

# Loxahatchee River Environmental Control District

## Olympus Drive Force Main & Low-Pressure Sewer Replacement

### Contract Documents and Technical Specifications

**Bid Set Design**



**CONTRACT DOCUMENTS  
AND  
TECHNICAL SPECIFICATIONS**

**FOR**

**OLYMPUS DRIVE FORCE MAIN &  
LOW-PRESSURE SEWER REPLACEMENT**

**LOXAHATCHEE RIVER  
ENVIRONMENTAL CONTROL DISTRICT**

**November 2020**

**Prepared by:**



LOXAHATCHEE RIVER ENVIRONMENTAL CONTROL DISTRICT

BIDDING AND CONTRACT REQUIREMENTS  
#20-006-OLYMPUSFMLP

OLYMPUS DRIVE FORCE MAIN & LOW PRESSURE SEWER REPLACEMENT

BID OPENING DATE: December 15, 2020

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# NOTICE TO CONTRACTORS

## **Bid # 20-006-OLYMPUSFMLP OLYMPUS DRIVE FORCE MAIN AND LOW PRESSURE REPLACEMENT**

Sealed Bids will be received by the Loxahatchee River Environmental Control District (the “District,”) via DemandStar until **2:00 p.m.** local time on **December 15, 2020**. Any Bids received after **2:00 p.m.** local time on **December 15, 2020**, will not be accepted under any circumstances. Any uncertainty regarding the time a Bid is received will be resolved against the Bidder. The Bids will be publicly opened and read aloud on **December 17, 2020** at **2:00 p.m.** local time in the Governing Board room of the District, at the above address. The Work to be performed is located in Palm Beach County, and consists of furnishing all labor, tools, materials, and equipment necessary to investigate the condition of the existing 24-inch ductile iron ball and socket, subaqueous force main as shown on the Contract Plans and Specifications and as specified herein to include:

### **OLYMPUS DRIVE FORCE MAIN & LOW PRESSURE SEWER REPLACEMENT**

**Furnishing all labor, materials, equipment and all incidentals and appurtenances for the installation of approximately 2,070 LF of 8-inch force main and approximately 785 LF of 2-inch low-pressure force main. Construction also includes MOT’s, complying with permit conditions, testing and all restoration for a complete and operating system. The roadways in the project area fall under the jurisdiction of Palm Beach County, Florida Department of Transportation (FDOT), and Town of Juno Beach.**

The District reserves the right to determine material elements of the Bid and to award the Contract, if at all, to the lowest, qualified, responsive, and responsible Bidder. The District further reserves the right to reject any and all Bids; to not proceed with the Project; and/or to waive any irregularities contained in a Bid.

A pre-bid conference will be held at **2:00 p.m.**, local time on **December 1, 2020** via Microsoft Teams. A meeting invite will be distributed to all plan holders prior to the scheduled date and time. If a bidder downloads Bid Documents from the District’s website the bidder must send a request to be included in the pre-bid conference meeting invite to **[purchasing@lrecd.org](mailto:purchasing@lrecd.org)**. All contractors planning to submit Bids on this Project are encouraged to attend.

Bid Documents may be downloaded at the District’s website, <https://loxahatcheeriver.org/governance/purchasing-bids/> or DemandStar. Bid Documents will be available on **November 9, 2020** after **8:00 a.m.** local time. The Bid Documents are made available on the above terms solely for the purpose of obtaining Bids and do not confer a license or grant for any other use.

Character and amount of security to be furnished by each Bidder are stated in the Instruction to Bidders. The Bidder shall hold its Bid open for acceptance by the District for a period of not less than ninety (90) calendar days following the date of the Bid opening.

The solicitation Invitation to Bid **20-006-OLYMPUSFMLP** has been issued as an Electronic Bid with the same title on DemandStar. To submit a response for this bid electronically follow the instructions on DemandStar. Electronic responses are the only method allowed for Bidders to respond

to this solicitation. Bids shall be submitted on or before the date and time specified.

LOXAHATCHEE RIVER ENVIRONMENTAL CONTROL DISTRICT

Stephen B. Rockoff, Chairman

## **INSTRUCTIONS TO BIDDERS**

### **ARTICLE 1**

1. The following defined terms shall govern this Section and all other Contract Documents unless otherwise noted in the Contract Documents:

- a. “Bid” shall mean the documents that comprise the submission for the Work of this Project.
- b. “Bid Period” shall mean the time period from when the Bid Documents will become available to the deadline for submitting Bids.
- c. “Bidder” shall mean one who submits a Bid directly to the District, as distinct from a sub-bidder, who submits a Bid to the Bidder.
- d. “Bid Documents” include the Advertisement for Bids, Instructions to Bidders, Proposal, Questionnaire, the Bid Form, and the proposed Contract Documents (including all Addenda issued prior to receipts of Bids).
- e. “Change Order” shall mean a written change, addition, or deletion to the Contract Documents signed by both Contractor and the District.
- f. “Contract” shall mean the agreement between the Successful Bidder and the District for performance of the Work.
- g. “Contract Documents” shall mean all documents that comprise the agreement of the parties related to the Project. The Contract Documents include the Notice to Contractors, Instructions to Bidders, Proposal, Questionnaire, Bid Security, Contract, Public Construction Bond, Sworn Statement of Public Entity Crimes, Opinion of District’s Attorney, Releases of Liens, Special Conditions, General Conditions, Technical Specifications, Standard Details and Plans, Plans and Specifications including all modifications, addenda, and Change Orders contained in any documents before or after execution of the Contract.
- h. “Contract Sum” shall mean the total amount due to Contractor as a result of the Work performed on the Project, including any amounts due as a result of Change Orders.
- i. “Contract Time” shall mean the time to complete the Project as set forth in the Contract Documents. Reference to “days” shall mean calendar days unless otherwise noted.
- j. “Contractor” shall mean the Successful Bidder with whom the District executes a contract for the Work or its duly authorized agents.
- k. “County” shall mean Palm Beach County, as may be applicable.
- l. “Defective” shall mean the Work does not conform to the Contract Documents or does not meet the requirements of any applicable inspection, reference standard, test, or approval.

- m. "District" shall mean the Loxahatchee River Environmental Control District, acting through its properly authorized representatives.
- n. "Engineer" shall mean the engineer designated by the District as its engineering representative during the course of construction to make appropriate inspection and computation of payments, whether acting directly or through properly authorized agents, inspectors or representatives of the Engineer, acting within the scope of duties entrusted to them. The Engineer may or may not be an employee of the District.
- o. "Final Completion" shall mean the time when Engineer determines that all of the Work and associated punch list items have been completed in accordance with the Contract Documents.
- p. "Notice of Award" shall mean the District's notification of award of the Contract to the Successful Bidder.
- q. "Plans" shall mean any and all drawings, plans, sketches, diagrams, designs, lists, or other graphic and pictorial portions of the Contract Documents showing the design, location, and dimensions of the Work for the Project.
- r. "Project" shall mean the entire construction to be performed as provided in the Contract Documents.
- s. "Specifications" shall mean the written requirements for materials, equipment, systems, standards, and workmanship for the Work, and performance of related services.
- t. "Substantial Completion" shall mean the date as certified by Engineer when the construction of the Project is sufficiently completed, in accordance with the Contract Documents, so that the Project can be utilized for the purposes for which it was intended; or if there be no such certification, the date when final payment is due in accordance with the Contract.
- u. "Successful Bidder" shall mean the lowest, qualified, responsible, and responsive Bidder to whom the District, based on the District's evaluation hereinafter provided, makes an award.
- v. "Work" shall mean any and all obligations, duties and responsibilities necessary to the successful completion of the Project assigned to or undertaken by Contractor under the Contract Documents, including all labor, materials, equipment, services, and other incidentals and the furnishing, installation, and delivery thereof and all Work reasonably inferable therefrom.

2. **Bids:** Sealed Bids will be received by the Loxahatchee River Environmental Control District (the "District,") via DemandStar until **2:00 p.m.** local time on **December 15, 2020**. Any Bids received after **2:00 p.m.** local time on **December 15, 2020**, will not be accepted under any circumstances. Any uncertainty regarding the time a Bid is received will be resolved against the Bidder. The Bids will be publicly opened and read aloud on **December 17, 2020** at **2:00 p.m.** local time in the Governing Board room of the District, at the above address. The Bidder shall hold its Bid open

for acceptance by the District for a period not less than ninety (90) calendar days following the date of the Bid opening.

Bid Documents may be downloaded at the District's website, <https://loxahatcheeriver.org/governance/purchasing-bids/> or via DemandStar. Bid Documents will be available on **November 9, 2020** after **8:00 a.m.** local time. The Bid Documents are made available on the above terms solely for the purpose of obtaining Bids and do not confer a license or grant for any other use.

A pre-bid conference will be held at **2:00 p.m.**, local time on **December 1, 2020** via Microsoft Teams. A meeting invite will be distributed to all plan holders prior to the scheduled date and time. If a bidder downloads Bid Documents from the District's website the bidder must send a request to be included in the pre-bid conference meeting invite to [purchasing@lrecd.org](mailto:purchasing@lrecd.org). All contractors planning to submit Bids on this Project are encouraged to attend.

All Bids shall be made on the blank form of proposal attached hereto. All blanks on the Bid Forms must be printed in blue or black ink or typed. Completed Bid Forms shall be scanned to PDF format and uploaded to DemandStar. The Bid shall contain an acknowledgment of receipt of all Addenda. A single Bid shall be submitted for all portions of the Work. Bids by corporations must be executed in the corporate name by the president or a vice president (or other corporate officer accompanied by evidence of authority to sign) and the corporate seal must be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation must be shown below the signature. Bids by partnerships must be executed in the partnership name and signed by a general partner, whose title must appear under the signature. The official address of the partnership must also be shown below the signature. If requested, the person signing a Bid for a corporation or partnership must produce evidence satisfactory to the District of the person's authority to bind the corporation or partnership. All names must be typed or printed below the signature. The address and telephone number for communications regarding the Bid must be shown.

After commencement of the Bid Period, no Bidder, or its agents, representatives, or persons acting at the request of such Bidder shall contact, communicate with or discuss any matter relating to the Bid with any District officer, agent, Board member, or employee other than Engineer or their designee. This prohibition ends upon execution of the final contract for the Work or when the Bid has been cancelled. A Bidder who violates this provision will be subject to discipline, including at a minimum a written reprimand and up to and including rejection of its Bid and/or cancellation of the Contract.

3. **Bid Security:** Each Bid must be accompanied by bid security in the form of a certified check or Bidder's Guaranty Bond ("Bid Bond") issued by a surety meeting the requirements of this Instruction to Bidders Section 3 and payable to the District for ten percent (10%) of the total amount of the Bid ("Bid Security"). Bidders will send the ORIGINAL Bid Bond to the District immediately after the Bid Due Date. The District will hold all bids unopened for 48 hours from the Bid Due Date. The original Bid Bond is to be received within 48 hours of the Bid Due Date or the bid will be deemed non-responsive. The Bid Security of the Successful Bidder will be retained until the Bidder has executed the Contract and furnished the required payment and performance bonds in the form of a Public Construction Bond, whereupon the Bid Security will be returned. If the Successful Bidder fails to execute and deliver the Contract and furnish the required Bonds within fourteen (14) calendar

days after the Notice of Award, the District may annul the Notice of Award and the Bid Security of that Bidder will be forfeited to the District. The Bid Security of any Bidder whom the District believes to have a reasonable chance of receiving the award may be retained by the District for ninety (90) calendar days after the date of the opening of the Bid. The Bid Security of other Bidders will be returned seven (7) calendar days after the opening of the Bids. The Bid Bond shall be issued by a company having a registered agent in the State of Florida.

4. **Bonds and Qualification of Security Companies:** Upon award of the Contract, Contractor shall execute a Public Construction Bond, in the amount of the total Contract Sum with a qualified surety company, covering performance of the Project and payment of subcontractors, substantially similar in form to that provided in Article 5 of the Contract Documents and in compliance with the requirements of Section 255.05, Florida Statutes.

In order to be acceptable to the District, Bid Bonds, Public Construction Bonds, or Maintenance Bonds shall, at a minimum be written by a surety company that:

- a. is admitted/authorized to do business in the State of Florida and complies with the provisions of Section 255.05, Florida Statutes;
- b. has been in business and has a record of successful continuous operations for at least five (5) years;
- c. files a certified copy of a power of attorney with the signed Bid, Public Construction, or Maintenance bonds;
- d. lists the surety's agency name, address, and telephone number on all bonds; and
- e. has at least the following minimum ratings based on the following contract amounts:

<u>CONTRACT AMOUNT</u>	<u>BEST'S RATINGS</u>
\$ 25,000.00 to \$100,000.00	B+ Class V or better
\$100,000.01 to \$500,000.00	A Class VI or better
\$500,000.01 and over	A Class VII or better

The life of the Construction Bonds or Maintenance Bonds shall extend twelve (12) months beyond the date of Final Completion and shall contain a waiver of alteration to the terms of the Contract, extensions of time, and/or forbearance on the part of the District.

Surety companies executing bonds must appear on the Treasury Department's most current list (Circular 570 as amended).

5. **Subject of Bids:** All Work for the Project shall be constructed in accordance with the Plans and Specifications prepared by Baxter & Woodman, Inc. Bids shall be submitted for furnishing, delivering, and installing all materials, equipment, incidentals and services, including labor for the

Work as specified in the Contract Documents and all items reasonably inferable therefrom. Engineer will compute the quantities that will be the basis for payment applications, both progress and final.

All Work shall be done as set forth in the Contract Documents and substantially completed, tested, cleaned, and ready for operation within the periods stated in Article 4 of the Contract, Section 2.

6. **Modification and Withdrawal of Bids:** Bids may be withdrawn or modified by an appropriate document duly executed (in the manner that a Bid must be executed) and delivered to the place where Bids are to be submitted during the Bid Period. A request for withdrawal or a modification must be in writing and signed by a person duly authorized to withdraw or modify the Bid. If signed by a deputy or subordinate, the principal's written authorization to such deputy or subordinate granting the power to act on the principal's behalf must accompany the request for withdrawal or modifications. Withdrawal of a Bid will not prejudice the rights of a Bidder to submit a new Bid within the Bid Period. After expiration of the Bid Period, no Bid may be withdrawn or modified, except as provided below.

If, within twenty-four (24) hours after Bids are opened, any Bidder files a duly signed, written notice with the District and within five (5) calendar days thereafter demonstrates to the reasonable satisfaction of the District that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid and the Bid Security will be returned. Thereafter, the Bidder will be disqualified from further bidding on the Project.

7. **Award, Waiver, and Rejection of Bids:** The Contract will be awarded pursuant to the requirements of applicable federal, state, and local laws and regulations. The Contract award will be made to the lowest cost, qualified, responsive, and responsible Bidder whose proposal materially complies with all the requirements. The District reserves the option to award or rebid the Project at any time if deemed to be in the best interest of the District.

It is the intention of the District to award the Contract to a Bidder competent to perform and complete the Work in a timely and satisfactory manner. Additionally, the District may conduct such investigations as the District deems necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications, and financial ability of Bidders, proposed subcontractors, suppliers, and other persons and organizations to perform and furnish the Work in accordance with the Contract Documents to the District's satisfaction and within the prescribed time.

To the extent permitted by applicable federal, state, and local laws and regulations, the District reserves the right to: determine materiality of Bid components; determine qualifications of the Bidder; determine responsibility of Bidder; determine responsiveness of Bidder; reject any and all Bids; waive any informality or irregularities in any Bid received; or accept the Bid deemed by the District to be in its best interest. Bids may be rejected at the option of the District if the District determines in its sole discretion the Bid is materially incomplete, unbalanced, conditional, or obscure; the Bid contains additions not called for, erasures, alterations, irregularities of any kind; the Bid does not comply materially with the Notice to Contractors and/or Instruction to Bidders; or the Bid is from a Bidder that does not meet pre-bid conference attendance requirements.

Documented poor performance of contractors on previous contracts with the District or other governmental entity will be considered during evaluation and may be sufficient cause not to award.

8. **Construction Schedule:** Prior to signing the Contract, the Successful Bidder shall submit on a form acceptable to the District and Engineer, the overall proposed construction schedule for the Project. The schedule shall conform to the requirements of Special Conditions Section 9.36. This construction schedule shall specify the Project completion date as set forth in the Contract.

9. **Execution of the Contract:** When the District gives a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Contract and all other written Contract Documents. Within fourteen (14) calendar days thereafter, Contractor shall sign and deliver the counterparts of the Contract and other written Contract Documents to the District with the required bonds and insurance certificates. Within fourteen (14) calendar days thereafter, the District shall deliver one fully signed counterpart to Contractor. Each counterpart is to be accompanied by a complete set of the appropriately identified Plans and Specifications. Following execution of the Contract by the District, the construction schedule shall be modified to begin upon the execution of the Contract by both Parties of the Contract.

10. **Examination of Contract Documents and Site:** It is the responsibility of each Bidder, prior to submitting a Bid to (a) examine the Bid and Contract Documents thoroughly, (b) visit the site of the Work and become familiar with local conditions that may in any manner affect cost, progress, performance or furnishing of the Work, (c) consider federal, state, and local laws, ordinances, rules, and regulations that may affect cost, progress, performance or furnishing of the Work in any manner, (d) examine the Plans and Specifications, requirements of the Work, and the accuracy of the quantities of the Work to be completed, and (e) notify Engineer of all conflicts, errors, or discrepancies in the Contract Documents.

Bidder may rely upon the accuracy of the technical data contained in the reports of exploration and tests of subsurface conditions at the site of the Work which have been utilized by Engineer in preparation of the Contract Documents. Bidder may not rely upon the completeness of the documents, non-technical data, interpretations or opinions of the reports of exploration and tests of subsurface conditions, for the purposes of bidding and/or construction. Further, information and data reflected in the Contract Documents with respect to underground facilities at or contiguous to the site are based upon information and data furnished to the District and Engineer by the owners of such underground facilities or others. The District does not assume responsibility for the accuracy or completeness thereof unless it is expressly provided otherwise in the Supplementary Conditions. Elevations of the ground are shown on the Plans and Specifications and are believed to be reasonably correct. However, such elevations are not guaranteed and are presented only as an approximation. Bidders shall satisfy themselves as to the correctness of all elevations.

The lands upon which the Work is to be performed, right-of-ways and easements for access thereto, and other lands designated for use by Contractor in performing Work are identified in the Contract Documents. All additional lands and access thereto required for temporary construction facilities or storage materials and equipment shall be provided by Contractor.

Before submitting a Bid, each Bidder shall, at Bidder's own expense, make or obtain any additional examinations, investigations, explorations, tests, studies and any additional information and/or data which pertain to the physical conditions (subsurface, surface and underground facilities) at or contiguous to the site or otherwise which may affect cost, progress, performance, or furnishing of the Work in accordance with the time, price, and other terms and conditions of the Contract Documents. In advance, the District will provide each Bidder access to the site of the Work at reasonable times to conduct such explorations and tests as each Bidder deems necessary for the submission of the Bid, provided Bidder provides two (2) business days written notice prior to the date access is requested.

The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with the requirements as set for in the Instructions to Bidders and all other Contract Documents; the Bid is premised upon performing and furnishing the Work required by the Bid and Contract Documents; the means, methods, techniques, sequences, or procedures of construction as may be indicated in or required by the Bid and Contract Documents will be followed; and that the Bid and Contract Documents are sufficient in scope and detail to indicate and convey an understanding of all terms and conditions of performance and furnishing of the Work.

The Contract Documents contain the detailed provisions required for the construction of the Project. No information, verbal or written, obtained from any officer, agent or employee of the District on any such matter shall in any way affect the risk or obligation assumed by Contractor, or relieve Contractor from fulfilling any of the conditions of the Contract Documents.

**11. Interpretations and Addenda:** All questions about the meaning or intent of the Contract Documents are to be directed to Engineer. All questions must be submitted to Engineer in writing as early as possible during the Bid Period. No oral answers or interpretations will be provided. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by addenda mailed to all persons recorded by Engineer as having received the Bid Documents. Questions received less than ten (10) calendar days prior to the deadline to submit Bids will not be answered. Only questions answered by formal written addenda will be binding. Oral responses and other interpretations or clarifications will be without legal effect, and shall not be relied upon by a Bidder.

Addenda may also be issued to modify the Bid Documents as deemed necessary by the District and/or Engineer. Contractor agrees to use the products and methods designated or described in the Plans and Specifications and as amended by any addenda. Addenda shall control in the event of conflict with Contractor's Bid.

**12. Substitute Material and Equipment:** The Contract will be based on material and equipment described in the Plans and Specifications without consideration of possible "substitute" or "equal" items. Whenever it is indicated in the Plans and Specifications that a Contractor may furnish or use a "substitute" or "equal" item of material or equipment, written application for such acceptance will not be considered by Engineer until after the effective date of the Contract. The written application for acceptance of a substitute item of material or equipment will be handled in accordance with the field order procedure.

13. **Subcontractors:** Each Bid must identify the names and addresses of the subcontractors. If requested by the District or Engineer, the Successful Bidder, and any other Bidder so requested, shall, within seven (7) days after the date of the request, submit to the District an experience statement with pertinent information as to similar projects and other evidence of qualification for each such subcontractor, person, and organization. The amount of subcontract work shall not exceed sixty percent (60%) of the Work. If the District or Engineer, after due investigation, has reasonable objection to any proposed subcontractor, supplier, other person, or organization, either party may, before issuing the Notice of Award, request the Successful Bidder to submit an acceptable substitute without an increase in Contract sum or Contract Time. If the apparent Successful Bidder declines to make any such substitution, the District may award the Contract to the next lowest qualified, responsive, and responsible Bidder that proposes to use acceptable subcontractors, suppliers, and other persons and organizations. Declining to make requested substitutions will not constitute grounds for sacrificing the Bid Security of any Bidder. Any subcontractor, supplier, other person or organization listed and not objected to in writing by the District or Engineer prior to giving of the Notice of Award, will be deemed acceptable to the District and Engineer, subject to revocation of such acceptance after the Effective Date of the Contract. The Successful Bidder shall be solely responsible for all payment to its subcontractors. No Contractor shall be required to employ any subcontractor, manufacturer, other person or organization against whom it has reasonable objection.

14. **Taxes:** Contractor shall pay all applicable sales, consumer, use, and other similar taxes required by law.

15. **Compliance with Laws:** Bidders must comply with all applicable federal, state, or local laws and regulations, including, but not limited to, the Department of Labor Safety and Health Regulations for construction promulgated under the Occupations Safety and Health Act of 1970 (PL 91-956) and under Section 107 of the Contract Work Hours and Safety Standards Act (PL 91-54).

Any chemicals used in the performance of this Project by the Bidder must have prior approval of the Environmental Protection Agency (EPA) and/or United States Department of Agriculture (USDA).

Bidders shall comply with the requirements of Sections 553.60-553.64, Florida Statutes (the "Trench Safety Act") and 29 CFR Section 1926.650 Subpart P (the "Occupational Safety and Health Administration's Excavation Safety Standards"). If the Project provides for trench excavation in excess of five (5) feet deep, the Bidder shall include in its Bid a reference to the Trench Safety Act and the standards that will be in effect during the period of construction of the Project; written assurance by the Bidder, that if selected, the Bidder will comply with applicable trench safety standards; and a separate item identifying the cost of compliance with the Trench Safety Act, in accordance with Section 553.64, Florida Statutes.

16. **Liquidated Damages and Additional Delay Damages:** Bidder and the District recognize the Work is of a critical nature, that time is of the essence, and the difficulty associated with ascertaining the extent of delay damages the District will suffer as a result of delay in the Work. As a result, if awarded the Contract, Bidder agrees to pay the District as liquidated damages, and not as a penalty, the amount of Liquidated Damages and Additional Delay Damages as outlined in Article 4- Contract Section 2.

17. **Insurance:** Contractor shall provide and maintain throughout the terms of this Contract, liability insurance with all the subject features in accordance with the instruction given in the Special Conditions Section 9.08.

18. **Required Disclosures:** With its Bid submission, Bidder shall disclose all material facts pertaining to any felony conviction or any pending felony charges in the last three (3) years in this state, any other state, or the United States against (i) Bidder, (ii) any business entity related to or affiliated with Bidder, or (iii) any present or former executive employee, officer, director, stockholder, partner or owner of Bidder or of any such related or affiliated entity. This disclosure shall not apply to any person or entity which is only a stockholder, owning twenty percent (20%) or less of the outstanding shares of a Bidder and whose stock is publicly owned and traded.

At its sole discretion the District may reject the Bid of any Bidder whose present or former executive employees, officers, directors, stockholders, partners, or owners are currently accused of or have ever been convicted of bidding violations. The discretion of the District may be exercised based on the disclosure required herein. By submitting a Bid, Bidder recognizes and accepts that the District may reject the Bid based upon the exercise of its sole discretion, and Bidder waives any claim it might have for damages or other relief resulting from the rejection of its Bid based on these grounds.

19. **Public Entity Crime/ Convicted Vendor List:** A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid on a contract to provide any goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public Work, may not submit bids on leases of real property to a public entity, may not be awarded or perform Work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, Florida Statutes, Category Two, for a period of thirty-six (36) months from the date of being placed on the convicted vendor list.

20. **License and Permits:** The District has obtained the permits specified within the Contract Documents. Contractor shall obtain and pay for all permits and licenses required for the Work as defined in Section 01010 of the Technical Specifications, including the cost of all Work performed in compliance with the terms and conditions of such permits, whether by itself or others.

No construction Work shall commence until all applicable licenses and permits have been obtained and copies delivered to Engineer.

21. **Protest:** The District is responsible for resolution of protests of contract awards, claims, disputes, alleged patent infringements, alleged license fee(s) and other related procurement matters in accordance with sound business judgment and good administrative practice. By submitting a Bid to the District, Bidders agree to the procedures outlined in the District's Procurement Policy which can be found on the District's website, [www.loxahatcheeriver.org/purchasing.php](http://www.loxahatcheeriver.org/purchasing.php), to resolve all protests.

22. The Contract Documents include various divisions, sections, and conditions which are essential parts of the Work to be provided by the Contractor. A requirement occurring in one is

binding as though occurring in all. The Contract Documents are intended to be complementary and to describe and provide for complete Work. In case of discrepancy, the following precedence will govern the interpretation of the Contract Documents prior to award of the Contract:

1. Addenda
2. Bid Documents, including the Contract
3. Special Conditions
4. Technical Specifications / Plans and Specifications
5. General Conditions
6. Bidder's Response

After award, in the event of a conflict, Change Orders, supplemental agreements, and revisions to Plans and Specifications will take precedence over any of the above. Detailed plans shall have precedence over general plans. In the event that any conflicts cannot be resolved by reference to this governing order of Contract Documents provision, then the District shall resolve the conflict in any manner which is acceptable to the District and which comports with the overall intent of the Contract Documents.

23. To render a Bid responsive, the Bidder's Proposal must be accompanied by the Bid Form provided in Article 2 of the Contract Documents. Acceptable references and projects to be included shall be those related to investigations of force mains. References provided shall be from the "owner" of the Project, not the project engineer or Contractor. The District will not award a Bid to any Bidder who cannot prove to the satisfaction of the District that the corporation/partnership/individual identified on the signature of Bidder form has satisfactory written references for similar work. References that are from a parent corporation or affiliated subsidiary will not be considered by the District.

24. **Notice to Proceed:** The Notice to Proceed for this project will be issued within 180 days of the Award of Contract at a time mutually agreed to by the District and lowest responsive bidder.

25. **Health, Safety and Environmental Performance:** The District shall evaluate Bidder's health, safety and environmental performance based on the following performance metrics and documentation reviews. The selected Bidder is solely responsible for all applicable health, safety, and environmental requirements, and the health, safety, and environmental evaluation conducted by the District is not an assumption of any responsibility for health, safety, and environmental requirements by the District. Bidders which fail to submit with their Bid information demonstrating compliance with the following criteria shall be considered non-responsive/non-responsible:

U.S. Department of Labor Occupational Safety and Health Administration (OSHA) Incident Rates and Recordable Injuries:

Total Days Away, Restricted, Transferred (DART) **Benchmark 4.4**  
(U.S. Bureau of Labor Statistics, Table 1). Incidence rates of nonfatal occupational injuries and illnesses by industry and case types, **2018, 25<sup>th</sup> percentile or better for size 11-49, NAICS 237110, Water and sewer line and related structures construction**). **Bidder's DART must be less than or equal to benchmark.**

Total Recordable Incident Rate (TRIR) **Benchmark 6.8**  
(U.S. Bureau of Labor Statistics, Table 1. Incidence rates of nonfatal occupational injuries and illnesses by industry and case types, **2018, 25<sup>th</sup> percentile or better for size 11-49, NAICS 237110, Water and sewer line and related structures construction**). **Bidder's TRIR must be less than or equal to benchmark.**

Fatalities: **0** Work related fatalities resulting in OSHA citations within the last three years, OR if 1 or more work related fatalities resulting in an OSHA citation exist within the last three years, the contractor must have mitigated risk of recurrence by implementing adequate industry standard safety procedures and training as determined by OSHA by providing such OSHA determination to the District.

Bidder shall submit a health, safety and environmental plan for Construction and General Industry. The health, safety and environmental plan must address the following minimum requirements:

Lockout/Tagout  
Excavation Trenching and Shoring  
Permit Required Confined Space  
Injury Reporting/Investigation  
Operator Qualifications  
Hot Work  
Personal Protective Equipment  
Electrical Safety  
Near Miss, Behavioral Based Safety  
Qualified, Certified and Competent Employees

OSHA Inspection Detail review must show no Serious or Willful violations in the previous 36 months and no unresolved Failure to Abate Prior Violation in the previous 36 months and no active Failure to Abate Prior Violation.

Bidder shall submit with their Bid OSHA Form 300A completed for the previous year, an Experience Modification Rating letter from its insurance carrier for the current period and a copy of its written health, safety and environmental program with training records for the previous 36 months.

26. **Previous Performance on District Projects:** The District has implemented a Contractor Evaluation Report in an effort to document contractor performance on District projects. Bidders who have received Unsatisfactory ratings on previous District projects must submit with their Bid a mitigation plan detailing previous unsatisfactory ratings and measures implemented to address the unsatisfactory performance. Bidders with unsatisfactory ratings not submitting a mitigation plan with their bid shall be deemed Non-Responsive/Non-Responsible.

27. **Experience:** The District shall evaluate the Bidder's experience relative to the work to be performed based on the following requirements:

Have successfully performed as Prime Contractor on a minimum of 5 similar projects in the past 5 years. Similar projects shall include sanitary force main inspections with a minimum construction contract value of \$100,000. Qualifying projects shall be complete and shall not have been assessed Liquidated Damages, terminated, suspended or defaulted.

Bidder shall submit Project Resumes for all qualifying projects. Resumes shall include project name, description, construction cost, completion date, District's project manager contact information (name, phone number and email), Engineer of Record's contact information (name, phone number and email). See Proposal, Article 2A, Questionnaire.

LOXAHATCHEE RIVER  
ENVIRONMENTAL CONTROL DISTRICT

By: \_\_\_\_\_  
Stephen B. Rockoff  
Chairman

I hereby acknowledge receipt of the Notice to Contractors and Instruction to Bidders and have familiarized myself with the contents therein and all other Contract Documents

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

\_\_\_\_\_ Date

**PROPOSAL**

**ARTICLE 2**

**LOXAHATCHEE RIVER DISTRICT  
OLYMPUS DRIVE FORCE MAIN AND LOW PRESSURE SEWER  
REPLACEMENT**

To the LOXAHATCHEE RIVER DISTRICT of Jupiter, Florida, as the party of the first part:

Proposal made by: \_\_\_\_\_  
as Bidder,

whose business address is: \_\_\_\_\_

State whether Bidder is an individual,  
a partnership or a corporation: \_\_\_\_\_

Accompanying this Proposal is a Bid Security for \$ \_\_\_\_\_ (Numbers)  
\_\_\_\_\_(Amount Written)

From: \_\_\_\_\_  
(Name of Surety)

1. The undersigned Bidder hereby declares that the Bidder has carefully examined the Contract Documents relating to the above entitled matter and the Work, and has personally inspected the location of the Work. The undersigned Bidder has correlated the results of all observations, examinations, investigations, tests, reports, and studies with the terms and conditions of the Contract Documents.
2. The undersigned Bidder hereby declares that the Bidder is the only person or persons interested in its Bid; that it is made without any connection with any person submitting another bid for the same Contract; that the Bid is in all respects fair and without collusion, fraud, or mental reservations; that no official of the District or any person in the employ of the aforesaid is directly or indirectly interested in said Bid or in the supplies of Work to which it relates, or in any portion of the profits thereof.
3. The undersigned Bidder does hereby offer and agree to furnish all materials, to fully and faithfully construct, perform and execute all Work in the above entitled matter in accordance with the Plans and Specifications relating thereto, and to furnish all labor, tools, implements, machinery, forms transportation, and materials necessary and proper for the said purpose at the prices named below for the various items of Work.
4. The undersigned Bidder does hereby declare that the prices so stated cover all expenses of every kind incidental to the completion of said Work and the Contract, including all claims that may arise through damages or other cause whatsoever. The undersigned Bidder agrees to complete the Work for the price(s) indicated in the Bid Form.
5. The undersigned Bidder does hereby declare that the Bidder shall make no claim on an account of any variation of the approximate estimate in the quantities of Work to be done, nor on account of any misunderstanding or misconceptions of the nature of the Work to be done or the grounds or place where it is to be done.
6. The undersigned Bidder does hereby agree that it will execute the Contract which will contain the material terms, conditions, provisions, and covenants necessary to complete the Work according to the Plans and Specifications, within fourteen (14) calendar days after receipt of written Notice of Award of this proposal by the District; and if the Bidder fails to execute said Contract within said period of time, that the District shall have the power to rescind said award and also retain for the District the Bid Security accompanying Bidder's proposal which shall become forfeited as liquidated damages.
7. The undersigned Bidder also declares and agrees that the Bidder will commence the Work within ten (10) calendar days after receipt of written Notice to Proceed and will complete the Work fully and in every respect on or before the time specified in the Contract Documents, and so authorize the party of the District in case of failure to complete the Work within such specified time to employ such persons, equipment, and materials as may be necessary for the proper completion of said Work and to deduct the cost therefore from the amount due under the Contract.
8. The undersigned Bidder accepts all of the terms and conditions of the Bid Documents, including without limitation those dealing with the disposition of the Bid Security. The undersigned Bidder also makes all representations required by the Instructions to Bidders.

