASTM standards.
 2. Special Waterstops: Product data including catalogue cut, technical data, location of use, storage requirements, splicing methods, installation instructions and conformity to ASTM standards.
 3. Premolded joint fillers: Product data including catalogue cut, technical data, storage requirements, installation requirements, location of use and conformity to ASTM standards.
 4. Bond breaker: Product data including catalogue cut, technical data, storage requirements, installation requirements, location of use and conformity to ASTM standards.
 5. Compressible joint filler: Product data including catalogue cut, technical data, storage requirements, installation requirements, location of use and conformity to ASTM standards.
 6. Bonding agents: Product data including catalogue cut, technical data, storage requirements, product life, application requirements and conformity to ASTM standards.
- B. Certifications
1. Certification that all materials used within the joint system are compatible with each other.

SECTION 03250
CONCRETE JOINTS AND JOINT ACCESSORIES

1.3 REFERENCE STANDARDS

- A. American Society for Testing and Materials (ASTM)
 - 1. ASTM A675 - Standard Specification for Steel Bars, Carbon, Hot-Wrought, Special Quality, Mechanical Properties.
 - 2. ASTM C881 - Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete.
 - 3. ASTM C1059 - Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete.
 - 4. ASTM D1751 - Standard Specification for Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction. (Nonextruding and Resilient Bituminous Types).
 - 5. ASTM D1752 - Standard Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
- B. U.S. Army Corps of Engineers (CRD).
 - 1. CRD C572 - Specification for Polyvinylchloride Waterstops.
- C. Federal Specifications
 - 1. FS SS-S-210A - Sealing Compound for Expansion Joints.
- D. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply unless otherwise noted.

PART 2 PRODUCTS

2.1 GENERAL

- A. The use of manufacturer's name and model or catalog number is for the purpose of establishing the standard of quality and general configuration desired.

SECTION 03250
CONCRETE JOINTS AND JOINT ACCESSORIES

- B. All materials used together in a given joint (bond breakers, backer rods, joint fillers, sealants, etc) shall be compatible with one another. Coordinate selection of suppliers and products to ensure compatibility. Under no circumstances shall asphaltic or bituminous bond breakers or joint fillers be used in joints receiving sealant.
- C. All chemical sealant type waterstops shall be products specifically manufactured for purpose for which they will be used and the products shall have been successfully similar structures for more than five years.

2.02 MATERIALS

- A. Waterstops
 - 1. Type A Expansive Waterstops - Non-expansion joint. The waterstops shall be preformed hydrophilic rubber seals. Installation adhesives used with the expansive waterstops shall be as recommended by the waterstop manufacturer. The waterstop shall be Adeka Ultraseal as distributed by Mitsubishi of Houston, TX; Hydrotite by Greenstreak Plastic Products, St. Louis, MO, or equal.
- B. Premolded Joint Filler
 - 1. Premolded joint filler - structures. Self-expanding cork, premolded joint filler shall conform to ASTM D1752, Type III. The thickness shall be 3/4-in unless shown otherwise on the Drawings.
 - 2. Premolded joint filler - sidewalk and roadway concrete pavements or where fiber joint filler is specifically noted on the Drawings. The joint filler shall be asphalt-impregnated fiber board conforming to ASTM D1751. Thickness shall be 3/4-in unless otherwise shown on the Drawings. Fiber joint filler shall be sealed with a joint sealant where recommended by the joint filler manufacturer.
- C. Bond Breaker
 - 1. Bond breaker tape shall be an adhesive-backed glazed butyl or polyethylene tape which will satisfactorily adhere to the premolded joint filler or concrete surface as required. The tape shall be the same width as the joint unless otherwise noted.

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CONCRETE JOINTS AND JOINT ACCESSORIES

2. Except where tape is specifically called for on the drawings, bond breaker for concrete shall be either bond breaker tape or a non-staining type bond prevention coating such as Williams Tilt-up Compound by Williams Distributors Inc.; Silcoseal 2000F, by SCA Construction Supply Division, Superior Concrete Accessories or equal.

D. Bonding Agent

1. Epoxy bonding agent shall be a two-component, solvent-free, moisture insensitive, epoxy resin material conforming to ASTM C881 (2002), Type V. The bonding agent shall be Sikadur 32 Hi-Mod by Sika Corporation of Lyndhurst, N.J.; Concessive Liquid (LPL) by Master Builders of Cleveland, OH or equal.
2. Latex bonding agent shall be a non-reemulsifiable acrylic-polymer latex conforming to ASTM C1059, Type II.

E. Compressible Joint Filler

1. The joint filler shall be a non-extruded watertight strip material use to fill expansion joints between structures. The material shall be capable of being compressed at least 40 percent for 70 hours at 68 degrees F and subsequently recovering at least 20 percent of its original thickness in the first 1/2 hour after unloading. Compressible Joint filler shall be Evazote 380 E.S.P, by E-Poxy Industries, Inc., Ravena, NY or equal.

PART 3 EXECUTION

3.1 INSTALLATION

A. Waterstops

1. Install standard waterstops for all joints where waterstops are indicated on the Drawings, unless specifically noted otherwise. Waterstops shall be continuous around all corners and intersections so that a continuous seal is provided. Splices shall be made by welding.
2. Install special waterstops at joints where specifically noted on the Drawings. Waterstops shall be continuous around all corners and intersections so that a continuous seal is provided.

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CONCRETE JOINTS AND JOINT ACCESSORIES

3. Each piece of the waterstop shall be of maximum practicable length to provide a minimum number of connections or splices. Connections and splices shall conform to the manufacturer's recommendations and as specified herein.
4. Waterstops shall be terminated 3-in below the exposed top of walls.
5. Prepare the joint surfaces, install primers or adhesives, and install Type A expansive waterstops in accordance with the manufacturer's instructions.

B. Construction Joints

1. Make construction joints only at locations shown on the Drawings or as approved by the Engineer. Any additional or relocation of construction joints proposed by the Contractor, must be submitted to the Engineer for written approval.
2. Additional or relocated joints should be located where they least impair strength of the member. In general, locate joints within the middle third of spans of slabs, beams and girders. However, if a beam intersects a girder at the joint, offset the joint a distance equal to twice the width of the member being connected. Locate joints in walls and columns at the underside of floors, slabs, beams or girders and at tops of footings or floor slabs. Do not locate joints between beams, girders, column capitals, or drop panels and the slabs above them. Do not locate joints between brackets or haunches and walls or columns supporting them.
3. All joints shall be perpendicular to main reinforcement. Continue reinforcing steel through the joint as indicated on the Drawings. When joints in beams are allowed, provide a shear key and inclined dowels as approved by the Engineer.
4. Provide sealant grooves for joint sealant where indicated on the Drawings.
5. At all construction joints and at concrete joints designated on the Drawings to be "roughened", uniformly roughen the surface of the concrete to a full amplitude (distance between high and low points or side to side) of approximately 1/4-in to expose a fresh face. Thoroughly clean joint surfaces of loose or weakened materials by waterblasting or sandblasting and prepare for bonding. At least 2 hours before and again

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CONCRETE JOINTS AND JOINT ACCESSORIES

shortly before the new concrete is deposited, the joints and adjacent concrete surfaces to at least 12-in past the joint shall be saturated with water. After glistening water disappears, horizontal construction joints shall be given a thorough coating of neat cement slurry mixed to the consistency of very heavy paste. The surfaces shall receive a coating at least 1/8-in thick, well scrubbed-in by means of stiff bristle brushes whenever possible. [Horizontal wall joints with no access to the earlier concrete placement surface shall have the roughened surface thoroughly coated with a neat, cement slurry of pouring consistency.] New concrete shall be deposited before the neat cement dries.

6. In lieu of the above method for bonding plastic concrete to hardened concrete, the following optional method may be used. Concrete must be allowed to set a minimum of 28 days. Use an epoxy bonding agent applied to roughened and cleaned surfaces of set concrete in strict accordance with manufacturer's recommendations [and as specified in Section 03740 with respect to preparation of surfaces and applications of bonding agent].
7. Provide waterstops in all wall and slab construction joints in liquid containment structures and at other locations shown on the Drawings.
8. Keyways shall not be used in construction joints unless specifically shown on the Drawings or approved by the Engineer.

C. Control Joints

1. Provide sealant grooves, sealants and waterstops at control joints in slabs on grade or walls as detailed. Provide waterstops at all wall and slab control joints in water containment structures and at other locations shown on the Drawings.
2. Control joints at slabs on grade 6-in thick or less and without waterstops, may be sawed, if approved by the Engineer. If control joint grooves are sawed, properly time the saw cutting with the time of the concrete set. Start cutting as soon as concrete has hardened sufficiently to prevent aggregates from being dislodged by the saw. Complete cutting before shrinkage stresses have developed sufficiently to induce cracking. No reinforcing shall be cut during saw cutting.

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3. Extend every other bar of reinforcing steel through control joints or as indicated on the Drawings. Where specifically noted on the Drawings, coat the concrete surface with a bond breaker prior to placing new concrete against it. Avoid coating reinforcement or waterstops with bond breaker at these locations.

END OF SECTION

**SECTION 03300
CONCRETE**

PART 1 - GENERAL REQUIREMENTS

1.1 SUMMARY:

A. This Section sets forth the requirements for general concrete, grout and related work required to furnish and install cast-in-place reinforced and unreinforced concrete unless otherwise noted in the plans and specifications.

B. GENERAL:

1. Reinforced concrete shall be steel reinforced and includes:
 - a. Precast manholes, inlets and junction boxes.
 - b. Other minor load bearing reinforced concrete structures in non-aggressive conditions.
 - c. Sidewalk, curb & gutter, encasements, etc.
2. Steel Reinforcement: Includes bars, ties, welded wire and supports.

1.2 QUALITY ASSURANCE

A SOURCE QUALITY CONTROL:

1. Concrete Testing Service:
 - a. CONTRACTOR shall employ acceptable testing laboratory to perform materials evaluation, testing and design of concrete mixes.
 - b. 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.
3. Quality Control: Perform sampling and testing during concrete placement as follows:
 - a. Sampling: ASTM C 172.
 - b. Slump: ASTM C 143, one test for each load at point of discharge Air Content: ASTM C 31, one for each set of compressive strength specimens.
 - c. Compressive Strength: ASTM C 39, one set for each 50 cubic yards or fraction thereof of concrete; 1 specimen tested at 7 days, 1 specimens tested at 28 days.
4. Report test results in writing to CITY and or Engineer of Record on same day tests are made.

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B. 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.
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. 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

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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 insure that segregation of the coarse and fine aggregate particles does not occur and the grading is not affected.

PART 2 – PRODUCTS

2.1 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:
 - a. Crushed stone, processed from natural rock or stone.

**SECTION 03300
CONCRETE**

- b. 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:
 - l. Proportion and design mixes to result in concrete slump:
 - a. Not more than 4 inches prior to adding high range water-reducer.
 - b. Not more than 8 inches at point of placement after adding high range water-reducer.

2.2 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.

2.3 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.

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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.

2.4 RELATED MATERIALS

- A. Water
- B. stops:
 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.
 - a. Manufacturer: 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.
 - a. 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.
 3. Or Equal.

**SECTION 03300
CONCRETE**

2.5 GROUT

- A. Non-shrink, Nonmetallic Grout:
 - 1. Prepackaged nonstaining cementitious grout requiring only the addition of water at the job site.
 - 2. Product and Manufacturer: Provide one of the following:
 - a. Euco N-S, as manufactured by the Euclid Chemical Company.
 - b. Masterflo 713, as manufactured by Masters Buildings Company.
 - c. 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:
 - a. Euco High Strength Grout, as manufactured by the Euclid Chemical Company, Cleveland, Ohio.
 - b. Sikadur 42, Grout-Pak, as manufactured by the Sika Chemical Company, Lyndhurst, NJ
 - c. Or equal.