9. The undersigned Bidder agrees to provide Unit Prices of major construction elements of the Work in order to better determine the value of progress payment, in a format as provided in Article 6 Forms for Use During Construction.

10. The undersigned Bidder hereby agrees that the Bidder will, at Bidder's expense, insure all persons employed by it in prosecuting the Work hereunder against accident as provided by the Workers' Compensation Law of the State of Florida.

11. The price for the Work shall be stated in both words and figures in the appropriate place in the proposal form. Discrepancies in the multiplication of units of Work and unit prices will be resolved in the favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in the favor of the correct sum. In the event that there is a discrepancy between the price in written words and the price written in figures, the former shall govern.

12. The undersigned Bidder acknowledges receipt of the addenda, if any, as listed herein and agrees that Bidder will be bound by all addenda whether or not listed herein.

Receipt of Addendum	No. _____	Date _____
	No. _____	Date _____
	No. _____	Date _____
	No. _____	Date _____

13. The following documents are attached to and made a condition of this Bid (initial each item in the space provided):

- a. Initial\_\_\_\_\_. Instructions to Bidders, Proposal, Questionnaire, Sworn Statement Under Section 287.133(3)(a), Florida Statutes, on Public Entity Crimes, Schedule of Bid Prices
- b. Initial\_\_\_\_\_. Bid Security
- c. Initial\_\_\_\_\_. Power of Attorney (for Surety Bond only)
- d. Initial\_\_\_\_\_. Corporate Authority to execute Bid (any corporate employee other than president or vice president)
- e. Initial\_\_\_\_\_. Copies of current valid license(s) issued in accordance with Florida Statutes and/or appropriate local ordinances is hereby acknowledged.
- f. Initial\_\_\_\_\_. OSHA's Form 300A completed for the previous year
- g. Initial\_\_\_\_\_. Experience Modification Rating letter (issued by insurance carrier) for the current period.

- h. Initial \_\_\_\_\_. Written health, safety and environmental program with training records for the previous 36 months.
- i. Initial \_\_\_\_\_. Contractor's Unsatisfactory Rating Mitigation Plan (if required, see ITB 26)
- j. Initial \_\_\_\_\_. Project Resume's for qualifying experience (see ITB 27).

Contractor: \_\_\_\_\_

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

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

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

(Corporation Seal)

Attest: \_\_\_\_\_

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

Contractor's License No: \_\_\_\_\_

**BID FORM — BASE BID**  
**LOXAHATCHEE RIVER ENVIRONMENTAL CONTROL DISTRICT**  
**OLYMPUS DRIVE FORCE MAIN & LOW PRESSURE SEWER REPLACEMENT**  
**UNIT PRICES**

<b>No.</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Unit Cost</b>	<b>Total</b>
	<b>GENERAL CONDITIONS</b>				
1	Mobilization, Insurance and Bonds (5%)*	LS	1	\$	\$
2	Maintenance of Traffic	LS	1	\$	\$
3	As-Built Record Drawings	LS	1	\$	\$
4	Audio Video Documentation	LS	1	\$	\$
5	NPDES Permit / Erosion Protection Measures	LS	1	\$	\$
	<b>ROADWAY</b>				
6	Mill Existing Asphalt Pavement (1.5" Avg Depth) and Hauloff	SY	1,400	\$	\$
7	1.5" Superpave Asphalt Concrete SP 12.5	TON	125	\$	\$
8	Open-Cut Pavement Trench Repair (2" FM)	LF	160	\$	\$
9	Open-Cut Pavement Trench Repair (8" FM)	LF	80	\$	\$
10	Replace ADA Curb Ramp w/ Tactile Warning Surface (FDOT Index 522)	EA	1	\$	\$
11	Replace Header Curb	LF	20	\$	\$
12	Replace Type F Curb	LF	10	\$	\$
13	Concrete Sidewalk Replacement (4" Thick; 3000 psi)	SF	360	\$	\$
14	Brick Sidewalk Replacement	SF	50	\$	\$
15	Pavement Markings	LS	1	\$	\$
	<b>FORCE MAIN</b>				
16	8" (PVC C900) Force Main (Push-On)	LF	70	\$	\$
17	8" (PVC C900) Force Main (Restrained Joints)	LF	250	\$	\$
18	2" HDPE DR11 (DIPS) FM w/ 2" (HDPE DR 7 IPS) Conduit	LF	570	\$	\$

No.	Description	Unit	Qty	Unit Cost	Total
19	8" HDPE DR11 (DIPS) FM w/ 2" (HDPE DR 7 IPS) Conduit	LF	1,750	\$	\$
20	Directional Drill Pit & Restoration (2" FM)	EA	6	\$	\$
21	Directional Drill Pit & Restoration (8" FM)	EA	6	\$	\$
22	DIP Compact Fittings (Epoxy Coated)	TON	1.2	\$	\$
23	2" ARV w/ Manhole (6" FM)	EA	4	\$	\$
24	2" Line Stop	EA	2	\$	\$
25	2" Ball Valve w/ Valve Box	EA	1	\$	\$
26	8" Plug Valve	EA	5	\$	\$
27	2" Pack Joint Style Adapter w/ Stainless Steel Stiffener	EA	6	\$	\$
28	8" MJ Adapter (DIPS)	EA	6	\$	\$
29	Furnish & Install 1-1/2" Low-Pressure Sewer Service	EA	4	\$	\$
30	Connect to Existing Force Main / Low-Pressure Sewer	EA	5	\$	\$
31	2" (SCH 80 PVC) Force Main & Fittings	LF	215	\$	\$
32	Remove Existing ARV & Manhole (including excavation, backfill, and compaction)	EA	1	\$	\$
33	Remove Existing FM	LF	50	\$	\$
34	Abandon & Grout Existing 6" FM	LF	1,980	\$	\$
35	Abandon & Grout Existing 10" FM	LF	750	\$	\$
	<b>MISCELLANEOUS</b>				
36	Flowable Fill	CY	50	\$	\$
37	Remove Palm Tree (Dwg. C-7)	EA	1	\$	\$
	<b>TOTAL BID ITEMS 1-37</b>				<b>\$</b>

\* Payment for mobilization shall not exceed eight percent (8%) of the contract price.

TOTAL BASE BID, ITEMS 1-37 (in words)

\_\_\_\_\_ Dollars

\_\_\_\_\_ Cents

THE CONTRACT AWARD SHALL BE EVALUATED BASED ON THE TOTAL BASE BID PRICE FOR ITEMS 1 THROUGH 37 AS SUBMITTED BY THE LOWEST, QUALIFIED, RESPONSIBLE, RESPONSIVE BIDDER.

---

(Name of Bidder)

Bidders Name: \_\_\_\_\_

By: \_\_\_\_\_  
Signature of Authorized Officer, Partner, Member, Manager

Print Name of Person signing: \_\_\_\_\_

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

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

\_\_\_\_\_

Incorporated or formed under the laws of the State of \_\_\_\_\_.

**PROPOSAL**  
**ARTICLE 2a**

QUESTIONNAIRE

For

OLYMPUS DRIVE FORCE MAIN & LOW-PRESSURE SEWER REPLACEMENT

INSTRUCTIONS

1. The following information must be filled out by **all Bidders**.
2. Please print legibly, type, or word process. Sign in ink. When attaching sheets, please place the question number to which you are responding in the upper right hand corner of each sheet and number the sheets.
3. Note that the person signing this Application must swear that the information provided below is true, accurate, and complete.

\*\*\*\*\*

**1. Basic Information**

1.1 Name of Contractor:

\_\_\_\_\_

[Same as on Cover Page of The Proposal]

1.2 Contact Person(s):

\_\_\_\_\_

1.3 Telephone No: \_\_\_\_\_ Fax No: \_\_\_\_\_ E-mail:

\_\_\_\_\_

1.4 Address:

\_\_\_\_\_

\_\_\_\_\_

1.5 Federal Tax ID No: \_\_\_\_\_

1.6 CONTRACTOR'S license: Primary classification: \_\_\_\_\_

State License Number \_\_\_\_\_

Supplemental classifications held, if any: \_\_\_\_\_

Name of Licensee, if different from (1) above: \_\_\_\_\_

\_\_\_\_\_

1.7 Name of person and title who inspected site of proposed WORK for your firm:

Name: \_\_\_\_\_ Date of Inspection: \_\_\_\_\_

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

## **2. Organizational Structure & History**

2.1 The Contractor is duly organized under the laws of the State of \_\_\_\_\_.

2.2 The Contractor has the following organizational structure.

( ) individual ( ) corporation ( ) partnership  
( ) limited liability company ( ) joint venture ( ) other: \_\_\_\_\_

2.3 Provide the year the Contractor (and not any Predecessor Entities or Related Entities) was first organized. \_\_\_\_\_

2.4 List all Predecessor Entities below (or on attached sheets if necessary).

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

2.5 Please list all Related Entities below (or on attached sheets if necessary).

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

2.6 If organized in any state other than Florida or in a foreign country, are you in compliance with all laws and regulations necessary to legally do business in the State of Florida?

YES \_\_\_\_\_ NO \_\_\_\_\_

### 3. Officers and Owners

3.1 Officers: List the name, title, and address of current Officers, Directors, Partners, Members, and any other persons with similar positions, in descending order of degree of control.

Name	Title	Address
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

[Attach additional sheets as necessary.]

3.2 Owners. Please list the name, address, and percentage of ownership of all persons or entities owning 10 percent or more of the Contractor, in descending order of percentage of ownership.

Owner	Address	%
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

[Attach additional sheets as necessary.]

3.3 Employees. Please list total quantity of employees, # of crews, and discipline of each crew.

Crew Discipline	Number of employees in crew	% of total firm
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

[Attach additional sheets as necessary.]

#### 4. Experience

4.1 Summary of Contractor Experience With respect to this specific project, list the approximate number of years of experience that the Contractor has as a prime contractor or as a subcontractor with primary responsibility.

<u>Project Type</u>	<u>Years</u>
Utility Construction (primary)	_____
Utility Construction (subcontractor)	_____

4.2 Most Recently Completed Contracts Please provide the following information regarding the last ten contracts completed by the Contractor. Please list in reverse chronological order (most recently completed project first, next most recently completed project, etc.). [Please feel free to provide this information on attached sheets in another format as long as it contains all the information requested.]

Contract Amount	Project Type & Location	Month / Year Completed	Name, Address, Contact Person & Tel. # of Owner

4.3 What is the last project similar in nature that you have completed as Prime Contractor for a government entity in Florida? (This must be filled out below or Bid may be considered non-responsive.)

Project: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Project Cost: \_\_\_\_\_  
Year Complete: \_\_\_\_\_  
Government: \_\_\_\_\_

4.4 ATTACH TO THIS BID the experience resume of the person who will be designated chief construction superintendent or on site construction manager.

4.5 List 5 projects completed as Prime Contractor in last 5 years in Florida involving work of similar type and complexity that you have completed as Prime Contractor for a government entity in Florida. See Instructions to Bidders, Paragraph 27, Experience. If 5 projects have not been completed, Contractor must so state (this must be filled out below or Bid may be considered non-responsive).:

a. Project Name: \_\_\_\_\_

Contract Price: \$\_\_\_\_\_

Detailed Description of Work: \_\_\_\_\_

\_\_\_\_\_

Name, Address and Telephone Number of Government/Contact Person: \_\_\_\_\_

\_\_\_\_\_

b. Project Name: \_\_\_\_\_

Contract Price: \$\_\_\_\_\_

Detailed Description of Work: \_\_\_\_\_

\_\_\_\_\_

Name, Address and Telephone Number of Government/Contact Person: \_\_\_\_\_

\_\_\_\_\_

c. Project Name: \_\_\_\_\_

Contract Price: \$\_\_\_\_\_

Detailed Description of Work: \_\_\_\_\_

\_\_\_\_\_

Name, Address and Telephone Number of Government/Contact Person: \_\_\_\_\_

\_\_\_\_\_

d. Project Name: \_\_\_\_\_

Contract Price: \$\_\_\_\_\_

Detailed Description of Work: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Name, Address and Telephone Number of Government/Contact Person: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

e. Project Name: \_\_\_\_\_

Contract Price: \$ \_\_\_\_\_

Detailed Description of Work: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Name, Address and Telephone Number of Government/Contact Person: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

4.6 Contracts In Progress Please provide the following information regarding all contracts currently in progress, in descending order of contract amount. [Please feel free to provide this information on attached sheets in another format as long as it contains all the information requested.]

Contract Amount	Project Type & Location	% Completed	Name, Address, Contact Person & Tel. # of Owner

4.7 Provide an alphabetical listing of all state or local government agencies, including telephone number and contact person, that have awarded the Contractor (or any Predecessor Entities and Related Entities) a contract during the last five years. Attach additional sheets as necessary.

- |          |          |
|----------|----------|
| 1. _____ | 2. _____ |
| 3. _____ | 4. _____ |
| 5. _____ | 6. _____ |

- 4.8 Subcontractors. This proposal is being submitted by the CONTRACTOR who proposes to perform the Work as required by the Contract Documents. If the CONTRACTOR will be utilizing a Subcontractor for a category of Work set forth below then the CONTRACTOR **must** identify the Subcontractor by name and provide the Subcontractor's address and telephone number. Only **one** Subcontractor may be identified for each category set forth below. If the CONTRACTOR does not identify a Subcontractor for a category of Work specified, this shall constitute a representation and warranty by the CONTRACTOR that the CONTRACTOR is not utilizing a Subcontractor for such Work and will perform such Work with CONTRACTOR's own employees. After submitting this bid the CONTRACTOR may not add to, subtract from, modify or make substitutions regarding the Supplier/Subcontractor identification and listing without the express written request and consent of the District. Any substitutions must be for legitimate and proper reasons. All Subcontractors listed are subject to the approval of the District.

CONTRACTOR represents and warrants to the District that all of said Subcontractors and their authorized vendors have been made aware of all the appropriate portions of the Contract Documents and agree that their portion of the Work and materials furnished in connection therewith will meet all of the requirements of the Contract Documents and that deliveries will be scheduled so as not to impede the progress of the Work.

Subcontractors:

Surveyor

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

\_\_\_\_\_  
Address & Telephone No.

Horizontal Directional Drilling

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

\_\_\_\_\_  
Address & Telephone No.

Roadway Restoration

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

\_\_\_\_\_  
Address & Telephone No.

Videographer

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

\_\_\_\_\_  
Address & Telephone No.

Other

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

\_\_\_\_\_  
Address & Telephone No.

4.10 Liquidated Damages Within the last five years, has the Contractor (or any Predecessor Entities or Related Entities) had liquidated damages assessed against it?

YES \_\_\_\_\_ NO \_\_\_\_\_

If YES, please provide full details on attached sheets including the per diem amount of liquidated damages, the original contract time, and the number of days for which liquidated damages were assessed. Please feel free to include a written summary of your position on the matter.

4.11 Terminations / Suspensions / Defaults

(a) Within the last five years, has a contract of the Contractor (or any Predecessor Entities or Related Entities) been terminated or suspended for cause?

YES \_\_\_\_\_ NO \_\_\_\_\_

(b) Within the last five years, has another party (e.g. surety) completed Work which the Contractor (or any Predecessor Entities or Related Entities) was originally responsible to perform?

YES \_\_\_\_\_ NO \_\_\_\_\_

(c) Within the last five years, has the Contractor (or any Predecessor Entities or Related Entities) been considered in default of a contract that was not cured within the time frame allowed by the contract?

YES \_\_\_\_\_ NO \_\_\_\_\_

If the answer to any of questions 4.6(a)-(c) is YES, please provide full details on attached sheets. Please feel free to include a written summary of your position on the matter.

#### 4.12 Denial of Qualification or Award

(a) Within the last 5 years, has any federal, state, or local government or procurement agency denied the Contractor (or any Predecessor Entities or Related Entities) qualification?

YES \_\_\_\_\_ NO \_\_\_\_\_

(b) Within the last 5 years, has any federal, state, or local government or procurement agency, after the Contractor (or any Predecessor Entities or Related Entities) submitted the apparent low bid, refused to award a contract for reasons related to the Contractor's qualifications, experience, competence, or financial situation?

YES \_\_\_\_\_ NO \_\_\_\_\_

If the answer to either of questions 4.7(a) or (b) is YES, please provide full details on attached sheets. Please feel free to include a written summary of your position on the matter.

#### 4.13 Debarments, Etc.

(a) Within the last 5 years, has the Contractor (or any Predecessor Entities or Related Entities) been debarred for any reason by any federal, state, or local government or procurement agencies?

YES \_\_\_\_\_ NO \_\_\_\_\_

(b) Within the last 5 years, has the Contractor (or any Predecessor Entities or Related Entities) refrained from bidding for any reason, such as suspension or agreement not to bid, or as part of the settlement of a Dispute of any type with any federal, state, or local government or procurement agencies?

YES \_\_\_\_\_ NO \_\_\_\_\_

If the answer to either of questions 4.8(a) or (b) is YES, please provide full details on attached sheets. Please feel free to include a written summary of your position on the matter.

4.14 Claims History Within the last 5 years, has the Contractor (or any Predecessor Entities or Related Entities) been a party to a Claim with an originally claimed amount in excess of \$50,000?

YES \_\_\_\_\_ NO \_\_\_\_\_

If YES, please provide full details for each Claim on attached sheets including (a) whether the Claim was brought by or against the Contractor (or any Predecessor Entities or Related Entities), (b) the nature of the Dispute underlying the Claim, (c) originally claimed amounts, (d) the resolution of such Claims (including the amount) or if unresolved, the current status of such Claims, and (e) the name, address and phone number of the primary adverse party who is to be contacted for additional information, and (f) a written summary of your position on the matter (if desired).

4.15 Bid or Other Crimes Within the last 10 years, has the Contractor (or any Predecessor Entities or Related Entities), or any officers, owners, or Key Personnel of the same ever been indicted on, convicted of, or plead or consented to a violation of a bid crime including bid collusion or any other crime involving fraud or knowing misrepresentation?

YES \_\_\_\_\_ NO \_\_\_\_\_

If YES, please provide full details on attached sheets. Please feel free to include a written summary of your position on the matter.

4.16 Quality Control Does the Contractor have a written organizational-level quality control plan (as opposed to project-level plans)?

YES \_\_\_\_\_ NO \_\_\_\_\_

If YES, please answer the following two questions.

- (a) What year was it first adopted? \_\_\_\_\_
- (b) In what year was its substance last revised? \_\_\_\_\_

4.17 Contractor Evaluation Report Has the Contractor performed work with the District where a Contractor Evaluation Report was completed as part of the work?

YES \_\_\_\_\_ NO \_\_\_\_\_

If YES, did the Contractor receive any UNSATISFACTORY ratings?

YES \_\_\_\_\_ NO \_\_\_\_\_

If YES, include with the Bid Contractor's UNSATISFACTORY RATING MITIGATION PLAN.

## **5. Key Personnel**

5.1 Please provide the following information for all Key Personnel whose duties consist primarily of one or more the following functions: (a) project management, (b) quality control and (c) safety oversight. [Please feel free to provide this information on attached sheets in another format as long as it contains all the information requested.]

	Name	Job Duties (a-c above)	Relevant Licenses or Certifications	Experience (# of Yrs.)	Education (Degree or # Yrs.)
1	_____	_____	_____	_____	_____
2	_____	_____	_____	_____	_____
3	_____	_____	_____	_____	_____
4	_____	_____	_____	_____	_____
5	_____	_____	_____	_____	_____
6	_____	_____	_____	_____	_____

[Attach additional sheets as necessary.]

## 6. **Bonding**

6.1 Is the Contractor capable of obtaining from a Qualifying Bonding Company a performance bond and a payment bond each in the amount of the bid prices that the Contractor will be submitting to the OWNER. A Qualifying Bonding Company is an insurance, bonding, and/or surety company rated in accordance with contract requirements.

YES \_\_\_\_\_ NO \_\_\_\_\_

If NO, please explain why you cannot meet the bonding standards set forth in question 6.1 above on attached sheets.

## 7. **Environmental**

7.1 Environmental Record. Within the last 5 years, has the Contractor (or any Predecessor Entities or Related Entities) been found to be in violation of any federal, state or local environmental law or regulation in an administrative, civil or criminal proceeding in which the fact finder found that the Contractor committed the violation and/or failed to comply after having been notified of the violation?

YES \_\_\_\_\_ NO \_\_\_\_\_

If YES, please provide full details, including a summary of your position, on attached sheets.

## 8. **Financial**

8.1 ATTACH TO THIS BID an abbreviated financial statement on the attached form, references, and other information, sufficiently comprehensive to permit an evaluation of CONTRACTOR'S current financial condition.

### **9. Certifications Under Oath**

By signing below, the person signing below hereby certifies and swears, **ON OATH**, as follows.

1. I have personal knowledge of all the information contained in this Questionnaire OR I am responsible for the accuracy of all such information.
2. The information contained in this Application is true and complete.
3. I hereby authorize the Loxahatchee River District to contact any person or entity necessary to verify or supplement any of the information requested by or provided in this Application without liability, and I hereby further authorize any person or entity contacted to provide any and all information requested without liability.
4. The Contractor has read, understands, and agrees to all terms of the Qualification Questionnaire.
5. I am duly authorized by law and by the Contractor to sign this Qualification on behalf of the Contractor.

\_\_\_\_\_  
Date

CONTRACTOR

\_\_\_\_\_  
Witness

\_\_\_\_\_  
[Signature]

By: \_\_\_\_\_  
[Name and Title Printed]

State of \_\_\_\_\_

County of \_\_\_\_\_

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

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_ by \_\_\_\_\_, who is personally known to me or who has produced a valid \_\_\_\_\_ Driver's License as identification and who did take an oath.

\_\_\_\_\_  
[Signature of Notary Public]

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

My Commission Expires: \_\_\_\_\_

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

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

1. This sworn statement is submitted with Bid, Proposal or Contract No. \_\_\_\_\_  
for OLYMPUS DRIVE FORCE MAIN & LOW-PRESSURE SEWER REPLACEMENT.
2. This                    sworn                    statement                    is                    submitted                    by  
\_\_\_\_\_  
(name of entity submitting sworn statement)  
whose business address is \_\_\_\_\_ and  
(if applicable) its Federal Employer Identification Number (FEIN) is \_\_\_\_\_.  
(If the entity has no FEIN, include the Social Security Number of the individual signing this  
sworn statement: \_\_\_\_\_.)
3. My name is \_\_\_\_\_ and my relationship to the entity  
named                    (please print name of individual signing)  
above is \_\_\_\_\_.
4. 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 with 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.
5. 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, nonjury trial, or entry of a plea of guilty or nolo contendere.
6. 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 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 thirty-six (36) months shall be considered an affiliate.

7. 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.
8. Based on information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. [Indicate which statement applies.]

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

\_\_\_ The entity submitting this sworn statement, or one of more of the officers, directors, executives, partners, shareholders, employees, members, or agents who are active in 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].

\_\_\_ There has been a proceeding concerning the conviction before a hearing officer of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer did not place the person or affiliate on the convicted vendor list. [Please attach a copy of the final order].

\_\_\_ The person or affiliate was placed on the convicted vendor list. There has been a subsequent proceeding before a hearing officer of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer determined that it was in the public interest to remove the person or affiliate from the convicted vendor list. [Please attach a copy of the final order].

\_\_\_ The person or affiliate has not been placed on the convicted vendor list. [Please describe any action taken by or pending with the Department of General Services].

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

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

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_,  
20\_\_ by \_\_\_\_\_, who is personally known to me or who has produced a valid  
\_\_\_\_\_ Driver's License as identification and who did take an oath.

\_\_\_\_\_  
Notary Public

\_\_\_\_\_  
Printed/Typed Name

My Commission Expires:

**Condensed current financial statement for (Name of Contractor)**

**OLYMPUS DRIVE FORCE MAIN & LOW-PRESSURE SEWER  
REPLACEMENT**

Condition at close of business \_\_\_\_\_, 20\_\_\_\_\_

**ASSETS**

1. Cash: (a) On Hand \$ \_\_\_\_\_, (b) In bank \$ \_\_\_\_\_, (c)  
Elsewhere \_\_\_\_\_  
\$ \_\_\_\_\_

2. Notes receivable (a) Due within 90 days  
\$ \_\_\_\_\_  
(b) Due after 90 days  
\$ \_\_\_\_\_  
(c) Past Due  
\$ \_\_\_\_\_

3. Accounts receivable from completed contracts, exclusive of claims not approved for payment  
\$ \_\_\_\_\_

4. Sums earned on uncompleted contracts as shown by Engineer's or Architect's estimate  
\$ \_\_\_\_\_  
(a) Amount receivable after deducting retainage  
\$ \_\_\_\_\_  
(b) Retainage to date, due upon completion of contracts  
\$ \_\_\_\_\_

6. Accounts receivable from sources other than construction contracts  
\$ \_\_\_\_\_

6. Deposits for bids or other guarantees  
\$ \_\_\_\_\_  
(a) Recoverable within 90 days  
\$ \_\_\_\_\_  
(b) Recoverable after 90 days  
\$ \_\_\_\_\_

7. Interest accrued on loans, securities, etc.  
\$ \_\_\_\_\_

8. Real Estate (a) Used for business purposes  
\$ \_\_\_\_\_  
(b) Not used for business purposes  
\$ \_\_\_\_\_
9. Stocks and Bonds (a) Listed – present market value  
\$ \_\_\_\_\_  
(b) Unlisted – present value  
\$ \_\_\_\_\_
10. Materials in stock not included in Item 4:  
(a) For uncompleted contracts (present value)  
\$ \_\_\_\_\_  
(b) Other materials (present value)  
\$ \_\_\_\_\_
11. Equipment, book value  
\$ \_\_\_\_\_
12. Furniture and fixtures, book value  
\$ \_\_\_\_\_
13. Other assets  
\$ \_\_\_\_\_
- TOTAL ASSETS
- \$ \_\_\_\_\_

### LIABILITIES

1. Notes payable (a) To banks regular  
\$ \_\_\_\_\_  
(b) To banks for certified checks  
\$ \_\_\_\_\_  
(c) To others for equipment obligations  
\$ \_\_\_\_\_  
(d) To others exclusive of equipment obligation  
\$ \_\_\_\_\_
2. Accounts Payable \* (a) Not past due  
\$ \_\_\_\_\_  
(b) Past due  
\$ \_\_\_\_\_

3. Real Estate encumbrances

\$ \_\_\_\_\_

4. Other liabilities

\$ \_\_\_\_\_

5. Reserves

\$ \_\_\_\_\_

6. Capital stock paid up:

(a) Common

\$ \_\_\_\_\_

(b) Common

\$ \_\_\_\_\_

(c) Preferred

\$ \_\_\_\_\_

(d) Preferred

\$ \_\_\_\_\_

7. Surplus (net worth)

Earned \$ \_\_\_\_\_ Unearned \$ \_\_\_\_\_

\$ \_\_\_\_\_

**TOTAL LIABILITIES**

\$ \_\_\_\_\_

### **CONTINGENT LIABILITIES**

1. Liability on notes receivable, discounted or sold

\$ \_\_\_\_\_

2. Liability on accounts receivable, pledged, assigned or sold

\$ \_\_\_\_\_

3. Liability as bondsman

\$ \_\_\_\_\_

4. Liability as guarantor on contracts or on accounts of others.

\$ \_\_\_\_\_

5. Other contingent liabilities

\$ \_\_\_\_\_

**TOTAL CONTINGENT LIABILITIES**

\$ \_\_\_\_\_

\*Include all amounts owing subcontractors for all work in place and accepted on completed and uncompleted contracts, including retainage

Certified and Signed By:

Certified Public Accountant

### **AUTHORITY TO EXECUTE BID AND CONTRACT**

If the Bidder is a Corporation, attach to this page a certified copy of corporate resolutions of the Board of Directors of the Corporation authorizing an officer of the Corporation to execute the Contract contained within this document on behalf of the Corporation.

(End of Article.)

## BID SECURITY

### ARTICLE 3

1. The undersigned Bidder does hereby declare and stipulate that this proposal is made in good faith, without collusion or connection with any other person or persons bidding for the same Work, and that it is made pursuant to and subject to all the terms and conditions of the Notice to Contractors, Instructions to Bidders, the Contract Documents, the Technical Specifications, and the Plans and Specifications pertaining to the Work, all of which have been examined by the undersigned.

2. Accompanying this proposal is a certified check or standard bid bond in the sum of \$\_\_\_\_\_.00, in accordance with the Notice to Contractors and Instruction to Bidders. Such amount shall be equal to ten percent (10%) of the Bid amount.

3. The undersigned Bidder agrees to execute the Contract, and the Public Construction Bond for the total amount of the Bid within fourteen (14) calendar days from the date when written Notice of Award of the Contract is delivered at the address given on this proposal. The name and address of the corporate surety with which the Bidder proposes to furnish the specified Public Construction Bond is as follows:

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Bond Company's most recent "Best's Key Rating": \_\_\_\_\_

4. The undersigned Bidder agrees to begin the Work with an adequate work force and equipment within ten (10) calendar days from the date of receipt of official Notice to Proceed, and to complete all of the Work within the number of calendar days specified in the Special Conditions from the date of official Notice to Proceed.

5. The Bid Security will be returned to all, except the three (3) lowest qualified responsive, responsible Bidders, within seven (7) business days after the opening of the Bids and the remaining securities will be returned to the three (3) lowest Bidders within forty-eight (48) hours, after the District and Contractor have executed the Contract, or, if no Contract has been so executed, within one hundred eighty five (185) calendar days after the date of the opening of Bids upon demand of the Bidder at any time thereafter so long as it had not been notified of the acceptance of the Bid.

7. All the phases of Work enumerated in the Contract Documents Technical Specifications with their individual jobs and overhead, whether specifically mentioned, included by implication or appurtenant thereto, are to be performed by Contractor under the applicable Bid item irrespective of whether it is named in said list.

7. This Bid is also based on addenda:

No. _____	Date _____
No. _____	Date _____
No. _____	Date _____
No. _____	Date _____

No. \_\_\_\_\_  
No. \_\_\_\_\_  
No. \_\_\_\_\_  
No. \_\_\_\_\_

Date \_\_\_\_\_  
Date \_\_\_\_\_  
Date \_\_\_\_\_  
Date \_\_\_\_\_

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

(SEAL)

Contractor's License No. \_\_\_\_\_

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

## CONTRACT

### ARTICLE 4

**THIS CONTRACT**, is made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, Two Thousand and \_\_\_\_\_ (20\_\_\_\_), by and between \_\_\_\_\_ (the “Contractor”), and the **LOXAHATCHEE RIVER ENVIRONMENTAL CONTROL DISTRICT**, (the “District.”)

WITNESSETH: That whereas the District has awarded to Contractor the Work of performing certain construction:

**SECTION 1.** Scope of Work: Contractor shall furnish, install and deliver all of the labor, including engineering design, materials (except District-furnished materials), tools, equipment, services, and everything necessary to perform the Work; and shall construct in accordance with the Contract Documents and the terms of this Contract, the Project known and identified as **OLYMPUS DRIVE FORCE MAIN & LOW PRESSURE SEWER REPLACEMENT** and shall do everything required by or reasonably inferable from the Contract Documents. The Work is generally described as follows:

#### **OLYMPUS DRIVE FORCE MAIN & LOW PRESSURE SEWER REPLACEMENT**

**Furnishing all labor, materials, equipment and all incidentals and appurtenances for the installation of approximately 2,070 LF of 8-inch force main and approximately 785 LF of 2-inch low-pressure force main. Construction also includes MOT’s, complying with permit conditions, testing and all restoration for a complete and operating system. The roadways in the project area fall under the jurisdiction of Palm Beach County, Florida Department of Transportation (FDOT), and Town of Juno Beach.**

Applicable reference drawings are entitled **OLYMPUS DRIVE FORCE MAIN & LOW PRESSURE SEWER REPLACEMENT** as prepared by the District.

**SECTION 2. Time of Completion:** Construction of the Work must begin within ten (10) calendar days from the date of receipt of official Notice to Proceed. Substantial Completion shall be achieved within **one-hundred twenty (120) days** consecutive calendar days from the date of Notice to Proceed. For projects with a value of less than ten million dollars (\$10,000,000.00), Final Completion shall be achieved within **sixty-five (65)** consecutive calendar days from the date of actual Substantial Completion. For projects with a value of more than ten million dollars (\$10,000,000.00), Final Completion shall be achieved within **ninety-five (95)** consecutive calendar days from the date of actual Substantial Completion. The rate of progress and the time of completion are essential conditions of this Contract.

**Deduction for Not Completing on Time:** The District and Contractor recognize that because the Work is of a critical nature, time is of the essence. Therefore, the District will suffer direct financial loss and damage if the Work is not completed within the times specified above. The District and Contractor also recognize that it is difficult to ascertain the extent of those damages in advance and it will be difficult and expensive to determine those damages in a legal proceeding. Accordingly, Contractor shall pay to the District as liquidated damages, and not as a penalty, the amounts set out in (a) and (b) (“Liquidated Damages”) below for each and every calendar day the above deadlines are delayed, as said date may be adjusted as provided in the Special Conditions. Delay shall not include delays caused by factors beyond Contractor’s reasonable control, including but not limited to delays because of strikes, lockouts, work slowdowns or stoppages, accidents, acts of God, failure of any governmental or other regulatory authority to act in a timely manner, failure of the District to furnish timely

information or to obtain the cooperation of the District's design professionals and/or Engineer, or delays caused by faulty performance by the District or by Engineer.

- a. **Substantial Completion Delay.** Contractor shall pay to the District as Liquidated Damages, and not as a penalty, **\$500.00** per day for each and every calendar day Substantial Completion is delayed.
- b. **Final Completion Delay.** If Final Completion is not reached within **sixty-five (65) days** of actual Substantial Completion, Contractor shall pay to the District as Liquidated Damages, and not as a penalty, **\$150.00** per day for each and every calendar day Final Completion is delayed.

In addition Contractor shall be responsible for the costs for engineering and other professional fees, delay damage settlements or awards owed by the District to others, fines or penalties imposed by regulatory agencies, and professional fees, including attorneys' fees, incurred in connection with such settlements, awards, penalties or fines (collectively "Additional Delay Damages"). Engineering and inspection fees shall include direct labor costs, indirect costs, and overhead and profit as specified in Section 01010 of the Technical Specifications of the Contract Documents. The District and Contractor agree that the amounts set out in (2)(a) and (2)(b), above are to be paid by Contractor as Liquidated Damages and represent a reasonable estimate of the District's anticipated expenses for delays, inspection, and administrative costs associated with such delays. However, such amounts do not represent additional District costs for Additional Delay Damages. Therefore, in addition to these Liquidated Damages amounts, there shall be other amounts for Additional Delay Damages incurred by the District caused by avoidable delays by Contractor.

Where Liquidated Damages and Additional Delay Damages in connection with the Work of this Contract are duly and properly imposed against Contractor in accordance with the terms of this Contract, Federal law, State law, and/or governing ordinances or regulations, the total amount that Contractor owes to the District may be withheld and reduced from any monies due or to become due Contractor under the Contract, and when deducted, shall be deemed and taken as payment for such Liquidated Damages and Additional Delay Damages. If monies due from the District are not sufficient to cover such Liquidated Damages, Contractor agrees to immediately pay to the District any balance due.

**SECTION 3. General:** Contractor hereby certifies that it has read each and every clause of the Contract Documents and that it has made such examination of the location of the proposed Work as is necessary to understand fully the nature of the obligation herein made; and will complete the same in the time limits specified herein, in accordance with the Contract Documents. Contractor shall work with and report to Engineer to complete the Work set forth in the Contract Documents. Contractor has given Engineer written notice of all conflicts, errors, and discrepancies in the Contract Documents and the written resolution thereof by Engineer is acceptable to Contractor.

All Work under this Contract shall be done to the satisfaction of Engineer, who shall, in all cases, determine the amount, quality, fitness, and acceptability of the Work and materials, which may arise, as to the fulfillment of the Contract on the part of Contractor, Engineer's decision thereon shall be final and conclusive, and such determination shall be a condition precedent to the right of Contractor to receive any payment hereunder.

At any time during the performance of the Contract, Contractor shall allow and provide the District access to all of the documents, papers, letters or other materials made or received by Contractor in conjunction with the Contract and Work. Should Contractor fail to provide access to these documents in response to the District's request, the District may unilaterally cancel the Contract. At the conclusion of the Contract, Contractor shall provide the District all public records related to the Project or the Work.

Any clause or section of this Contract or the Contract Documents which may, for any reason, be declared invalid, may be eliminated therefrom; and the intent of this Contract or the Contract Documents and the remaining portion thereof will remain in full force and effect as completely as though such invalid clause or section has not been incorporated herein.

No assignment by a party hereto of any rights, responsibilities, or interests in the Contract Documents will be binding on another party hereto without the written consent of both parties. Unless specifically stated to the contrary in a written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents. Notwithstanding the foregoing, the District may assign this Contract to the State of Florida or any political subdivision, municipality, special district or authority thereof without Contractor's consent and without recourse.

The District and Contractor each binds itself, its partners, successors, assigns and legal representatives to the other party hereto, its partners, successors, assigns and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

**SECTION 4. Contract Sum:** The District shall pay Contractor as just compensation for the performance of this Contract, subject to any additions or deductions as provided in the Contract Documents, based on unit prices, the amounts set forth in the Pricing Schedule attached hereto ("Contract Sum"). The District and Contractor agree that all payments will be processed in accordance with the Local Government Prompt Payment Act, Sections 218.70-218.80, Florida Statutes.

**SECTION 5. Progress Payments:** On or before the tenth (10th) day of every month, except as provided for in the Special Conditions, Contractor shall prepare and submit on a form approved by Engineer a detailed estimate and invoice to Engineer setting forth the schedule of values of the total amount of the Work which has been completed from the start of the job up to and including the last day of the preceding month and the value thereof, less any percentage retained in accordance with the Special Conditions, and the aggregate of any previous payment ("Progress Payment Application"). Contractor shall provide such supporting evidence as may be required by the District and/or Engineer.

As a strict condition precedent to payment, each Progress Payment Application must be accompanied by: a Contractor's Progress Payment Affidavit submitted by Contractor to Engineer indicating that all lienors under Contractor's direct contract have been paid in full; and a waiver and release of lien upon progress payment ("Partial Release of Lien") from all persons with a potential lien interest in the Project, including but not limited to subcontractors, sub-subcontractors, suppliers, and materialmen.

Upon receipt of the Progress Payment Application, Engineer shall either provide the District with its written approval of the Progress Payment Application, or notify the District in writing that it rejects the Progress Payment Application, the reason(s) for such rejection, and its recommendation as to the amount Contractor is owed, if any, within ten (10) days of receipt of the Progress Payment Application.

The District shall review Engineer's recommendation as set forth above. If the District agrees that the Progress Payment Application is complete and accurately reflects the amount Contractor is owed, the District shall pay Contractor the amount set forth on the Progress Payment Application within twenty-five (25) days of Engineer's receipt of the Progress Payment Application.

In the event the District finds the Progress Payment Application is incomplete or does not accurately reflect the amount Contractor is owed, the District shall reject the Progress Payment Application in writing within twenty (20) days of Engineer's receipt of the Progress Payment Application. The rejection shall state with specificity the reason for the rejection and any action necessary to make the Progress Payment Application acceptable to the

District. If Contractor submits a corrected Progress Payment Application within ten (10) days of the rejection, acceptable to the District, the District shall pay the corrected Progress Payment Application within ten (10) business days after the corrected Progress Payment Application is received.

In the event the District disputes the corrected Progress Payment Application, the District shall notify Contractor in writing of such dispute and pay to Contractor the amount not in dispute, if any, within twenty-five (25) days of the District's receipt of the corrected Progress Payment Application. In exchange for such payment, Contractor shall submit to Engineer a Progress Payment Affidavit indicating that all lienors under Contractor's direct contract have been paid in full for the Work related to the non-disputed amount.

Contractor and the District agree that prior to instituting any litigation for damages under this Section 5, the parties shall conduct a non-binding mediation to attempt to resolve their dispute. In the event the parties cannot agree upon a mediator, each party shall select a mediator and such mediators shall select a third mediator who shall serve as the mediator for the dispute. In the event such mediation does not occur within thirty (30) days of a written request of either party, the parties shall be free to pursue litigation without first conducting mediation.

Contractor shall promptly pay each subcontractor and supplier within ten (10) days of receipt of payment from the District. The amount shall be determined in accordance with the terms of the applicable subcontracts and purchase orders. The District shall not have responsibility for payments to a subcontractor.

Contractor warrants that title to all Work covered by the Progress Payment Application will pass to the District no later than the time payment. Contractor further warrants that upon submittal of a progress payment application, all Work previously paid for by the District shall, to the best of Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or other encumbrances adverse to the District's interests.

A progress payment by the District shall not constitute acceptance of Work not in accordance with the requirements of the Contract Documents.

**SECTION 6. Acceptance and Final Payment:** When the Work has been fully completed, including all punch list items as provided for in the Special Conditions, in accordance with the terms of the Contract Documents, a Final Payment Application shall be prepared by Contractor and provided to Engineer within thirty (30) calendar days after the date of Final Completion stating the final Work performed to complete the Project plus or minus any Change Orders, and less the aggregate of any previous payment.

As a strict condition precedent to final payment, Contractor shall submit to Engineer with the Final Payment Application:

1. a Final Payment Affidavit stating that all subcontractors, suppliers, and other materialmen have been paid;
2. Waiver and Release of Lien upon Final Payment ("Final Release of Lien") from Contractor and all persons or entities that have, or potentially have, a lien on the Project, including but not limited to all subcontractors and vendors;
3. all close-out documents including, but not limited to the Maintenance Bond, warranties, guarantees, owner's manuals, and start-up certificates by the designer or manufacturer demonstrating that the equipment meets design intent;
4. data establishing payment or satisfaction of obligations, such as receipts, claims, security interests or encumbrances arising out of the Contract.

Upon receipt of the Final Payment Application, Engineer will inspect the Work, the Final Payment Application, and supporting documentation. If Engineer finds the Work acceptable, Engineer will issue a certificate of acceptance stating that the quality Work has been fully completed to Engineer's satisfaction in substantial compliance with the Contract Documents. The Certificate of Final Completion shall constitute Engineer's determination as to the quality of the Work only; it shall not include an opinion as to the timeliness of completion of the Work. If the Engineer finds the Contract fully and timely performed, and the Final Payment Application accurately reflects the final amount Contractor is owed, the Engineer shall issue its written approval to the District of the Final Payment Application within ten (10) calendar days of receipt the Final Payment Application.

If Engineer disputes the Final Payment Application, finds the Work unsatisfactory, or determines that amounts should be deducted as Liquidated Damages and Additional Delay Damages, Engineer shall notify the District in writing of its findings, the support for such findings, and its recommendation as to the amount Contractor is owed, if any, within ten (10) calendar days of receipt of the Final Payment Application.

The District shall review Engineer's recommendation as set forth above. If the District finds that the Work is acceptable, the Contract has been fully and timely performed, and the Final Payment Application is complete and accurately reflects the amount Contractor is owed, the District shall pay Contractor the amount of the Final Payment Application within twenty-five (25) calendar days of Engineer's receipt of the Final Payment Application.

In the event the District finds the Work is not acceptable, the Contract has not been fully and timely performed, or the Final Payment Application is incomplete or does not accurately reflect the amount Contractor is owed, the District shall reject the Final Payment Application in writing within twenty (20) calendar days of Engineer's receipt of the Final Payment Application. The rejection shall state with specificity the reason for the rejection and any action necessary to make the Final Payment Application acceptable to the District. If Contractor submits a corrected Final Payment Application acceptable to the District, the District shall pay the corrected Final Payment Application within ten (10) calendar days after the corrected Final Payment Application is received.

In the event the District disputes the corrected Final Payment Application, the District shall notify Contractor in writing of such dispute and pay to Contractor the amount not in dispute, if any, within twenty-five (25) calendar days of the District's receipt of the corrected Final Payment Application. This payment shall constitute a progress payment and shall not be deemed final payment. In exchange for such payment, Contractor shall submit to Engineer a Progress Payment Affidavit indicating that all lienors under Contractor's direct contract have been paid in full for the Work related to the non-disputed amount.

The District and Contractor agree that prior to instituting any litigation for damages under this Section, the parties shall conduct a non-binding mediation to attempt to resolve their dispute. In the event the parties cannot agree upon a mediator, each party shall select a mediator and such mediators shall select a third mediator who shall serve as the mediator for the dispute. Such mediation shall occur within forty-five (45) calendar days of the District's rejection of the corrected Final Payment Application. In the event such mediation does not occur within thirty (30) calendar days of a written request of either party, the parties shall be free to pursue litigation without first conducting mediation.

Acceptance of final payment by Contractor, a subcontractor, or material supplier shall constitute a waiver of claims by the payee.

In the event that a lien is filed or claimed against the Work by any subcontractor, supplier, or laborer, Contractor agrees to immediately (i) pay such subcontractor, supplier, or laborer for work which Contractor has been paid by the District and deliver to the District a Final Release of Lien signed by such subcontractor, supplier, or laborer; or (ii) cause the immediate removal of such lien by providing a bond in accordance with Florida law. If Contractor

fails to do the above, the District may, at its option, and at the sole expense and liability of Contractor, bond such lien or cause the lien to be discharged and deduct the cost of said bond from the amount owed Contractor under any pending invoice or the next invoice. This Section shall survive the termination or expiration of this Contract.

**SECTION 7. WARRANTY:** Contractor warrants to the District and Engineer that (1) materials and equipment furnished under the Contract will be new and of good quality unless otherwise required or permitted by the Contract Documents; (2) the Work will be free from defects not inherent in the quality required or permitted; and (3) the Work will conform to the requirements of the Contract Documents.

**SECTION 8. CORRECTION OF THE WORK:** In addition to the warranties provided for in Article 4 – Contract Section 7, Contractor shall promptly correct Work rejected by Engineer and/or District as failing to conform to the requirements of the Contract Documents. Contractor shall bear the cost of correcting such rejected Work, including the costs of uncovering, replacement, and additional testing.

In addition to Contractor's other obligations including warranties under the Contract, Contractor shall, for a period of one (1) year after Substantial Completion, correct Work not conforming to the requirements of the Contract Documents.

If Contractor fails to correct nonconforming Work within a reasonable time, the District may correct it in accordance with the Contract Documents.

This period of one (1) year shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual performance of the Work. This Section 8 shall survive acceptance of the Work under the Contract Documents and termination of the Contract Documents.

**(Remainder of this page left blank intentionally)**

IN WITNESS WHEREOF, the parties hereto have executed this Contract this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_. All portions of the Contract Documents have been signed or identified by the District and Contractor or by Engineer on their behalf.

ATTEST:

OWNER: LOXAHATCHEE RIVER  
ENVIRONMENTAL CONTROL DISTRICT

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Stephen B. Rockoff  
Chairman  
Address for notice: 2500 Jupiter Park Dr.  
Jupiter, Florida 33458  
\_\_\_\_\_

CONTRACTOR:

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Witness

\_\_\_\_\_  
As its: \_\_\_\_\_

Address for notice: \_\_\_\_\_  
\_\_\_\_\_

(Affix Corporate Seal)

**STATE OF FLORIDA  
COUNTY OF PALM BEACH**

I HEREBY CERTIFY that on this day, before me, personally appeared \_\_\_\_\_, as \_\_\_\_\_, to me well known and known to be the person described in or who produced as identification a \_\_\_\_\_ (Form of ID) and who executed and acknowledged to and before on behalf of the District, the foregoing Contract, and that he acknowledged in the presence of two subscribing witnesses freely and voluntarily for the purposes therein expressed.

WITNESS my hand and official seal in the County and State last aforesaid this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_.

\_\_\_\_\_  
Notary Public, State of Florida  
Print Name:  
Commission No.:  
My Commission Expires:

(Notary Ink Stamp)

**STATE OF FLORIDA  
COUNTY OF \_\_\_\_\_**

I HEREBY CERTIFY that on this day, before me, personally appeared \_\_\_\_\_ as \_\_\_\_\_ (Title) of the \_\_\_\_\_ (Name of Company), to me well known and known to be the person described in or who produced as identification a \_\_\_\_\_ (Form of ID) and who executed and acknowledged to and before on behalf of \_\_\_\_\_ (Company Name), Contractor, the foregoing Contract, and that he acknowledged in the presence of two subscribing witnesses freely and voluntarily for the purposes therein expressed.

WITNESS my hand and official seal in \_\_\_\_\_ County and State last aforesaid this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_.

\_\_\_\_\_  
Notary Public, State of Florida  
Print Name:  
Commission No.:  
My Commission Expires:

(Notary Ink Stamp)

**PRICING SCHEDULE — BASE CONTRACT**  
**LOXAHATCHEE RIVER ENVIRONMENTAL CONTROL DISTRICT**  
**OLYMPUS DRIVE FORCE MAIN & LOW-PRESSURE SEWER REPLACEMENT**  
**UNIT PRICES**

<b>No.</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Unit Cost</b>	<b>Total</b>
	<b>GENERAL CONDITIONS</b>				
1	Mobilization, Insurance and Bonds (5%)*	LS	1	\$	\$
2	Maintenance of Traffic	LS	1	\$	\$
3	As-Built Record Drawings	LS	1	\$	\$
4	Audio Video Documentation	LS	1	\$	\$
5	NPDES Permit / Erosion Protection Measures	LS	1	\$	\$
	<b>ROADWAY</b>				
6	Mill Existing Asphalt Pavement (1.5" Avg Depth) and Hauloff	SY	1,400	\$	\$
7	1.5" Superpave Asphalt Concrete SP 12.5	TON	125	\$	\$
8	Open-Cut Pavement Trench Repair (2" FM)	LF	160	\$	\$
9	Open-Cut Pavement Trench Repair (8" FM)	LF	80	\$	\$
10	Replace ADA Curb Ramp w/ Tactile Warning Surface (FDOT Index 522)	EA	1	\$	\$
11	Replace Header Curb	LF	20	\$	\$
12	Replace Type F Curb	LF	10	\$	\$
13	Concrete Sidewalk Replacement (4" Thick; 3000 psi)	SF	360	\$	\$
14	Brick Sidewalk Replacement	SF	50	\$	\$
15	Pavement Markings	LS	1	\$	\$
	<b>FORCE MAIN</b>				
16	8" (PVC C900) Force Main (Push-On)	LF	70	\$	\$
17	8" (PVC C900) Force Main (Restrained Joints)	LF	250	\$	\$

No.	Description	Unit	Qty	Unit Cost	Total
18	2" HDPE DR11 (DIPS) FM w/ 2" (HDPE DR 7 IPS) Conduit	LF	570	\$	\$
19	8" HDPE DR11 (DIPS) FM w/ 2" (HDPE DR 7 IPS) Conduit	LF	1,750	\$	\$
20	Directional Drill Pit & Restoration (2" FM)	EA	6	\$	\$
21	Directional Drill Pit & Restoration (8" FM)	EA	6	\$	\$
22	DIP Compact Fittings (Epoxy Coated)	TON	1.2	\$	\$
23	2" ARV w/ Manhole (6" FM)	EA	4	\$	\$
24	2" Line Stop	EA	2	\$	\$
25	2" Ball Valve w/ Valve Box	EA	1	\$	\$
26	8" Plug Valve	EA	5	\$	\$
27	2" Pack Joint Style Adapter w/ Stainless Steel Stiffener	EA	6	\$	\$
28	8" MJ Adapter (DIPS)	EA	6	\$	\$
29	Furnish & Install 1-1/2" Low-Pressure Sewer Service	EA	4	\$	\$
30	Connect to Existing Force Main / Low-Pressure Sewer	EA	5	\$	\$
31	2" (SCH 80 PVC) Force Main & Fittings	LF	215	\$	\$
32	Remove Existing ARV & Manhole (including excavation, backfill, and compaction)	EA	1	\$	\$
33	Remove Existing FM	LF	50	\$	\$
34	Abandon & Grout Existing 6" FM	LF	1,980	\$	\$
35	Abandon & Grout Existing 10" FM	LF	750	\$	\$
	<b>MISCELLANEOUS</b>				
36	Flowable Fill	CY	50	\$	\$
37	Remove Palm Tree (Dwg. C-7)	EA	1	\$	\$
	<b>TOTAL BID ITEMS 1-37</b>				<b>\$</b>

\* Payment for mobilization shall not exceed eight percent (8%) of the contract price.

TOTAL BASE BID ITEMS 1-37 (in words)

\_\_\_\_\_ Dollars

\_\_\_\_\_ Cents

THE CONTRACT AWARD SHALL BE EVALUATED BASED ON THE TOTAL BID PRICE FOR ITEMS 1 THROUGH 37 AND ANY SELECTED ALTERNATE AS SUBMITTED BY THE LOWEST, QUALIFIED, RESPONSIBLE, RESPONSIVE BIDDER.

\_\_\_\_\_  
(Name of Bidder)

Bidders Name: \_\_\_\_\_

By: \_\_\_\_\_  
Signature of Authorized Officer, Partner, Member, Manager

Print Name of Person signing: \_\_\_\_\_

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

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

\_\_\_\_\_

Incorporated or formed under the laws of the State of \_\_\_\_\_.

## PUBLIC CONSTRUCTION BOND

### ARTICLE 5

Bond No. \_\_\_\_\_

KNOW ALL PERSONS BY THESE PRESENTS: That we, \_\_\_\_\_  
(Name of Contractor) as “Principal” at the address of \_\_\_\_\_  
and \_\_\_\_\_ as “Surety” at the address of \_\_\_\_\_  
are bound to the LOXAHATCHEE  
RIVER ENVIRONMENTAL CONTROL DISTRICT (the “District”), at the address of 2500 Jupiter  
Park Drive, Florida 33458, in the sum of \_\_\_\_\_  
(Written Amount) (\$ \_\_\_\_\_ -\_) (the “Bond”) for the payment of which we bind  
ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally.

WHEREAS, Principal has entered into a contract (the “Contract”) with LOXAHATCHEE  
RIVER ENVIRONMENTAL CONTROL DISTRICT dated \_\_\_\_\_, 2020, in the amount of  
\$ \_\_\_\_\_) for the  
OLYMPUS DRIVE FORCE MAIN & LOW-PRESSURE SEWER REPLACEMENT, which  
Contract, is by reference made a part hereof.

THE CONDITION of this Bond is that if Principal:

1. Performs the Contract with the District at the times and in the manner prescribed in the  
Contract; and

2. Promptly makes payments to all claimants, as defined in Section 255.05(1), Florida  
Statute, supplying Principal with labor, materials, or supplies, used directly or indirectly by Principal  
in the prosecution of the Work provided for in the Contract; and

3. Pays the District all losses, damages, expenses, costs, and attorney’s fees, including  
appellate proceedings, that the District sustains because of a default by Principal under the Contract;  
and

4. Performs the guarantee of all Work and materials furnished under the Contract for the time  
specified in the Contract, then this Bond is void; otherwise, it remains in full force.

5. Any changes in or under the Contract Documents and compliance or noncompliance with  
any formalities connected with the Contract or the changes does not affect Surety’s obligation under  
this Bond.

6. To a claimant who is not in privity with the Principal and who has not received payment  
for labor, materials, or supplies, that written notice must be delivered to the Principal. This Bond is  
furnished pursuant to the statutory requirements for bonds on public works projects, Section 255.05,  
Florida Statutes. A claimant, except a laborer, who is not in privity with the Principal and who has  
not received payment for labor, materials, or supplies, is hereby notified that Section 255.05(2),  
Florida Statutes specifically requires that written notice be given to Principal within forty-five (45)  
days after beginning to furnish labor, materials, or supplies for the prosecution of the Work that

claimant intends to look to the Bond for protection. Further notice is hereby given to a claimant who is not in privity with the Principal and who has not received payment for labor, materials, or supplies, that written notice must be delivered to the Principal and to the Surety, of the performance of the labor or delivery of the materials or supplies and of the non-payment, within ninety (90) days after performance of the labor or after complete delivery of the materials or supplies (but not before 45 days after the first furnishing of labor, services, or materials), or with respect to rental equipment, within ninety (90) days after the date that rental equipment was last on the job site available for use. No action for the labor, material, or supplies may be instituted against Principal or the Surety unless both notices have been given. Further notice is hereby given that no action for labor, materials, or supplies may be instituted against the Principal or the Surety on the Bond after one (1) year from the performance of the labor or completion of delivery of the materials or supplies.

7. Without modifying the foregoing, this Bond shall require no more and no less of the Principal and Surety than is specified in Section 255.05, Florida Statutes. The notice and time limitation provisions of Section 255.05, Florida Statutes are incorporated herein by reference.

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed above, do cause this Performance Bond to be duly executed on its behalf by its authorized officer, agent or representative.

The provisions and limitations of Section 255.05, Florida Statutes including but not limited to the notice and time limitations in Sections 255.05(2) and 255.05(10), Florida Statutes are incorporated in this bond by reference.

(Remainder of Page Intentionally Left Blank)

SIGNED AND SEALED ON \_\_\_\_\_, 202\_\_

\_\_\_\_\_  
Name of Principal

\_\_\_\_\_  
Name of Surety

By: \_\_\_\_\_  
Signature of Principal

By: \_\_\_\_\_  
As Attorney-in-Fact (Attach Power of Attorney)

STATE OF FLORIDA  
COUNTY OF \_\_\_\_\_

Sworn to and acknowledged before me this \_\_\_\_ day of \_\_\_\_\_, 202\_\_, by \_\_\_\_\_ to me who produced as identification a \_\_\_\_\_.

\_\_\_\_\_  
Notary Public, State of Florida

Print Name: \_\_\_\_\_

(Notary Ink Seal)

Commission Expires: \_\_\_\_\_

My Commission Expires: \_\_\_\_\_

COUNTERSIGNATURE

BY: \_\_\_\_\_

**ARTICLE 6**  
**FORMS FOR USE DURING CONSTRUCTION**

**6-1 Notice of Award of Contract**

**6-2 Notice to Proceed**

**6-3 Progress Payment Affidavit**

**6-4 Final Payment Affidavit**

**6-5 Certificate of Substantial Completion**

**6-6 Certificate of Final Completion**

**6-7 Partial Release of Lien**

**6-8 Final Release of Lien**

**6-9 Change Order**

**6-10 Application and Certificate of Payment** – Contractor shall utilize American Institute of Architect Form G702 and G703

# Loxahatchee River District



Water Reclamation | Environmental Education | River Restoration  
2500 Jupiter Park Drive, Jupiter, Florida 33458-8964  
Telephone (561) 747-5700 • Fax (561) 747-9929 • [www.loxahatcheeriver.org](http://www.loxahatcheeriver.org)  
D. Albrey Arrington, Ph.D., Executive Director

[Date]

[Contractor Name]

[Contractor Address]

**SUBJECT: Loxahatchee River Environmental Control District**  
**OLYMPUS DRIVE FORCE MAIN & LOW-PRESSURE SEWER**  
**REPLACEMENT**  
**Notice of Award of Contract**

Dear \_\_\_\_\_:

I am pleased to advise you that the District Governing Board has elected to Award the Contract for the subject project to your firm. You are the apparent successful Bidder and have been awarded a contract for:

**OLYMPUS DRIVE FORCE MAIN & LOW-PRESSURE SEWER REPLACEMENT**

The Contract Price of your Contract is \$\_\_\_\_\_

In accordance with the contract specifications you will have 14 calendar days from the date of this Notice of Award, that is by (Day), (Date), to provide the following:

- a.) 4 executed sets of the attached Contract Documents, and
- b.) A Public Construction Bond with power of attorney in the amount of 100% of the contract (\$\_\_\_\_\_) and
- c.) An insurance certificate for this project in accordance with requirements set forth in Section 9.08, (please make sure coverages and additional insureds are as stated); and
- d.) A schedule of activities (received), and
- e.) Any other paperwork as required by the Contract.

Failure to comply with these conditions within the time specified will entitle District to consider your Bid abandoned, to annul this Notice of Award and to declare your Bid Security forfeited.

Within 20 calendar days after you comply with the above conditions, the District will return 1 fully executed contract after execution.

Your attendance will be requested at an Open House meeting to be held with property owners in the affected area prior to construction. This will provide an opportunity to coordinate activities and provide a schedule of activities and how services will be maintained during construction.

Should you have any questions in regard to this correspondence, please feel free to contact me or [ENGINEER]

Regards,

Kris Dean, P.E.  
Deputy Executive Director/Director of Engineering Services

Enclosures: 4 sets of Contract Documents

# Loxahatchee River District



Water Reclamation | Environmental Education | River Restoration  
2500 Jupiter Park Drive, Jupiter, Florida 33458-8964  
Telephone (561) 747-5700 • Fax (561) 747-9929 • [www.loxahatcheeriver.org](http://www.loxahatcheeriver.org)

D. Albrey Arrington, Ph.D., Executive Director

[Date]

[Contractor Name]

[Contractor Address]

SUBJECT: OLYMPUS DRIVE FORCE MAIN & LOW-PRESSURE SEWER  
REPLACEMENT  
**Notice to Proceed**

Dear \_\_\_\_\_:

You have already received one (1) copy of the fully executed contract for the subject project. With the execution of this document completed by both parties and a Planning Meeting held [DATE], you are hereby provided with **NOTICE TO PROCEED as of [Day], [Date]**.

In accordance with the contract documents, you will have \_\_\_\_\_ consecutive calendar days from \_\_\_\_\_ to Substantial Completion, and \_\_\_\_\_ calendar days from actual Substantial Completion to Final Contract Completion, therefore:

**Substantial Completion Date is:**

**Contract Completion Date is:**

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

We look forward to working with you toward the successful completion of another project.

Should you have any questions in regard to this matter please feel free to contact me or [ENGINEER].

Kris Dean, P.E.  
Deputy Executive Director/Director of Engineering Services

[ENGINEER]

**PROGRESS PAYMENT AFFIDAVIT**

STATE OF FLORIDA

COUNTY OF \_\_\_\_\_

BEFORE ME, the undersigned authority, personally appeared \_\_\_\_\_  
 who, after being by me first duly sworn, deposes and says of his personal knowledge that:

1. He/She is the \_\_\_\_\_ of \_\_\_\_\_, which  
 does business in the State of Florida, hereinafter referred to as "Contractor".

2. Pursuant to a contract with Loxahatchee River District, Contractor has furnished and will furnish  
 services for the purpose of improving real property, more particularly described as:

OLYMPUS DRIVE FORCE MAIN & LOW-PRESSURE SEWER REPLACEMENT

3. This affidavit is executed in accordance with Section 713.06(3)(c), Florida Statutes, for the purpose  
 of obtaining a progress payment in the amount of \_\_\_\_\_  
 \_\_\_\_\_ Dollars (\$ \_\_\_\_\_ ).

4. All lienors under Contractor's direct Contract have been paid in full, except for the following listed  
 lienors:

NAME OF LIENOR  
 (Use blank sheet if necessary)

AMOUNT DUE OR TO BECOME DUE FOR  
 LABOR, SERVICES OR MATERIAL

_____	_____
_____	_____

SIGNED, SEALED, AND DELIVERED this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

By \_\_\_\_\_  
 Contractor

SUBSCRIBED AND SWORN TO before me this \_\_\_\_ day \_\_\_\_\_ of 20\_\_\_\_, by  
 \_\_\_\_\_, personally known to me or who produced as identification a  
 \_\_\_\_\_.

\_\_\_\_\_  
 NOTARY PUBLIC, State of \_\_\_\_\_  
 Print Name: \_\_\_\_\_  
 Commission No.: \_\_\_\_\_  
 My Commission Expires: \_\_\_\_\_

(Notary Ink Stamp)

\* THIS FORM SHALL BE SUBMITTED WITH EACH PAYMENT REQUEST.

**FINAL PAYMENT AFFIDAVIT**

STATE OF FLORIDA

COUNTY OF \_\_\_\_\_

BEFORE ME, the undersigned authority, personally appeared \_\_\_\_\_  
 who, after being by me first duly sworn, deposes and says of his personal knowledge that:

1. He/She is the \_\_\_\_\_ of \_\_\_\_\_, which  
 does business in the State of Florida, hereinafter referred to as "Contractor".

2. Pursuant to a contract with Loxahatchee River District, Contractor has furnished and will furnish  
 services for the purpose of improving real property, more particularly described as:

OLYMPUS DRIVE FORCE MAIN & LOW-PRESSURE SEWER REPLACEMENT

3. This affidavit is executed in accordance with Section 713.06(3)(c), Florida Statutes, for the purpose  
 of obtaining final payment in the amount of \_\_\_\_\_  
 \_\_\_\_\_ Dollars (\$ \_\_\_\_\_ ).

4. All lienors under Contractor's direct Contract have been paid in full, except for the following listed  
 lienors:

NAME OF LIENOR

(Use blank sheet if necessary)

AMOUNT DUE OR TO BECOME DUE FOR

LABOR, SERVICES OR MATERIAL

_____	_____
_____	_____

SIGNED, SEALED, AND DELIVERED this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

By \_\_\_\_\_  
 Contractor

SUBSCRIBED AND SWORN TO before me this \_\_\_\_\_ day \_\_\_\_\_ of 20\_\_\_\_, by  
 \_\_\_\_\_, personally known to me or who produced as identification a  
 \_\_\_\_\_.

(Notary Ink Stamp)

\_\_\_\_\_  
 NOTARY PUBLIC, State of \_\_\_\_\_  
 Print Name: \_\_\_\_\_  
 Commission No.: \_\_\_\_\_  
 My Commission Expires: \_\_\_\_\_

**Certificate of Substantial Completion**

[Date]  
[NAME]  
[ADDRESS]

Loxahatchee River Environmental Control District  
OLYMPUS DRIVE FORCE MAIN & LOW-PRESSURE SEWER REPLACEMENT  
Substantial Completion

Dear [Name]:

On \_\_\_\_\_ the District, [PARTY NAMES] conducted a Substantial Completion Inspection for the above referenced project. The Substantial Completion inspection resulted in the attached [#] page Punchlist, containing [#] items for completion or correction. Please note per Spec Section 01700, all punch list items are to be corrected prior to Final Payment and before Final Completion is granted.

Based on the above referenced inspection, [name] has **deemed the project Substantially Complete as of [date].**

Once all of the attached punch list items have been completed or corrected, please contact our office in writing so that we can schedule a time for final inspection.

If you have any questions regarding these items, please call me at \_\_\_\_\_.

Sincerely,

[Name]  
[Title]

Enclosure: Substantial Completion Punchlist

cc: Kris Dean, LRECD  
Lenny Giacobelli, LRECD

**Certificate of Final Completion**

[DATE]  
[NAME]  
[ADDRESS]

Loxahatchee River Environmental Control District  
OLYMPUS DRIVE FORCE MAIN & LOW-PRESSURE SEWER REPLACEMENT  
**Final Completion**

Dear [Name]:

On \_\_\_\_\_ the Loxahatchee River Environmental Control District, Palm Beach County,  
\_\_\_\_\_, and \_\_\_\_\_ conducted a Final Completion  
Inspection for the above referenced project. Per our inspection, the below listed items were  
determined to be incomplete:

We have now verified that all of the Punch List Items have been completed. Please accept this  
letter for your records, that as of \_\_\_\_\_ has deemed the above  
referenced project to be fully complete and in compliance with the Contract Documents.

We are currently preparing the Final Balancing Change Order to complete the processing of your  
Final Payment Application.

If you have any questions regarding these items, please call me at \_\_\_\_\_.

Sincerely,

[Name]  
[Title]

Enclosure

cc: Kris Dean, LRECD  
Lenny Giacobelli, LRECD

**WAIVER AND RELEASE OF LIEN UPON PROGRESS PAYMENT:**

The undersigned lienor, in consideration of the sum of \$ \_\_\_\_\_, hereby waives and releases its lien and right to claim a lien for labor, services, or materials furnished through (insert date) to (insert the name of your customer) on the job of (insert the name of the owner) to the following property:

## OLYMPUS DRIVE FORCE MAIN &amp; LOW-PRESSURE SEWER REPLACEMENT

This waiver and release does not cover any retention or labor, services, or materials furnished after the date specified.

DATED on , (year). (Lienor)

WITNESS:

\_\_\_\_\_ By: \_\_\_\_\_  
Contractor (SEAL)

\_\_\_\_\_ Attest: \_\_\_\_\_

SWORN AND SUBSCRIBED TO BEFORE ME, THIS \_\_\_\_\_ day \_\_\_\_\_ of 20\_\_\_\_, by \_\_\_\_\_, personally known to me or who produced as identification a \_\_\_\_\_.