- C. Ordinary Cement-Sand Grout:
 - 1. Except where otherwise specified use 1 part cement to 3 parts sand complying with the following:
 - a. Cement: ASTM C 150, Type II.
 - b. Sand: ASTM C 33.

PART 3 - EXECUTION

3.1 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.

SECTION 03300
CONCRETE

3.2 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.

3.3 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. Remove loose rust and mill scale, earth, and other materials which reduce or destroy bond with concrete.
- C. 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.

**SECTION 03300
CONCRETE**

- D. 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.
- E. Splices:
 - 1. 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.
- F. 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.
- G. Joints: Provide construction, isolation, and control joints as indicated or required. Locate construction joints so as to not impair the strength and appearance of the structure. Place isolation and control joints in slabs on ground to stabilize differential settlement and random cracking.
 - 1. In mats and slabs on grade locate joints at a spacing of approximately 40 feet. Place concrete in a strip pattern.
- H. 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.

3.4 CONCRETE AND PLACEMENT

- A. Proportioning and Design of Mix:
 - 1. Minimum compressive strength at 28 days: 3,500 psi.
 - 2. Maximum water cement ration by weight: 0.45.
 - 3. Minimum cement content: 564 pounds per cubic yard.
 - 4. Normal weight: 145 pounds per cubic foot.

**SECTION 03300
CONCRETE**

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.
- C. Job-Site Mixing: Use drum type batch machine mixer, mixing not less than 1 ½ minutes for one cubic yard or smaller capacity. Increase mixing time at least 15 seconds for each additional cubic yard or fraction thereof.
- D. Ready-Mixed Concrete: ASTM C 94.
- E. 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.
- F. 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.
- G. 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.

3.5 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.

SECTION 03300
CONCRETE

- 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.

3.6 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.

3.7 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. Check and level the surface plane to a tolerance not exceeding $\frac{1}{4}$ 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. Uniformly slope surfaces to drains. Immediately after leveling, refloat the surface to a uniform, smooth granular texture.
 - 2. 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.

**SECTION 03300
CONCRETE**

3.8 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 3.4 above.

END OF SECTION

DIVISION

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METALS

SECTION 05500
METAL FABRICATIONS

PART 1 – GENERAL

1.1 DESCRIPTION OF WORK

A. Provide metal fabrications as shown and specified. The work includes:

1. Mid-block arches

B. Related Work:

1. Section 09905: Metal Painting

1.2 QUALITY ASSURANCE

A. Materials and methods of construction shall comply with the following standards:

1. American Welding Society, (AWS)
2. American Society for Testing and Materials (ASTM)
3. National Association of Architectural Metal Manufacturers (NAAMM)

B. Detail, fabrication and erection shall comply with the Aluminum Association standards.

C. Welding: Comply with American Welding Society (AWS) Structural Welding Code. Qualify welding procedures, welders, and welding operations in accordance with AWS Standard Qualification Procedure.

1.3 SUBMITTALS

A. Submit shop drawings. Include details of sections and connections. Show anchorage and accessory items.

B. Submit samples of selected aluminum finish for approval by the Engineer, prior to commencement of work.

1.4 DELIVERY, STORAGE AND HANDLING

A. Deliver, store, and handle metal fabrication items to prevent damage and deterioration.

B. Stack assembled items off the ground.

SECTION 05500
METAL FABRICATIONS

1.5 PROJECT CONDITIONS

- A. Coordinate metal fabrications work with trades furnishing items which will attach to members for proper positioning.
- B. No work shall be fabricated until shop drawings for the work have been reviewed and accepted.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Metal surfaces: Provide all materials smooth and free of pitting, seam marks, roller marks, Rolled trade names and roughness.
- B. Aluminum tubing: ASTM B483, alloy grade 3003814.
- C. Fasters: Provide stainless steel fasteners for exterior use. Select fasteners for the type, Grade, and class required.
 - 1. Bolt and nuts: Regular hexagon head type, ASTM A307, Grade A.
 - 2. Lag bolts: Square head type, FS FF-B561.
 - 3. Machine screws: Steel, FS FF-S-92.
- D. Stainless Steel Cable Assembly
 - 1. Material:
 - a. Cable: 1/4" diameter (6MM) conventional 1 x 19 strand.
 - b. 3/8" Stud Swage Terminal w/washer and nut and cap nut.
 - c. All-natural stainless steel – AISI Type #316.
 - d. 3/8" stud to stud turnbuckle – 5 3/4" long, chrome plated bronze w/stainless steel lock nuts.
 - 2. Source: Materials as supplied by approved Suppliers.
- E. Paint:
 - 1. Refer to Section 09905 – Metal Painting

SECTION 05500
METAL FABRICATIONS

2.2 FABRICATION

- A. Fabricate work in accordance with reviewed and accepted shop drawings and referenced standards.
- B. Weld shop connections, except as otherwise indicated. Grind all exposed welds smooth.
- C. Provide joints and intersections tight fitting and securely fastened.
- D. Provide metal fabrications work square, plumb, straight, and within allowable tolerances.
- E. Drill or punch all holes required for attachment of other work and bolted connections. Burned holes not acceptable.
- F. Bend or form pipe and other members to continuous and true curves, with joints neatly fastened and assembled.
- G. Provide for anchorage of type required, coordinated with supporting structure. Fabricate and space anchoring devices to provide adequate support for intended use.
- H. Pre-assemble items in shop to greatest extent possible to minimize field fitting and assembly.

PART 3 EXECUTION

3.1 INSPECTION

- A. Inspect substrates, field measure, and verify installation conditions.

3.2 PREPARATION

- A. Provide sleeves and anchorages which are built into concrete or masonry construction. Furnish templates, setting drawings, and instructions for installation of sleeves and anchorages.

3.3 INSTALLATION

- A. Assemble and install metal fabrications in accordance with final shop drawings.

SECTION 05500
METAL FABRICATIONS

- B. Perform fitting required for installation. Set the work accurately in location, alignment, and Elevation free of rack, measured from established lines and levels. Assembled metal fabrications shall be firm, rigid, free of rattle, and provide maximum protection against tampering and vandalism.

- C. Fit exposed connections accurately together to provide flush, tight hairline joints.

3.4 METAL FABRICATIONS SCHEDULE

A. Aluminum Pipe, Grills, Insets, Medallions:

- 1. Grade 3003814 aluminum alloy.
- 2. Finish: best suited to receive paint, provide technical data to Engineer for approval of type of finish prior to commencement of fabrication. Provide shop applied lacryl 2030 primer and activator if recommended by the paint manufacturer. Provide shop applied paint per Section 09905.

B. Miscellaneous Framing, Supports, Tabs:

- 1. Provide as indicated on the plans, or as required by the approved shop drawings.
- 2. Provide all miscellaneous framing, supports, and tabs shop primed and painted.

3.5 CLEANING

- A. Perform cleaning during installation of the work and upon completion of the work. Remove from site all excess materials, debris, and equipment. Repair damage resulting from metal fabrications work.

- B. Upon completion of installation, clean factory finished metal fabrication items in accordance with manufacturer's cleaning instructions. Exercise care to avoid damage.

END OF SECTION

DIVISION

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METAL

PAINTING

**SECTION 09905
METAL PAINTING**

PART 1 – GENERAL

1.1 DESCRIPTION OF WORK

A. Paint and finish surfaces as shown and specified. The work includes:

1. Painting aluminum mid-block arches.
2. Painting signage.
3. Painting kiosk.

1.2 QUALITY ASSURANCE

A. Application: Performed only by skilled, experienced painters.

B. Provide lead free prime and finish coatings. All top coatings shall be mold and mildew resistant.

1.3 SUBMITTALS

A. Submit a complete schedule identifying manufacturer and specific brand name or number of products proposed for finishing specified surfaces. Provide percent of solids by volume content data for all materials.

B. Provide the Owner, at completion of work, 1 gallon of paint of each color selected. Provide original unopened, labeled containers with color sample and a list of product use.

1.4 PROJECT CONDITIONS

A. A complete schedule of finishes and colors is indicated on the plans.

B. Comply with paint material manufacturer's surface preparation and material application instructions.

PART 2 – PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Paint manufacturer: Sherwin Williams

B. Other manufacturers are acceptable, provided the color, quality of paint and primer is equal to that specified on the plans.

SECTION 09905
METAL PAINTING

- C. Provide base primer system and intermediate coat products compatible with finish coat and as recommended by manufacturer of finish coat.

2.2 PAINT AND PRIMER

- A. Primer: Apply Lacryl 2030 primer and activator only if recommended by the manufacturer in addition to a 5-stage chrome phosphate metal treatment (or equivalent).
- B. Paint: Sherwin Williams Permaclad 2400 High Solids Polyester Baking Enamel, or equal, if acceptable to the landscape architect. Colors as called for on the plans.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Examine substrate surfaces and installation conditions. Do not start painting work until unsatisfactory conditions are corrected.

3.2 PREPARATION

- A. Clean all metal surfaces of dust, grease, scale, dirt, fingerprints, oxidation products, or any other extraneous material.

3.3 APPLICATION

- A. All painting shall be completed off site, in an approved paint shop.
- B. A minimum of 5 stage chrome phosphate metal treatment or equivalent is required for proper adhesion and optimum coating performance properties.
- C. Paint may be applied by conventional or electrostatic bell, disc or handgun spray methods. Reduce paint up to 10% with High Flash Naphtha-100 Flash or xylene. Heat may be used, up to 120 degrees, to reduce viscosity and for ease of application.
- D. Finished surfaces shall be uniform in finish and color and free of sagging, corduroy, and other imperfections.
- E. Edges of paint or finish adjoining other materials or colors shall be sharp and clean without overlapping.

**SECTION 09905
METAL PAINTING**

- F. Provide minimum 1.8 mil. (wet) thickness of total paint application.
- G. Bake finished painted surfaces at temperature and duration as recommended by the manufacturer.

END OF SECTION

DIVISION

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MECHANICAL

**SECTION 15049
TRACER WIRE AND ALARMING TAPE**

PART 1 - GENERAL REQUIREMENTS

1.1 SUMMARY

Furnish and install identification tape over the centerline of all buried potable water lines, wastewater force mains, gravity sewer and waste water effluent mains.

1.2 SUBMITTALS

Submit manufacture's descriptive literature, illustrations, specifications and other pertinent data.

PART 2 – PRODUCTS

2.1 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.

**SECTION 15049
TRACER WIRE AND ALARMING TAPE**

- 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.

2.2 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 4mils. 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. Tape background colors and imprints shall be as follows:

Background	Color
Imprint	
“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

- D. 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.

**SECTION 15049
TRACER WIRE AND ALARMING TAPE**

PART 3-EXECUTION

3.1 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.

3.2 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

1.1 SUMMARY

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.

1.2 REFERENCES

Specification Sections 02641 Pressure Pipe Cleaning and Pigging, 15056 Ductile Iron Pipe - Water, Section 01650 Disinfection, Section 01660 Piping & Equipment-General Field Testing and the CITY's Utility Department Standard Details, latest edition shall apply

1.3 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.

1.4 JOB CONDITIONS:

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)

SECTION 15050
WATER PIPING – GENERAL

PART 3– EXECUTION

3.1 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 insure 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. 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.
- C. 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.
- D. 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.

SECTION 15050
WATER PIPING – GENERAL

E. 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 LOCATOR TAPE

A three-inch-wide metalized locator tape shall be used for all water mains installed. The locator tape shall be non-corrodible consisting of polyethylene film with a metallic film and shall be continuously marked to identify the referenced pipeline. The tape shall be installed eighteen inches directly above the pipe. In addition, a #12 gage insulated UF single strand copper locator's wire shall be wound continuously around all non-metallic pipe from valve box to valve box terminated in accordance with the CITY's standard detail.

3.3 WATER AND SEWER MAIN CROSSING:

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.

3.4 HIGHWAY CROSSINGS:

All pipe under State and County highways shall be installed in accordance with the requirements of the permits issued by the respective agency.

3.5 CUT-IN CONNECTION TO EXISTING MAINS:

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.

SECTION 15050
WATER PIPING – GENERAL

3.6 OTHER UTILITIES:

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.

3.7 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.

SECTION 15050
WATER PIPING – GENERAL

3.8 WATER MAIN TESTS:

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. 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. 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.

3.9 PRESSURE TESTS:

Tests shall be made on the completed pipe installation. The test pressure shall be 150 psi maintained for a period of not less than three (3) 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 15051
SANITARY PIPING GENERAL**

PART 1 - GENERAL REQUIREMENTS

1.1 SUMMARY:

- A. This Section sets forth the requirements for materials and performing all operations required to install the various piping systems for gravity sewers and force mains, as specified and shown on the drawings.

1.2 SUBMITTALS:

- A. Shop drawings shall be submitted for all pipe, valves, boxes, harnessing, manholes, frames and cover. The manufacturer shall furnish a certification that the pipe fittings and lining furnished under the Contract comply with all applicable provisions of the ANSI standards. Foundry reports may be required to confirm the quality of the products delivered.
- 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.

1.3. JOB CONDITIONS:

- A. All bidders shall evaluate the job site conditions before submitting a bid.

PART 2 – PRODUCTS

(Not Applicable, General Conditions may apply)

**SECTION 15051
SANITARY PIPING GENERAL**

PART 3 - EXECUTION

3.1 INSPECTION OF MATERIALS

A. All materials shall be subject to inspection prior to delivery to the CITY. The CITY reserves the right to reject all materials not inspected prior to shipping and the CONTRACTOR shall immediately remove at no additional cost any materials that in the opinion of the CITY's Inspector do not meet typical standards. (For example if the pipe arriving is cracked, discolored, or appear used the CITY Inspector will refuse to allow the pipe to be unloaded at the job site unless there is proof that the pipe being delivered will not be used in the final project.) Special markings shall be plainly marked on the applicable pipe indicating the weight, proper location of the pipe or fittings in the line by reference to layout drawings and schedules, class of pipe, casting period, manufacturer's mark and year pipe was produced. No valve or other component that is otherwise new that is older than two years will be allowed to be part of the project.

3.2 CONSTRUCTION

- A. Excavation, trenching, and backfilling for the installation of underground piping systems shall be as specified in Section 02202. Laying of the pipe shall be commenced immediately after the excavation is started, an every means must be used to keep pipe laying closely behind the trenching. The CITY's project representative may order the trenching stopped when in this opinion the trench is open too far in advance of the pipe laying operation.
- B. The bottom of the sewer trench shall be shaped to give substantially uniform circumferential support to the lower one-third of each pipe. Where bell and spigot type pipe is used, holes shall be scooped out where the bells occur leaving the entire barrel of the pipe bearing on the pipe bed. Each pipe shall be inspected for defects prior to foreign material gets into the finished line. Water shall be kept out of the pipe and the pipe kept closed by means of a test plug whenever work is not in progress. Pipe shall be handled carefully to avoid breakage. Pipe may be laid in the best manner adapted to securing speed and good results. However, it shall be laid in accord with the manufacturer's instructions and recommendations. Pipe shall be laid with spigot ends pointing in the direction of flow. Installation of pipe and fittings, with factory made joints shall be accomplished in strict accord with the pipe manufacturer's recommendations and approval of the CITY. Pipe alignment shall conform to the standards for laying pipe as determined by the CITY's Inspector.

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SANITARY PIPING GENERAL

- C. All joints shall be watertight. Any leaks or defects discovered shall be immediately repaired. All cracked, broken and damaged piping shall be removed and replaced. Any pipe which has been disturbed after being laid shall be taken up, the joints cleaned and the pipe properly replaced. Any superfluous material inside the pipe shall be flushed or removed by means of an approved follower, scraper or pigging device.

3.3 INSTALLATION CONDITIONS:

- A. Where it is necessary to cut the force main to place special castings, care must be taken not to crack the pipe and to cut straight and true around it. Force mains shall be restrained by restraining devices (thrust blocking is not permitted) to prevent movement of lines under pressure.
- B. Force main connections shall be constructed as shown on the detailed drawings or as is common practice should no detail be provided.
- C. Where there is no adequate natural foundation upon which to construct a pipe bed, the pipe shall be installed on a prepared stabilized sub-grade or rock bedding. Unsuitable sub-grade materials shall be removed and stabilizing materials shall be used. Gravel or graded lime rock may be used for pipe bedding where suitable material is not available. All stabilizing materials and work related to removing the unsuitable materials shall be provided at no additional cost to the CITY.
- D. Where a gravity sewer or force main crosses an existing or proposed water main the State of Florida Department of Environmental Protection requires 18-inch separation and for this reason the CONTRACTOR shall investigate well in advance of pipe or sewer construction to lower or raise the proposed piping to secure the 18-inch separation.
- E. Horizontal separation of force mains/gravity sewers from water mains is controlled by State of Florida Department of Environmental Protection but as a general rule the minimum desired separation is 10 feet but with approval of the CITY/ ENGINEER of Record may be reduced to the State standard.
- F. All pipe under State or County highways shall be installed in accordance with Requirements of these agencies at CITY direction whether or not they are made a part of this Specification.

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SANITARY PIPING GENERAL**

3.4 BY PASS PUMPING

- A. UNLESS THESE SPECIFICATIONS DEFINE SPECIAL ASSISTANCE BY THE CITY REGARDING REQUIRED BY PASS SEWAGE PUMPING, THE CONTRACTOR IS HEREBY ADVISED THAT ALL NECESSARY BY PASS PUMPING INCLUDING LABOR, MATERIALS AND ASSOCIATED COSTS IS THE FULL REponsibility OF THE CONTRACTOR. THE ADVANCED APPROVAL BY CITY FOR ALL BYPASS PUMPING OPERATIONS IS REQUIRED.** The approval of the by-passing system in advance by the CITY shall in no way relieve the CONTRACTOR of his full and complete responsibility. The pump and bypass lines shall be of adequate capacity to handle all flows.

END OF SECTION

**SECTION 15056
DUCTILE IRON PIPE- WATER**

PART 1 - GENERAL REQUIREMENTS

1.1 SUMMARY

- A. This Section sets for the material and general requirements for ductile iron pipe in water systems.

1.2 SUBMITTALS

- A. The CONTRACTOR shall submit to the CITY each month a record of all ductile iron pipe installed including the manufacturer name and class rating. All ductile iron pipe used must be new and a purchase record may be required unless pipe is provided by CITY.
- B. A certified copy of the tests made by the manufacturer will be required.

1.3. JOB CONDITIONS

No Special Conditions Noted

PART 2 – PRODUCTS

(Not Applicable, General Conditions may apply)

PART 3 - EXECUTION

3.1 GENERAL

- A. Ductile iron pipe for water mains installed underground shall be manufactured in accord with ANSI/AWWA C151/1 21.51, the latest version thereof.
- B. Pipe shall be designed for thickness in accordance with ANSI/AWWA C 151/ A21.51, the latest version thereof subject to the following design criteria for both fittings and pipe: Pressure Class 350 for diameters less than 30” and Pressure Class 250 for 30” and greater diameters.
- C. The depth of cover for water mains shall be a minimum of 3 feet with no exceptions.
- D. Generally, joints for ductile iron pipe shall be push-on type designed in accordance with ANSI/AWWA C111/A 21.11, the latest version thereof.

SECTION 15056
DUCTILE IRON PIPE- WATER

- E. The manufacturer shall furnish adequate joint lubrication to ensure proper installation.
- F. At certain locations restrained joints such as Megalug™, Field Lok™, or Fast Grip™ or approved equal shall be used. Field Lok™ or Fast Grip™ restrained joint gaskets shall only be allowed within the limits of the restraint as indicated on the plans or as required for the length indicated in the restrained joint schedule on the detailed sheet. The length of restrained joint shall be adequate for the testing pressure and the conditions for the work area, even if this means extending the restrained joints beyond the chart value.
- G. Field Lok™ or Fast Grip™ restrained joint gaskets will not be allowed at the fitting itself, only Megalug™ or approved equal shall be used. Field Lok™ or Fast Grip™ restrained joint gaskets shall be UL FM approved, with a minimum pressure rating that matches or exceeds the pipe Pressure Class.
- H. At certain locations shown on the drawings, the joints shown on the drawings, the joints for the pipe connections shall be flanged. Flanged pipe shall conform to the requirements of ANSI/AWWA C115/A21.15, the latest version thereof.
- I. Gasket lubricant for push-on joints shall be labeled with the trade name and the pipe manufacturer's name. Fittings for ductile iron pipe shall be manufactured of ductile iron and shall conform to the requirements of ANSI/AWWA C153/A21.53, the latest version. Fittings shall be compatible with the pipe and designed the same Pressure Class rating as the pipe. The lining and coating of the fittings shall be as specified for the pipe. Joints for fittings 16" in nominal diameter and under shall be push-on type or mechanical joint, except above ground fittings as shown on the drawings, shall be flanged. All below ground mechanical joint connections shall be restrained type such as Megalug™ or approved equal. The interior of ductile iron pipe and fittings shall have cement lining and bituminous seal coat in accordance with ANSI/AWWA C104/A21.4, the latest version thereof.

END OF SECTION

**SECTION 15058
DUCTILE IRON PIPE- SANITARY**

PART 1 - GENERAL REQUIREMENTS

1.1 SUMMARY

- A. This Section sets forth the material and ancillary item requirements for pipe, fitting & gasket work necessary to construct sanitary force mains.

1.2 REFERENCES

- A. The CITY Utilities Department Standard Details, latest edition and Sections 02616, 02641 and 15051.

1.3 SUBMITTALS

- A. The CONTRACTOR shall submit a record of all ductile iron pipe installed, including the manufacturer name and class rating, each month. A purchase record may be required.
- B. A maintenance of traffic plan is required a minimum of three weeks in advance of each requested road closure for City review and acceptance.
- C. A certified copy of the manufacturer's material quality and composition tests will be required.

1.4 SITE CONDITIONS

- A. Contractor shall visit and review the site prior to submitting the bid and incorporate the anticipated work condition needs in the bid.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Ductile iron pipe for sewer mains installed underground shall be manufactured in accord with ANSI/AWWA C151/1 21.51, the latest version thereof. All ductile iron pipe used must be new.
- B. Pipe shall be designed for thickness in accordance with ANSI/AWWA C 151/ A21.51, the latest version thereof subject to the following design criteria for both fittings and pipe: Pressure Class 350 for pipes less than 30" in diameter and Pressure Class 250 for pipes 30" or greater in diameter.

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DUCTILE IRON PIPE- SANITARY

- C. Generally, joints for ductile iron pipe shall be push-on type designed in accordance with ANSI/AWWA C111/A 21.11, the latest version thereof.
- D. The manufacturer shall furnish adequate joint lubrication to ensure proper installation
- E. At certain locations restrained joints such as Megalug™, Field Lok™, or Fast Grip™ or CITY acceptable equal shall be used. Field Lok™ or Fast Grip™ restrained joint gaskets shall only be allowed within the limits of the restraint as indicated on the plans or as required for the length indicated in the restrained joint schedule on the detailed sheet. The length of restrained joint shall be adequate for the testing pressure and the conditions for the work area, even if this means extending the restrained joints beyond the chart value.
- F. Field Lok™ or Fast Grip™ restrained joint gaskets will not be allowed at the fitting itself, only Megalug™ or approved equal shall be used. Field Lok™ or Fast Grip™ restrained joint gaskets shall be UL FM approved, with a minimum working pressure that meets or exceeds the pipe Pressure Class.
- G. At certain locations shown on the drawings, the joints shown on the drawings, the joints for the pipe connections shall be flanged. Flanged pipe shall conform to the requirements of ANSI/AWWA C115/A21.15, the latest version thereof.
- H. Gasket lubricant for push-on joints shall be labeled with the trade name and the pipe manufacturer's name. Fittings for ductile iron pipe shall be manufactured of ductile iron compact fittings and shall conform to the requirements of ANSI/AWWA C153/A21.53, the latest version thereof. Fittings shall be compatible with the pipe and designed to meet or exceed the pipe Pressure Class. The lining and coating of the fittings shall be as specified for the pipe. Joints for fittings 16" in nominal diameter and under shall be push-on type or mechanical joint, except above ground fittings as shown on the drawings, shall be flanged. All below ground mechanical joint connections shall be restrained type such as megalug™ or approved equal.
- I. The interior of ductile iron pipe and fittings shall have seal coat in accordance with ANSI/AWWA C104/A21.4, the latest version thereof. For ductile iron pipe used for Sanitary sewer mains a Fusion-Bonded Epoxy lining or approved equal shall be provided. (Fusion-Bonded Epoxy lining may be provided for fittings were noted) (Amine Cured Novalax Epoxy, i.e. Protecto 401™)

**SECTION 15058
DUCTILE IRON PIPE- SANITARY**

- J. Air Release Valves shall meet or exceed A.R.I models “D-020, D025, D-023, and S-20” Combination air Valve for sewage “SAAR” as approved by the City.