\_\_\_\_\_  
NOTARY PUBLIC, State of Florida

**WAIVER AND RELEASE OF LIEN UPON FINAL PAYMENT**

The undersigned lienor, in consideration of the final payment in the amount of \$ \_\_\_\_\_, receipt of which is hereby acknowledged, hereby waives and releases its lien and right to claim a lien for labor, services, or materials furnished to \_\_\_\_\_ on the job of the Loxahatchee River Environmental Control District hereinafter referred to as the "District," to the following property OLYMPUS DRIVE FORCE MAIN & LOW-PRESSURE SEWER REPLACEMENT

WITNESS:

\_\_\_\_\_

By: \_\_\_\_\_  
Contractor (SEAL)

\_\_\_\_\_

Attest: \_\_\_\_\_

SWORN AND SUBSCRIBED TO BEFORE ME, THIS \_\_\_\_\_ day \_\_\_\_\_ of 20\_\_\_\_, by \_\_\_\_\_, personally known to me or who produced as identification a \_\_\_\_\_.

(Notary Ink Stamp)

\_\_\_\_\_  
NOTARY PUBLIC, State of Florida  
Print Name: \_\_\_\_\_  
Commission No.: \_\_\_\_\_  
My Commission Expires: \_\_\_\_\_

**LOXAHATCHEE RIVER ENVIRONMENTAL CONTROL DISTRICT**

2500 JUPITER PARK DRIVE, JUPITER, FLORIDA 33458  
 (561) 747-5700 FAX (561) 747-9929

CHANGE ORDER #1

DATE: \_\_\_\_\_

PROJECT NAME: OLYMPUS DRIVE FORCE MAIN & LOW-PRESSURE SEWER REPLACEMENT

OWNER: Loxahatchee River Environmental Control District

CONTRACTOR:

THE FOLLOWING CHANGES:

JUSTIFICATION:

CHANGE TO CONTRACT PRICE:

Original CONTRACT PRICE: \$

Current CONTRACT PRICE \$

CONTRACT PRICE due to this Change Order  
 will be *INCREASED/DECREASED* by: \$

The New CONTRACT PRICE including  
 this Change Order will be: \$

CHANGE TO CONTRACT TIME:

The DATE OF COMPLETION of all work will be: UNCHANGED

APPROVED BY CONTRACTOR: \_\_\_\_\_  
 DATE

APPROVED BY ENGINEER: \_\_\_\_\_  
 DATE

APPROVED BY OWNER: \_\_\_\_\_  
 LOXAHATCHEE RIVER ENVIRONMENTAL CONTROL DISTRICT DATE

## ARTICLE 7

### CERTIFICATE OF DISTRICT'S ATTORNEY

#### OLYMPUS DRIVE FORCE MAIN & LOW-PRESSURE SEWER REPLACEMENT

THIS IS TO CERTIFY that on this \_\_\_\_ day of \_\_\_\_\_, 20\_\_, I have examined the attached Contract Documents, Surety Bonds, and the execution thereof by the parties thereto, and I am of the opinion that each of the aforesaid agreements has been duly executed by the proper parties thereto acting through their duly authorized representatives; that said representative have full power and authority to execute said agreements on behalf of the respective parties named therein; and that the foregoing agreements as being legally sufficient in form constitute a binding agreement between the parties.

By: \_\_\_\_\_  
Patrick J. McNamara, Esq.  
de la Parte & Gilbert, P.A.  
Attorney for the  
LOXAHATCHEE RIVER  
ENVIRONMENTAL CONTROL DISTRICT

**ARTICLE 8**

**RESERVED**

## **SPECIAL CONDITIONS**

### **ARTICLE 9**

#### **TITLE**

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## **9.01 Governing Order of Contract Documents**

In the event of discrepancy, the interpretation of Contract Documents shall follow the order of precedence as identified in Article 1 Instruction to Bidders Section 22.

## **9.02 Time of Completion and Amount of Liquidated Damages**

Contractor agrees to commence Work on or before a date to be specified in a written Notice to Proceed. In the event Contractor does not reach Substantial Completion or Final Completion of the Work within the time specified in the Notice to Proceed, Contractor shall pay to the District as liquidated damages, and not as a penalty the amounts set forth in Article 4- Contract Section 2.

## **9.03 Reimbursement of Additional Delay Damages**

In the event Substantial Completion and Final Completion of the Work set forth in the Contract Documents and any subsequent modifications, is delayed beyond the time set forth in Article 4- Contract Section 2, Contractor shall also be responsible for Additional Delay Damages as set forth in the Article 4 - Contract Section 2.

## **9.04 Percentage of Progress Payments to be Retained**

The percentage of estimated value to be retained under that heading of the Contract, entitled Progress Payments shall conform to the following schedule:

- a. Retention of up to 10% of payments claimed.
- b. For Projects over \$200,000, when the Project is fifty percent (50%) complete, the retainage amount shall be reduced to 5% from each subsequent progress payment made to the Contractor.
- c. After fifty percent (50%) completion of the Work, Contractor may present a payment application for up to one-half of the retainage held by the District for the first fifty percent (50%) of the Work.
- d. A cash bond or irrevocable letter of credit will be accepted if offered in lieu of cash retainage.

The above retainage reductions shall not require the District to release any amount that is the subject of a good faith dispute or a claim pursuant to Section 255.05, Florida Statutes.

The above retainage reductions shall not apply if the Project is funded, in whole or in part, with federal funds that are subject to federal grantor laws and regulations that are contrary to any provision of the Florida Local Government Prompt Payment Act, or if the retainage reduction is otherwise not required by the Florida Local Government Prompt Payment Act.

## **9.05 Left Blank Intentionally**

## **9.06 Surety Bonds**

Contractor, at the time of execution of the Contract, must deposit with the District a Public Construction Bond providing for the satisfactory performance and completion of the Work and providing security for payment of all persons performing labor and/or providing materials or supplies

in connection with this Contract. The bond shall be furnished in an amount equal to the amount of the contract award. The form and conditions of the bond and the surety shall be in accordance with the statutory requirements of Section 255.05(2), Florida Statutes, and are subject to the District's approval.

A maintenance bond in the amount of 50% of the contract price guaranteeing the repair of all damages due to improper materials or workmanship for a period of one (1) year after Final Completion will also be required. The maintenance bond shall be submitted with the final payment request.

The bonds shall be written by a surety company that has the following ratings based upon amount of the Contract:

<u>CONTRACT AMOUNT</u>	<u>BEST'S RATINGS</u>
\$ 25,000.00 to \$100,000.00	B+ Class V or better
\$100,000.01 to \$500,000.00	A Class VI or better
\$500,000.01 and over	A Class VII or better

The surety must be licensed to do business in the State of Florida, and the bonds must be executed by an Attorney-in-Fact for the surety company with a certified copy of its Power of Attorney attached to the bonds.

The Maintenance Bond shall remain in effect for one (1) year beyond the date of Final Completion and acceptance of the entire Work to repair any Defective Work done under the Contract Documents. The Public Construction Bond shall remain in effect to pay valid claims for payment of labor, supplies, and/or materials submitted after completion of the Work and for items covered under the performance aspect of said bond.

#### **9.07 Subcontractors**

Prior to award of the Contract, Engineer shall notify Contractor of any objection to the subcontractors proposed for the Work, and Contractor shall not employ any subcontractor with whom Engineer or District has an objection.

Contractor shall be responsible to the District for the acts and omissions of any subcontractor and any person directly or indirectly employed by a subcontractor, to the extent Contractor is responsible for the acts and omissions of persons directly employed by Contractor. Nothing contained in the Contract Documents shall create any contractual relation between any subcontractor and the District.

#### **9.08 Contractor's Insurance**

Contractor shall maintain and pay for, as applicable, through an insurance company or insurance companies acceptable to the District at Contractor's sole expense: Fire, Extended Coverage, Vandalism and Malicious Mischief coverage on buildings and structures in the course of construction. Such coverage shall include foundations, additions, attachments, and all permanent fixtures belonging to and constituting a part of said buildings or structures. The policy or policies shall also cover machinery, if the cost of machinery is included in the Contract. The amount of insurance must at all times be at least equal to the actual cash value of the insured property.

Contractor shall provide the District, prior to the execution of the Contract, with a satisfactory Certificate of Insurance certifying that the required insurance is in force.

During the life of the Project, Contractor shall provide, pay for and maintain insurance of the types and in the amounts described herein. All such insurance shall be provided by responsible companies with A.M. Best ratings of at least A-, authorized to transact business in the State of Florida, and which are satisfactory to the District. Promptly after the District's issuance of the Notice of Award of this Contract, and prior to commencing the Work, Contractor shall provide evidence of insurance coverages of the types and in the amount required by submitting executed Certificates of Insurance, in the form preferred by the District. Each Certificate of Insurance shall set forth the original manual signature of the authorized representative of the insurance company/companies identified therein and shall have attached thereto proof that said representative is authorized to execute the same. In addition, certified true and exact copies of all required policies shall be provided to the District upon request.

Contractor shall obtain and maintain in full force and effect during the life of this Contract, Worker's Compensation Insurance covering all employees in performance of Work under this Contract. Contractor shall make this same requirement of any of its subcontractors. Contractor shall indemnify and save the District and Engineer harmless from any damages resulting from either Contractor or any subcontractor's failure to secure and/or maintain such insurance.

All policies of insurance required shall require that the insurer give the District thirty (30) days written notice of any cancellation, intent not to renew, or reduction in coverage; and ten (10) days written notice of any non-payment of premium. Such notice shall be delivered by U.S. Registered Mail to: Loxahatchee River District, 2500 Jupiter Park Drive, Jupiter, Florida 33458, Attn: Kris Dean, P.E. In the event of any reduction in the aggregate limit of any policy, Contractor shall immediately restore such limit to the amount required herein.

Receipt by the District of any Certificate of Insurance or copy of any policy evidencing the insurance coverages and limits required by the Contract Documents does not constitute approval or agreement by the District that the insurance requirements have been satisfied or that the insurance policies shown on the Certificates of Insurance are in compliance with the requirements of the Contract Documents.

The insurance coverages and limits required of Contractor under the Contract Documents are designed to meet the minimum requirements of the District. They are not designed as a recommended insurance program for Contractor. Contractor shall be responsible for the sufficiency of its own insurance program. Should Contractor have any questions concerning its exposures to loss under the Contract Documents or the insurance coverages needed therefore, it should seek professional assistance.

If the insurance coverage initially provided by Contractor is to expire prior to the completion of the Work, renewal Certificates of Insurance shall be furnished to the District thirty (30) days prior to the expiration of current coverages.

All liability insurance policies obtained by Contractor to meet the requirements of the Contract Documents, other than the Worker's Compensation and Employer's Liability Policy, shall provide that the District, its officers, employees, and agents, and Engineer and its shareholders, officers, and directors, and any other person or entity designated by the District, shall be named "additional

insureds” under the Policy and shall also incorporate a Severability of Interest and Cross Liability provision. All insurance coverages provided under this Special Conditions Section 9.08 shall apply to all of Contractor’s activities under the Contract Documents without regard for the location of such activity. The policy shall include a waiver of subrogation provision in favor of the additional insured. This policy shall include, but not be limited to, all of the following coverage in the following minimum amounts:

- a. Vehicle – Owner, Hired, Non-owner – Any Automobile Coverage
 

Injury or death of any one person:	\$1,000,000
Injury or death of more than one person in any one occurrence:	\$1,000,000
Property Damage- any one occurrence:	\$ 300,000
  
- b. Comprehensive General Liability, other than vehicle, including:
 

Comprehensive Premises Operations Explosions and Collapse Hazard Underground Hazard Products/Completed Operations Hazard Broad Form Property Damage Independent Contractors Personal Injury	
Per Occurrence	\$1,000,000
Aggregate	\$1,000,000
Injury or death of any one person:	\$1,000,000
Injury of death of more than one person in any one occurrence:	\$1,000,000
  
- c. Property Damage:
 

Each occurrence:	\$ 300,000
Aggregate operations:	\$ 500,000
Aggregate protective:	\$ 500,000
Aggregate contractual:	\$ 500,000

Neither Contractor nor any subcontractor shall commence Work under this Contract until they have obtained all insurance required under this Special Conditions Section 9.08, and have supplied the District with evidence of such coverage in the form of the Certificate of Insurance, and such Certificate has been approved by the District in writing. All such insurance policies shall provide for at least thirty (30) calendar days written notice to the District prior to cancellation. Contractor’s and subcontractor’s insurance shall be primary to any other insurance carried by the District, its

consultants, or Engineer. The District's, its consultants', or Engineer's coverage shall be excess insurance only, and Contractor's insurance policies shall so state.

Contractor shall be responsible for and shall obtain and file insurance certificates on behalf of all its subcontractors within ten (10) calendar day of the subcontractor's start of Work. All Certificates of Insurance shall be filed with the District in the office designated in the Contract Documents.

Should Contractor fail to maintain the insurance coverages required by the Contract Documents, the District may, at its option, either terminate this Contract for default or procure and pay for such coverage, charge Contractor, and deduct the costs from payments due Contractor. A decision by the District to procure and pay for such insurance coverages shall not operate as a waiver of any of its rights under the Contract Documents.

Failure of Contractor to submit the required Certificates of Insurance within the times required by this Special Conditions Section 9.08 may result in a delay in issuing the Notice to Proceed. The parties specifically agree that such a delay is neither excusable nor compensable and will not entitle Contractor to a change in the Contract Sum or time.

#### **9.09 Water Supply**

Contractor shall, at its own expense, provide all water needed for construction purposes and for testing.

#### **9.10 Pipeline and Manhole Locations**

Pipelines and manholes will be located substantially as indicated on the Plans and Specifications, but Engineer may make such modifications in locations as may be found desirable to avoid interferences with existing structures or for other reasons.

#### **9.11 Elevation Datum**

The datum adopted by Engineer is based on National Geodetic Vertical Datum of 1929. All elevations on the Plans and Specifications refer to this datum.

#### **9.12 Easements**

The District has obtained, or will obtain, permanent easements and temporary construction easements through private property, where required. The temporary construction easements entitle Contractor to the occupancy and use of the designated area near or adjacent to the Work for purposes related to the Work.

Easements are shown on the Plans and Specifications.

Contractor will not encroach on any property unless it has been established that easements have been obtained or that the property owner has given the District permission in writing. On all other land, Contractor has no rights unless he obtains written consent from the proper parties.

#### **9.13 Occupying Private Land**

Contractor shall not (except after written consent from the proper parties) enter or occupy with persons, tools, equipment or materials, any land outside the rights-of-way or property of the District. A copy of the written consent shall be given to Engineer.

#### **9.14 Work in State, County, and Town Rights-of-Way**

Attention is directed to the fact that Work will be going on in County rights-of-way. The District has obtained written consent for Contractor to encroach on these rights-of-way for the Work. Any damage to the areas within these rights-of-way shall be repaired or restored in accordance with their respective standards, specifications, latest revisions and permit requirements.

#### **9.15 Interference with and Protection of Streets**

Contractor shall not close or obstruct any portion of the street, road, or private way without obtaining permits therefor from the proper authorities. During the course of the Work, if any street or private way shall be rendered unsafe by Contractor's operations, Contractor shall make such repairs or provide such temporary ways or guards as shall be acceptable to Engineer.

Streets, roads, private ways, and walks not closed, shall be maintained passable by Contractor at Contractor's expense, and Contractor shall assume full responsibility for the adequacy and safety of provisions made.

Contractor shall, at least forty-eight (48) hours in advance, notify the proper authorities including, but not limited to, the police, ambulance squad, fire departments, and school district, and any other public authority with jurisdiction in writing, with a copy to Engineer, if a closure of a street is necessary. Contractor shall cooperate with the proper authorities in the establishment of alternate routes. Contractor shall provide adequate detour signs, plainly marked and well lit, in order to minimize confusion. All expenses of street closure shall be the responsibility of Contractor.

Contractor shall, when required by Engineer, schedule its Work so as to interfere as little as possible with the operations of adjacent users and to minimize loss of access by public or private agencies to their place of business.

#### **9.16 Traffic Control**

For control of traffic, Contractor shall provide an adequate number of flagmen in accordance with the latest revisions of the Florida Department of Transportation specifications. Contractor shall bear the costs of employing such flagmen.

#### **9.17 Work Adjacent to Telephone, Power, Cable TV and Gas Company Structures**

In all cases where Work is to be performed near telephone, power, water, cable TV, or gas company facilities, Contractor shall provide written notification to the respective companies of the areas in which Work is to be performed, within a minimum of forty-eight (48) hours prior to any Work in these areas. Contractor shall comply with all applicable regulations of the State of Florida regarding the location of underground facilities prior to excavating any area (Sunshine State-One Call of Florida).

### **9.18 Storage of Materials**

Suitable storage facilities shall be furnished by Contractor. All materials, supplies and equipment intended for use in the Work shall be stored by Contractor to prevent damage from exposure, contamination by foreign substances, or vandalism. Engineer shall not accept, or sample for testing, materials, supplies or equipment that have been improperly stored. Materials found unfit for use shall not be incorporated in the Work and shall immediately be removed from the construction or storage site.

### **9.19 Salvaged Materials and Excavated Materials**

In the absence of special provisions to the Contract, salvage materials, equipment or supplies excavated during the course of the Work are the property of the District and shall be cleaned and stored as directed by Engineer.

All excavated materials needed for backfilling operation shall be stored on site. Contractor shall take the appropriate steps to secure any necessary additional area for stockpiling. Contractor shall include in its bid price the removal of such material from site to an area designated by Engineer. The haul distance shall not exceed six (6) miles each way. All excess materials not wanted by the District shall be hauled and disposed of at an approved site, at Contractor's expense.

### **9.20 Pre-Construction Meeting**

Within ten (10) calendar days after the execution of the Contract and prior to start of construction, a planning meeting will be scheduled by Engineer which must be attended by Contractor. This conference will include representatives of Contractor, Engineer, the District, local utilities, regulatory agencies, other contractors performing Work in the area for the District, and any other party that the District may deem as necessary for the orderly performance of the Contract. However, this does not relieve Contractor of the responsibility of contacting local utilities and any other necessary agencies as the circumstances may require. At this meeting the parties shall coordinate the sequence of construction.

### **9.21 Alterations**

Engineer may make alterations in the line, grade, plan, form, dimensions, or materials of the Work or any part thereof, either before or after the commencement of construction of the Work. If such alterations increase or diminish the quantity of Work to be done, compensation for increased Work shall be made at the Contract Unit Prices or under the item for extra Work. For decreased Work, Contractor shall allow the District a credit based on the Contract Unit Prices or by such other means as determined by Engineer. If such alterations diminish the quantity of Work to be done, they shall not warrant any claim for damages or for anticipated profits on the Work that is eliminated.

### **9.22 Extra and Deleted Work**

Contractor shall perform any unforeseen additional Work necessary to the proper completion of the Contract and not otherwise provided for herein, when and as ordered in writing by Engineer and approved by the District ("Extra Work"). For Extra Work, Contractor shall be compensated either:

- a. At the price agreed upon before the Extra Work is commenced and named in the order for the Work, or
- b. If Engineer so elects, for the reasonable cost of said Work, as determined by Contractor and approved by Engineer, plus a percentage of such cost, as set forth below, or
- c. At the unit price indicated in the Contract.

Contractor must submit written notification to Engineer within fifteen (15) days of any event Contractor claims to result in a change in the Scope of the Work or in Extra Work, and Contractor shall quantify such change within thirty (30) days of the event. The District shall provide a response to the Contractor within thirty (30) days from receipt of Contractor's quantification of the change. The cost of Extra Work performed shall include the cost to Contractor of materials used, equipment installed, common and skilled labor and foremen, and the fair rental price of all machinery used on the Extra Work for the period of such use.

At the request of Engineer, Contractor shall furnish itemized statements of the cost of the Work ordered and give Engineer access to all accounts, bills, and vouchers relating thereto.

Contractor may include in the cost for Extra Work the amounts of additional premiums paid to obtain and maintain the required insurance on account of such Extra Work, including but not limited to: Social Security or other direct assessments upon Contractor's payroll by Federal or other properly authorized public agencies; and other approved assessments made by Contractor directly to Contractor's employees, which are recognized to be part of the cost of doing Work.

Compensation for the rental of machinery used for Extra Work shall be based upon an appropriate fraction of the approved monthly rate schedule. The cost of transportation, not exceeding a distance of one hundred (100) miles, of such machinery to and from the Work shall be added to the compensation for rental property provided; however, compensation for rental property shall only apply to machinery or equipment used for Extra Work and not already required to be furnished under the terms of the Contract.

Contractor shall not include in the cost of Extra Work, any cost or rental of small tools, buildings, or any portion of the time of Contractor, its superintendent, or its office and engineering staff.

Contractor may add up to fifteen percent (15%) to the cost of Extra Work done by Contractor's own forces to cover its overhead allowance for use of capital the premium on the Bond as assessed upon the amount of this extra Work, and profit.

Where Extra Work done is performed by a subcontractor, the subcontractor shall compute the cost for the Extra Work, as stated above plus fifteen percent (15%). Contractor shall be allowed an additional five percent (5%) of the subcontractor's charge for the Extra Work to cover the cost of Contractor's overhead, use of capital, the premium on the Bonds as assessed upon the amount of this Extra Work, and profit.

If Extra Work is done, Contractor and/or subcontractor shall keep daily records of such Extra Work. The daily record shall include the names of persons employed, hours worked, materials and

equipment incorporated, and machinery used, if any, in the execution of such Extra Work. This daily record shall be signed by Contractor's authorized representative and approved by Engineer, verifying that such Work has been done. A separate daily record shall be submitted for each Extra Work order.

Notwithstanding anything contained herein the markup to Contractor and/or subcontractor, for overhead, profit, use of capital, and the premium on the Bonds as the same relates to Extra Work within the scope of Section 01020 of the Technical Specifications, shall not exceed twenty percent (20%).

### **9.23 Extension of Time on Account of Extra Work**

When Extra Work is ordered at any time during the progress of the Work which requires, in the opinion of Engineer, an unavoidable increase of time for the completion of the Contract, additional time shall be certified in writing by Engineer.

### **9.24 Changes Not To Affect Bonds**

It is distinctly agreed and understood that any changes made in the Plans and Specifications for this Work (whether such changes increase or decrease the amount thereof) of any change in the manner of time of payments made by the District to Contractor shall in no way annul, release, or affect the liability and surety on the bonds given by Contractor.

### **9.25 Non-Assignable**

Neither the Contract Documents, nor any monies due hereunder, or any part thereof, shall be assigned, transferred, or sublet by Contractor; nor shall the District be liable to any assignee or transferee, or sub-lessee, without the written consent of the District. Any assignment, transfer, or sublease, shall not release or discharge Contractor from any obligation hereunder.

### **9.26 District Remedies**

If Contractor defaults or neglects to carry out any of its obligations under this Contract, or should liens be filed, bills of sale, conditional bills of sale, chattel mortgages, assignments of this Contract without the consent of Contractor, or orders for the payment of money for materials or labor or either, or should Contractor become insolvent or file Bankruptcy, the District shall have the right, in addition to any other rights and remedies provided by law, to (a) perform and furnish through itself or through others any such labor or materials for the Work and to deduct the cost thereof from any money due or to become due to Contractor for all or any portion of the Work; (b) enter upon the premises and take possession for the purpose of completing the Work of all equipment, scaffolds, tools, appliances, and any other items thereon; and (c) to employ any person or persons to complete the Work and provide all labor services, materials, equipment, and other items required therefor. In case of such termination of the employment of Contractor, Contractor shall not be entitled to receive any further payment under this Contract. However, if the unpaid balance of the amount to be paid under this Contract shall exceed the cost and expense incurred by the District in completing the Work, such excess shall be paid by the District to Contractor; but if such cost and expenses shall exceed the unpaid balance, Contractor shall promptly pay the difference to the District on demand. Said cost and expense shall include not only the cost of completing the Work to the satisfaction of the District and of performing and furnishing all labor, services, materials, equipment, and other items required

therefor, but all losses, damages, costs and expenses including attorney's fees sustained, incurred, or suffered by reason of or resulting from Contractor default, or by reason for litigation over this Contract.

#### **9.27 Contractor's Remedies**

If the District fails to make a payment as provided for in the Contract Documents for a period of thirty (30) days after the date the payment is due, through no fault of Contractor, Contractor may, upon seven (7) additional days' written notice to the District terminate the Contract and recover from the District payment for Work executed including reasonable overhead and profit and costs incurred by reasons of such termination.

#### **9.28 Discontinuance of Construction**

Contractor agrees and guarantees to perform the above mentioned Work in accordance with the terms herein, irrespective of any strikes, lockouts, or stoppages and Contractor shall not employ persons, means, materials, or equipment which may cause strikes, Work stoppages, or any disturbances by workmen employed by Contractors.

In the event the District is prevented from proceeding with any or all of this Work as stated in this Contract, due to a declaration of war, or national emergency, by the United States government, whereas the construction of the type contracted for herein is specifically prohibited by statute or governmental edict, or due to the stoppages of construction caused by any governmental agency, State, City, Town, or County regulations, orders, restrictions, or due to circumstances beyond the District's control, or for any reasons whatsoever, then the District herein reserves the right to either suspend the Work to be done for an indefinite period of time or to cancel this Contract outright by giving notice by registered mail for such intention to Contractor herein. In the event of any conditions above mentioned occurring after the Work herein has already been commenced, then the District herein shall be liable only for the Work completed up to the cancellation or suspension without the addition of prospective profits or other charges whatsoever.

#### **9.29 Contractor's Responsibility**

It is specifically agreed, that all materials shall be supplied and Work shall be done in accordance with the rules, requirements, regulations and directives of various Building Departments, other State, County, or Town departments having jurisdiction over the same; mortgagees, if any; and the Federal Housing Administration or the Veteran's Administration, or their Bureaus, Agencies, Subdivisions, or Agencies or any other governmental bureau, agency, or department interested in this job directly or indirectly.

Contractor shall, at its own cost, obtain all necessary permits, licenses, inspections and certificates pertaining to the Work and shall comply with all Federal, State, Municipal and local laws, ordinances, rules, regulations, orders, notices and requirements, whether or not provided by the Plans, Specifications, General Conditions or other Contract Documents without additional expense to the District. Contractor shall also be responsible for and correct at its own cost and expense, any violations thereof resulting from and in connection with its performance of its Work. Engineer shall not be responsible for the means, methods, techniques, sequences or procedures of construction selected by Contractor or the safety precautions and programs incident to the Work of Contractor. Engineer's efforts will be directed toward providing assurance for the District that the completed

Project will conform to the Contract Documents, but Engineer shall not be responsible for the failure of Contractor to perform the construction Work in accordance with the Contract Documents.

Engineer shall have the authority to reject Work which does not conform to the Contract Documents, and shall have authority, but not the obligation, to stop the Work in the event of any unsafe conditions or unsafe practices on the part of Contractor, any subcontractor or any of their employees. Engineer's ability to stop the Work shall not affect Contractor's liability for the existence of unsafe conditions or practice.

### **9.30 The District's Right to Terminate**

The District may terminate this Contract and take possession of all or some of Contractor's materials, tools, equipment and appliances and complete the Work by any means the District deems fit if any of the following occur: if at any time there shall be filed by or against Contractor in any court a petition in bankruptcy, insolvency, for reorganization, or for the appointment of a receiver or trustee of all or a portion of Contractor's property, where Contractor fails to secure a discharge within thirty (30) days of any such petition; if Contractor makes an assignment for the benefit of creditors or petitions for or enters into an agreement or arrangement with its creditors; if Contractor fails to prosecute the Work properly, fails to complete the Work entirely on or before any date established for partial or final completion; fails to make prompt payment to subcontractors, for materials or labor; or without limitation, fails to perform any provisions of this Contract. The District may terminate this Contract by giving Contractor seven (7) calendar days prior written notice of any such default to Contractor. Such termination shall be without prejudice to any other remedy that the District may have. In case of termination, Contractor shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Sum shall exceed (1) the expense of completing the Work including compensation for additional managerial and administrative services, plus (2) the District's losses and damages because of Contractor's default, such excess shall be paid to Contractor. If such expense, plus the District's losses and damages shall exceed such unpaid balance, Contractor shall pay the difference to the District promptly on demand.

The District may terminate this Contract without cause by giving seven (7) calendar days prior written notice to Contractor, and in such event, the District will pay Contractor for that portion of the Contract Sum, less the aggregate of previous payments, allocable to the Work completed as of the date of termination. The District also will reimburse Contractor for all costs necessarily incurred for organizing and carrying out the stoppage of the Work and paid directly by Contractor, not including overhead, general expenses or profit. The District will not be responsible to reimburse Contractor for any continuing contractual commitments to subcontractors or materialmen or penalties or damages for canceling such contractual commitments inasmuch as Contractor shall make all subcontracts and other commitments subject to this provision.

In the event of termination by the District, the District may require Contractor promptly to assign to it all or some subcontracts, construction, plant, materials, tools, equipment, appliances, rental agreements, and any other commitments which the District may in its sole discretion, choose to take by assignment, and in such event Contractor shall promptly execute and deliver to the District written assignments of the same.

The District may, at any time, terminate the Contract for the District's convenience and without cause. Contractor shall be entitled to receive payment for Work executed and costs incurred by reason of such termination

### **9.31 Venue, Disputes and Attorney's Fees**

This Contract shall be governed by the laws of the State of Florida as now and hereafter in force. The venue for actions arising out of this Contract is fixed in Palm Beach County, Florida.

Contractor and the District agree that prior to instituting any litigation for damages under this Special Conditions Section 9.31, the parties shall conduct a non-binding mediation to attempt to resolve their dispute. In the event the parties cannot agree upon a mediator, each party shall select a mediator and such mediators shall select a third mediator who shall serve as the mediator for the dispute. In the event such mediation does not occur within thirty (30) days of a written request of either party, the parties shall be free to pursue litigation without first conducting mediation.

In any dispute arising out of the Contract Documents and/or relating to the Work, the Prevailing Party shall be entitled to recover all costs and expenses incurred, including, without limitation, attorneys' and paralegals' fees and costs whether before suit is filed, after suit is filed, on any appeal, and in any bankruptcy proceedings.

### **9.32 Coordination with District's Existing Facilities**

Contractor shall cooperate and coordinate its activities with those of the District when connecting to the existing District facilities, while working on the District plant site, and as specified in the Contract Documents.

The District has adopted a Standard Operating Procedure (SOP) for System Shutdowns and Bypass included in the Appendix and made part of this Contract. The Contractor is responsible for compliance with the SOP including planning all work requiring system shutdowns and/or bypasses to be completed within the Low Risk Holding Time and the Contractors Wastewater Management/Spill Response Plan. Details required for this compliance are included in the Appendix including the allowable duration of the shutdown or bypass (low risk holding time), the location of the isolation facilities, required facility information to determine residual wastewater volume disposal requirements and disposal locations, anticipated continuous flow the Contractor may expect and other pertinent information.

The Contractor is also responsible for all costs associated with the Emergency Operation Measures should these be implemented due to negligence on the Contractor's part or failure of the Contractor to perform the work within the allowed time frame.

### **9.33 Permits**

Unless otherwise identified in Section 01000 of the Technical Specifications, Contractor shall be responsible for obtaining any and all permits (i.e. building permits) necessary for the Work under this Contract and pay the costs thereof, said permits may be included as part of the Contract Documents. If differences between the specifications and conditions of the permits exist, the permits shall govern.

### **9.34 Coordination of Construction**

#### **A. General**

Contractor shall be responsible for the maintenance of utility operations during construction as specified in the Section 01500 of the Technical Specifications.

#### **B. Temporary Facilities**

District personnel must have ready access at all times to all existing structures. Temporary facilities shall include any equipment, materials, controls, services and accessories temporarily needed for access to, and for protection of all existing structures and equipment, and to maintain an operating system, in accordance with the provisions of these Specifications.

The size or capacity of the temporary facility shall generally be equal to the size or capacity of the facility replaced, unless otherwise indicated on the Contract Plans and Specifications or otherwise directed and approved by the District. All temporary facilities shall be removed when they are no longer required unless otherwise agreed upon in writing. To substitute an unscheduled temporary facility for an existing or new facility, Contractor shall prepare and submit a plan and description of the proposed temporary facility to the District. Upon receipt of the written approval of the District, Contractor shall then submit the notification of intent to commence Work.

#### **C. Coordination with District Personnel**

Before commencing Work involving removing or placing in operation existing or new facilities, Contractor shall notify the District in writing at least thirty (30) calendar days in advance in writing. The District shall be responsible for removing facilities from operation. Only the District can authorize the shutdown of any portions of the sanitary system. Contractor shall, under no circumstances, interfere with any existing lift station or collection system.

### **9.35 Field Layout Work**

All Work under this Contract shall be constructed in accordance with the lines and grades shown on the Contract Plans and Specifications or as directed by Engineer. Elevation of existing ground, structures and appurtenances are believed to be reasonably correct but are not guaranteed to be absolute and therefore are presented only as an approximation. Any error or apparent discrepancy in the data shown or omissions of data required for accurately accomplishing the stake-out survey shall be referred immediately to Engineer for interpretation or correction.

All survey Work for construction control purposes shall be made by Contractor at its expense as set forth in General Conditions Section 10.11.

Contractor shall establish all base lines for the location of the principal component parts of the Work together with benchmarks and batter boards adjacent to the Work. Based upon the information provided by the Contract Plans and Specifications, Contractor shall have the responsibility to carefully preserve the benchmarks, reference points and stakes. In case of destruction thereof by

Contractor or resulting from its negligence, Contractor shall be held liable for any expense and damage resulting therefrom and shall be responsible for any mistakes that may be caused by the unnecessary loss or disturbance of such marks, reference points, and stakes.

Existing or new control points, property markers, and monuments that will be established or are destroyed during the normal causes of construction shall be reestablished by Contractor; and all reference ties recorded therefore shall be furnished to Engineer. All computations necessary to establish the exact position of the Work shall be made and preserved by Contractor.

### **9.36 Submittals**

#### **A. Progress Schedule**

Prior to executing the Contract, but after the award of the Contract to the Successful Bidder, the Successful Bidder shall prepare and submit the proposed progress schedule to Engineer for review and comments. The schedule shall be prepared using Oracle - Primavera P6. The contractor shall supply the electronic Primavera P6 schedule and a PDF copy of the Primavera P6 gantt chart.

The schedule shall be prepared using the Critical Path Method ("CPM") and shall depict in detail the proposed sequence of the Work and identifying construction activities for each structure, collection, transmission, or treatment facility. The schedule shall be time scaled, identifying the first day of each week, with the estimated date of starting and completion of each stage of the Work in order to complete the Project within the Contract time.