2.2 MANUFACTURERS

- A. Products shall be provided from manufacturers that utilize manufacturing processes that consistently produce pipe, fittings and appurtenances in compliance with national ANSI/AWWA quality standards and specifications.

PART 3– EXECUTION

3.1 QUALIFICATIONS OF INSTALLER

- A. Contractor and their subcontractors shall be experienced in all aspects of their assigned work and provide sufficient experienced personnel and appropriate equipment to perform quality work in a timely manner

3.2 INSTALLATION

- A. The depth of cover for sewer mains shall be a minimum of 4 feet or as directed in the construction plans.
- B. Resilient seat gate valves shall be installed on sanitary force mains unless otherwise noted in the contract Bid Documents. Tapping gate valves will be used at line taps.
- C. The CONTRACTOR shall install metallic locator tape 18 inches above the top of the installed pipe for the full length of the sewage force main. Tape shall be color coded green for all sanitary lines.
- D. Coordinate the co-location of CITY Information Technology PVC conduit with the sanitary main locations on the construction plans to minimize excavation and site disturbance.

END OF SECTION

SECTION 15066
POLYVINYL CHLORIDE (PVC) PIPE AND CONDUIT

PART 1 - GENERAL REQUIREMENTS

1.1 SUMMARY

This Section sets forth the general requirements for PVC and FPVC pipe and pipe conduit work.

1.2 REFERENCES

The CITY's Utility Department Standard Details, latest edition and C 900-97 and C 905 standards shall apply.

PART 2 – PRODUCTS

2.1 PVC PIPE

- A. PVC gravity sanitary pipe shall be green SDR 26 ASTM, D-3034 where a minimum of 4 feet of cover is provided and the burial depth is less than 10 feet. For burial depths of 10 feet or greater C900/C905 DR-18 minimum Pressure Class 150 shall be used.
- B. PVC pressure potable water pipe shall be blue C900/C905 DR-18 pressure class 150. 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.
- C. At the City's discretion pressure class upgrades for pipe used in potable and reuse water distribution systems with multiple turns will be required at no additional cost to the City to meet the C900-97 burst protection standards if using pipe rated under the C900-07 standards.
- D. The joints for gravity sewer pipe and fittings shall be a rubber gasketed compression type designed to prevent infiltration. Joint lubrication shall be as furnished by the manufacturer
- E. Fittings and pipe shall be best quality meeting AWWA and ASTM recommended material, performance and manufacturing specifications. Wall thickness must meet established standard. Plugs for use at the end of service pipe shall be PVC. Fittings shall meet or exceed the Pressure Class of the pipe.

**SECTION 15066
POLYVINYL CHLORIDE (PVC) PIPE AND CONDUIT**

- F. Fusible PVC (FPVC) manufactured by Underground Solutions, Inc. using all virgin resin used in water main or sanitary force main Horizontal Directional Drilling (HDD) applications shall have a minimum working pressure of 160 PSI unless otherwise specified.
- G. 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.
- H. An easily accessible mule or pull tape with a minimum pull strength of 1250 pounds shall be installed in all empty conduits for post-construction use unless otherwise directed.
- I. 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.
- J. A #12 gage UF rated insulated single strand copper tracer wire shall be installed with and attached to buried non-metallic pipe and conduit in accordance with the Utility Department Standard Details. A 3" wide metallic tracer tape shall also be installed eighteen inches above and directly over all buried non-metallic pressure mains.

PART 3 - EXECUTION

(Not applicable, General Conditions may apply)

END OF SECTION

**SECTION 15067
RECLAIMED WATER PIPE**

PART 1 - GENERAL REQUIREMENTS

1.1 SUMMARY

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. The work includes all testing and sampling in accordance with governing agencies.

1.2 REFERENCES

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

**SECTION 15067
RECLAIMED WATER PIPE**

PART 2 – PRODUCTS

2.1 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. Ductile Iron Pipe (DIP) less than 30' in diameter shall be Pressure Class 350 and 30" or greater shall be Pressure Class 250 standard cement-lined with manufacturer applied purple outside finish coating. All pipe shall use a restrained joint method such as megalugs, boltless restraints or gripper gaskets in compliance with Ductile Iron Pipe Research Association (DIPRA) guidelines. Couplings and gaskets shall be furnished with the pipe. 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.
- B. 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.

2.2 LOCATOR TAPE AND WIRE

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.

2.3 FITTINGS

Fittings 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.

PART 3– EXECUTION

3.1 INSTALLATION:

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 insure that no dirt or foreign material gets into the

**SECTION 15067
RECLAIMED WATER PIPE**

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.

3.2 ROADWAY CROSSINGS:

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.

3.3 CUT-IN CONNECTION TO EXISTING MAINS:

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.

3.4 OTHER UTILITIES:

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.

3.5 RECLAIMED WATER MAIN TESTS:

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. All tests to be conducted with the CITY in attendance. The CONTRACTOR is to coordinate the testing through the CITY.

3.7 PRESSURE TESTS:

Tests shall be made on the completed pipe installation. The test pressure shall be 150 psi maintained for a period of not less than three (3) 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.

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RECLAIMED WATER PIPE**

3.8 RESTRAINED JOINTS

Restrained joints for use with PVC pipe shall consist of retainer glands fabricated of ductile-iron conforming to ASTM A536. The gland shall be such that it can replace the 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.

END OF SECTION

SECTION 15100
VALVES AND ACCESSORIES – POTABLE WATER

PART I – GENERAL REQUIREMENTS

1.1 SUMMARY

- A. This Section sets forth the requirements for materials and operations necessary to provide and install valves, taps, and various accessories. This Section will apply for the additional materials the CONTRACTOR is required to provide and install above and beyond materials provided by the CITY.

1.2 REFERENCES

- A. The CITY's Utilities Department Standard Details, latest edition and Section 02616.

PART 2 – PRODUCTS

2.1 GATE VALVES

- A. Gate valves 20" and less in diameter shall be ductile iron body resilient seated gate valve, fusion bonded on the interior and exterior of the valve in accordance with AWWA C509-87, 0-ring type with non-rising stem, and opening counterclockwise. Valves shall be manufactured in accordance with AWWA C-509-87 for NRS valves and designed for 250 psi working pressure. Valves for buried services shall have mechanical joint ends and operation nut in accord with AWWA C509. One socket valve wrench shall be provided with extension as required. Valves for above ground shall be American Standard flanged, with wheel operator. The provided valves shall be manufactured in the United States and be acceptable to the CITY.
- B. Gate valves 20" in diameter and larger shall be cast iron bodies, bronze mounted, double discs, 0-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. Valves for above ground shall be American Standard flanged, with wheel operator.

2.2 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 "Water". Extensions shall be provided as required to meet grade.

SECTION 15100
VALVES AND ACCESSORIES – POTABLE WATER

2.3 AIR RELEASE AND/OR COMBINATION VALVE ASSEMBLY

- A. An air release valve assembly shall be furnished and installed on the water main as shown on the drawings. Air release valve assembly shall consist of a combination short body, air release vacuum breaker valve, installed in a manhole or vault with vented manhole cover, gate valve, fittings, tapping saddle and connecting piping to the main. The combination assembly will include air intake valving.
- B. Air release or combination 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 a concrete box or vault as shown on the drawing. Box and lid shall be 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 manufactured by Mueller, Hays, or CITY accepted equal. The valve shall be manufactured by Multiplex Manufacturing Company, A.R.I, Valve and Primer Corporation, or CITY accepted equal.

2.4 HOSE BIBB WITH VACUUM BREAKER:

- A. Hose bibbs shall be Woodford Model Y24, Mueller, Crane, or CITY accepted 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 CITY accepted equal.

2.5 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 and a concrete pad shall be poured around the top of the box as shown in the standard details.

SECTION 15100
VALVES AND ACCESSORIES – POTABLE WATER

2.6 TAPPING SLEEVE AND TAPPING VALVE:

- A. The tapping sleeve and valve shall be designed for making a wet tap on an existing water main. The tapping sleeve and valve shall be made of high-quality ductile iron conforming to the material specifications of ANSI/AWWA C110/A21.10. The tapping sleeve shall be equipped with a molded rubber gasket to completely encircle the tapped opening thereby insuring a complete watertight connection. It shall be designed to withstand a working pressure of at least 200 psi. The outlet change of the tapping sleeve and valve shall be Class 125 (A.S.A.B16.1-1960). The tapping sleeve and valve shall be hot dipped Galvanized after fabrication. All internal threads shall be tapped or re-tapped after galvanizing. The tapping sleeve and valve shall include all necessary bolts, nuts and gaskets. The tapping sleeve shall be a mechanical joint type with a flanged outlet such as manufactured by MUELLER, American-Darling, or CITY accepted equal. The tapping valve shall be a resilient seat gate valve such as manufactured by MUELLER, American-Darling, U.S. Pipe Metro Seal or CITY accepted equal.

PART 3– EXECUTION

(Not Applicable, General Conditions may apply)

END OF SECTION

**SECTION 15101
VALVES AND ACCESSORIES - SANITARY**

PART 1 - GENERAL REQUIREMENTS

1.1 SUMMARY

- A. This Section sets for the requirements for valves and accessories to be installed as part of the project sanitary system work.

1.2 REFERENCES

- A. The CITY's Utilities Department Standard Details, latest addition and Section 02616

PART 2 – PRODUCTS

2.1 AIR RELEASE AND/OR COMBINATION VALVE ASSEMBLY

- A. An air release valve assembly shall be furnished and installed on the force main as shown on the drawings. Air release valve assembly shall consist of a combination short body, air release vacuum breaker valves, installed in a manhole with vented manhole cover, gate valve, fittings, tapping saddle and connecting piping to the main. Combination valves shall include air intake valving.
- B. The valve shall automatically function to release to atmosphere both large and small amounts of air that accumulate in the pipeline. Once the air has been exhausted, both valves shall seal tightly to prevent water leakage. The valve shall also function to admit air into a line, tank, or chamber under emergency conditions or when it is being drained. The valve body and cover shall be of semi-steel, stainless steel or reinforced nylon with resilient seats, rubber covered floats and no levers. Valves shall be corrosion resistant and suitable for sewage force main application. Valve shall be as manufactured by A.R.I model D-025, Val-Matic, model 48/301, Golden-Anderson or approved equal. Each valve shall have a backwash accessory.

2.2 PLUG VALVES

- A. Plug valves shall be suitable for sewage flows and for buried, submerged or above grade service. Plug valves shall be manually actuated straight way valves of the non-lubricated, eccentric type with resilient faced plugs, mechanical joint ends for buried service and flanged for lift station. Plug valves shall be full bore for valves through 20”.