Contractor shall revise the progress schedule to reflect Engineer's comments prior to approval.

An updated schedule shall be submitted monthly with each Progress Payment Application depicting progress to the last day of the month. Subsequent changes to the schedule shall be accompanied by a letter of explanation with appropriate references and revision dates on the schedule.

#### **B. Operation and Maintenance Instruction for all Valves and Mechanical Devices**

##### **1. Individual Instructions**

When required by Engineer, Contractor, through manufacturer's representatives, shall provide instruction to the District's designated employees regarding the operation and care of all equipment furnished by Contractor and installed hereunder.

##### **2. Written Instructions**

When required by Engineer, Contractor shall furnish and deliver to Engineer, prior to final payment, six (6) complete sets of instructions, technical bulletins, and any other printed matter such as diagrams, prints or drawings, containing full information required for the proper operation, maintenance, and repair of all Contractor furnished equipment. Included in this submission shall be a spare parts diagram and complete spare parts list. The information provided shall include a source of replacement parts and names of service representatives,

including addresses and telephone numbers. Extensive pictorial cuts of equipment are required for operator reference in servicing. These requirements are a prerequisite to the operation and acceptance of equipment. Each set of instructions shall be bound together in appropriate three-ring binders. A detailed table of contents shall be provided for each set. Written operation and maintenance instructions shall be required for all equipment items supplied for this Project. The amount of detail required shall be commensurate with the complexity of the equipment item.

Information not applicable to the specific piece of equipment installed on this Project shall be removed from the submission.

When written instructions include shop drawings and other information previously reviewed by Engineer, only those editions thereof which were accepted by Engineer, and which accurately depict the equipment installed, shall be incorporated in the instructions.

C. Maintenance and Lubrication Schedules

When required by Engineer, Contractor shall furnish complete Equipment Maintenance and Lubrication Schedules for each piece of mechanical equipment such as valves, gates, etc. The complete forms (six copies), as provided in Section 01300 entitled "Submittals" of the Technical Specifications shall be submitted along with the shop drawings and included with the furnished O&M Manuals.

D. Schedule of Values

Contractor shall submit as a shop drawing a Schedule of Values for Engineer's review at the Pre-Construction Meeting. The Schedule of values shall contain the installed value of the component parts of the Work for the purpose of making progress payments during the construction period. The Schedule shall provide sufficient detail for the proper identification of Work accomplished. Each item shall include its proportional share of all costs, including Contractor's overhead contingencies and profit. The sum of all scheduled items shall equal the total value of the Contract. For payments on acceptable stored material items, Contractor shall also submit a separate list covering the cost of materials, delivered, and unloaded at the project site along with delivery invoices with taxes paid. Stored materials will be paid for items to be used within thirty (30) days of delivery. In addition, the listing shall also include the installed value of the item with coded reference to the Work items in the Schedule of Values.

Contractor shall expand or modify the above schedule and materials listing as required by Engineer's initial and subsequent reviews.

E. Schedule of Payments

Contractor shall submit a Schedule of Payments at the Pre-Construction meeting to be approved by the District. The Schedule of Payments shall contain Contractor's expected Progress Payment values throughout the construction period, for the purpose of assuring that the District will have sufficient monies available to make payments in the expected amounts

for each payment period. Contractor shall provide an updated Schedule of Payments with each Progress Payment Application.

**F. Contractor's Shop and Working Drawings**

Contractor shall submit shop and Work drawings in accordance with General Conditions Section 10.07.

**9.37 Inspection and Testing**

The Contractor shall employ and pay for the services of an independent test laboratory for specified testing.

The Work or actions of the testing laboratory shall in no way relieve Contractor of its obligations under the Contract. The laboratory testing Work shall include such inspections and testing required by the Contract Document, existing laws, codes, ordinances, etc. The testing laboratory will have no authority to change the requirements of the Contract Documents, nor perform or approve any of Contractor's Work.

Contractor shall allow Engineer ample time and opportunity for testing materials and equipment to be used in the Work. Contractor shall advise Engineer promptly upon placing orders for materials and equipment so that arrangements may be made, if desired, for inspection before shipment from place of manufacture. Contractor shall at all times furnish Engineer and Engineer's representatives, facilities including labor, and allow proper time for inspecting and testing materials, equipment, and workmanship. Contractor must anticipate that possible delays may be caused in the execution of the Work due to the necessity of materials and equipment being inspected and accepted for use. Contractor shall furnish, at Contractor's own expense, all samples of materials required by Engineer for testing. Contractor shall make its own arrangements for providing water, electric power, or fuel for the various inspections and tests of structures and equipment.

Contractor shall furnish the services of representatives of the manufacturers of certain equipment, as prescribed in other sections of the Specifications. Contractor shall also place orders for such equipment on the basis that, after the equipment has been tested prior to Final Completion of the Work; the manufacturer will furnish the District with certified statements that the equipment has been installed properly and is ready to be placed in functional operation. Tests and analyses required of equipment shall be paid for by Contractor, unless otherwise specified in writing.

The Contractor will pay the cost of all tests, inspections, or investigations undertaken by the order of Engineer for the purpose of determining conformance with the Contract Documents if such tests, inspections, or investigations are not specifically required by the Contract Documents, and if conformance is ascertained thereby. Whenever nonconformance is determined by Engineer as a result of such tests, inspections, or investigations, Contractor shall bear the full cost thereof or shall reimburse the District for said cost. The cost of any additional tests and investigations, which are ordered by Engineer to ascertain subsequent conformance with the Contract Documents, shall be borne by Contractor.

**9.38 Utilities and Services**

A. General

Contractor shall provide for utilities and services for its own operations, as well as field offices. These shall include electrical power, water, ventilation, sanitary facilities and telephone service. Contractor shall furnish, install and maintain all temporary utilities during the Contract period including removal upon completion of the Work. Such facilities shall comply with regulations and requirements of the National Electrical Code, OSHA, Florida Power and Light, and applicable Federal, State, and local codes, etc.

B. Temporary Power

Contractor shall arrange with Florida Power and Light for construction period service and pay all costs for the work and power. In addition to providing for a safe construction period distribution system, Contractor shall provide a safe and adequate artificial lighting system for work areas which do not have sufficient natural light. Temporary lighting shall be maintained during non-working periods if the area is subject to access by the public or plant personnel. Contractor shall furnish all electrical or other power required for construction, testing and trial operation prior to final acceptance by the District or at the time of Beneficial Occupancy.

C. Permanent Power

Utility charges for power consumed by permanent electrical facilities used for normal operations and maintenance of the treatment plant will be paid by the District.

D. Temporary Water

Contractor shall pay for all water used for construction, flushing, testing and temporary sanitary facilities. Contractor shall provide and maintain all piping, fittings, adapters, and valves required.

E. Temporary Ventilation

Contractor shall provide and maintain adequate ventilation for a safe working environment. In addition, forced air ventilation shall be provided for the curing of installed materials, humidity control and the prevention of hazardous accumulations of dust, gases or vapors.

F. Temporary Sanitary Facilities

Contractor shall provide and maintain adequate and clean sanitary facilities for the construction work force and visitors. The facilities shall comply with local codes and regulations and be situated at approved locations.

### **9.39 Security**

Contractor shall employ watchmen and security guards in its sole discretion, as it deems necessary to protect the job site against vandalism, burglary, theft, trespassing, etc. Contractor shall care for and

protect against loss or damage all material to be incorporated in the construction, including but not limited to, the existing plant structures, equipment and materials for the duration of the Contract, shall repair or replace damaged or lost materials and damaged structures at no additional cost to the District.

Contractor shall be responsible for providing, maintaining and securing gates used for construction purposes for the duration of the Project.

#### **9.40 Special Controls**

##### **A. Chemicals**

All chemicals used during Project construction or furnished for testing or Project operation, whether herbicide, pesticide, disinfectant, polymer, reactant of other classification, must be approved by either EPA or HUD. The handling, use, storage and disposal of such materials, containers or residues shall be in strict conformance to the manufacturer and/or supplier's instructions. Unless otherwise authorized, such materials shall be kept in secured storage. Copies of antidote literature shall be kept at the storage site and at Contractor's job site office. A supply of antidotes shall be kept at Contractor's office.

##### **B. Dust**

During construction Contractor shall, by the application of water and/or calcium chloride or other means, approved by Engineer, eliminate dust annoyance to adjacent property owners, business establishments, and all vehicular traffic. Contractor shall take all protective measures, to the satisfaction of Engineer, necessary to ensure that dust and debris do not enter any adjacent property or roadway. Contractor shall be responsible for the cleanup of existing property and roadways which have become soiled due to lack of proper dust control as determined by Engineer.

##### **C. Noise**

Noise resulting from Contractor's Work shall not exceed the noise levels and other requirements stated in local ordinances. Contractor shall be responsible for curtailing noise resulting from its operation. Contractor, upon written notification from Engineer or the noise control officers, shall make any repairs, replacements, adjustments, additions to and/or furnish mufflers when necessary to fulfill noise level requirements.

##### **D. Erosion Abatement and Water Pollution**

It is imperative that any Contractor dewatering operation does not contaminate or disturb the environment of the properties adjacent to the plant. Contractor shall, therefore, schedule and control its operations to confine all runoff water from disturbed surfaces, and water from dewatering operations that becomes contaminated with lime, silt, muck, and other deleterious matter, fuels, oils, bitumens, calcium chloride, chemicals and other polluting materials.

Contractor shall construct temporary stilling basin(s) of adequate size and provide all necessary temporary materials, operations, and controls including, but not limited to, filters,

coagulants, screens, and other means necessary to attain the required discharge water quality.

Contractor shall be responsible for providing, operating, and maintaining materials and equipment used for conveying clear water to the point of discharge. All pollution prevention procedures, materials, equipment and related items shall be operated and maintained until such time as the dewatering operation is discontinued. Upon the removal of the materials, equipment and related items, Contractor shall restore the area to the existing condition prior to commencing the Work.

E. Pests and Rodents

Contractor shall be responsible for maintaining the job site free from litter, rubbish and garbage. Contractor shall provide containers for the disposal of garbage and other materials that attract and are breeding places for pests and rodents. Contractor shall, at its expense, provide the services of an exterminator on a periodic basis to inspect the job site and to provide services as required to control pests and rodents.

F. Periodic Clean-Up; Basic Site Restoration

During construction, Contractor shall regularly remove from the site all accumulated debris and surplus materials of any kind which result from the construction. Unused equipment and tools shall be stored at Contractor's yard or base of operations for the Project.

Contractor shall perform the clean-up Work on a regular basis and/or as frequently as ordered by Engineer. Basic site restoration in a particular area shall be accomplished immediately following the installation or completion of the required facilities in that area. Furthermore, such site restoration shall also be accomplished, when ordered by Engineer, if partially completed facilities must remain incomplete for some time period due to unforeseen circumstances.

Upon failure of Contractor to perform periodic clean-up and basic restoration of the site to Engineer's satisfaction, Engineer may, upon five (5) calendar days prior written notice to Contractor, employ such labor and equipment as he deems necessary for the purpose, and all costs resulting therefrom shall be charged to Contractor and deducted from any amounts of money that may be due it.

**9.41 Storage and Construction Areas**

A. Storage and Construction Areas

Contractor shall confine its construction operations within the Contract limits shown on the Plans and Specifications and/or property lines and/or fence lines. All on-site Contractor Staging Areas shall be confined to designated areas as shown on the Plans and Specifications. Any additional staging and storage areas required by Contractor shall be provided by Contractor.

Contractor shall be solely responsible for the protection and safekeeping of equipment and materials at or near the sites. No claim shall be made against the District for any act of an

employee or trespasser. Should an occasion arise necessitating access to an area occupied by stored equipment and/or materials, Contractor shall immediately move such equipment or materials. No equipment or materials shall be placed upon the District's property until written approval has been received from the District.

Upon completion of the Contract, Contractor shall remove from the staging areas all equipment, fencing, surplus materials, rubbish, etc., from the construction, storage, and staging areas, and restore the areas to their original condition.

#### **9.42 Equipment and Materials**

##### **A. General**

All equipment, materials, instruments or devices incorporated in this Project shall be new and unused, unless indicated otherwise in the Contract Documents or in writing signed by the District and Contractor. All equipment, materials, instruments or devices shall be the products of reliable manufacturers who, unless otherwise specified, have been regularly engaged in the manufacture of such material and equipment for the use as identified for this Project for, at least five (5) years.

Equipment and materials to be incorporated in the Work shall be delivered sufficiently in advance of their installation and use to prevent delay in the execution of the Work, and they shall be delivered as nearly as feasible in the order required for executing the Work.

Contractor shall protect all equipment and materials from deterioration and damage. The equipment and materials shall be handled and stored by the manufacturer, fabricator supplier and Contractor before, during, and after shipment in a manner to prevent warping, twisting, bending, breaking, chipping, rusting, and any injury, damage or theft of any kind whatsoever. Any equipment exhibiting any of the above, shall be removed and replaced at Contractor's expense; such expense shall include both labor and materials.

##### **B. Storage**

Contractor shall store its equipment and materials in accordance with Special Conditions Section 9.18, Storage of Materials, at the job site in accordance with the manufacturer's recommendations and as directed by Engineer. Contractor shall not store unnecessary materials or equipment on the job site and shall prevent any structure from being overloaded or kept in a condition that would endanger the safety of others. Contractor shall enforce the instructions of the District and Engineer regarding the posting of regulatory signs for loading structures, fire safety, and smoking areas.

##### **C. Handling and Maintenance**

The manufacturer's storage instructions shall be carefully followed and any deviations shall be approved by the manufacturer in writing with a copy to Engineer. Equipment with moving parts, such as gears, electric motors, etc., and/or instruments, control panels, and switch gears, shall be stored in a temperature and humidity controlled building until the equipment is to be installed, and such equipment shall be rotated per the manufacturer's recommendations while

in storage and during the period between installation and acceptance of the Work.

The equipment shall be stored fully lubricated unless otherwise instructed by the manufacturer. Lubricants shall be changed upon completion of installation and as frequently as required thereafter during the period between installation and acceptance of the Work. New lubricants shall be put into the equipment at the time of acceptance of the Work.

Equipment with electric motors having space heaters shall have the space heaters energized unless stored in a temperature and humidity controlled building. Space heaters shall be energized at the time of installation and maintained until acceptance of the equipment.

### **9.43 Project Closeout**

#### **A. General**

As construction of the Project enters the final stages of completion, Contractor shall, in accordance with the requirements set forth in the Contract Documents, attend to or have already completed the following items:

1. Schedule equipment manufacturer's visits to site.
2. Calibrate instruments and controls.
3. Required testing of Project components.
4. Schedule facilities start-up and initial operation.
5. Schedule and furnish skilled personnel during initial facilities operation.
6. Correct and/or replace Defective Work, including completion of items previously overlooked or Work which remains incomplete, all as evidenced by Engineer's "Punch List".
7. Attend to any other items listed herein or brought to Contractor's attention by Engineer.

#### **B. Substantial Completion**

Items to be completed and provided prior to issuance of Substantial Completion shall include but not be limited to the following:

1. All equipment mfg. visits to the site
2. Startup tests completed and documentation provided to the Engineer
3. All instruments and controls calibrated and tested
4. All components of the Project successfully tested
5. Instruction provided to personnel on operation of equipment as required by the Technical Specification.
6. Project and its constituent pieces must be fully operational in accordance with Contract requirements and permits.
7. Restore areas disturbed by construction activities.

C. Cleaning and Restoration

Before the Final Completion of the Project, Contractor shall accomplish the cleaning and final adjustments of the various facility components as specified in the Specifications, including:

1. Clean and lubricate all finish hardware after adjustment for proper operation.
2. Touch up marks or defects in painted surfaces and touch up any similar defects in factory finished surfaces.
3. Remove all stains, marks, fingerprints, soil, spots, and blemishes from all finish surfaces.
4. Restore all areas disturbed by construction operations to conditions equal to or better than that which existed prior to the Work.

D. Project Record Drawings and Documents

Contractor shall keep a set of drawings at the jobsite. As-built plans shall be submitted for Work completed at the end of each pay period. The payment application will not be processed until the as-built plans are approved by Engineer. Contractor shall be held responsible for the accuracy of such data, and shall bear any costs incurred in finding utilities as a result of incorrect data furnished by Contractor.

Before the Final Completion of the Project, Contractor shall submit to Engineer (or to the District if indicated) certain records, certifications, etc., which are specified elsewhere in the Contract Documents. Missing, incomplete, or unacceptable items, as determined by Engineer or the District, shall constitute grounds for withholding Final Payment to Contractor. A partial list of such items appears below, but it shall be Contractor's responsibility to submit any other items which are required in the Contract Documents:

1. Test results of Project components.
2. Performance affidavits for equipment.
3. Operation and maintenance instructions or manuals for equipment.
4. Month-to-month records containing all deviations from the Plans and Specifications, Addenda, and Modifications of Shop drawings. Such records shall be prepared from record drawings showing correct and accurate changes and deviations from the Work made during construction so as to reflect the Work as it was actually constructed. These drawings shall conform to recognized standards of drafting, be neat, legible and be on Mylar or other approved reproducible material. Contractor shall secure and pay for the services of a registered land surveyor for a final survey at every 100 feet of the location of the pipeline upon completion of construction. Signed and sealed "As Built" record drawings showing pipe location, slopes, depths of cover, offsets, and location of all fittings, valves, manholes, and all related appurtenances shall be submitted to Engineer. Missing, incomplete or inaccurate drawings as specified herein and as determined by Engineer, shall constitute grounds for withholding final payment to Contractor.
5. In addition to items specified under Article 4 Section 6 of the Contract, all technical documentation as specified elsewhere in the Contract Documents and particularly in the Technical Specifications.

E. Grease, Oil and Fuel

All grease, oil, and fuel required for testing of equipment shall be furnished by Contractor. Contractor shall also furnish a one (1) year's supply of lubricants including grease and oil in the type recommended by the manufacturer for each item of equipment supplied.

F. Touch-Up and Repair

Contractor shall touch-up and repair damage to all field painted and factory finished equipment. Touch-up of equipment, panels, etc. shall match as nearly as possible to the original finish. If in the opinion of Engineer the touch-up Work is not satisfactory, Contractor shall repaint the item.

G. Chemicals

All chemicals required for testing of equipment or the process shall be furnished by Contractor. Contractor shall also furnish chemicals for the District's use where specified.

H. Closeout and Punch Lists

Contractor shall notify Engineer and the District in writing when the Work has reached Substantial Completion. Engineer will make an inspection of the Project for the purposes of determining the Work has reached Substantial Completion and for discovering and developing a list of Work not found acceptable and requiring cleaning, repair or replacement ("Punch List"). If Engineer determines the Project to be substantially complete, Engineer shall issue the Certificate of Substantial Completion. If the Project has an estimated cost of less than \$10 million, the Punch List shall be developed within thirty (30) days following actual Substantial Completion of the Project. If the Project has an estimated cost of more than \$10 million, the Punch List shall be developed within sixty (60) days following actual Substantial Completion of the Project. The Punch list shall be delivered to Contractor within five (5) days of the development of the Punch List. The Final Completion date shall not be less than thirty (30) days following delivery of the Punch List.

Upon receipt of the Punch List, Contractor shall perform all work necessary to complete the Punch List. Work that has been inspected and accepted by Engineer shall be maintained by Contractor, until Final Completion of the entire Project. Upon completion of the items on the Punch List, Contractor shall notify Engineer in writing that the Project is ready for inspection. This procedure will continue until the entire Project is accepted by Engineer. "Final Payment" will not be processed until the entire Project has been accepted by Engineer in writing by issuance of the Certificate of Final Completion and all of the requirements in Special Conditions Section 9.43 D. - Project Record Drawings and Documents have been satisfied. Contractor's acceptance of final payment from the District shall constitute a full waiver and release by Contractor of all claims against the District arising out of or relating to the Project or Work.

Final cleaning and repairing shall be scheduled upon completion of the Project.

I. Partial Utilization

Prior to the completion of the Project, it may be necessary to place into service various facilities, structures, equipment and processes in accordance with the Sequence of Operation and Construction. Whenever a structure, equipment, or process has been completed and tested, Contractor shall notify Engineer that it is ready for inspection. Any Work not found acceptable will be noted on the "Punch List." Whenever Contractor has completed the Work and it has been accepted by Engineer, the District shall take possession, operate and maintain the facility, and equipment warranties begin ("Partial Utilization"). Partial Utilization shall not constitute Substantial Completion.

#### J. Tools and Spare Parts

##### 1. Tools

Any special tools (including grease guns or other lubricating devices) which may be necessary for the adjustment, operation, and maintenance of any equipment shall be furnished with the respective equipment. Contractor shall furnish a complete list of tools and instructions for their use, recommended by the manufacturer or supplier with the Shop Drawing Submittal.

##### 2. Spare Parts

Spare parts for equipment shall be furnished where indicated in the equipment specifications and/or as recommended by the equipment manufacturer. Spare parts shall be identical and interchangeable with original parts. Parts shall be supplied, prepared for storage, in clearly identified containers, except large or bulky items which may be wrapped in polyethylene.

The parts shall be stored separately in a locked area, maintained by Contractor, and shall be delivered to the District at a location designated by the District. Contractor shall furnish an inventory listing all spare parts in the form included herein for each piece of equipment.

#### K. Start-Up and Field Instructions

The bid prices for the equipment furnished by Contractor shall include the cost of competent manufacture representatives of all equipment to supervise the installation, adjustment and testing of the equipment and to instruct the District's operating personnel in their operation and maintenance of all equipment. The supervision may be divided into two or more time periods as required by the installation program or as directed by Engineer.

The manufacturer's representatives shall certify in writing that the installation and testing of the equipment has satisfactorily been completed and that the equipment is ready for operation and the District's operating personnel have been instructed in the operation, maintenance, and lubrication of the equipment.

Contractor shall provide the services of the manufacturer's representative(s) for additional time as required should difficulties arise in the operation of the equipment due to the

manufacturer's design or fabrication of the equipment or faulty installation by Contractor. This additional service shall be provided at no cost to the District for the duration of the Contract and one (1) year maintenance period.

#### **L. Final Clean-Up and Site Restoration**

Before finally leaving the site, Contractor shall wash and clean all exposed surfaces which have become soiled or marked. Contractor shall remove from the site of the Work all accumulated debris and surplus materials of any kind which result from its operation, including construction equipment, tools, sheds, sanitary enclosures, etc. Contractor shall leave all equipment, fixtures, and Work, which he had installed, in a clean condition. The completed Project shall be turned over to the District in a neat and orderly condition.

All damage, as a result of Work under this Contract, to existing structures, pavement, driveways, curb and gutters, sidewalks, utility poles, utility pipelines, conduits, drains, catch basins, fences, and other obstructions not specifically mentioned herein shall be repaired.

### **9.44 Open Specifications**

Where materials or equipment are specified by a trade or brand name, it shall not be the intention of the District to discriminate against an equal product of another manufacturer but rather to set a definite standard of quality or performance and to establish an equal basis for the evaluation of bids. Unless otherwise specified, all materials shall be the best of their respective kinds and shall be in all cases, fully equal to approved samples. Where a trade or brand name is specified with the words "or equal" or "equivalent," this is understood to mean that other trade or brand names may be substituted that are, in the opinion and judgment of Engineer, equal in quality and performance. Even though the words "or equal" or "equivalent" are used in the Specifications, unless a substitute is approved in writing by Engineer, Engineer shall have the right to require the use of the material or equipment specified by trade or brand name.

### **9.45 Spare Parts List**

The equipment supplier shall prepare a recommended spare parts list. Six (6) copies of the recommended spare parts list shall be submitted with the shop drawings.

### **9.46 Applicable Standards and Codes**

Whenever reference is made to any published standards, codes, or standard specifications, such reference shall mean the latest issue of that standard, code, specifications, or tentative specification of the technical society, organization, or body referred to which is in effect at the date of invitation for bids.

### **9.47 Copies of Plans and Specifications**

Contractor shall be provided with three (3) complete sets of Plans and Specifications for its use at no charge. Signed and sealed drawings which are necessary to obtain Building Permits will also be provided to Contractor by Engineer at no charge.

#### **9.48 Restoration – Special**

Existing areas of special landscaping materials, irrigation systems, ground cover and any other improvements that are damaged shall be restored with new materials to equal or better than existing conditions. Technical Specifications may contain additional requirements.

#### **9.49 Contractor Performance Reviews and Ratings**

The District shall develop a Contractor performance evaluation report. This report shall be used to periodically review and rate the Contractor's performance under the contract with performance rating as follows:

Satisfactory	Performance meets contractual requirements. The contractual performance of the element being assessed may contain some minor problems for which corrective actions taken by the Contractor were satisfactory
Unsatisfactory	Performance does not meet most contractual requirements and recovery is not likely in a timely manner. The contractual performance contains a serious problem(s) for which the contractor's corrective actions appear or were ineffective.

The report shall also list discrepancies found during the review period. The Contractor shall be provided with a copy of the report and may respond in writing if he takes exception to the report or wishes to comment on the report. Contractor performance reviews and subsequent reports will be used in determining the Contractor's satisfactory performance record on future Contracts.

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## GENERAL CONDITIONS

### ARTICLE 10

#### TITLE

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## **10.01 General**

Contractor shall furnish all labor, materials, tools and equipment necessary to do all Work required for the completion of each item of this Contract as specified herein. The Work to be done and paid for under any item shall not be limited to the exact extent mentioned or described, but shall include all incidental Work necessary or customarily done for the completion of that item.

## **10.02 Definitions**

Wherever the words or terms defined in this Section or pronouns used in their stead occur in the Specifications or other Contract Documents, they shall have the meanings herein given.

- a. "AASHTO" shall mean the American Association of State Highway and Transportation Officials.
- b. "ACI" shall mean the American Concrete Institute.
- c. "Addendum" shall mean modification of the Contract Documents issued in writing by Engineer prior to opening the bids.
- d. "ANS" shall mean American National Standard, as approved by the American National Standards Institute, Inc.
- e. "ASTM" shall mean the American Society for Testing and Materials.
- f. "AWWA" shall mean the American Water Works Association.
- g. "Bid" shall mean the documents that comprise the submission for the Work of this Project.
- h. "Bid Period" shall mean the time period from when the Bid Documents will be available to the deadline for submitting Bids.
- i. "Bidder" shall mean one who submits a Bid directly to District, as distinct from a sub-bidder, who submits a Bid to the Bidder.
- j. "Bid Documents" include the Advertisement for Bids, Instructions to Bidders, Proposal, Questionnaire, the Bid Form, and the proposed Contract Documents (including all Addenda issued prior to receipts of Bids).
- k. "Change Order" shall mean a written change, addition, or deletion to the Contract Documents signed by both Contractor and the District.
- l. "Contract" shall mean the agreement between the Successful Bidder and the District for performance of the Work.
- m. "Contract Documents" shall mean all documents that comprise the agreement of the parties related to this Project. The Contract Documents include the Notice to Contractors, Instructions to Bidders, Proposal, Questionnaire, Bid Security, Contract, Public Construction

Bond, Sworn Statement of Public Entity Crimes, Opinion of District's Attorney, Final Release of Lien, Special Conditions, General Conditions, Technical Specifications, Standard Details and Plans, including all modifications, addenda, and Change Orders contained in any documents before or after execution of the Contract

- n. "Contract Sum" shall mean the total amount due to Contractor as a result of Work on the Project, including any amounts as a result of Change Orders.
- o. "Contract Time" shall mean the time to complete the Project as set forth in the Contract Documents. Reference to "days" shall mean calendar days unless otherwise noted.
- p. "Contractor" shall mean the Successful Bidder with whom the District signs the Contract for the Work or its duly authorized agents.
- q. "County" shall mean Palm Beach County, as may be applicable.
- r. "Defective" shall mean the Work does not conform to the Contract Documents or does not meet the requirements of any applicable inspection, reference standard, test, or approval.
- s. "District" shall mean the Loxahatchee River Environmental Control District, acting through its properly authorized representatives.
- t. "Engineer" shall mean the engineer designated by the District as its engineering representative during the course of construction to make appropriate inspection and computation of payments, whether acting directly or through properly authorized agents, inspectors or representatives of Engineer, acting within the scope of duties entrusted to them.
- u. "Final Completion" shall mean the time when Engineer determines that all Contract Document requirements have been completed.
- v. "IEEE" shall mean the Institute of Electrical and Electronic Engineers, Inc.
- w. "Notice of Award" shall mean the District's notification of the Contract to the Successful Bidder.
- x. "Notice to Proceed" shall mean the written notice from the District to the Contractor to proceed with the Work.
- y. "Plans" shall mean any and all drawings, plans, sketches, diagrams, designs, lists, exhibits, or other graphic and pictorial portions of the Contract Documents showing the design, location, and dimensions of the Work for the Project.
- z. "Pricing Schedule" shall be based upon the Bid item(s) and shall establish the value of the Contract Award. .
- aa. "Project" shall mean the entire construction to be performed as provided in the Contract Documents.

- bb. "Schedule of Values" is established between Contractor and Engineer to determine the appropriate cost of component items that were used to establish the "Pricing Schedule," and the value to be paid as Work is completed. The Schedule of Values shall be determined during the Pre-Construction Meeting.
- cc. "Specifications" shall mean the written requirements for materials, equipment, systems, standards, and workmanship for the Work, and performance of related services.
- dd. "Substantial Completion" shall mean the date as certified by Engineer when the construction of the Project or a specified part thereof is completed, in accordance with the Contract Documents and applicable permits, so that the Project or specified part can be utilized for the purposes for which it was intended; or if there be no such certification, the date when final payment is due in accordance with the Contract.
- ee. "Successful Bidder" shall mean the lowest cost, qualified, responsive, responsible Bidder to whom the District, based on the District's evaluation hereinafter provided, makes an award.
- ff. "Work" shall mean any and all obligations, duties and responsibilities necessary to the successful completion of the Project assigned to or undertaken by Contractor under the Contract Documents, including all labor, materials, equipment, services, and other incidentals and the furnishing, installation, and delivery thereof and all Work reasonably inferable therefrom.

### **10.03 Plans and Specifications are Supplementary**

The Plans and Specifications are intended to supplement each other, and together constitute one complete set of Contract Documents, so that any Work exhibited in the one and not the other shall be executed just as if it has been set forth in both, in order that the Work shall be completed in every respect according to the complete design or designs as decided and determined by Engineer. In the event of a conflict in the Plans and Specifications, the Specifications shall be considered prevailing. Should Contractor find that anything is omitted from the Plans and Specifications which is necessary for a clear understanding of the Work, or that there is an error in either Plans or Specifications, Contractor shall promptly notify Engineer. From time to time during the progress of the Work, Engineer may furnish supplementary or working drawings necessary to show changes or define the Work in more detail, and these also shall be part of the Contract Documents.

### **10.04 Handling and Distribution**

Contractor shall, at its own expense, handle, haul, deliver, and distribute all materials and all surplus materials on the different portions of the Work, as necessary. Contractor shall provide suitable and adequate storage room for materials and equipment, until the Final Completion of the Work.

Storage charges and demurrage charges by transportation companies and vendors, which result from delays in handling, shall be borne by Contractor.

### **10.05 Materials, Samples, Inspection, Approval**

Unless otherwise indicated on the Plans and Specifications or specified, only new materials and equipment shall be incorporated in the Work. All materials and equipment furnished by Contractor to be incorporated in the Work shall be subject to the inspection and approval of Engineer.

No material shall be processed for, fabricated for, or delivered to the Work without prior approval of Engineer.

Within thirty (30) calendar days after the award of the Contract, Contractor shall submit to Engineer the names and addresses of the manufacturers and suppliers of all materials and equipment proposed to be incorporated into the Work. When shop and working drawings are required as specified below, such information shall be submitted prior to the submission of the drawings so that Engineer may consider and approve or disapprove the manufacturer and/or the supplier as to its ability to furnish a product meeting the Specifications, subject to final approval of the particular material or equipment. As requested, Contractor shall also submit data relating to the material and equipment proposed to be incorporated into the Work, in sufficient detail to enable Engineer to identify the particular product in question and to form an opinion as to its conformity to the Contract requirements.

Such data shall be submitted in a manner similar to that specified for shop and working drawings.

Facilities and labor for the handling and inspection of all materials and equipment shall be furnished by Contractor. Defective materials and equipment shall be removed immediately from the site of the Work. The Contractor will make arrangements for, and pay for soil density tests wherever and whenever the District desires, but at no less than every 1 foot lift and 400 LF of trench backfill, 1 foot lift and 100 SF of roadway subgrade and base and 1 foot lift and 100SF of fill beneath concrete on grade. If the results of a soil density test indicate that compaction is less than that specified, Contractor shall recompact and retest soil density with no additional cost to the District.

If Engineer so requires, either prior to beginning or during the progress of the Work, Contractor shall submit samples of materials for such special tests as may be necessary to demonstrate that they conform to the Specifications. Such samples, including concrete test cylinders, shall be furnished, taken, stored, packed and shipped as directed, at the expense of Contractor. Contractor shall, at its expense, furnish approved molds for making concrete test cylinders. Except as otherwise specified, the District shall make arrangements for, and pay for, the tests. All samples shall be packed so as to reach their destination in good condition, and shall be labeled to indicate the material represented, the name of the building or Work and location of which the material is intended, and the name of Contractor submitting the sample. To ensure consideration of samples, Contractor shall notify Engineer by letter that the samples have been shipped and shall properly describe the samples in the letter. In no case shall the letter of notification be enclosed with the samples.

Contractor shall submit data and samples to Engineer, or place its orders, sufficiently early to permit Engineer to consider, inspect, test, and approve the materials and equipment before they are incorporated in the Work. Delay resulting from Contractor's failure to do so shall not be used as a basis of a claim against the District or Engineer. When required, Contractor shall furnish to Engineer three (3) sworn copies of manufacturer's shop or mill tests (or reports from independent testing laboratories) relative to materials, concrete and equipment data.

After Engineer approval of the samples, data, etc., the materials and equipment used in the course of the Work shall correspond therewith.

#### **10.06 Inspection of Work Away from the Site**

If Work done off the construction site is to be inspected on behalf of the District during its fabrication, manufacture, or testing, or before shipment, Contractor shall give notice to Engineer of the place and time where such fabrication, manufacture, 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.