SECTION 15101
VALVES AND ACCESSORIES - SANITARY

- B. Valve bodies shall be semi-steel or cast iron with raised seats. The face of the seats shall be corrosion resistant nickel or epoxy coated. Upper and lower plug stem bushings shall be of stainless steel or isolated with O-rings and permanently lubricated. Valves shall be of the bolted bonnet design. Packing and valves shall be O-ring or adjustable type. Valves and actuator for submerged service shall have seals on all shafts, and gaskets on valve submersed service shall be totally enclosed and shall have gasket seals. All exposed nuts, bolts, strings and washers for submerged valves shall be zinc plated or stained steel.
- C. Plug valve pressure ratings: Sizes through 12" 175 psi.
- D. Valves shall be capable of drip-tight shutoff up to the full valve rating with pressure in either direction.
- E. Buried valves shall have an AWWA, 2' square actuating nut. One T-handle wrench shall be furnished. Manual valves for the lift station shall have lever actuators up to 10" in size. Valves 10" and larger shall have gear actuators. Plug valves in the vertical riser on the discharge side of the pump shall have chain wheel operators. All gearing shall be enclosed in semi-steel housing and be suitable for running in a lubricant with direct and waterproof Seals provided on shafts. Actuator shafts shall be supported by permanently lubricated bronze bearings. Plug valves shall be manufactured by Dezurik or Homestead or equal.

2.3 VALVE BOXES

Valve boxes shall be provided for all buried valves. Valve boxes shall consist of cast iron base and adjustable top section with cover that shall be marked "Sewer". Extensions shall be provided as required to meet grade.

PART 3- EXECUTION

(Not Applicable, General Conditions may apply)

END OF SECTION

**SECTION 15110
VALVES AND ACCESSORIES – RECLAIMED WATER**

PART I – GENERAL REQUIREMENTS

1.1 SUMMARY

This Section sets forth the requirements for materials and operations necessary to provide and install valves, taps, and various accessories. This Section will apply for the additional materials the CONTRACTOR is required to provide and install above and beyond materials provided by the CITY.

1.2 REFERENCES

The CITY's Utility Department Standard Details, latest edition and Sections 15100 and 02616.

PART 2 – PRODUCTS

2.1 GATE VALVES

- A. Gate valves 20" and less in diameter shall be ductile iron body resilient seated gate valve, fusion bonded on the interior and exterior of the valve in accordance with AWWA C509-87, 0-ring type with non-rising stem, and opening counterclockwise. Valves shall be manufactured in accordance with AWWA C-509-87 for NRS valves and designed for 250 psi working pressure. Valves for buried services shall have mechanical joint ends and operation nut in accord with AWWA C509. One socket valve wrench shall be provided with extension as required. Valves for above ground shall be American Standard flanged, with wheel operator. The provided valves shall be manufactured in the United States and be acceptable to the CITY.
- B. Gate valves 20" in diameter and larger shall be cast iron bodies, bronze mounted, double discs, 0-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. Valves for above ground shall be American Standard flanged, with wheel operator.

SECTION 15110
VALVES AND ACCESSORIES – RECLAIMED WATER

2.1 VALVE BOXES

Valve boxes shall be provided for all buried valves. Valve boxes shall consist of cast iron base and adjustable top section with cover that shall be marked "Reclaimed Water". Extensions shall be provided as required to meet grade.

2.3 AIR RELEASE AND/OR COMBINATION VALVE ASSEMBLY

- A. An air release valve assembly shall be furnished and installed on the water main as shown on the drawings. Air release valve assembly shall consist of a combination short body, air release vacuum breaker valve, installed in a manhole or vault with vented manhole cover, gate valve, fittings, tapping saddle and connecting piping to the main. The combination valve will include air intake valving.
- B. Air release and or combination 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 a concrete manhole or vault 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 iron pipe Manufacturer. The corporation stop shall be Mueller H-10045, or Hays 5284, or equal. The valve shall be Type N, Crispin, as manufactured by Multiplex Manufacturing Company, or Model 200 APCO, as manufactured by Valve and Primer Corporation, or equal.

2.4 HOSE BIBB WITH VACUUM BREAKER

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.

2.5 SETTING VALVES AND BOXES

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.

SECTION 15110
VALVES AND ACCESSORIES – RECLAIMED WATER

2.6 TAPPING SLEEVE AND TAPPING VALVE

The tapping sleeve and valve shall be designed for making a wet tap on an existing water main. The tapping sleeve and valve shall be made of high quality ductile iron conforming to the material specifications of ANSI/AWWA C110/A21.10. The tapping sleeve shall be equipped with a molded rubber gasket to completely encircle the tapped opening thereby insuring a complete watertight connection. It shall be designed to withstand a working pressure of at least 200 psi. The outlet change of the tapping sleeve and valve shall be Class 125 (A.S.A.B16.1-1960). The tapping sleeve and valve shall be hot dipped Galvanized after fabrication. All internal threads shall be tapped or re-tapped after galvanizing. The tapping sleeve and valve shall include all necessary bolts, nuts and gaskets. The tapping sleeve shall be a mechanical joint type with a flanged outlet such as MUELLER Model H-615, American-Darling, or approved equal. The tapping valve shall be a resilient seat gate valve, such as MUELLER Model H-665, American-Darling model 565, U.S. Pipe Metro Seal model 505860 or approved equal.

PART 3– EXECUTION

(Not Applicable, General Conditions may apply)

END OF SECTION

DIVISION

16

ELECTRICAL

**SECTION 16101
ELECTRICAL AND FIBER-OPTIC CONDUIT**

PART 1 - GENERAL REQUIREMENTS

1.1 SUMMARY

- A. This Section set forth the requirements for materials and operations necessary for the installation of steel and PVC electrical and fiber-optic carrier conduit.

1.2 REFERENCES

- A. CITY Utilities Department Standard Details latest edition, Section 01300, Section 15066 and:
 - 1. American National Standards Institute (ANSI)
 - 2. National Electrical Manufacturers Association (NEMA)
 - 3. Underwriters' Laboratories (UL)
 - 4. Insulated Cable Engineers Association (ICEA)
 - 5. Institute of Electrical and Electronics Engineers (IEEE)

1.3 SUBMITTALS

- A. Submit shop drawings on all specified equipment and include at minimum sufficient information to indicate complete compliance with specifications. Such data shall include "cuts", catalog data sheets, drawings, and/or certifications as necessary. Submit additional information as directed by the CITY.

1.4 JOB CONDITIONS

- A. The CONTRACTOR shall visit the site prior to bidding and include all requirements dictated by site conditions in the Bid submittal

PART 2 – PRODUCTS

2.1 GENERAL

- A. All conduit shall be new.

2.2 RACEWAY SYSTEMS

- A. All conduit shall bear the UL label.

SECTION 16101
ELECTRICAL AND FIBER-OPTIC CONDUIT

- B. Conduit sizes shown or called for are minimum requirements.
- C. Rigid steel conduits for installation in casing pipes, shall be mild steel galvanized inside and out with galvanized threads. Unless otherwise called for on the drawings, rigid galvanized steel conduit for direct burial shall be coated with an approved asphaltic paint. Where called for on the drawings, rigid galvanized steel conduit shall be of the 40 mil PVC bonded type with the bonded PVC jacket extending the full length of the pipe except the threads. Fittings for rigid steel conduit shall be threaded and galvanized malleable iron.
- D. Outlet bodies for rigid steel conduit shall be threaded and galvanized malleable iron.
- E. Rigid steel conduit sleeves, for 40 mil PVC bonded conduit shall have a 40 mil PVC bonded coating.
- F. For buried conduit Schedule 40 PVC conduit shall be used. PVC conduit shall be Schedule 40 PVC conduit manufactured from ASTM D 1784 PVC in compliance with NEMA TC-2. PVC conduit shall be UL listed. Joints shall be solvent cement type.
- G. Provide PVC long sweep elbows, bends, fittings, and adaptors as required for a complete installation. Provide solvent cement as recommended by the conduit manufacturer.

PART 3 - EXECUTION

3.1 RACEWAY SYSTEMS

- A. Conduits: Verify conduit sizes with the dimensions of the particular wires and cables to be installed.
- B. Exposed conduits shall be neatly installed and painted the same color as the adjacent surfaces.
- C. Runs shall be parallel and, in general, perpendicular or parallel to walls, floors or principal structural elements.
- D. To prevent motion in any direction conduits shall be supported and secured by galvanized wall bracket, ceiling trapeze or pipe clamps approved by the Engineer. Perforated metal strap hangers and wire hangers are not acceptable.

**SECTION 16101
ELECTRICAL AND FIBER-OPTIC CONDUIT**

- E. All job cut threads shall be given a coat of rust-resistant paint, zinc chromate, or equivalent. All threaded joints shall be made watertight with a waterproofing compound. Conduits that have been cut shall have burrs removed by reaming.
- F. At conduits connections to enclosures or boxes, install locknuts inside and outside of the enclosure or box on all conduits. Install insulating bushings on all conduits.
- G. Liquid tight flexible metallic conduit shall be installed in such a manner that liquids tend to run off the surface and not drain toward the fittings. Sufficient slack shall be provided to reduce the effects of vibration. Where the fittings are brought into an enclosure with a knock-out, a gasket assembly consisting of an "O" ring and retainer, shall be provided on the outside.
- H. Set-screw conduit connectors and running thread couplings shall not be used. Conduit and equipment connected by conduit shall be so installed as to provide proper continuous grounding bonds, using bonding jumpers where required.
- I. Make joints in PVC conduit in compliance with the manufacturers instructions. Make all bends by means of an electrical heating unit approved by the conduit manufacturer where standard elbows and fittings cannot be used.
- J. Conduit ends shall be capped or plugged as soon as possible after installation.
- K. Separation of conduit from other pipes; Do not run conduit directly under cold water lines and separate from same in other directions by at least 3-inches or as shown on the drawings.
- L. Termination of empty conduit; Terminate empty conduits with smooth insulating bushings and/or cap.
- M. Installation and drawings: Follow the layout shown on the drawings. This layout is, however, diagrammatic only and where changes are necessary due to structural conditions, interference with other apparatus or other causes, make such changes without additional cost to the Owner. Install offsets in conduits as required by the conditions.
- N. Backfill for buried Conduit: When trenching and backfilling for conduit under proposed or existing pavement, the pavement replacement and backfill compaction shall be in accordance with Section 02202 and the CITY Utilities Department Standard Details, latest edition.

END OF SECTION

APPENDIX

A

PERMITS

APPENDIX

B

FPL SPECIFICATIONS FOR UNDERGROUND CONDUIT

Specifications For Underground Conduit Installation

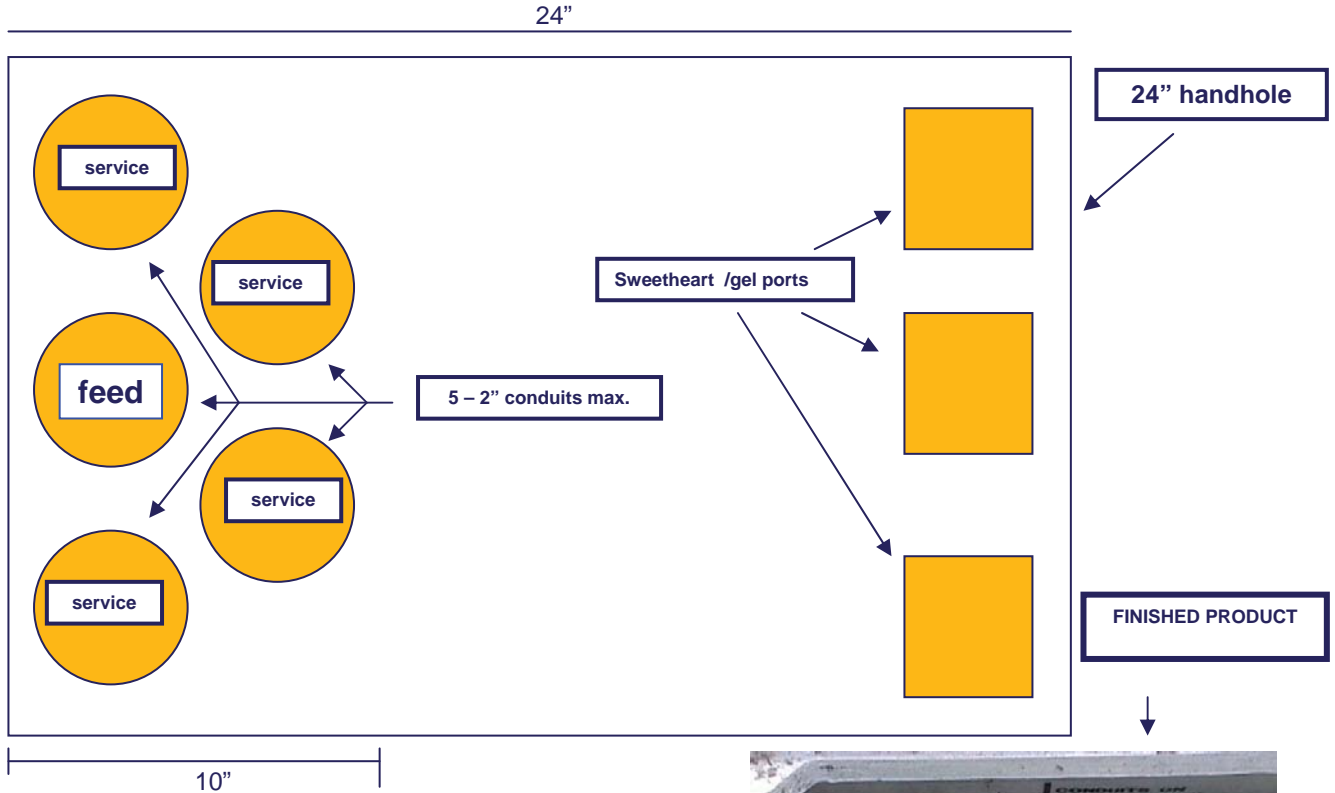
1. Conduit placement shall be in the easement provided and in accordance with the design drawings and field staking.
2. Use only FPL supplied conduit with FPL supplied bends. (Figure 1)
3. Glue all joints securely with FPL supplied glue. (Appendix A)
4. FPL conduit markers must be placed at all conduit ends. (Figure 1)
5. All primary and secondary conduit is to have a minimum of 36 inches of cover. (Figure 1)
6. All service conduit is to have 24 – 30 inches of cover at property line. All future service stub-outs at transformer locations to be installed with 90's. Where primary or secondary conduit runs turn horizontally, 36 inch radius 90 degree bends are to be used.
7. Cap all ends of the conduit with FPL supplied end caps. Denote termination point of each conduit run on the capped end, (Appendix B). All conduit ends are to be terminated 1 – 2 feet above final grade except at transformer locations where conduit ends are to be terminated 3 inches above final grade. (Figure 3)
8. Install 1 #12 copper locate wire supplied by FPL in each trench per attached specs (Figure 4). All ends of the #12 copper locate wire must be exposed above grade, and secured with a tie wrap to a piece of stubbed up conduit for future locates. (Figure 4)
9. Conduits terminated at transformer locations to be installed with templates supplied by FPL per Figure 3A, 3B, or 3C according to the type of transformer being installed. (Consult your Service Planner).
10. Concrete transformer slabs provided by FPL are to be installed level on compacted fill at final grade and oriented as shown on the FPL design drawing(s) (Figure 3)
11. Conduits terminated at future secondary handhole locations to be installed per Figure 2. If secondary handholes are being installed at the time of conduit installation, install 45 degree bends as shown in Figure 1.
12. Primary splice handhole to be installed with electronic cable marker. (Figure 2A)
13. Install a continuous length of pull string in all conduit runs.
14. Backfill operations are to be done carefully with special attention given to utilizing clean fill, thereby assuring the elimination of rock and other scrap material to insure that the conduit will not be damaged or marking devices moved and proper compaction is achieved.

Testing and Acceptance Guidelines

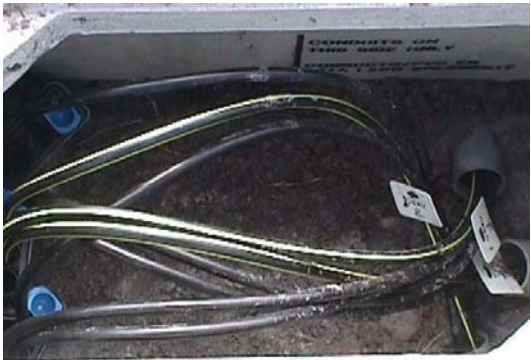
Following notification of completed installation of underground conduits by a developer/contractor FPL will:

1. Spot check randomly, with electronic equipment, the installation depth of conduits below grade at a minimum of 2 points between each primary termination point, (transformers, splice boxes & risers) noting the measured depth on the record drawing.
2. After confirming the correct routing and integrity of a conduit run, verify that the cable markers were installed and exposed conduit ends are plugged.
3. Confirm that a continuous length of pull string has been installed in all conduit runs and verify that all conduits runs terminate in the correct locations.
4. The final acceptance of the conduit installation will occur when FPL pulls the conductor and occupies the conduit.

TEMPLATE

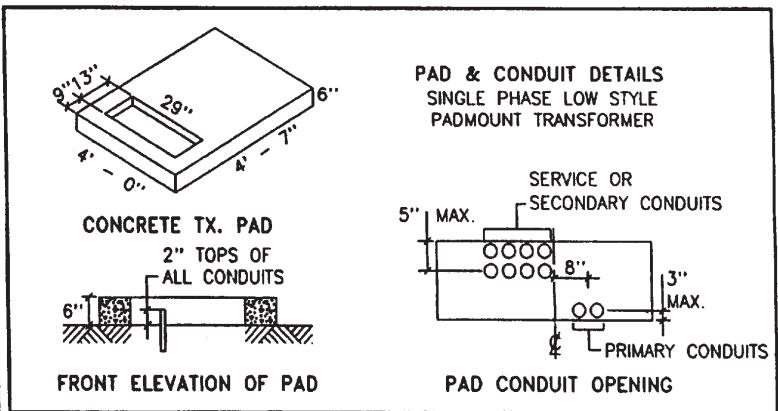
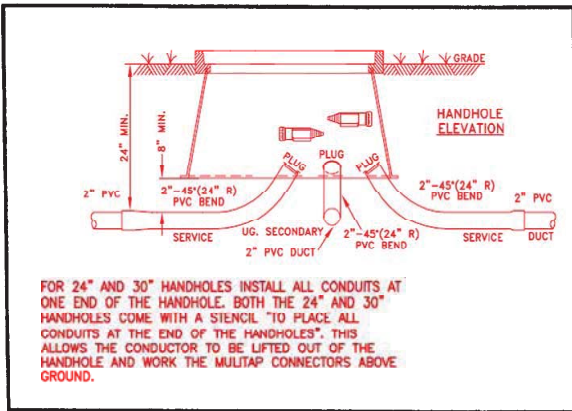
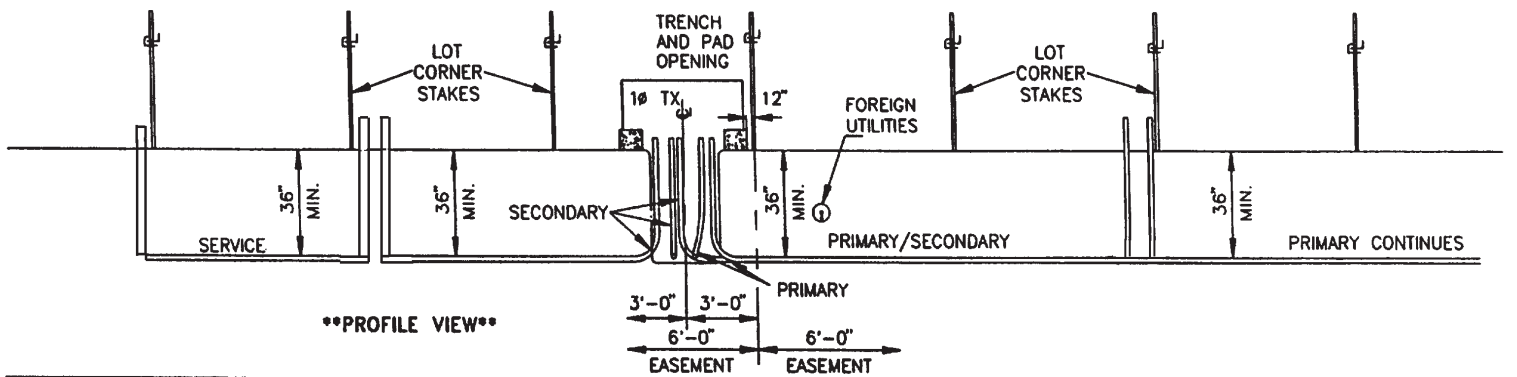
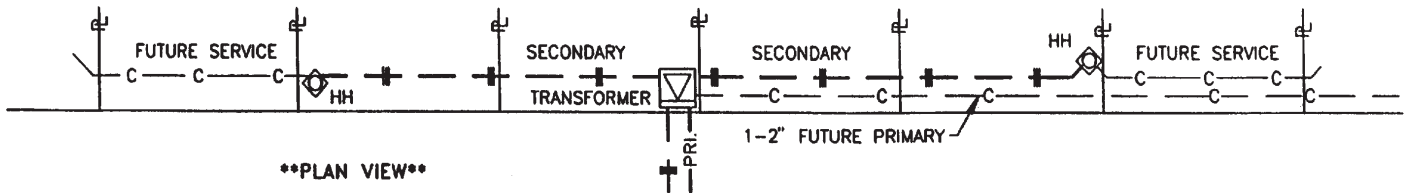


WHEN INSTALLING 2" CONDUITS UP TO 5 MAY BE PLACED IN A 24" HANDHOLE. Please install all conduits within 10" of one end of the handhole. This allows cables to drape across to the other end of handhole where the terminations will be placed, such as sweetheart connectors or gel port connectors. When the wires are raised out of the handhole this will allow approximately 18" of wire above ground level, making it easier for employees to work on in future situations.