#### **10.07 Contractor's Shop and Working Drawings**

Contractor shall submit for approval six (6) copies (unless otherwise specified in writing) of shop and working drawings of concrete reinforcement, structural details, piping layout, wiring, materials fabricated especially for this Contract, and materials and equipment for which such drawings are specifically requested. All shop and working drawing submittals shall be prepared and submitted in accordance with Section 01300 of the Technical Specifications.

#### **10.08 Health, Safety and Environmental Program**

The Contractor shall adhere to all applicable federal and state occupational safety and health laws as they apply to this Contract.

The Contractor will enforce the Loxahatchee River Environmental Control District's safety rules and practices as they apply to the Contractor's employee's, in addition to the Contractor's own safety rules and procedures.

The Contractor shall provide all of its subcontractors with copies of all safe working procedures and shall ensure their enforcement.

#### **10.09 Insufficiency of Safety Precautions**

Failure of Contractor to provide these required conditions shall be a material breach of this Contract and the District shall be entitled to stop the Work until such time as Contractor corrects these conditions, without payment to Contractor of extension of time to complete the Work.

#### **10.10 Sanitary Regulations**

Contractor shall provide adequate sanitary conveniences for the use of those employed on the worksite. Such conveniences shall be made available when the first employees arrive on the worksite, shall be properly secluded from public observation, and shall be constructed and maintained in suitable numbers and at such points and in such manner as may be required or approved.

Contractor shall maintain the sanitary facilities in a satisfactory and sanitary condition at all times and shall enforce their use. Contractor shall rigorously prohibit the committing of nuisances on the

worksite, on the lands of the District, or any adjacent property. Contractor is solely responsible for the use and maintenance of the sanitary facilities.

The District and Engineer shall have the right to inspect any building or other facility erected, maintained, or used by Contractor, to determine whether or not the sanitary regulations have been complied with.

#### **10.11 Lines, Grades and Measurements**

Contractor shall employ, at its own expense, a land surveyor who shall be registered in the State of Florida and who shall be thoroughly experienced in field layout work. Said surveyor shall establish all lines, elevations, reference marks, etc., needed by Contractor during the progress of the Work, and from time to time Contractor shall verify such marks by instrument or by other appropriate means.

Alignment and grade of all pipe, tunnels and borings shall be controlled by use of lasers, levels or other equipment as required to assure proper alignment and grade. Contractor shall furnish all lasers and accessories as required and approved by Engineer. Contractor's engineer will set and check each laser each day that Work is in progress or more often as required to assure continuous accurate control. Contractor's engineer responsible for lines and grades shall certify to the District in writing that the Work has been constructed to lines and grades as shown on the Plans and Specifications. This certification shall accompany each request for payment.

Engineer shall be permitted at any time to review the lines, elevations, reference marks, lasers, etc., set by Engineer employed by Contractor, and Contractor shall correct any errors in lines, elevations, reference marks, lasers, etc., disclosed by engineer. Such a review shall not be construed to be an approval of Contractor's Work and shall not relieve Contractor of the responsibility for the accurate construction of the entire Work.

Contractor shall make all measurements and review all dimensions necessary for the proper construction of the Work called for by the Plans and Specifications. During the prosecution of the Work, Contractor shall make all necessary measurements to prevent misfitting in said Work, for the accurate construction of the entire Work.

#### **10.12 Dimensions of Existing Structures**

Where the dimensions and locations of existing structures are of critical importance in the installation or connection of new Work, Contractor shall verify such dimensions and locations in the field before the fabrication of any materials or equipment which is dependent on the correctness of such information.

#### **10.13 Work to Conform**

During its progress and on its completion, all Work shall conform to the lines, levels, and grades indicated on the Plans and Specifications or given by Engineer and shall be built in a thoroughly substantial and workmanlike manner, in accordance with the Plans and Specifications and the directions given from time to time by Engineer. In no case shall any Work in excess of the requirements of the Plans and Specifications be paid for unless ordered in writing by Engineer.

All Work done without instructions having been given therefore by Engineer, done without proper lines or levels, or done during the absence of Engineer, or its agent, will not be estimated or paid for except when such Work is authorized by Engineer in writing. Work so done may be ordered uncovered or taken down, removed, and replaced at Contractor's expense.

#### **10.14 Pipe Location**

Pipelines will be located substantially as indicated on the Plans and Specifications, but the right is reserved by the District, acting through Engineer, to make such modifications in location as may be found desirable to avoid interference with existing structures or for other reasons. Where fittings, etc., are noted on the Plans and Specifications, such notation is for Contractor's convenience and does not relieve Contractor from laying and joining different or additional items where required without additional compensation.

#### **10.15 Planning and Progress Schedules**

Contractor shall prepare and submit all schedule submittals in accordance with Section 01300 of the Technical Specifications.

#### **10.16 Precautions During Adverse Weather**

In the event of, or the possibility thereof, adverse weather, including high tides, and against the possibility thereof, Contractor shall take all necessary precautions so that the Work may be properly done and satisfactory in all respects. When required, protection shall be provided by use of tarpaulins, wood, building paper shelters, and other approved means. Contractor shall be responsible for all changes caused by adverse weather, including tidal fluctuations and Contractor shall take such precautions and procure insurance as Contractor deems prudent.

Engineer may suspend construction operations at any time when, in its sole discretion, the conditions are unsuitable or the proper precautions are not being taken, whatever the weather or tidal conditions may be, in any season.

Contractor shall provide a written tropical storm/hurricane plan consistent with District requirements to Engineer prior to commencement of construction.

#### **10.17 Electrical Energy**

Contractor shall make all necessary applications and arrangements and pay all fees and charges for power and light and other electrical energy as necessary for the proper completion of this Contract during its entire progress. Contractor shall provide and pay for all temporary wiring, switches, connections, and meters.

There shall be sufficient electrical lighting so that all Work may be done in a workmanlike manner when there is not sufficient daylight.

#### **10.18 Bolts, Anchor Bolts and Nuts**

All necessary bolts, anchor bolts, nuts, washers, plates and bolt sleeves shall be furnished by Contractor in accordance herewith.

#### **10.19 Concrete Inserts**

Concrete inserts shall be designed to safely support, in the concrete that is used, the maximum load that can be imposed by the bolts used in the inserts. Inserts shall be of a type which will permit locking of the bolt head or nut. All inserts shall be 316 stainless steel.

#### **10.20 Operating Instructions and Parts Lists**

Operations and Maintenance (O&M) Manuals for each item of equipment shall be submitted in accordance with Section 01300 of the Technical Specifications entitled "Submittals."

#### **10.21 Lubricants**

During testing and prior to acceptance, Contractor shall furnish all lubricants necessary for the proper lubrication of all equipment furnished under this Contract and as specified in the Contract Documents.

#### **10.22 Special Tools**

For each type of equipment furnished by Contractor, Contractor shall provide a complete set of all special tools (including calibration and test equipment) which may be necessary for the adjustment, operation, maintenance, and disassembly of such equipment.

Special tools are considered to be those which, because of their limited use, are not normally available, but which are necessary for the particular equipment.

Special tools shall be delivered at the same time as the equipment to which they pertain. Contractor shall properly store and safeguard such special tools to ensure they are in a proper functioning condition, as determined by Engineer. At the completion of the Work the special tools shall be delivered to the District.

#### **10.23 Protection Against Electrolysis**

Where dissimilar metals are used in conjunction with each other, suitable insulation shall be provided between adjoining surfaces so as to eliminate direct contact and any resultant electrolysis. The insulation shall be bituminous impregnated felt, heavy bituminous coatings, nonmetallic separators or washers, or other materials approved by Engineer.

#### **10.24 Indemnification and Confidentiality**

For specific consideration received by Contractor, included in the Contract sum beyond the cost of the Work, Contractor shall indemnify and hold harmless the District, 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 Contractor and persons employed or utilized by Contractor in the performance of the Contract. The monetary limitation on the extent of the indemnification that bears a reasonable commercial relationship to the

Contract and is part of the Project specifications or Bid Documents, is up to three (3) times the monetary value of the Contract. Notwithstanding the foregoing, the monetary limitation on the extent of the indemnification provided shall not be less than one million dollars (\$1,000,000.00) per occurrence. The District and the insurance carrier shall have the right to “mutually approve” the choice of attorney(s) to provide the defense, with such approval not to be unreasonably withheld. If no agreement on the choice of attorney(s) can be reached in a reasonable length of time, the final authority to choose an attorney will rest with the claims manager in the office where the claim originated.

In any and all claims against the District or any of their officers or employees by an employee of Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone else for whose acts any of them may be liable, the indemnification obligation under this General Conditions Section 10.24 shall not be limited in any way on the amount or type of damages, compensation or benefits payable by or for Contractor or any subcontractor under worker’s compensation acts, disability benefits or other employee benefit acts. The intention of these two clauses above is to provide for the legal indemnification allowed for under Section 725.06, Florida Statutes, no more and no less, so as to be completely legal and not void as against public policy. If any provision of this indemnification is determined by a court of law to be void, it shall be severed from this provision and the remainder of this provision shall be given full force and effect under Section 725.06, Florida Statutes.

In the performance of the Work, Contractor may be exposed to the confidential information of the District and other. Contractor shall not disclose to anyone not employed by the District nor use, except on behalf of the District, any such confidential information acquired in the performance of the Work except as authorized by the District in writing and, regardless of the term of this Contract, Contractor shall be bound by this obligation until such time as said confidential information shall become part of the public domain. Information regarding all aspects of the District’s business and information concerning the Work (either directly or indirectly disclosed to it or developed by it in the performance of the Work) shall be presumed to be confidential except to the extent that same shall have been published or otherwise made freely available to the general public without restriction. Contractor also agrees that it will not disclose to the District any information it holds subject to any obligation or confidence to any third persons.

#### **10.25 Work by Others**

The District may perform additional Work related to the Project itself, or the District may engage others to perform Work on the Project which such engagement shall be governed by similar General Conditions. Contractor shall afford the other contractors who are parties to such direct contracts (or the District, if it is performing the additional Work), reasonable opportunity for the introduction and storage of materials and equipment and the execution of the Work, and shall properly connect and coordinate Contractor’s Work with the Work of others. If any part of Contractor’s Work depends for proper execution or results upon the Work of any such other contractor (or the District), Contractor shall inspect and promptly report to Engineer, in writing, any defects or deficiencies in such Work that render it unsuitable for such proper execution and results. Contractor’s failure so to report shall constitute an acceptance of the other Work as fit and proper for the relationship of its Work except as to defects and deficiencies which may appear in the other Work after the execution of Contractor’s Work.

Contractor shall do all cutting, fitting and patching of its Work that may be required to make its several parts come together properly and fit it to receive or be received by such other Work. Contractor shall not endanger any Work of others by cutting, excavating or otherwise altering their Work and will only cut or alter their Work with the written consent of Engineer and of the other contractors whose Work will be affected.

If the performance of additional Work by other contractors or the District is not noted in the Contract Documents prior to the execution of the Contract, written notice thereof shall be given to Contractor prior to the state of any such additional Work.

#### **10.26 Record Drawings**

Contractor shall keep and maintain one record copy of all Specifications, Plans and Specifications, Addenda, Change Orders, Modifications and Shop drawings at the site in good order and annotated to show all changes made during the construction process as specified in the Contract Documents. All record drawings shall be kept maintained and updated by Contractor in accordance with Section 01720 of the Technical Specifications entitled "Project Record Drawings."

#### **10.27 Non-Waiver**

Progress or final payments shall not be acceptance of improper, faulty, or defective work or material, and shall not release Contractor of any of its obligations under the Contract Documents, and shall not constitute a waiver of any rights or provisions of the Contract Documents by the District.

#### **10.28 Mutuality of Provisions**

If any provision of the Contract Documents shall for any reason be held to be invalid, illegal, or unenforceable in any respect under the laws of the State of Florida, any such invalidity, illegality or unenforceability shall not affect any other provision of the Contract Documents and the Contract Documents shall be construed as if such invalid, illegal, or unenforceable provision had never been incorporated herein and the rights of the parties hereto shall be construed and enforced accordingly.

#### **10.29 Restoration of Property**

Existing structures and facilities, including but not limited to buildings, utilities, topography, streets, curbs, walks landscape materials and other improvements that are damaged or removed due to the Work, shall be patched, repaired, or replaced by Contractor to the satisfaction of the owner of such structure and facility, and authorities having jurisdiction. In the event that authorities having jurisdiction require that such repairing and patching be done with their own labor and materials, Contractor shall abide by such regulations and pay for such work.

#### **10.30 Notice**

Any notice or writing given hereunder shall be delivered by depositing the notice contained in a sealed envelope, postage prepaid in the United States Postal System as registered or certified mail, with return receipt requested, or by overnight express carrier. Any such notice so deposited shall be conclusively deemed delivered to and received by the addressee forty-eight (48) hours after the deposit if all of the foregoing conditions of notice have been satisfied and addressed as follows:

DISTRICT:

CONTRACTOR:

### **10.31 Legally Binding**

Contractor agrees that the Contract Documents are legally binding documents and has had the opportunity to permit its attorney to review them. The Contract Documents are the joint work product of the Parties hereto and, accordingly, no term or provision shall be more strictly construed against any party.

**(Remainder of this page left blank intentionally)**

**DIVISION 1**

**GENERAL REQUIREMENTS**

## **SECTION 01010 SUMMARY OF WORK**

### **PART 1 - GENERAL**

#### **1.01 WORK COVERED BY CONTRACT DOCUMENTS**

- A. The location of the work is along Olympus Drive, SR A1A, and Celestial Way as shown on Drawing G-4. The work is located in the Town of Juno Beach. The roadways are under the jurisdiction of Palm Beach County, FDOT, and Town of Juno Beach and the existing drainage is under the jurisdiction of the Town of Juno Beach. The existing water system is under the jurisdiction of Town of Jupiter.
- B. The construction drawings for the proposed sanitary sewer system have been prepared by Baxter & Woodman, Inc. entitled "Olympus Drive Force Main & Low Pressure Sewer Replacement."
- C. The total work for the Olympus Drive Force Main & Low Pressure Sewer Replacement consists of furnishing all labor, materials, equipment and all incidentals and appurtenances for the installation of approximately 2,070 LF of 8-inch force main, approximately 765 LF of 2-inch low-pressure sewer, and abandonment of the existing force main. The affected roadway shall be milled and overlaid. Construction also includes dewatering, MOT's, pavement markings and signage, complying with permit conditions, testing and all restoration work for a complete and operating system. The work will be within Palm Beach County, FDOT and Town of Juno Beach rights-of-way.
- D. Except as specifically noted, the Contractor shall provide and pay for:
  - 1. Labor, materials, tools, construction equipment, and machinery.
  - 2. Other facilities and services necessary for proper execution and completion of the work.
- E. The Contractor shall comply with all codes, ordinances, rules, regulations, orders, and other legal requirements of the Loxahatchee River District, Palm Beach County, FDOT, FDEP, SFWMD, and the Army Corps of Engineers.

#### **1.02 LOCATIONS OF UTILITIES**

- A. Information shown on the drawings as to the location of existing utilities has been prepared from the most reliable data available to Baxter & Wodoman; however, this information is not guaranteed and it shall be the Contractor's responsibility to

determine the location, character, and depth of any existing utilities. Extreme caution shall be exercised to eliminate any possibility of any damage to utilities resulting from his activities.

The Contractor shall be fully responsible for any damage to utilities resulting from his operation.

**The Contractor is required to subcontract with a Professional Utility Locator, to locate existing service utilities such as telephone lines, CATV, electric lines, fiber optic lines, gas lines, and any other existing facility.**

**The Contractor shall be responsible for the immediate repair of damage to existing utilities such as telephone line, CATV, underground electric lines, gas lines, stormwater facilities, septic tanks and any facility that has been marked in the field and/or on the drawings.**

**The Contractor shall be responsible for damages to existing landscaping, landscape lighting and electrical lines, irrigation system piping and appurtenances (irrigation heads, spray nozzles), and control wiring. Contractor shall complete the repair and restoration of damaged facilities within two (2) calendar days of the damage.**

- B. The Contractor shall determine any conflicts between existing utilities, or other structures or facilities, with the alignment or gradient of the proposed work, and report such conflicts to the District, sufficiently in advance of his construction operations so that proper adjustments in the alignment or gradient of the proposed work may be planned by the District to avoid such conflicts. The District shall not be liable for any cost or added expenses to the Contractor for delays, or for the necessary adjustment of previously installed work to avoid such conflicts, due to the Contractor's failure to advise the District of such conflicts adequately in advance of his construction operations.

#### 1.03 SILTATION AND BANK EROSION

- A. The Contractor shall take adequate precautions as directed by Engineer and/or regulatory agencies to minimize siltation and bank erosion in the vicinity of wetlands or coastline, in discharging well point systems, or during other construction activities (including flushing of mains).

#### 1.04 STORAGE OF MATERIALS

- A. Coordinate with Palm Beach County, FDOT, Town of Juno Beach, and private property owners to identify and utilize storage area(s), and agree to terms and conditions for use of the area to mobilize, and to store materials and equipment.

- B. All materials, supplies and equipment intended for use in the work shall be suitably stored by the Contractor to prevent damage from exposure, admixture with foreign substances, or vandalism or other cause. The District will refuse to accept, or sample for testing, materials, supplies or equipment that have been improperly stored, as determined by the Engineer. Materials found unfit for use shall not be incorporated in the work and shall immediately be removed from the construction or storage site.
  - 1. Delivered materials shall be stored in a manner acceptable to the Engineer before any payment for same will be made.
- C. When storing materials on private property, the Contractor shall submit in writing the property owner's authorization to do so and provide any and all permits that may be required at no expense to the District.

#### 1.05 PRESERVATION OF PROPERTY

- A. The Contractor shall preserve from damage all property along the line of the work, or which is in the vicinity of or is in any way affected by the work, the removal or destruction of which is not called for by the Drawings. Wherever such property is damaged due to the activities of the Contractor, it shall be immediately restored to its original condition by the Contractor at no cost to the District.

#### 1.06 CLEAN UP

- A. The Contractor shall keep the construction site free of rubbish and other materials and restore to their original conditions those portions of the site not designated for the alternation by the Contract Documents. Clean up and restoration shall be accomplished daily throughout the contract period and in such a manner as to maintain a minimum of nuisance and interference to the general public and residents in the vicinity of the work. The Contractor shall also remove, when no longer needed, all temporary structures and equipment used in his operation. It is the intent of this Specification that the construction areas and those other areas not designated for alteration by the Contract Documents shall be immediately restored to original condition. All clean up is subject to approval by the District.

#### 1.07 PUBLIC SAFETY AND CONVENIENCE

- A. The Contractor shall at all times so conduct his work as to ensure the least possible obstruction to traffic, or inconvenience to the general public and residents in the vicinity of the work. No road or street shall be closed to the public, except with the permission of the District, Palm Beach County, FDOT, Town of Juno Beach and appropriate Police and Fire Department. Fire hydrants on or adjacent to the work shall be kept accessible. Provisions shall be made by the Contractor to ensure public access to sidewalks, public telephones, and the proper functioning of all gutters, sewer

inlets, drainage ditches, and irrigation ditches. No open excavation shall be left overnight. All open excavation within the roadway shall be protected with steel plating.

1.08 SAFETY AND OSHA COMPLIANCE

- A. The Contractor shall comply in all respects with all Federal, State and Local safety and health regulations. Copies of the Federal regulations may be obtained from the U.S. Department of Labor, Occupation Safety and Health Administration (OSHA), Washington, DC 20210 or their regional offices.
- B. The Contractor shall comply in all respects with the applicable Workman's Compensation Law.

1.09 CONTRACTOR'S USE OF PREMISES

- A. Coordinate use of premises under direction of the District. Submit in writing authorization to use the premises and provide any and all permits that may be required at no expense to the District.
- B. Assume full responsibility for the protection and safekeeping of equipment and materials stored on the site.

1.10 SALVABLE MATERIALS

- A. All salvable pipe fittings, valve boxes, or other miscellaneous materials removed during construction and not used in the work shall be cleaned and delivered to the District maintenance facility office, at the Contractor's expense, and shall remain the property of the District. All other materials shall be disposed of by the Contractor at his own expense. No separate payment for this work shall be allowed.
- B. Clean fill generated from the construction shall be delivered to a site as designated by the District, or disposed of by the Contractor at his own expense. No separate payment for this work shall be allowed.

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION (NOT USED)**

END OF SECTION

## **SECTION 01015 MISCELLANEOUS REQUIREMENTS**

### **PART 1 - GENERAL**

#### **1.01 LINES, GRADES AND MEASUREMENTS**

- A. Alignment and grade of all pipe, tunnels and borings shall be continuously controlled by use of lasers or other acceptable method. Laser alignment and grade through the pipeline is the preferred method. The District Engineer shall be permitted at any time to check the lines, elevations, reference marks, laser, etc., set by the Contractor or the Design Engineer.

#### **1.02 WORK TO CONFORM**

- A. The maximum allowed vertical deviation of any single gravity pipe, tunnel or boring from plan grade shall be three percent (3%) of inside diameter. No single gravity pipe shall vary in horizontal alignment right or left, from the pipe centerline by more than five percent (5%) of inside diameter. Force main joint deflections shall be limited by AWWA Standards and manufacturers recommendation.

#### **1.03 PIPELINE LOCATION**

- A. Pipelines shall not be located closer to an existing or proposed structure than the horizontal distance obtained when drawing a 45-degree angle from the proposed invert of the pipeline to bottom outside face of the footing. In no case shall this distance be less than ten (10) feet.
- B. Pipelines shall be located as indicated on the drawings, but the right is reserved to the Design Engineer to make such modifications in location as may be found desirable to avoid interference with existing structures or for other reasons, which are not material to the interest of the District and which do not otherwise conflict with any other statement or criteria set forth in this manual. The District should be notified of such changes in a timely fashion and such changes shall be recorded on as-built drawings.

#### **1.04 PIPE ADAPTERS**

- A. When joining pipes of different types, District approved transition sleeves, adapters, and couplings shall be used.

#### 1.05 BOLTS, ANCHOR BOLTS, AND NUTS

- A. Anchor bolts shall have suitable washers and, where so required, their nuts shall be hexagonal. All anchor bolts, nuts, washers, plates, and bolt sleeves shall be galvanized unless otherwise indicated or specified.
- B. Expansion bolts shall have malleable iron and lead composition elements or the required number of units and sizes.
- C. Bolts, anchor bolts, nuts and washers, specified to be galvanized shall be zinc coated, after being threaded, by the hot dip process in conformity with the ASTM Standard Specification for Zinc (Hot Galvanized) Coatings on Products Fabricated from Rolled, Pressed and Forged Steel Shapes, Plates, Bars, and Strip, Designation A123, Latest Revision, or the ASTM Standard Specifications for Zinc Coating (Hot Dip) on Iron and Steel Hardware, Designation A153, Latest Revision, as is appropriate.
- D. Bolts, anchor bolts, nuts and washers specified to be stainless steel shall be Type 316 stainless steel.
- E. Anchor bolts and expansion bolts shall be set accurately. If anchor bolts are set before the concrete has been placed, they shall be carefully held in suitable templates of approved design. If anchor or expansion bolts are set after the concrete has been placed, all necessary drilling and grouting or caulking shall be done and care shall be taken not to damage the structure or finish by cracking, chipping, spalling, or otherwise during the drilling and caulking.

#### **PART 2 - PRODUCTS (NOT USED)**

#### **PART 3 - EXECUTION (NOT USED)**

END OF SECTION

## **SECTION 01025 MEASUREMENT AND PAYMENT**

### **PART 1 - GENERAL**

#### **1.01 GENERAL**

- A. The Contractor shall receive and accept the compensation provided in the Proposal and the Contract as full payment for performing all operations necessary to complete the work under the Contract, and also in full payment for all loss or damages between the actual quantities of work and quantities herein estimated by the Engineer, or from the action of the elements or from any unforeseen difficulties which may be encountered during the prosecution of the work until the final acceptance by the District. The Contractor shall be responsible for conforming to all permit conditions as required by all governing agencies including, but not limited to, the Palm Beach County Health Department, South Florida Water Management District, Army Corps of Engineers, Palm Beach County, Town of Juno Beach, and Florida Department of Transportation.
- B. Each of the prices for the individual items stated in the Proposal include all costs and expenses for taxes, labor, supervision, administration, equipment, materials, commissions, transportation charges and expenses, patent fees and royalties, labor for handling materials during inspection, together with any and all other costs and expenses for performing and completing the work as shown on the Plans and specified herein. The basis of payment for an item at the unit price shown in the Proposal shall be in accordance with the description of that item in this Section.
- C. The Contractor's attention is again called to the fact that the quotations for the various items of work are intended to establish a total price for completing the work in its entirety. Should the Contractor feel that the cost for any item of work has not been established by the Bid Form or Payment Items, he shall include the cost for that work in some other applicable bid item, so that his proposal for the project does reflect his total price for completing the work in its entirety.
- D. The District reserves the right to increase or decrease the quantities of work to be paid for at the stated unit price, whichever it deems to be in the best interest of the District.
- E. All required manufacturer testing and certification shall be included in the unit prices shown in the proposal and Contract. Density testing required for compacted backfilling, and concrete strength and materials testing required at the time of construction shall be arranged for by Contractor and paid for by the District. Water quality monitoring testing required for the dewatering permit shall be arranged for by the Contractor and paid for by the District.

- F. Any items not shown or omitted that are required for a complete installation shall be furnished and installed by the Contractor at no additional cost to the District.
- G. Payment for repair and/or replacement of existing utilities will be included in the unit price bid or the lump sum bid amount for the related new construction bid item.
- H. Existing storm sewers affected by construction shall be replaced to the line and grade of the existing storm sewer with equal or better materials. No separate payment for storm sewer restoration shall be made.
- I. The bids for the work are intended to establish a total cost for the work in its entirety. Should the Contractor feel that the cost for the work has not been established by specific items in the Bid Forms, include the cost for that work in some related bid item so that the Proposal for the project reflects the total cost for completing the work in its entirety.

## **PART 2 - MATERIAL (NOT USED)**

## **PART 3 - EXECUTION**

### **3.01 MEASUREMENT AND PAYMENT**

- A. The quantities for payment under this Contract shall be determined by actual measurement of the completed items, in place, ready for service and accepted by the District, in accordance with the applicable method of measurement therefore contained herein unless otherwise stated. A representative of the Contractor shall witness all field measurements.
- B. Payment for all work completed under this Contract shall be in accordance with the provisions of the Contract and upon the basis of specific provisions of this Section of the Contract Documents. The bid items for furnishing and installing work under the Contract shall include full compensation for completing all activities not limited to selling, delivery, construction, testing and restoration, within the limits of right-of-way to right-of-way, and work areas outside of the right-of-way.

### **3.02 PAYMENT ITEMS**

## ***GENERAL CONDITIONS***

- A. **Mobilization, Insurance and Bonds – Bid Item No. 1**
  - 1. Payment for mobilization/demobilization, bonds, insurance, scheduling, temporary facilities, permits and all other activities necessary will be made at the Contract Lump Sum (LS) bid price for this item, which price shall be full

compensation for all materials, labor, equipment, tools and all other incidentals necessary to complete this item.

2. For mobilization/demobilization the lump sum cost shall include, but not limited to, those operations necessary for the movement of personnel, equipment, permit fees, pay requisitions, meetings, coordination with contractors, and sub-contractors which may or may not be on this site, meetings with residents and/or government agencies, supplies and incidentals to the project site and to maintain services (mail, trash, etc.). The cost of bonds, insurance, survey layout, and clean up of site, shall also be included in this item. The cost of supervision and/or administration of the project shall be deemed to be included in each of the respective items of work bid herein.
3. This also includes coordination between the Contractor and FP&L in regards to any power poles that may need to be temporarily secured during construction. The District shall pay FP&L for services on a case by case basis. If however, due to the Contractor's failure to complete the work within the agreed upon period of time, any additional costs for FP&L's extended time for their service, including any stand-by time or remobilization shall be paid for by the Contractor.
4. **Payment item for mobilization, insurance and bonds shall not exceed eight percent (8%) of the contract price. Should the bid price for mobilization, insurance and bonds exceed 8% of the Contract amount, any amount over the 8% will be paid with the Contractor's final payment application.**

**B. Maintenance of Traffic – Bid Item No. 2**

1. Payment for maintenance of traffic will be made at the Contract Lump Sum (LS) bid price for this item, which price shall be full compensation for all materials, labor, equipment, tools and all other incidentals necessary to complete this item.
2. It shall be the Contractor's responsibility to provide all necessary permits and traffic devices to maintain traffic during construction. Traffic devices may be in the form of barricades, personnel, lights, signs, temporary rock roadways, construction and removal of temporary access driveways to residential homes, commercial material for driveway maintenance, etc. The quantity of traffic control to be considered for payment shall be equivalent to the percentage of the project determined by the Engineer to be complete as the day of the pay request submitted. The percent completion of the project shall be based on the percent of the total project actually constructed and not on the percent of the contract price completed.
3. All work shall be in accordance with all applicable Florida Department of Transportation specifications, and in accordance with the governing

municipalities (Palm Beach County) and other governing agencies. Detailed MOT plans shall be required for work within Palm Beach County R-O-W. The MOT plan shall also address the Contractor's plan for maintaining access to the homeowner's driveways during all phases of the project.

4. Contractor shall be responsible for coordinating with Palm Beach County Fire and Rescue as related to this project and any special access requirements that they may need.

C. **As-Built Record Drawings– Bid Item No. 3**

1. Payment for this item will be made at the Contract Lump Sum (LS) bid price for this item. One set of full size design drawings and an electronic AutoCAD 2018 (or latest version) file of the design drawings on CD will be furnished to the Contractor by the Engineer. The Contractor shall maintain full size (22" x 34") field drawings to reflect the "as-built" items of work as the work progresses.
2. The signed and sealed As-Built drawings prepared by professional surveyor are required to be submitted with each pay request. Partial payment will be made for this item based upon the percentage of work completed. All survey work shall be performed by an independent third party surveyor, licensed to practice in the State of Florida. The surveyor shall be retained by the Contractor and approved by the Engineer.
3. The Contractor shall provide complete record drawing information to the Engineer. This information shall include horizontal and vertical dimensions on all structures, north & east coordinates, lateral stationing, slopes, lines, and materials. Discovered utilities or utilities to be found in different locations shall also be shown on record drawings. The AutoCAD files shall be established in State Plane Coordinate System, NAD 83, Florida East Zone. The vertical datum referenced shall be NGVD 29. All EMS marker locations shall be shown on record drawings and in accordance with Engineer's directions. No payment will be made for final "as-built" drawings until both the reproducible and electronic files are received and accepted by the District.
4. This item does not include surveying work required for layout and alignment of utility and paving improvements.

D. **Audio-Video Documentation – Bid Item No. 4**

1. Payment for this item will be made at the Contract Lump Sum (LS) bid price for this item.
2. The Contractor shall provide, prior to start of construction, a video record of the entire project by a professional audio-video taping service acceptable to the District. The video shall include all roadways, sidewalks, Contractor's staging area, outside face of houses (front), driveways, walls, fences,

landscaping area, wetland areas, etc. for each side of the streets. The audio-video should extend from right-of-way to right-of-way and 10' beyond. The entire lift station site(s) including existing wetlands shall also be videoed. Two (2) copies of the video (DVD format) shall be provided to the District for their use prior to construction activities.

E. **NPDES Permit / Erosion Protection Measures– Bid Item No. 5**

1. Payment for Contractor required NPDES Permit application (Notice of Intent and Notice of Termination), reporting by a person holding a certification as an FDEP NPDES Construction Site Inspector, and associated erosion protection measures including turbidity abatement for short-term dewatering procedures will be made at the Contract Lump Sum Price (LS) Bid for this item. The percent completion of the project shall be based on the percent of the total project actually constructed and not on the percent of the Contract price completed.
2. This item includes all silt fencing, inlet protection, etc.

***ROADWAY***

F. **Milling Existing Asphalt Pavement (1.5" Average Depth) & Hauloff – Bid Item No. 6**

1. Payment for this item shall be made on a Square Yard (SY) Basis. The Contractor's unit price shall include full compensation for labor, materials and equipment required for asphalt milling to the appropriate depth, removal and proper disposal of the milling, within the road right of way as indicated on the plans, except for any areas designated to be paid for separately or to be specifically included in the costs of other work under the Contract.
2. Also included in this item is all restoration work (sod, driveways, sidewalk, etc.) that is required due to removing pavement section.

G. **Asphalt Pavement – Superpave Hot Mix – Bid Item No. 7**

1. Payment for installing new Superpave hot mix asphalt (SP 12.5) including tack coat where indicated on the plans shall be made at the Contractor's unit price per TON (TN) for Superpave asphalt pavement and shall include all labor, material, and equipment required to construct the asphalt pavement as required due to construction activities. The unit price shall include compensation for labor, materials, equipment and testing required to construct the new asphaltic surface.
2. This unit price shall also include all necessary labor, materials, and equipment to transitions to existing pavement, tack coating, compaction, rolling, brooming, and any other work required to complete the work.

H. **Open Cut Pavement Trench Repair (2" FM) – Bid Item No. 8**

1. Payment for this item shall be on a Linear Foot (LF) basis.
2. Measurement of this item shall be a count of the linear feet of length of pavement removed for installation of the proposed 2" force main. **No measurement of width shall be made for this item.** The contract unit price shall include all labor, materials, and equipment necessary to construct the trench repair in accordance with the plans and specifications. This pay item also includes providing a temporary asphalt concrete patch until replaced with permanent overlay. Permanent overlay is also included in this bid item.
3. The contract unit price shall include all labor, materials, and equipment necessary to prepare the sub-base, install the baserock and asphalt concrete in accordance with the plans and specifications.

I. **Open Cut Pavement Trench Repair (8" FM) – Bid Item No. 9**

1. Payment for this item shall be on a Linear Foot (LF) basis.
2. Measurement of this item shall be a count of the linear feet of length of pavement removed for installation of the proposed 8" force main. **No measurement of width shall be made for this item.** The contract unit price shall include all labor, materials, and equipment necessary to construct the trench repair in accordance with the plans and specifications. This pay item also includes providing a temporary asphalt concrete patch until replaced with permanent overlay. Permanent overlay is also included in this bid item.
3. The contract unit price shall include all labor, materials, and equipment necessary to prepare the sub-base, install the baserock and asphalt concrete in accordance with the plans and specifications.

J. **ADA Curb Ramp with Tactile Warning Surface (FDOT Index 522) – Bid Item No. 10**

1. Payment for this item shall be made at the Contractor's unit price for each curb ramp installed and accepted. The Contractor's unit price shall include full compensation for furnishing and installing the curb ramps including sub-base preparation, forming, testing, sidewalk curb, and the provision of cast in place detectable warning mat. Ramp slopes and dimensions shall be constructed per FDOT Index 522 at the locations shown on the Drawings. The curb ramps shall be in accordance with the plans, details, and specifications.

K. **Concrete Curbs & Gutter – Bid Items No. 11 and 12**

1. The quantity of curbs and/or gutter removed and replaced shall be determined by measurement of the units Linear Feet (LF) installed and accepted.

2. Payment for removing existing, furnishing and installing concrete curbs and gutters shall be made at the contract unit price per Linear Foot (LF) of each type concrete curb and/or gutter, including flared ends and transitions, drop curbs, rebar (as applicable) installed and accepted. The contract unit price shall include all labor, materials, equipment and testing necessary to prepare the sub-base and install the concrete curbs and/or gutter in accordance with the plans, specifications and per FDOT Index 520.

**L. Concrete Sidewalk Replacement (4" Thick; 3000 psi) - Bid Item No. 13**

1. Payment for removing existing sidewalk, furnishing and installing concrete sidewalks (4" thick) where indicated on the plans shall be made at the Contractor's unit price per Square Foot (SF) of concrete sidewalks installed and accepted. The Contract Unit Price shall include full compensation for labor, materials, equipment and testing required to construct the concrete sidewalk in accordance with FDOT standards and with the plans and specifications.

**M. Brick Sidewalk Replacement – Bid Item No. 14**

1. The quantity of brick paver sidewalk restoration shall be determined by measurement of the units removed, reinstalled and accepted.
2. Payment for removal and reinstallation of brick paver units shall be made at the contract unit price per Square Foot (SF) of brick paver units reinstalled and accepted. The contract unit price shall include full compensation for all labor, materials, and equipment necessary to restore the existing brick paver sidewalk in accordance with the plans and specifications. This includes replacement of joints, bedding sand and/or base cement mortar where it is existing.

**N. Pavement Markings – Bid Item No. 15**

1. Payment for this item shall be made at the Contract Lump Sum (LS) bid price for this item.
2. The lump sum price bid for pavement markings (guide lines and symbols) shall include all labor, material, and equipment required to construct the pavement markings shown on the detail drawings. All pavement marking shall be thermoplastic. The unit price shall include all materials, equipment, preparation, and other miscellaneous work required to complete the work as shown on the Drawings in accordance with Florida Department of Transportation, Section 711.
3. This item also includes providing temporary painted striping during curing periods of asphalt and between the initial and final lifts of asphalt.

## **FORCE MAIN**

### **O. PVC C900 Force Main – Bid Items No. 16 and 17**

1. Payment for this item shall be on a Linear Foot (LF) basis.
2. The unit price for per linear foot of 8" diameter PVC C900 force main and shall include all labor, materials, equipment and incidentals necessary to furnish and install 8" PVC C900 force main as shown on the contract drawings, as specified herein and as directed by the Engineer, including but not limited to: bracing sheeting, dewatering, complying with the State of Florida Trench Safety Act, pipe location tape, the furnishing and installation of the force main, pipe restraints, the backfilling and compaction of the pipe trenches, density testing, and providing access to driveways and roadways at all time, maintaining traffic control, cleaning the site of the work location and protection of utilities, structures, trees, shrubs, lawns, and other work required for the complete installation of the force main. This includes all restoration (sod, re-establish existing swales, irrigation repair, maintenance of balance of irrigation zones, driveways, etc.) to complete the work. **Note: Any driveways damaged during the installation of the force main shall be paid for under this Bid Item.** If the Contractor damages an existing driveway during construction it shall be restored in kind. Damaged driveways shall be replaced beyond the damaged section of each driveway to the nearest existing control joint. In the event no joint exists between the edge of pavement and the property line, the contractor shall replace the full apron from edge of pavement to the property line.
3. The unit price bid per foot shall also include the cost for soft-digs to verify location (horizontal & vertical) of all utility crossings, including paralleling of utilities, prior to construction of the proposed sewer system.

### **P. HDPE DR11 (DIPS) Force Main with 2-Inch (HDPE DR 7 IPS) Conduit – Bid Items No. 18 and 19**

1. Payment for this item shall be on a Linear Foot (LF) basis. The Contract unit price shall include full compensation for furnishing and installing the HDPE DR 11 (DIPS) pipe (all pipe shall be black w/ green identification stripe) as shown on the Drawings, Detail Drawings and specified herein by directional drill methods, including piping, restraining devices, one 2-inch HDPE DR 7 (IPS) conduit (black) with a minimum 14 gauge copper tracer wire, sheeting, shoring, dewatering, supporting poles, existing utility protection, temporary plugs, making temporary and permanent pavement repairs, sod, landscape replacement and all other appurtenances and miscellaneous work required for a complete operating system. **Only the horizontal length of the directional drill piping that is actually installed for the intended operation of the main shall be included in the footage of the pipeline being measured.** Any excess material and/or vertical depth shall not be included in the footage

of the pipeline being measured. This includes all density testing and any other tests required as shown on the plans and/or specifications.

2. The unit price shall also include locating the existing utilities (horizontal and vertical) within directional drill crossings and preparing a detailed "Directional Drill Plan" prior to construction using this utility location information.
3. Upon completion of the directional drill activities, a "Surface Drill Path Profile" for each directional drill location must be submitted prior to final acceptance of the project.
4. The Contract unit price bid per foot shall also include the cost for soft-digs to verify location (horizontal & vertical) of all utility crossings, including paralleling of utilities, prior to construction of the proposed force main.

**Q. Directional Drill Pit & Restoration (2" FM) – Bid Item No. 20**

1. The Contract unit price bid for this item for the Directional Drill Pit and Restoration for the proposed 2" force main as shown on the Drawings and specified shall be full compensation for all work, including complete drill pit excavation and restoration of the pit. This includes all shoring, sheeting and dewatering required. This includes all density testing and any other tests required as shown on the plans and/or specifications.
2. This pay item includes all excavation and restoration (e.g. sod, replacement of existing irrigation pipe and sprinkler heads, temporary and permanent pavement restoration, parking lot restoration, landscaping, sidewalk, driveways, curbing, etc.) that is not included in other bid items. Sod shall be Floratam where irrigation exists and Bahia where no irrigation exists.

**R. Directional Drill Pit & Restoration (8" FM) – Bid Item No. 21**

1. The Contract unit price bid for this item for the Directional Drill Pit and Restoration for the proposed 8" force main as shown on the Drawings and specified shall be full compensation for all work, including complete drill pit excavation and restoration of the pit. This includes all shoring, sheeting and dewatering required. This includes all density testing and any other tests required as shown on the plans and/or specifications.
2. This pay item includes all excavation and restoration (e.g. sod, replacement of existing irrigation pipe and sprinkler heads, temporary and permanent pavement restoration, parking lot restoration, landscaping, sidewalk, driveways, curbing, etc.) that is not included in other bid items. Sod shall be Floratam where irrigation exists and Bahia where no irrigation exists.

**S. DIP Compact Fittings - Bid Item No. 22**

1. The unit price bid for this item shall be full compensation for furnishing,

installing and testing compact weight fittings (epoxy coated), including restraint glands, bolts, nuts, gaskets, restraining devices and all other appurtenances for fittings. Only fittings actually installed will be measured for payment by the ton, based on certified shipping weight slips supplied by the Contractor. Provide electronic ball markers at all fittings.

2. This item does not include restraining devices for piping (Bid Item No. 16) or any fittings included in other bid items.

T. **2-Inch ARV with Manhole – Bid Item No. 23**

1. The Contract unit price for this item shall be full compensation for furnishing and installing two-inch air release valves (ARV) with precast concrete manhole for force mains including all appurtenances and miscellaneous items of work required. This item shall also include furnishing and installing dedicated Odor Control Units for each ARV.
2. The number of units to be paid for will be determined by the actual number of units installed and accepted.

U. **2-Inch Line Stop – Bid Item No. 24**

1. Payment under this item shall be made at the Contractor's unit price for each size line stop and shall include full compensation for all labor, material, dewatering, all restoration, and equipment required to provide the line stop in accordance with the plans and specifications.

V. **Ball Valve with Valve Box – Bid Item No. 25**

1. Payment for furnishing and installing 2-inch ball valve with box shall be made at the Contractor's unit price Each (EA) per valve with box and shall include all necessary labor and materials for furnishing and installing the valves, boxes, and appurtenances as called for on the plans.

W. **Plug Valve – Bid Items No. 26**

1. Payment for furnishing and installing 8-inch plug valves shall be made at the Contractor's unit price Each (EA) per valve and shall include all necessary labor and materials for furnishing and installing the valves, boxes, and appurtenances as called for on the plans.

X. **Pack Joint Style Adapter – Bid Item No. 27**

1. The Contract unit price bid for this item shall be full compensation for furnishing, installing and testing pack joint style adapter fittings to transition from the HDPE segment of the force main to the PVC segments of the 2-inch force main, including, backer flange restraint glands, bolts, nuts, gaskets, stiffeners, restraining devices and all other appurtenances for fittings. All

ferrous metals shall be 316 SS.

2. The number of pack joint style adapters to be paid for will be determined by the actual number of units installed and accepted.

Y. **MJ Adapter (DIPS) – Bid Item No. 28**

1. The Contract unit price bid for this item shall be full compensation for furnishing, installing and testing MJ adapter fittings to transition from the HDPE segment of the force main to the PVC segments of the 8-inch force main, including, backer flange restraint glands, bolts, nuts, gaskets, stiffeners, restraining devices and all other appurtenances for fittings. All ferrous metals shall be 316 SS.
2. The number of MJ adapters to be paid for will be determined by the actual number of units installed and accepted.

Z. **Furnish & Install 1-1/2” Low-Pressure Sewer Service – Bid Item No. 29**

1. The unit price bid for each 1-1/2” service lateral (single) shall be deemed full compensation for furnishing and installing as shown on the plans and in accordance with the specifications. The unit price shall also include coordination with property owners and District to correctly locate service connections.
2. The unit price for each service shall include earth excavation, fill, backfill, embedment, sheeting, dewatering, pipe, all fittings as shown on the plans, electronic marker, landscape replacement, sod restoration, connection to the Low Pressure Sewer System and all other items necessary for a complete installation. Services which have not been properly installed to line, grade, back filled, compacted and satisfactorily completed shall not be included for payment until, in the opinion of the Engineer, the conditions have been rectified. Contractor shall install all service lines by directional drilling underneath roadways. Contractor shall include all restoration associated with this item.
3. The unit price bid per foot shall include the soft-digs to verify (horizontal & vertical) of all utility crossings, including paralleling of utilities, prior to construction of the proposed force main. This will include all coordination with utility companies.
4. Refer to Typical Single Service Schematic on Drawing D-1 for materials that will be furnished and installed under this pay item.
5. The work shall also include coordination with residents and confirming location of all septic tank locations prior to performing the work.

AA. **Connect to Existing Force Main / Low-Pressure Sewer – Bid Item No. 30**

1. The unit price Each (EA) for this item shall be full compensation for the furnishing and installation of force main / low-pressure sewer connections as shown on the Drawings including all adapter fittings, glands, bolts, gaskets and restraining devices, removing existing plug, all restoration work and all appurtenances and miscellaneous items of work required.
2. The number of connections to be paid for will be determined by the actual number of units installed and accepted but excluding all other separate bid items.

BB. **PVC SCH 80 Force Main & Fittings – Bid Item No. 31**

1. Payment for this item shall be on a Linear Foot (LF) basis.
2. The unit price for per linear foot of 2" diameter PVC SCH 80 force main and fittings and shall include all labor, materials, equipment and incidentals necessary to furnish and install 2" diameter PVC SCH 80 force main and fittings as shown on the contract drawings, as specified herein and as directed by the Engineer, including but not limited to: the excavation of any type including rock and/or muck, together with the disposal of all excess materials, bracing sheeting, dewatering, pipe location tape, the furnishing and installation of the force main, pipe restraints, the backfilling and compaction of the pipe trenches, density testing, and providing access to driveways and roadways at all time, maintaining traffic control, cleaning the site of the work location and protection of utilities, structures, trees, shrubs, lawns, and other work required for the complete installation of the force main. This includes all restoration (sod, re-establish existing swales, irrigation repair, maintenance of balance of irrigation zones, driveways, etc.) to complete the work. **Note: Any driveways damaged during the installation of the force main shall be paid for under this Bid Item.** If the Contractor damages an existing driveway during construction it shall be restored in kind. Damaged driveways shall be replaced beyond the damaged section of each driveway to the nearest existing control joint. In the event no joint exists between the edge of pavement and the property line, the contractor shall replace the full apron from edge of pavement to the property line.
3. The unit price bid per foot shall also include the cost for soft-digs to verify location (horizontal & vertical) of all utility crossings, including paralleling of utilities, prior to construction of the proposed sewer system.

CC. **Remove Existing ARV & Manhole – Bid Item No. 32**

1. This item shall be paid per each air release valve (ARV) with manhole structure removed. The Contractor's unit price shall include full compensation for labor, materials and equipment required for the removal of existing ARV and corp stop with manhole (varying type and size), as indicated on the plans.

The ARV with manhole shall be properly disposed of off-site at no additional cost to the District.

2. This item includes all excavation, backfill and compaction required for removal of the existing ARV and manhole.

DD. **Remove & Dispose of Existing Force Main – Bid Item No. 33**

1. The unit price for this item shall be full compensation for cutting, plugging and removal of the existing force main pipe as shown on the Drawings and described herein. Branch lines and/or services shall be plugged prior to removal. Service shall be maintained. Included in this unit cost are all excavation, backfill, compaction, density testing, dewatering, trench safety, masonry plugs and restoration.
2. Measurement for payment shall be linear feet of pipe removed and properly disposed of.

EE. **Abandon In-Place & Grout Existing 6” Force Main – Bid Item No. 34**

1. The unit price for this item shall be full compensation for cutting, plugging and grouting the existing force main pipe as shown on the Drawings and described herein. Both ends of the pipe shall be open to inspection during grouting. Grout shall be applied from the high end of the pipe. Maximum length of pipe between observation openings shall be four hundred (400) feet. Branch lines and/or services shall be plugged prior to grouting. Grouting shall continue until the pipe is full. Grout material shall be a ready mix flowable fill. Included in this unit cost are all excavation, backfill, compaction, density testing, dewatering, trench safety, masonry plugs, vacuuming and disposal of wastewater contained within the pipe to be abandoned, and restoration.
2. Measurement for payment shall be linear feet of pipe grouted.

FF. **Abandon In-Place & Grout Existing 10” Force Main – Bid Item No. 35**

1. The unit price for this item shall be full compensation for flushing, cutting, plugging and grouting the existing force main pipe as shown on the Drawings and described herein. Both ends of the pipe shall be open to inspection during grouting. Grout shall be applied from the high end of the pipe. Maximum length of pipe between observation openings shall be four hundred (400) feet. Branch lines and/or services shall be plugged prior to grouting. Grouting shall continue until the pipe is full. Grout material shall be a ready mix flowable fill. Included in this unit cost are all excavation, backfill, compaction, density testing, dewatering, trench safety, masonry plugs, vacuuming and disposal of wastewater contained within the pipe to be abandoned, and restoration.
2. Measurement for payment shall be linear feet of pipe grouted.

## **MISCELLANEOUS**

### **GG. Flowable Fill – Bid Item No. 36**

1. Payment for this item shall be made at the Contract unit price per Cubic Yard (CY) of 100 psi FDOT excavatable, flowable fill installed and accepted and shall include compensation for all labor, materials, and equipment required to complete the work as indicated on the plans.
2. **This pay item is only for placing flowable fill between piping that does not meet separation requirements of minimum cover requirements or at places indicated on the Drawings.** It is not for trench repair, backfill or roadway reconstruction.

### **HH. Remove Palm Tree (Dwg. C-7) – Bid Item No. 37**

1. Payment for this item shall be on a Unit Cost basis for Each (EA) tree removed and disposed as shown on Drawing C-7.

END OF SECTION

## **SECTION 01041 PROJECT COORDINATION**

### **PART 1 - GENERAL**

#### **1.01 REQUIREMENTS INCLUDED**

- A. Engineer will coordinate the work between Prime Contractors as required.
- B. The Contractor shall:
  - 1. Coordinate work of his [own] employees and subcontractors.
  - 2. Expedite his work to assure compliance with schedules.
  - 3. Comply with orders and instructions of Engineer.

#### **1.02 RELATED REQUIREMENTS**

- A. Section 01152 entitled: Applications for Payment.
- B. Section 01300 entitled: Submittals.
- C. Section 01310 entitled: CPM Construction Schedule Requirements.
- D. Section 01500 entitled: Construction Facilities and Temporary Controls.
- E. Section 01700 entitled: Contract Closeout.

#### **1.03 CONSTRUCTION ORGANIZATION AND START-UP**

- A. Engineer shall establish on-site lines of authority and communications:
  - 1. Schedule and conduct pre-construction meeting and progress meetings as specified in Section.
  - 2. Establish procedures for [intra-project communications]:
    - a. Submittals
    - b. Reports and records
    - c. Recommendations
    - d. Coordination of drawings
    - e. Schedules
    - f. Resolution of conflicts

3. Interpret Contract Documents:
  - a. Transmit written interpretations to [Prime] Contractors, and to other concerned parties.
4. Assist in obtaining permits and approvals:
  - a. Verify that contractor[s] and subcontractors have obtained inspections for Work and for temporary facilities.
5. Control the use of Site:
  - a. Allocate space for [each Prime] Contractor's use for field offices, sheds, and work and storage areas.
6. Inspection and Testing:
  - a. Inspect work to assure performance in accord with requirements of Contract Documents.
  - b. Administer special testing and inspections of suspect Work.
  - c. Reject Work which does not comply with requirements of Contract Documents.

#### 1.04 CONTRACTOR'S DUTIES

- A. Construction Schedules:
  1. Prepare a detailed schedule of basic operations.
  2. Monitor schedules as work progresses:
    - a. Identify potential variances between scheduled and probable completion dates or each phase.
    - b. Recommend to District adjustments in schedule to meet required completion dates.
    - c. Document changes in schedule; submit to District, Engineer and to involved subcontractors.
  3. Observe work of each subcontractor to monitor compliance with schedule.
    - a. Verify that labor and equipment are adequate for the work and the schedule.
    - b. Verify that product procurement schedules are adequate.
    - c. Verify that product deliveries are adequate to maintain schedule.
    - d. Report noncompliance to Engineer, with recommendation for changes.

- B. Process Shop Drawings, Product Data and Samples:

1. Prior to submittal to Engineer, review for compliance with Contract Documents:
  - a. Field dimensions and clearance dimensions.
  - b. Relation to available space.
  - c. Effect of any changes on the work of any subcontractor.
- C. Prepare Coordination Drawings as required to resolve conflicts and to assure coordination of the work of, or affected by, mechanical and electrical trades, or by special equipment requirements.
  1. Submit to Engineer.
  2. Reproduce and distribute copies to concerned parties after Engineer review.
- D. Maintain Reports and Records at Job Site, available to Engineer and District.
  1. Daily log of progress of work.
  2. Records
    - a. Contracts
    - b. Purchase orders
    - c. Materials and equipment records
    - d. Applicable handbooks, codes and standards
  3. Maintain file of record documents

#### 1.05 CONTRACTOR'S CLOSEOUT DUTIES

- A. At completion of Work, conduct an inspection to assure that:
  1. Specified cleaning has been accomplished.
  2. Temporary facilities have been removed from site.
- B. Substantial Completion:
  1. Conduct an inspection to develop a list of Work to be completed or corrected.
  2. Assist Engineer in inspection.
  3. Supervise correction and completion of work of subcontractors.

1.06 ENGINEER'S CLOSEOUT DUTIES

A. Final Completion:

1. When Contractor determines that Work is finally complete, conduct an inspection to verify completion of Work.

B. Administration of Contract closeout:

1. Receive and review contractor's final submittals.
2. Transmit to District with recommendations for action.

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION (NOT USED)**

END OF SECTION

## **SECTION 01042 PROJECT MEETINGS**

### **PART 1 - GENERAL**

#### **1.01 ENGINEER RESPONSIBILITIES**

- A. Engineer shall schedule and administer a pre-construction meeting, periodic progress meetings, and specially called meetings throughout progress of the work. Engineer will conduct the following:
  - 1. Prepare agenda for meetings.
  - 2. Distribute written notice of each meeting four days in advance of meeting date.
  - 3. Make physical arrangements for meetings.
  - 4. Preside at meetings.
  - 5. Record the minutes; include significant proceedings and decisions.
  - 6. Reproduce and distribute copies of minutes within three days after each meeting.
    - a. To participants in the meeting.
    - b. To parties affected by decisions made at the meeting.
- B. Representatives of contractors, subcontractors and suppliers attending meetings shall be qualified and authorized to act on behalf of the entity each represents.

#### **1.02 RELATED REQUIREMENTS**

- A. Section 01300 entitled: Submittals
- B. Section 01700 entitled: Contract Closeout

#### **1.03 PRE-CONSTRUCTION MEETING**

- A. The preconstruction meeting shall be scheduled within 10 days after effective date of the Contract.
- B. A central site for the meeting, convenient for all parties, shall be designated by the District.
- C. The following shall attend:

1. District's representatives.
2. Contractor's superintendent.
3. Major subcontractors.
4. Representatives from various utilities.
5. Others as appropriate and approved by the District.

D. The suggested agenda shall be as follows:

1. Distribution and discussion of:
  - a. List of major subcontractors and suppliers.
  - b. Projected construction schedules.
2. Critical work sequencing.
3. Major equipment deliveries and priorities.
4. Project coordination and designation of responsible personnel.
5. Procedures and processing of:
  - a. Field decisions.
  - b. Proposal requests.
  - c. Submittals.
  - d. Change orders.
  - e. Applications for payment.
6. Adequacy for distribution of Contract Documents.
7. Procedures for maintaining Record Documents.
8. Use of premises.
  - a. Office, work, and storage areas.
  - b. District's requirements.
9. Construction facilities, controls, and construction aids.
10. Temporary utilities.
11. Safety and first-aid procedures.
12. Security procedures.
13. Housekeeping procedures.
14. Emergency phone numbers.

15. Miscellaneous.

1.04 PROGRESS MEETINGS

- A. Engineer shall schedule regular periodic (monthly) meetings.
- B. Progress meetings shall be held a location as directed by the District.
- C. The following shall attend:
  - 1. District representatives
  - 2. Other representatives
  - 3. Contractor's superintendent
  - 4. Subcontractors as appropriate to the agenda
  - 5. Suppliers as appropriate to the agenda
  - 6. Others
- D. The suggested agenda shall be as follows:
  - 1. Review, approval, of minutes of previous meeting.
  - 2. Review of work progress since previous meeting.
  - 3. Field observations, problems, conflicts.
  - 4. Problems which impede construction schedule.
  - 5. Review of off-site fabrication delivery schedules.
  - 6. Corrective measures and procedures to regain projected schedule.
  - 7. Revisions to construction schedule.
  - 8. Progress, schedule, during succeeding work period.
  - 9. Coordination of schedules.
  - 10. Review of submittal schedules; expedite as required.
  - 11. Maintenance of quality standards.
  - 12. Pending changes and substitutions.
  - 13. Review proposed changes for:
    - a. Effect on construction schedule and on completion date.
    - b. Effect on other contracts relating to the project.

14. Review of record drawings.
15. Other business.

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION (NOT USED)**

END OF SECTION

## **SECTION 01050 MOBILIZATION**

### **PART 1 - GENERAL**

#### **1.01 WORK INCLUDED**

- A. This section covers the work necessary for the movement of personnel, equipment, supplies and incidentals, the establishment and removal of temporary offices and the maintaining of services (mail, trash, & etc.), bonds, insurance, traffic control, survey layout, and site clean up.

### **PART 2 - PRODUCTS**

#### **2.01 GENERAL**

- A. Provide all materials and equipment required to accomplish the work as specified.

### **PART 3 - EXECUTION**

#### **3.01 MAINTAIN SERVICES**

- A. Maintain postal services facilities in accordance with the requirements of the U.S. Postal Service. Move mailboxes to temporary locations designated by the Postal Service, and upon completion of work in each area, replace them in their original location in accordance with Postal Service Regulations.
- B. Maintain trash pickup facilities in accordance with the requirements of the Palm Beach County Solid Waste Authority. Move trash pickup to temporary locations designated by the Solid Waste Authority, and upon completion of work in each area, notify the Solid Waste Authority that normal pickups may resume.

#### **3.02 TRAFFIC CONTROL**

- A. Traffic Routing:
  - 1. Prior to starting work at project site, Contractor shall submit traffic routing plans in accordance with Florida Department of Transportation Standards, to the District, and to the Engineer, for review showing:
    - a. Sequences of construction affecting the use of roadways.

- b. Time required for each phase of work.
    - c. Provisions for decking over excavations or phasing of operations, or a combination of both methods, to provide necessary access.
    - d. Signing, barricading, and striping to provide:
      - 1) Passages for pedestrians.
      - 2) Number and width of vehicular lanes over and adjacent to trenches and other excavations.
  - 2. Contractor shall comply with the requirements of Palm Beach County and the FDOT for traffic regulations and road constructions.
- B. Signs and Equipment:
  - 1. Furnish at the site, or convenient to and immediately available to the site, the following signs and equipment:
    - a. Barricades, as required by FDOT, in sufficient quantity to safeguard the public and the work.
    - b. Portable "TOW-AWAY - NO STOPPING" signs, placed where approved by police department and District.
    - c. Traffic cones, to delineate traffic lanes to guide and separate traffic movements.
  - 2. Signs and equipment shall conform to requirements of the FDOT.
- C. Traffic Safety and Access:
  - 1. Comply with rules and regulations of the city, county, and state authorities regarding closing or restricting the use of public streets or highways. No public or private road shall be closed, except by written permission of the proper authority. Assure the least possible obstruction to traffic.
  - 2. Provide temporary access driveways where required.
  - 3. Provide signs, signals, cones, barricades and trained flagmen to direct traffic in and around the construction site in accordance with Florida Department of Transportation Work Zone Traffic Control Standards.
  - 4. Notify the fire department and police department before closing any street or portion thereof. Notify said departments when the streets are again passible for emergency vehicles. Conduct operations with the least interference to fire equipment access, and at no time prevent such access.

### 3.03 SURVEY LAYOUT

- A. Employ a Land Surveyor registered in the State of Florida and acceptable to the

Engineer to perform all field surveys.

- B. Contractor shall locate and protect survey control and reference points.
- C. Control datum for survey is NGVD 1929.
- D. Provide field engineering services. Utilize land surveyor to establish elevations, lines, and levels, utilizing recognized survey practices.
- E. Submit signed and sealed certification prepared by the Land Surveyor that the elevations and locations of the Work are in conformance with the Contract Documents.
- F. Surveyor's Responsibilities
  - 1. Engineer will furnish Autocad file of all applicable Drawings for surveyor's use in plotting Record Drawing information.
  - 2. Record information is to be plotted on mylars. Signed and sealed prints are to be submitted at appropriate stages of construction as designated by the Engineer. One complete set will be required for Health Department approval.
  - 3. Mark information on the Drawing in a manner that indicates which elevations and dimensions have been checked. This is to be done by crossing through the design elevation or dimension and placing the Record information next to it. If an elevation or dimension has not changed, the same procedure should be followed to confirm that it has been checked. Add new information in a manner to indicate that it is Record information and not design information.
  - 4. Each Record Drawing sheet must include the surveyor's name, company, address, and registration number.
  - 5. At the conclusion of the Project, return the Record Drawing mylars and one final set of signed and sealed prints to the Engineer for permanent record keeping.

### 3.04 CLEANUP

- A. Progress Cleaning
  - 1. Maintain all construction areas free of waste materials, debris, and rubbish. Maintain all sites in a clean and orderly condition.
  - 2. To prevent dust periodically water bare soil, unpaved streets, roads, detours, and haul roads.
  - 3. Broom and vacuum clean areas prior to start of surface finishing, and continue cleaning to eliminate dust.

4. Remove waste materials, debris, and rubbish from site weekly and dispose of at approved location.
  5. Always keep roadways, sidewalks and bicycle paths clear of construction debris and trash.
- B. Upon completion and acceptance of work, remove from the site all equipment and all debris, unused materials, temporary facilities, and other miscellaneous items resulting from or used in the operations. Replace or repair any facility which has been damaged during construction work. Restore the site to the original condition or better.

END OF SECTION

## **SECTION 01090 REFERENCE STANDARDS**

### **PART 1 - GENERAL**

#### **1.01 REQUIREMENTS INCLUDED**

- A. Abbreviation and acronyms used in Contract Documents to identify reference standards.

#### **1.02 QUALITY ASSURANCE**

- A. Application: When a standard is specified by reference, comply with requirements and recommendations stated in that standard, except when requirements are modified by the Contract Documents, or applicable codes establish stricter standards.
- B. Publication Date: The publication in effect on the date of issue of Contract Documents, except when a specific publication date is specified.

#### **1.03 ABBREVIATIONS, NAMES, AND ADDRESSES OR ORGANIZATIONS**

- A. Obtain copies of referenced standards direct from publication source, when needed for proper performance of Work, or when required for submittal by Contract Documents.

AA	Aluminum Association 818 Connecticut Avenue, N.W. Washington, DC 20006
AABC	Associated Air Balance Council 1000 Vermont Avenue, N.W. Washington, DC 20005
AASHTO	American Association of State Highway & Transportation Officials 444 North Capitol Street, N.W. Washington, DC 20001

ACI	American Concrete Institute Box 19150 Redford Station Detroit, MI 48219
ADC	Air Diffusion Council 435 North Michigan Avenue Chicago, IL 60611
AI	Asphalt Institute Asphalt Institute Building College Park, MD 20740
AISC	American Institute of Steel Construction 1221 Avenue of the Americas New York, NY 10020
AISI	American Iron and Steel Institute 1000 16th Street, N.W. Washington, DC 20036
AMCA	Air Movement and Control Association 30 West University Drive Arlington Heights, IL 60004
ANSI	American National Standards Institute 1430 Broadway New York, NY 10018
ARI	Air-Conditioning and Refrigeration Institute 1815 North Fort Myer Drive Arlington, VA 22209
ASHRAE	American Society of Heating, Refrigerating & Conditioning Engineers 345 East 47th Street New York, NY 10017
ASME	American Society of Mechanical Engineers 345 East 47th Street New York, NY 10017

ASPA	American Sod Producers Association Association Building Ninth and Minnesota Hastings, NE 68901
ASTM	American Society of Testing & Materials 1916 Race Street Philadelphia, PA 19103
AWWA	American Water Works Association 6666 W. Quincy Avenue Denver, CO 80235
AWI	Architectural Woodwork Institute 2310 South Walter Reed Drive Arlington, VA 22206
AWPA	American Wood-Preserver's Association 7735 Old Georgetown Road Bethesda, MD 20014
AWS	American Welding Society 2501 NW 7th Street Miami, FL 33125
CDA	Cooper Development Association 57th Floor, Chrysler Building 405 Lexington Avenue New York, NY 10017
CLFMI	Chain Link Fence Manufacturers Institute 1101 Connecticut Avenue Washington, DC 20036
CRSI	Concrete Reinforcing Steel Institute 180 North LaSalle Street, Suite 2110 Chicago, IL 60601
MF	Factory Mutual System 1151 Boston Providence Turnpike Norwood, MA 02062

FS	Federal Specification General Services Administration Specifications and Consumer Information Distribution Section (WFSIS) Washington Navy Yard, Bldg. 197 Washington, DC 20407
GA	Gypsum Association 1603 Orrington Avenue Evanston, IL 60201
MIL	Military Specification Naval Publications and Forms Center 5801 Tabor Avenue Philadelphia, PA 19120
MLSFA	Metal Lath/Steel Framing Association 221 North LaSalle Street Chicago, IL 60601
NAAMM	National Association of Architectural Metal Manufacturers 221 North LaSalle Street Chicago, IL 60601
NEBB	National Environmental Balancing Bureau 8224 Old Courthouse Road Vienna, VA 22180
NEMA	National Electrical Manufacturer's Association 2101 L Street, N.W. Washington, DC 20037
NFPA	National Fire Protection Association 470 Atlantic Avenue Boston, MA 02210
NFPA	National Forest Products Association 1619 Massachusetts Avenue, N.W. Washington, DC 20036
NTMA	National Terrazzo and Mosaic Association 3166 Des Plains Avenue Des Plains, Il 60018

PCA	Portland Cement Association 5420 Old Orchard Road Skokie, IL 20076
PCI	Prestressed Concrete Institute 20 North Wacker Drive Chicago, IL 60606
PS	Product Standard U.S. Department of Commerce Washington, DC 20203
RCSHSB	Red Cedar Shingle & Handsplit Shake Bureau 515 116th Avenue Bellevue, WA 98004
SDI	Steel Deck Institute Box 3812 St. Louis, MO 63122
SDI	Steel Door Institute 712 Lakewood Center North Cleveland, OH 44107
SIGMA	Sealed Insulating Glass Manufacturers Association 111 East Wacker Drive Chicago, IL 60601
SJI	Steel Joist Institute 1703 Parham Road, Suite 204 Richmond, VA 23229
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association 8224 Old Court House Road Vienna, VA 22180
TAS	Technical Aid Series Construction Specifications Institute 1150 Seventeenth Street, N.W. Washington, DC 20036

TCA	Tile Council of America, Inc. Box 326 Princeton, NJ 08540
UL	Underwriter's Laboratories, Inc. 333 Pfingston Road Northbrook, IL 60062

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION (NOT USED)**

END OF SECTION

## **SECTION 01152**

### **APPLICATION FOR PAYMENT**

#### **PART 1 - GENERAL**

##### **1.01 REQUIREMENTS INCLUDED**

- A. Submit Applications for Payment to Engineer in accordance with the schedule established by Conditions of the Contract and herein.

##### **1.02 RELATED REQUIREMENTS**

- A. Agreement Between District and Contractor: Lump Sum and Unit Price.
- B. Conditions of the Contract: Progress Payments, Retainage and Final Payment.
- C. Section 01153 entitled: Change Order Procedures.
- D. Section 01370 entitled: Schedule of Values.
- E. Section 01700 entitled: Contract Closeout.

##### **1.03 FORMAT AND DATA REQUIRED**

- A. Submit applications in the form required by District, with itemized data typed on 8½ x 11-inch white paper continuation sheets.
- B. Provide itemized data on continuation sheet:
  - 1. Format, schedules, line items and values: Those of the Schedule of Values accepted by Engineer.