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FIGURE 1



Transformer may split lot lines



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FIGURE 2

TYPICAL SERVICE HANDHOLE INSTALLATION

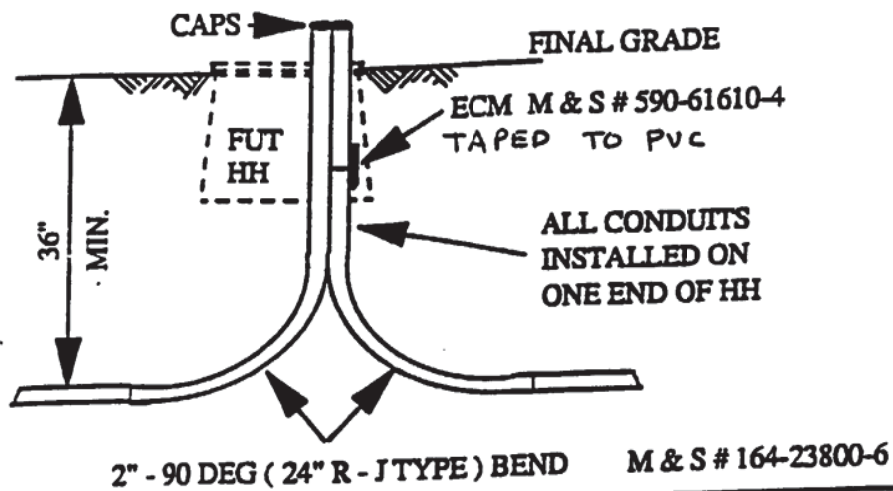
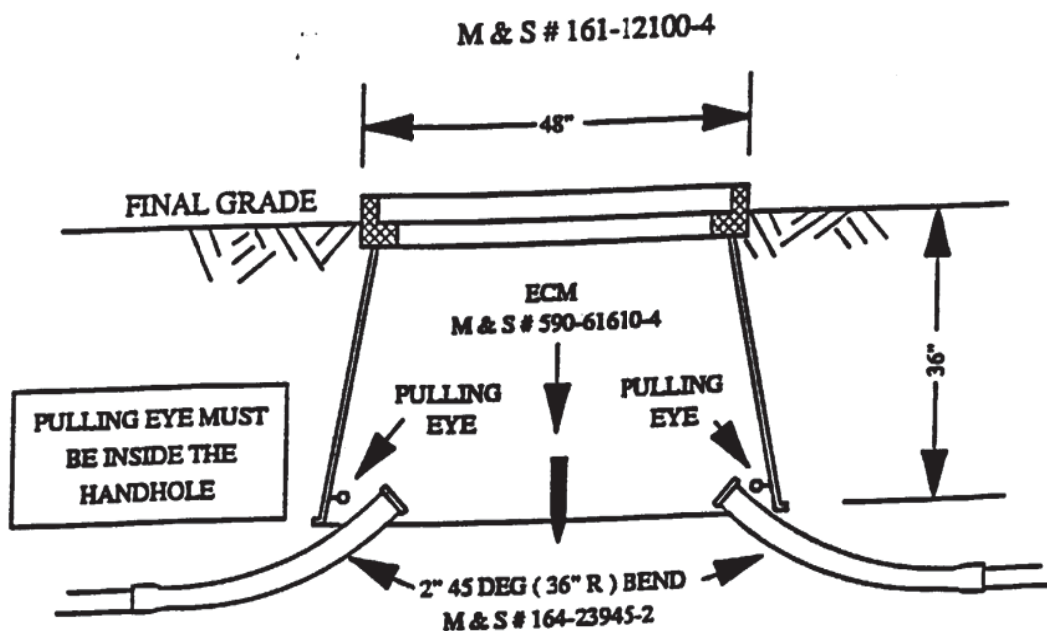


FIGURE 2A

48" PRIMARY SPLICE HANDHOLE

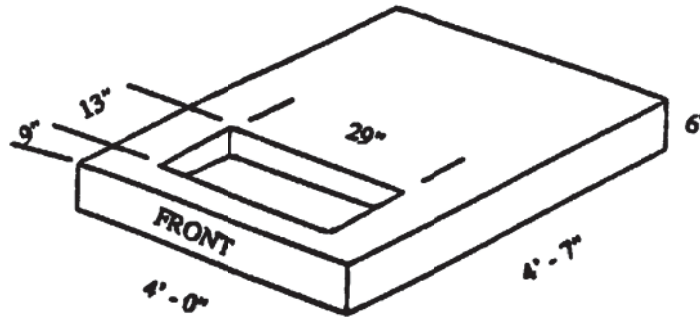


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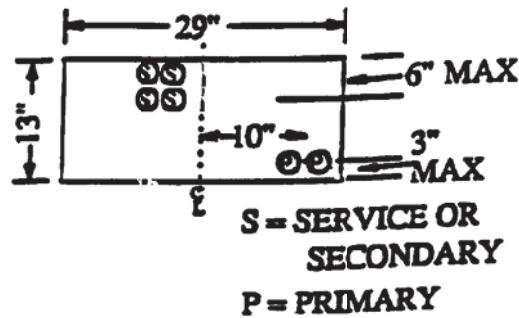
FIGURE 3

PAD & CONDUIT DETAILS

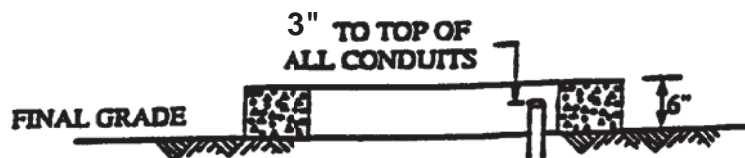
SINGLE PHASE LOW STYLE
PADMOUNT TRANSFORMER



CONCRETE TRANSFORMER PAD
M & S # 162-24800-4



PAD CONDUIT OPENING



FRONT ELEVATION OF PAD

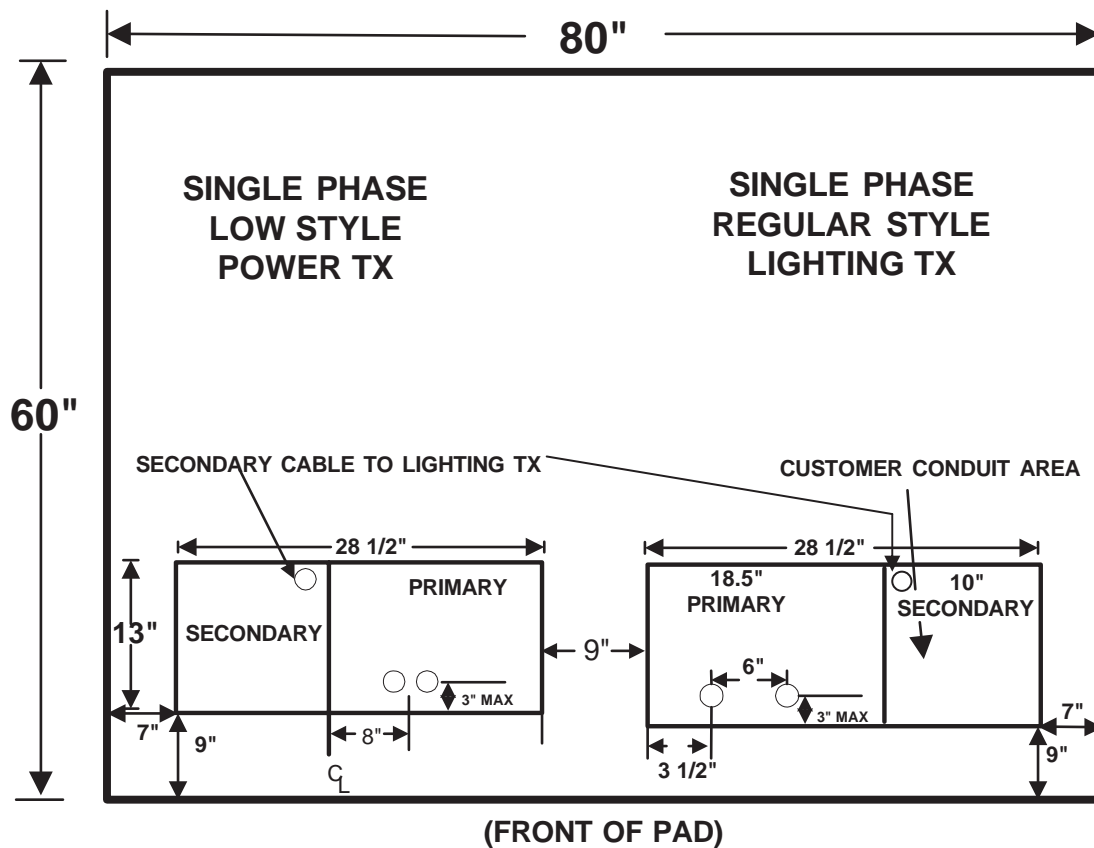


FPL.

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FIGURE 3A

ONE LOW STYLE & ONE REGULAR STYLE TRANSFORMER



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FIGURE 3B
SINGLE PHASE LOW STYLE TRANSFORMER

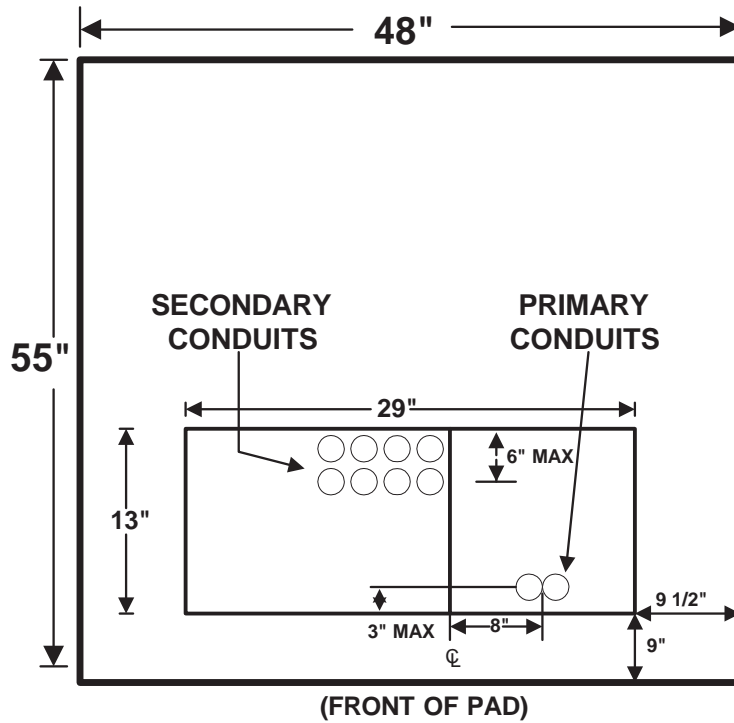


FIGURE 3C

TWO LOW STYLE TRANSFORMERS

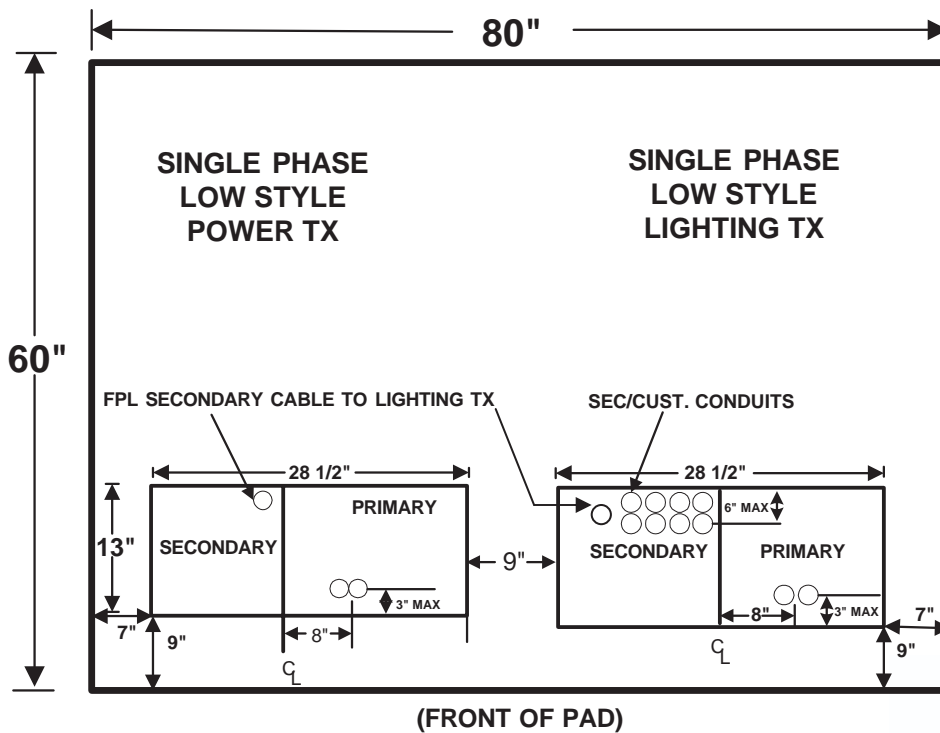
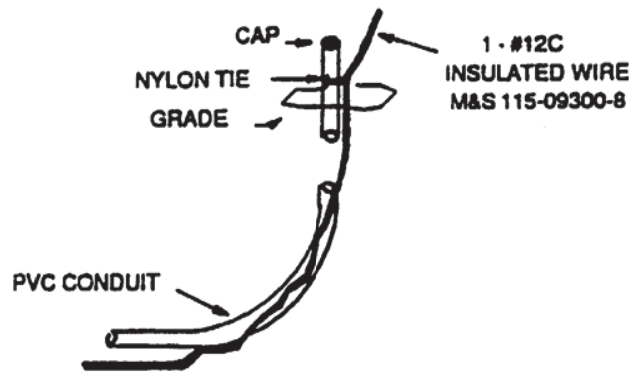


FIGURE 4

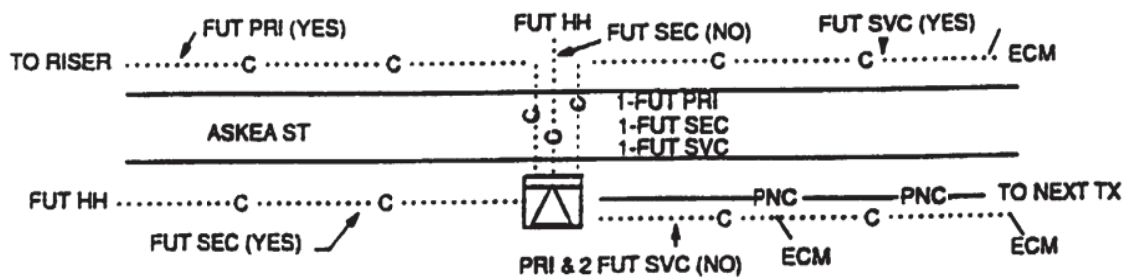
1 - #12C INSTALLATION

When installing conduit only (cable to be pulled later), a single #12 copper insulated wire is to be direct buried in every trench at the same depth as the conduits. The ends of the wire are to be terminated above ground at the conduit ends as shown. This wire will allow empty plastic conduits to be located with electronic equipment.

This method is not intended for cases where conduit is installed strictly for road crossings only. In these cases ECM markers should be used to mark the conduit ends.

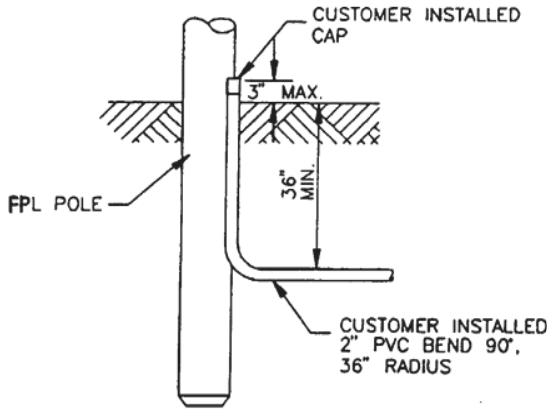


WHERE TO INSTALL #12C WIRE

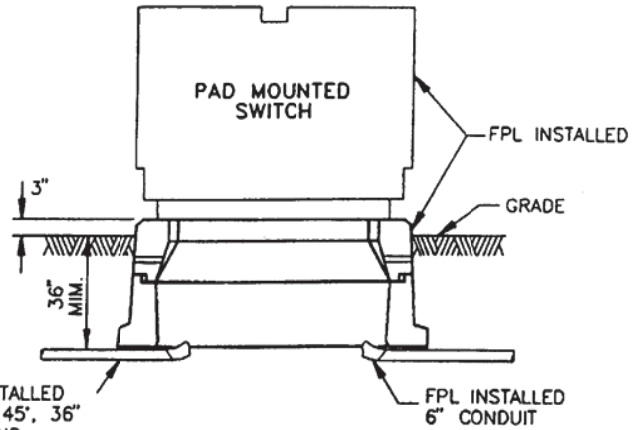


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DRAWING SYMBOLS



TYPICAL PVC CONDUIT BEND AT RISER POLE INSTALLATION



TYPICAL CONDUIT ENTRANCES TO PAD MOUNTED SWITCH

SYMBOLS

CONDUCTORS - PRIMARY

FPL OWNED, IN CONDUIT, WITH CONDUCTOR SIZE, METAL, RATED VOLTAGE INSULATION AND NEUTRAL INDICATED.

EXISTING

— PNC —

PROPOSED

— - PNC - -

CONDUCTORS - SECONDARY - STREET LIGHT

FPL OWNED, IN CONDUIT, WITH CONDUCTOR SIZE, METAL AND INSULATION INDICATED (HM/HD TPX SHOWN).

1/0A
— — — — —

4/0A
— — — — —

SERVICE LATERALS

THREE-WIRE SECONDARY SERVICE. FPL OWNED IN CONDUIT WITH CONDUCTOR SIZE, METAL, INSULATION AND JACKET INDICATED.

3-2C RN
— — — — —

1/0A TPX
— — — — —

EMPTY CONDUIT

— C —

— C — C —

PADMOUNTED TRANSFORMERS

PADMOUNTED TRANSFORMER, 1 ϕ , WITH KVA RATING (FRONT, OR TERMINAL CHAMBER, IS SMALL RECTANGLE AT RIGHT END OF SYMBOL. PRIMARY PHASE INDICATED) TRANSFORMER STYLE SHOWN AS FOLLOWS: (RS) - REGULAR SIZE - 42" + HIGH, (DF) - DEAD FRONT - 32" + HIGH, (LS) - LOW STYLE - 24" + HIGH.

▶ B 15

▶ B 15

STRUCTURES

ELECTRONIC CABLE MARKER AND OR SPLICE PIT (BURIED)



SERVICE HANDHOLE



APPENDIX B

UV-12.0.0

IDENTIFICATION OF UNDERGROUND CABLES AND VACANT CONDUITS

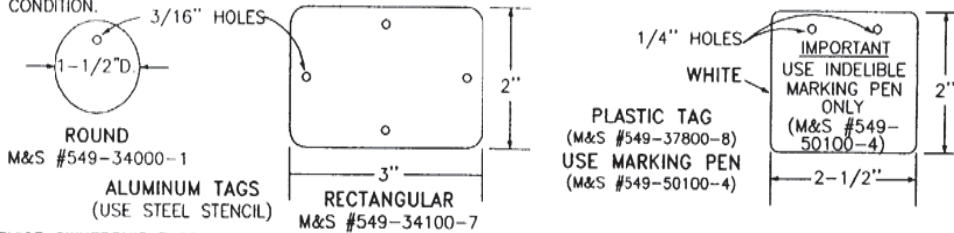
UV-12.0.0

GENERAL ALL UNDERGROUND CIRCUITS SHOULD BE IDENTIFIED WHERE APPLICABLE AS FOLLOWS:

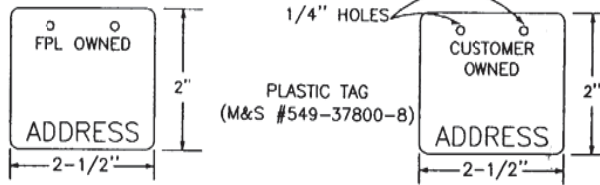
- FEEDER NUMBER
- SWITCH NUMBER
- PHASE
- CONDUCTOR SIZE, METAL, TYPE INSULATION AND VOLTAGE RATE (IF NOT SAME AS OPERATING VOLTAGE)
- SOURCE OR DIRECTION OF FEED
- OWNERSHIP
- ADDRESS OF BUILDING SERVED
- TLM NUMBER
- DATE OF FAILURE ON SECTION OF CABLE (DIRECT BURIED ONLY)
- ANY UNUSUAL CONDITIONS, I.E. CABLE IN CONDUIT, PARTIALLY IN CONDUIT, DIRECT BURIED, ETC.

ALL CIRCUITS AND VACANT CONDUITS SHOULD BE APPROPRIATELY IDENTIFIED AT EACH TERMINAL OR SWITCHING POINT AND ALL INTERMEDIATE LOCATIONS SUCH AS VAULTS, MANHOLES, PAD MOUNTED TRANSFORMERS, OR HANDHOLES. WHEN THE CIRCUIT OR VACANT CONDUIT IS OWNED BY OTHER THAN FLORIDA POWER & LIGHT COMPANY, SHOW "CUST" ON APPROPRIATE TAG. IF NECESSARY INFORMATION CANNOT BE SHOWN ON ONE TAG, USE ADDITIONAL TAGS.

INFORMATION WILL BE PLACED ON APPROVED TAGS SHOWN BELOW IN THE MANNER DESCRIBED FOR THE PARTICULAR CONDITION.



SERVICE OWNERSHIP TAGS
PLACE INSIDE METER CAN. USE TIE WRAP TO ATTACH TAG TO CONDUCTORS. PRINT ADDRESS USING MARKING PEN (M&S #549-50100-4)



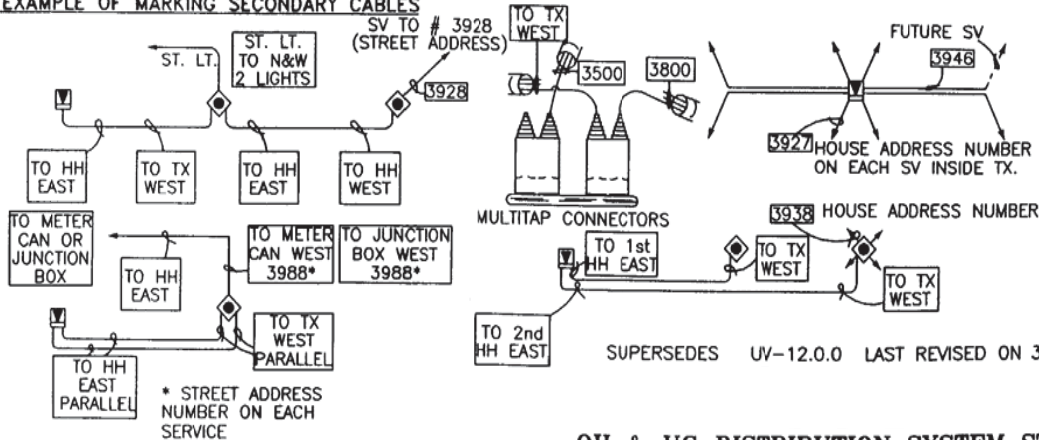
UNDERGROUND DUCT & MANHOLE SYSTEMS

USE ALUMINUM TAGS, AFFIXED TO CABLES WITH #12C-TW ON ALL CIRCUITS IN UNDERGROUND SYSTEMS, SUCH AS SUBWAY VAULTS, MANHOLES, RISER POLES, ETC. ROUND ALUMINUM TAGS ARE FOR FEEDER NUMBER AND PHASE IDENTIFICATION. RECTANGULAR ALUMINUM TAGS ARE USED FOR ALL OTHER IDENTIFICATION PURPOSES FOR EXAMPLE, ON ISOLATED NEUTRAL CONDUCTORS OF PILC CABLES, ETC.

DIRECT BURIED AND CABLE IN CONDUIT SYSTEMS

USE ALUMINUM TAGS FOR CUSTOMER I.D. AS INDICATED ABOVE FOR LOCATIONS THAT WILL BE SUBJECTED TO SUNLIGHT. USE PLASTIC TAGS FOR URD CABLE TERMINATION TAGGING AND AT OTHER LOCATIONS SUCH AS PADMOUNTED TRANSFORMERS AND HANDHOLES. ALLOW 10 SECONDS MINIMUM DRYING TIME TO PREVENT SMEARING. FASTEN PLASTIC TAG TO CABLE WITH TY-RAP (M&S #534-25000-1).

EXAMPLE OF MARKING SECONDARY CABLES



SUPERSEDES UV-12.0.0 LAST REVISED ON 3-15-91

OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: RJO

DRAWN BY: MLG

0	9-30-94	CHANGED PAGE FORMAT AND REVISED NOTES AND DIMENSIONS	RJO	MLG	RJS	DATE: 9-30-94	APPROVED: R.J. SALESKY	NO SCALE
NO.	DATE	REVISION	ORIG.	DRAWN	APPR.	SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES		