##### **1.04 PREPARATION OF APPLICATION FOR EACH PROGRESS PAYMENT**

- A. Application Form:
  - 1. Fill in required information, including that for Change Orders executed prior to date of submittal of application.
  - 2. Fill in summary of dollar values to agree with respective totals indicated on continuation sheets.
  - 3. Execute certification with signature of a responsible officer of Contract firm.

4. Include updated project schedule and progressive record drawings.

B. Continuation Sheets:

1. Fill in total list of all scheduled component items of work, with item number and scheduled dollar value for each item.
2. Fill in dollar value in each column for each scheduled line item when work has been preformed or products stored.
  - a. Round off values to nearest dollar, or as specified for Schedule of Values.
3. List each Change Order executed prior to date of submission at the end of the continuation sheets.
  - a. List by Change Order Number, and description, as for an original component item of work.

1.05 SUBSTANTIATING DATA FOR PROGRESS PAYMENTS

- A. When the District or the Engineer requires substantiating data, Contractor shall submit suitable information, with a cover letter identifying:
  1. Project
  2. Application number and date.
  3. Detailed list of enclosures.
  4. For stored products:
    - a. Item number and identification as shown on application.
    - b. Description of specific material.
- B. Submit one copy of data and cover letter for each copy of application.

1.06 PREPARATION OF APPLICATION FOR FINAL PAYMENT

- A. Fill in Application form as specified for progress payments.
- B. Use continuation sheet for presenting the final statement of accounting as specified in Section 01700 - Contract Closeout.

1.07 SUBMITTAL PROCEDURE

- A. Submit Applications for Payment to Engineer at the times stipulated.

- B. Number: Four (4) copies of Application.
- C. When Engineer finds Application properly completed and correct, he will transmit certificate for payment to District, with copy to Contractor.

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION (NOT USED)**

END OF SECTION

## **SECTION 01153 CHANGE ORDER PROCEDURES**

### **PART 1 - GENERAL**

#### **1.01 REQUIREMENTS INCLUDED**

- A. Promptly implement change order procedures.
  - 1. Provide full written data required to evaluate changes.
  - 2. Maintain detailed records of work done on time and material/force account basis.
  - 3. Provide full documentation to Engineer on request.
- B. Designate in writing the member of Contractor's organization:
  - 1. Who is authorized to accept changes in the work.
  - 2. Who is responsible for informing others in the Contractor's employ of the authorization of changes in the work.
- C. District will designate in writing the person who is authorized to execute Change Orders.

#### **1.02 RELATED REQUIREMENTS**

- A. Agreement: The amounts of established unit prices.
- B. Special Conditions and General Conditions.
- C. Conditions of the Contract:
  - 1. Methods of determining cost or credit to District resulting from changes in Work made on a time and material basis.
  - 2. Contractor's claims for the additional cost.
- D. Section 01152 entitled: Application for Payment.
- E. Section 01310 entitled: CPM Construction Schedule Requirements.
- F. Section 01370 entitled: Schedule of Values.
- G. Section 01700 entitled: Contract Closeout.

### 1.03 DEFINITIONS

- A. Change Order: See Special Conditions and General Conditions.
- B. Construction Change Authorization: A written order to the Contractor, signed by District and Engineer, which amends the Contract Documents as described, and authorizes Contractor to proceed with a change which affects the Contract Sum or the Contract Time, for inclusion in a subsequent Change Order.
- C. Field Order: A written order, instructions, or interpretations, signed by Engineer making minor changes in the Work not involving a change in Contract Sum or Contract Time.

### 1.04 PRELIMINARY PROCEDURES

- A. District or Engineer may initiate changes by submitting a Proposal Request to Contractor. Request will include:
  - 1. Detailed description of the Change, products, and location of the change in the Project.
  - 2. Supplementary or revised Drawings and Specifications.
  - 3. The projected time span for making the change, and a specific statement as to whether overtime work is, or is not, authorized.
  - 4. A specific period of time during which the requested price will be considered valid.
  - 5. Such request is for information only, and is not an instruction to execute the changes, nor to stop Work in progress.
- B. Contractor may initiate changes by submitting a written notice to Engineer, containing:
  - 1. Description of the proposed changes.
  - 2. Statement of the reason for making the changes.
  - 3. Statement of the effect on the Contract Sum and the Contract Time.
  - 4. Statement of the effect on the work of separate contractors.
  - 5. Documentation supporting any change in Contract Sum or Contract Time, as appropriate.

#### 1.05 CONSTRUCTION-CHANGE AUTHORIZATION

- A. In lieu of Proposal Request, Engineer may issue a construction change authorization for Contractor to proceed with a change for subsequent inclusion in a Change Order.
- B. Authorization will describe changes in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the change, and will designate the method of determining any change in the Contract Sum and any change in Contract Time.
- C. District and Engineer will sign and date the Construction Change Authorization as authorization for the Contractor to proceed with the changes.
- D. Contractor shall sign and date the Construction Change Authorization to indicate agreement with the terms therein.

#### 1.06 DOCUMENTATION OF PROPOSALS AND CLAIMS

- A. Support each quotation for a lump-sum proposal, and for each unit price which has not previously been established, with sufficient substantiating data to allow Engineer to evaluate the quotation.
- B. On request provide additional data to support time and cost computations:
  - 1. Labor required.
  - 2. Equipment required.
  - 3. Products required.
    - a. Recommended sources of purchase and unit cost.
    - b. Quantities required.
  - 4. Taxes, insurance and bonds.
  - 5. Credit for work deleted from Contract, similarly documented.
  - 6. Overhead and profit.
  - 7. Justification for any change in Contract Time.
- C. Support each claim for additional costs, and for work done on a time-and-material/force account basis, with documentation as required for a lump-sum proposal, plus additional information:
  - 1. Name of District's authorized agent who ordered the work, and date of the order.

2. Dates and times work was performed, and by whom.
  3. Time record, summary of hours worked, and hourly rates paid.
  4. Receipts and invoices for:
    - a. Equipment used, listing dates and times of use.
    - b. Products used, listing of quantities.
    - c. Subcontractors.
- D. Document requests for substitutions for Products as specified in Section 01630.

1.07 PREPARATION OF CHANGE ORDERS

- A. Engineer will prepare each Change Order.
- B. District's Form, per example provided by the Engineer.
- C. Change Order will describe changes in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the change.
- D. Change Order will provide an accounting of the adjustment in the Contract Sum and in the Contract Time.

1.08 LUMP-SUM/FIXED PRICE CHANGE ORDER

- A. Content of Change Orders will be based on, either;
  1. Engineer's Proposal Request and Contractor's responsive Proposal as mutually agreed between District and Contractor.
  2. Contractor's Proposal for a change, as recommended by Engineer.
- B. District and Engineer will sign and date the Change Order as authorization for the Contractor to proceed with the changes.
- C. Contractor shall sign and date the Change Order to indicate agreement with the terms therein.

1.09 UNIT PRICE CHANGE ORDER

- A. Content of Change Orders will be based on, either:
  1. Engineer's definition of the scope of the required changes.
  2. Contractor's Proposal for a change, as recommended by Engineer.

3. Survey of completed work.
- B. The amounts of the unit prices to be:
  1. Those stated in the Agreement.
  2. Those mutually agreed upon between District and Contractor.
- C. When quantities of each of the items affected by the Change Order can be determined prior to start of the work:
  1. District and Engineer will sign and date the Change Order as authorization for Contractor to proceed with the changes.
  2. Contractor shall sign and date the Change Order to indicate agreement with the terms herein.
- D. When quantities of the items cannot be determined prior to start of the work:
  1. Engineer or District will issue a construction change authorization directing Contractor to proceed with the change on the basis of unit prices, and will cite the applicable unit prices.
  2. At completion of the change, Engineer will determine the cost of such work based on the unit process and quantities used.
    - a. Contractor shall submit documentation to establish the number of units of each item and any claims for a change in Contract Time.
  3. Engineer will sign and date the Change Order to establish the change in Contract Sum and in Contract Time.
  4. District and Contractor will sign and date the Change Order to indicate their agreement with the terms therein.

1.10 TIME AND MATERIAL/FORCE ACCOUNT CHANGE ORDER/ CONSTRUCTION CHANGE AUTHORIZATION

- A. Engineer and District will issue a Construction Change Authorization directing Contractor to proceed with the changes.
- B. At completion of the change, Contractor shall submit itemized accounting and supporting data as provided in the Article "Documentation of Proposals and Claims" of this Section.
- C. Engineer will determine the allowable cost for such work, as provided in General Conditions and Supplementary Conditions.

- D. Engineer will sign and date the Change Order to establish the change in Contract Sum and in Contract Time.
- E. District and Contractor will sign and date the Change Order to indicate their agreement therewith.

1.11 CORRELATION WITH CONTRACTOR'S SUBMITTALS

- A. Periodically revise Schedule of Values and Request for Payment forms to record each change as a separate item of Work, and to record the adjusted Contract sum.
- B. Periodically revise the Construction Schedule to reflect each change in Contract Time.
  - 1. Revise sub-schedules to show changes for other items of work affected by the changes.
- C. Upon completion of work under a Change Order, enter pertinent changes in Record Documents.

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION (NOT USED)**

END OF SECTION

## **SECTION 01300 SUBMITTALS**

### **PART 1 - GENERAL**

#### **1.01 REQUIREMENTS**

- A. Submittals include the preconstruction audio-video recording, traffic control plan, project schedule, shop drawings, product data and samples, and record documents including as-built drawings.

#### **1.02 RELATED REQUIREMENTS**

- A. Definitions and additional responsibilities of parties: General Conditions of the Contract.
- B. Section 01390 entitled: Pre-Construction Audio-Video Documentation
- C. Section 01570 entitled: Traffic Control
- D. Section 01700 entitled: Contract Closeout

#### **1.03 PROJECT SCHEDULE**

- A. Prior to the preconstruction meeting, the Contractor shall submit to the Engineer for review and approval, a project schedule (Refer to Section 01310) showing the approximate dates on which each part or division of the work is expected to start and finish.
- B. The schedule shall be updated and submitted to the Engineer at the end of each month, whenever the work deviates substantially from the schedule, or any time the Engineer requests an updated schedule.

#### **1.04 SHOP DRAWINGS**

- A. Shop drawings shall be presented in a clear and thorough manner. Details shall be identified by reference to sheet and detail and schedule.
- B. Minimum sheet size shall be 8 ½ x 11 inches.

#### **1.05 PRODUCT DATA AND SAMPLES**

- A. Preparation

1. Clearly mark each copy to identify pertinent products or models.
  2. Show performance characteristics and capacities.
  3. Show dimensions and clearances required.
  4. Show wiring or piping diagrams and controls.
- B. Manufacturer's standard schematic drawings and diagrams:
1. Modify drawings and diagrams by deleting information which is not applicable to the work.
  2. Supplement standard information to provide information specifically applicable to the work.

#### 1.06 ADDITIONAL SUBMITTALS

1. Submittal of the preconstruction audio-video recording, traffic control plan, and record documents are described in Sections 01360, 01570, and 01720, respectively.

#### 1.07 CONTRACTOR'S RESPONSIBILITIES

- A. Review shop drawings, product data, and samples prior to submission.
- B. Determine and verify:
1. Field measurements
  2. Field construction criteria
  3. Catalog numbers and similar data
  4. Conformance with specifications
- C. Coordinate each submittal with requirements of the work and of the Contract Documents.
- D. Notify the Engineer in writing, at the time of submission, of any deviations in the submittals from requirements of the Contract Documents.
- E. Begin no fabrication or work which requires approved submittals until return of submittals by the Engineer.
- F. Provide a submittal register listing all anticipated submittals.

#### 1.08 SUBMISSION REQUIREMENTS

- A. Make submittals in such sequence as to cause no delay in the work.
- B. Number of submittals required:
  - 1. Shop drawings and product data: Submit electronic version of each shop drawing submittal in .pdf format.
  - 2. Samples: Submit the quantity stated in each specification section.
- C. Submittals shall contain:
  - 1. The date of submission and the dates of any previous submissions.
  - 2. The project title and number.
  - 3. Contract identification.
  - 4. The names of:
    - a. Contractor
    - b. Supplier
    - c. Manufacturer
  - 5. Identification of the product, with the specification section number
  - 6. Field dimensions, clearly identified as such.
  - 7. Relation to adjacent or critical features of the work or materials.
  - 8. Applicable standards, such as ASTM or federal specification numbers.
  - 9. Identifications of deviations from Contract Documents.
  - 10. Identification of revisions on resubmittals.
  - 11. CONTRACTOR'S stamp initialed or signed, certifying review of submittal, verification of products, field measurements and field construction criteria, and coordination of the information within the submittal with requirements of the work and of Contract Documents.

#### 1.09 RESUBMISSION REQUIREMENTS

- A. Make any corrections or changes in the submittals noted by the Engineer and resubmit unless otherwise noted.
- B. Shop drawings and product data:
  - 1. Revise initial drawings or data, and resubmit as specified for the initial

submittal.

2. Indicate any changes which have been made other than those suggested by the Engineer.

- C. Samples: Submit new samples as required for initial submittal.

#### 1.10 ENGINEER'S DUTIES

- A. Review submittals within 14 working days or in accord with schedule.
- B. Affix stamp and initials or signature, and indicate status of submittal.
- C. Return submittals to Contractor for distribution, or resubmission.
- D. Review initial submittals and one resubmittal. Resubmittals that cannot be approved will be returned. Additional resubmittals will be reviewed by the Engineer, and costs for time and materials for reviewing resubmittals will be back charged by the District to the Contractor.

#### 1.11 SUPPLEMENTS

- A. The supplements listed below, following "END OF SECTION" are part of this specification.
  1. Forms: Transmittal of Contractor's Submittal

### **PART 2 - PRODUCTS (NOT USED)**

### **PART 3 - EXECUTION (NOT USED)**

END OF SECTION

**TRANSMITTAL OF CONTRACTOR'S SUBMITTAL**  
(Attach to Each Submittal)

DATE: \_\_\_\_\_

**TO:** \_\_\_\_\_

Submittal No.: \_\_\_\_\_

☐ New Submittal    ☐ Resubmittal

Previous Submittal No.: \_\_\_\_\_

Project: \_\_\_\_\_

Project No. \_\_\_\_\_

Specification Section No.: \_\_\_\_\_

**FROM:** \_\_\_\_\_

Contractor

**(Cover only one section with each transmittal)**

Schedule Date of Submittal: \_\_\_\_\_

SUBMITTAL TYPE:    ☐ Shop Drawing    ☐ Contract Closeout    ☐ "Or-Equal"/Substitute  
                              ☐ Quality Control        ☐ Sample

**The following items are hereby submitted:**

Number of Copies	Description of Item Submitted (Type, Size, Model Number, Etc.)	Spec. Para. No.	Drawing or Brochure Number	Contains Variation to Contract	
				No	Yes

CONTRACTOR hereby certifies that (i) CONTRACTOR has complied with the requirements of Contract Documents in preparation, review, and submission of designated Submittal and (ii) the Submittal is complete and in accordance with the Contract Documents and requirements of laws and regulations and governing agencies.

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

CONTRACTOR (Authorized Signature)

## **SECTION 01310**

### **CPM CONSTRUCTION SCHEDULE REQUIREMENTS**

#### **PART 1 - GENERAL**

##### **1.01 GENERAL**

- A. This section covers the requirements for submittal of a critical path method (CPM) construction schedule and an associated schedule of values.
- B. Development of the schedule, the cost loading of the schedule, monthly payment requisitions, and project status reporting requirements of the contract shall employ computerized CPM scheduling. The CPM schedule shall be cost loaded based on the schedule of values or unit bid prices or combination thereof.

##### **1.02 INITIAL SCHEDULE SUBMITTALS**

- A. Submit two short-term schedule documents at the preconstruction conference and as described in the subsection on "Submittals" which shall serve as the Contractor's plan of operation for the initial 60-day period of the contract time and to identify the manner in which the Contractor intends to complete all work within the contract time. Submit (1) a 60-day narrative plan of operation, describing in detail narrative how contract operations will be conducted, and (2) a project overview bar-chart type plan for all work as indicated below.
  - 1. 60-Day Narrative Plan of Operation: During the initial 60 days of the contract time, conduct contract operations in accordance with the 60-day detail narrative and bar chart plan of operation. The bar chart shall show the accomplishment of the Contractor's early activities (mobilization items, permits, submittals necessary for early material and equipment procurement, submittals necessary for long lead equipment procurement, CPM submittals, initial site work, and other submittals and activities required in the first 60 days).
  - 2. Comprehensive Project Overview Bar Chart: The comprehensive overview bar chart shall indicate the major components of the project work and the sequence relations between major components and subdivisions of major components. The overview bar chart shall indicate the relationships and time frames in which the various components of the work will be substantially complete and placed into service in order to meet the project milestones. Sufficient detail shall be included for the identification of subdivisions of major components into such activities as potholing, excavation, bedding and pipe installation, backfilling, surface restoration, tunneling, structures, relocations, improvements, and other important work for each major facility within the overall project scope. Indicate planned durations and start dates for each work item subdivision.

Plot each major component and subdivision component on time scale sheets not to exceed 24 inches by 36 inches in size. Do not use more than four sheets to represent this overview information.

- B. The District's Representative and the Contractor shall meet to review and discuss the narrative 60-day plan of operations and project overview bar chart within 5 days after they have been submitted to the District's Representative. The District's Representative's review and comment on the schedules shall be limited to contract conformance (with the sequencing and interim duration requirements). Make corrections to the schedules necessary to comply with the contract requirements, and adjust the schedules to incorporate any missing information requested by the District's Representative.
- C. Satisfactory incorporation of the District's Representative's comments shall be a condition for progress payments.

#### 1.03 CPM PROGRAM

- A. Use PRIMAVERA (R) P-3 or 4, or an equivalent computer software for the CPM schedule, as approved by the District's Representative. If software other than one of the programs named above is used, provide licensed copy and training to District's Representative.

#### 1.04 SUBMITTALS

- A. Within three calendar days of the Notice to Proceed, submit a written statement of CPM capability, verifying that the Contractor has qualified in-house personnel capable of using the CPM technique or that the Contractor employs a qualified CPM consultant. The statement shall identify the individuals who will perform the CPM scheduling and provide those individuals' detailed resumes. Capability shall be verified by detailed description of construction projects and references on which the individuals have successfully applied computerized CPM and shall include at least three projects of similar nature, scope, and value not less than one-half the total bid price of this project. The statement shall also provide the contact persons for the referenced projects with current telephone and address information.
- B. Submit an initial schedule within ten days of the date of Notice to Proceed. If revisions are required to this initially submitted schedule, resubmit a revised schedule within five calendar days after the Contractor receives the returned copy.
- C. Submit graphic network diagram and tabulated schedules within 30 days of the Notice to Proceed.
- D. Within 10 days after the conclusion of District's Representative's review, revise the network diagram and resubmit the network diagram and a tabulated schedule produced therefrom. The revised network diagram and tabulated schedule will be

reviewed and accepted or rejected by District's Representative within 15 days after receipt. The network diagram and tabulated schedule when accepted by District's Representative shall constitute the project work schedule unless a revised schedule is required due to substantial changes in the work or a change in contract time, delinquency by Contractor requiring a recovery schedule, or as otherwise provided herein below. Activities not occurring as scheduled are delinquent if they begin after early start or they finish after early finish.

- E. Submit a copy of the schedule, clearly showing progress made and actual "S" curves, on a monthly basis along with the Application for Payment.
- F. Schedule submittals to the District's Representative shall include eight hard copies and one electronic copy of a CPM-type construction schedule, generally as outlined in the Associated General Contractors Publication the Use of CPM in Construction.
- G. Submit a preliminary schedule of values for the major components of the work within three days of the Notice to Proceed.
- H. Prepare and submit a detailed schedule of values to the District's Representative within 30 days from the date of Notice to Proceed.

#### 1.05 PROJECT INFORMATION

- A. Each network diagram and report tabulation shall be prefaced with the following summary data:
  - 1. Project name.
  - 2. Contractor.
  - 3. Type of tabulation (initial or updated).
  - 4. Project duration.
  - 5. Project contract completion date.
  - 6. Projected completion date.
  - 7. Variance analysis per activity.

#### 1.06 GRAPHIC NETWORK DIAGRAM AND TABULATED SCHEDULES

- A. The completed schedule shall include a graphic network and tabulated schedules with the graphic network displayed on a sheet with a minimum size of 11 inches by 17 inches and a maximum size of 24 inches by 36 inches. The graphic network shall be the precedence diagram method (PDM). It may be divided into two or more sheets, if necessary, provided that all sheets are properly referenced. Notation on each activity arrow shall include a brief work description and an estimate of the time duration of the work. Show a calendar along the full length of

each sheet. Plot each activity so that the beginning and completion dates can be readily determined by comparison to the calendar scale. Show activities using symbols and/or color that clearly designate whether it is a critical path or noncritical activity. Noncritical path activities shall show estimated work time and free float time.

B. Float Time:

1. Definition: Unless otherwise provided herein, float as referenced in these documents is total float. Total float is the period of time measured by the number of working days each noncritical path activity may be delayed before it and its succeeding activities become part of the critical path. If a noncritical path activity is delayed beyond its float period, that activity then becomes part of the critical path and controls the end date of the project. Thus, the delay of the noncritical path activity beyond its float period will cause delay to the project itself.
2. Float Ownership: Neither the District nor the Contractor owns the float time. The project owns the float time. As such, liability for delay of the project completion date rests with the party actually causing delay to the project completion date. For example, if Party A uses some but not all of the float time and Party B later uses the remainder of the float time as well as additional time beyond the float time, Party B shall be liable for the costs associated with the time that represents a delay to the project's completion date. Party A would not be responsible for any costs since it did not consume all of the float time and additional float time remained; therefore, the project's completion date was unaffected.

C. Display time at the top of the schedule, reading left to right, with no greater than weekly divisions.

D. The schedule shall indicate dates for important activities including:

1. A logical succession of work from start to finish. This logical succession, when accepted, is the Contractor's work plan and is only designated as early start to accommodate standard computerized systems.
2. Detailed definition of each activity.
3. A logical flow of work crews/equipment (crews are to be defined by labor category and labor hours; equipment by type and hours).
4. Shop drawing submittals and reviews.
5. Decisions.
6. Product procurement and delivery.
7. Beginning and completion of each element of construction.
8. Critical coordination dates.
9. Submittal of record drawings and equipment manuals.

10. Cleanup, final inspection, etc.
  11. Any project milestones or phases of work that affect important dates, such as other parallel contracts.
- E. Submit:
1. Activity sort by early start, organized by related elements.
  2. Activity sort by float, organized by related elements.
  3. Activity sort by predecessor/successor.
  4. Narrative description of the logic and reasoning of the schedule.
  5. Resource allocation by activity.
  6. List of cost-loaded activities that identifies specific cost amount for each activity in the CPM schedule.
- F. Show constraints between interrelated activities.
- G. The initial schedule shall include the following minimum data for each activity:
1. Activity numbers.
  2. Estimated duration.
  3. Activity description.
  4. Early start date (calendar dated).
  5. Early finish date (calendar dated).
  6. Status (whether critical).
  7. Float.
  8. Cost of activity.
  9. Other resources including equipment hours by type, labor by craft or crew, and materials by units.
- H. Where float time exists in activities, show the activities with early start/early finish times.
- I. The schedule shall include a title block with the project title, the Contractor's business name, the date of submittal or revision, and the signature of the Contractor's authorized representative attesting to his review and accuracy of the submittal.
- J. The duration indicated for each activity shall be in calendar days and shall represent the single best time considering the scope of the work and resources planned for the activity including time for inclement weather. Except for certain non-labor activities, such as curing concrete or delivering materials, activity durations shall not exceed 14 days, be less than one day, or exceed \$50,000 in

value unless otherwise accepted by the District's Representative.

#### 1.07 CONSTRUCTION SCHEDULE PROGRESS

- A. If the Contractor's progress has fallen behind the accepted construction schedule, the Contractor shall take such steps as may be required, including increasing the number of personnel, shifts, overtime operations, days of work, and amount of construction equipment until such time as the work is back on schedule. Increased costs of any accelerated work program shall be paid for by the Contractor. Submit such recovery schedule within 10 days upon written request by District's Representative.

#### 1.08 ACCEPTANCE

- A. The finalized schedule will be acceptable to the District's Representative when it provides an orderly progression of the Work to completion in accordance with the contract requirements, adequately defines the Contractor's work plan, provides a workable arrangement for processing the submittals in accordance with the project specification requirements, and properly allocates resources (labor, equipment, and costs) to each activity (free of unbalances in resources). When the network diagram and tabulated schedule have been accepted, submit to District's Representative eight copies of the timescaled network diagram; eight copies of a computerized, tabulated schedule in which the activities have been sequenced by activity numbers; and eight copies of all reports required by this specification.
- B. Also submit a 700MB CD that contains all of the schedule submittal information. The disk shall contain data compatible with the specified CPM program to generate network diagrams and schedule reports identical to the hard copies submitted.
- C. Review of the Contractor's project schedule is for conformance to the requirements of the contract documents only. Review by the District's Representative of the Contractor's project schedule does not relieve the Contractor of any of its responsibility whatsoever for the accuracy or feasibility of the project schedule, or of the Contractor's ability to meet the interim milestone date(s) and the contract completion date, nor does such review and acceptance imply or expressly warrant, acknowledge, or admit the reasonableness of the logic, durations, labor, or equipment loading of the Contractor's project schedule.

#### 1.09 REVISIONS OR UPDATES TO CONSTRUCTION SCHEDULE

- A. Submit a revised or updated construction schedule by the third working day of each month. The data date shall be the 25<sup>th</sup> of the preceding month. Revise or update the schedule upon the occurrence of any of the following:
  - 1. When delay in completion of any activity or group of activities indicates an overrun of the contract time or control point requirement by 10 working

days or 10% of the remaining duration, whichever is less.

2. Delays in submittals, deliveries, or work stoppage are encountered which make re-planning or rescheduling of the work necessary.
  3. The schedule does not represent the actual prosecution and progress of the project as being performed in the field and progress for any activity is five working days behind the current schedule.
  4. The Contractor will be performing work at an earlier date than is shown on the schedule and the work will require additional inspection and/or testing personnel.
- B. In the event of any change to the contract, submit a time analysis of the effect on the critical path. If the Contractor maintains there is no impact, submit a statement to that effect.
- C. The cost of revisions to the construction schedule resulting from District-initiated contract changes shall be included in the cost for the change in the work and shall be paid as part of the total cost of the change through the contract allowable percentages for changed work.
- D. The cost of revisions to the construction schedule not resulting from authorized changes in the work shall be the responsibility of the Contractor.

## **PART 2 - PRODUCTS (NOT USED)**

## **PART 3 - EXECUTION (NOT USED)**

END OF SECTION

## **SECTION 01360**

### **PRE-CONSTRUCTION AUDIO-VIDEO DOCUMENTATION**

#### **PART 1 - GENERAL**

##### **1.01 REQUIREMENTS**

- A. The Contractor shall provide a color audio-video recording showing the entire preconstruction site. All audio/video recordings shall be taken by a professional commercial video photographer. The video photographer shall be an established enterprise that routinely provides these services. The videos shall be in standard electronic compact disc/DVD format, indicating the date, project name, and a brief description of the location where the video was taken. The Contractor shall submit two (2) copies of the preconstruction audio-video to the Engineer.
- B. Include the names and addresses of two references that the professional video photographer has performed color audio-visual recording on projects of a similar nature, including one within the last six months.
- C. No construction shall begin prior to the review and approval of the preconstruction audio-video DVD by the Engineer.

##### **1.02 RELATED REQUIREMENTS**

- A. Submit qualifications and references of the professional commercial video photographer.

##### **1.03 QUALITY ASSURANCE**

- A. Completed documentation shall reproduce bright, sharp pictures with accurate colors and shall be free from distortion, tearing, rolling, or any other significant picture imperfection. The audio portion of the recording shall reproduce the commentary of the camera operator with proper volume, clarity, and be free of distortion.

#### **PART 2 - PRODUCTS**

##### **2.01 GENERAL**

- A. 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. The video portion of the recording shall produce bright sharp, and clear pictures with accurate colors and shall be free from distortion, and any other form of

picture imperfection. All video recordings shall, by electronic means, display on the screen the time of day, the month, day, and year of the recording.

### **PART 3 - EXECUTION**

#### **3.01 COVERAGE**

- A. Record coverage of all surface features located in the construction's zone of influence including, but not limited to:
  - 1. Roadways, driveways, sidewalks, bicycle paths, railroads.
  - 2. Buildings, walls, retaining walls, seawalls.
  - 3. Ponds, culvert ends, drainage structures.
  - 4. Landscaping, trees, shrubbery, fences, irrigation heads.
- B. Record the individual features of each item with particular attention being focused upon the existence of any faults, fractures, or defects.
- C. Control pan rate, rate of travel, camera height and zoom rate to maintain a steady clear view at all times.
- D. Limit recorded coverage to one side of any street at any one time.
- E. Create a single, continuous, unedited recording which begins and ends within each portion of a particular construction area. The recording shall proceed in the direction of ascending baseline stationing.

#### **3.02 AUDIO CONTENT**

- A. Simultaneously record audio content during video taping.
- B. Audio recording shall assist in viewer orientation and in any needed identification, clarification, or description of features being recorded.
- C. Audio recording will only consist of camera operator commentary.

#### **3.03 INDEXING**

- A. Permanently label each DVD with a sequential DVD number and the project name.
- B. Index each DVD with a digital record of the time and date of the recording which is continuously displayed as the tape is played.

- C. Prepare a written log which describes the contents of each tape including:
  - 1. Names of streets or easements.
  - 2. Coverage begin/end, station and location.
  - 3. Recording date.

#### 3.04 CONDITIONS

- A. Record coverage during dry, clear weather and during daylight hours only.
- B. Record coverage when the area to be video recorded is free of debris or obstructions.
- C. Record coverage no more than 45 days prior to the start of construction.

END OF SECTION

## **SECTION 01370 SCHEDULE OF VALUES**

### **PART 1 - GENERAL**

#### **1.01 REQUIREMENTS INCLUDED**

- A. Submit to the Engineer a Schedule of Values allocated to the various portions of the Work, within ten days after award of contract.
- B. Upon the request of the Engineer, support the values with data which will substantiate their correctness.
- C. The Schedule of Values, unless objected to by the Engineer, shall be used only as the basis for the Contractor's Applications for Payment.
- D. Related Requirements in Other Parts of the Contract Documents.
  - 1. Agreement
  - 2. General Conditions
  - 3. Supplementary Conditions

#### **1.02 RELATED REQUIREMENTS**

- A. Section 01152 entitled: Application for Payment
- B. Section 01600 entitled: Material and Equipment.

#### **1.03 FORM AND CONTENT OF SCHEDULE OF VALUES**

- A. Type schedule on 8½ x 11-inch white paper; Contractor's standard forms and automated printout will be considered for approval by Engineer upon Contractors request. Identify schedule with:
  - 1. Title of Project, location and (City, County, District) Project Number.
  - 2. Engineer and Engineer's Project number.
  - 3. Name and Address of Contractor.
  - 4. Date of Submission.

- B. Schedule shall list the installed value of the component parts of the Work, in sufficient detail to serve as a basis for computing values for progress payments during construction.
- C. Follow the table of contents of these Specifications as the format for listing component items.
  - 1. Identify each line item with the number and title of the respective major section of the specifications.
- D. For each major line item list sub-values of:
  - 1. Major products or operations under the item.
  - 2. Contract conditions, such as: bonds, insurance premiums, job mobilization, construction facilities and temporary controls.
- E. For the various portions of the Work:
  - 1. Each item shall include a directly proportional amount of the Contractor's overhead and profit.
  - 2. For items on which progress payments will be requested for stored materials, break down the value into:
    - a. The cost of the materials, delivered and unloaded, with taxes paid.
    - b. The total installed value.
- F. The sum of all values listed in the schedule shall equal the total Contract Sum.

#### 1.04 SUBSCHEDULE OF UNIT MATERIAL VALUES

- A. Submit a sub-schedule of unit costs and quantities for:
  - 1. Products specified under a unit cost allowance in Section 01020.
  - 2. Products on which progress payments will be requested for stored products.
- B. The form of submittal shall parallel that of the Schedule of Values, with each item identified the same as the line item it the Schedule of Values.
- C. The unit quantity for bulk materials shall include an allowance for normal waste.
- D. The unit values for the materials shall be broken down into:
  - 1. Cost of the material, delivered and unloaded at the site, with taxes paid.

2. Installation costs, including Contractor's overhead and profit.
- E. The installed unit value multiplied by the quantity listed shall equal the cost of that item in the Schedule of Values.

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION (NOT USED)**

END OF SECTION

## **SECTION 01410 TESTING LABORATORY SERVICES**

### **PART 1 - GENERAL**

#### **1.01 REQUIREMENTS INCLUDED**

- A. The District will employ services of an Independent Testing Laboratory to perform specified testing.
  - 1. Contractor shall cooperate with laboratory to facilitate the execution of its required services.

#### **1.02 LIMITATIONS OF AUTHORITY OF TESTING LABORATORY**

- A. Laboratory is not authorized to:
  - 1. Release, revoke, alter or enlarge on requirements of Contract Documents.
  - 2. Approve or accept any portion of the Work.
  - 3. Perform any duties of the Contractor.

#### **1.03 CONTRACTOR'S RESPONSIBILITIES**

- A. Cooperate with laboratory personnel and/or Engineer, provide access to Work or manufacturer's operations.
- B. Secure and deliver to the laboratory adequate quantities of representational samples of materials proposed to be used and which require testing.
- C. Provide to the laboratory the preliminary design mix proposed to be used for concrete, and other material mixes which require control by the testing laboratory.
- D. Furnish copies of Products test reports as required.
- E. Furnish incidental labor and facilities:
  - 1. To provide access to Work to be tested.
  - 2. To obtain and handle samples at the Project site or at the source of the product to be tested.
  - 3. To facilitate inspections and tests.
  - 4. For storage and curing of test samples.

- F. Notify the Engineer sufficiently in advance of operations to allow for laboratory assignment of personnel and scheduling of tests:

When tests or inspections cannot be performed after such notice, reimburse District for laboratory personnel and travel expenses incurred due to Contractor's negligence.

- G. Make arrangements with the Engineer and the laboratory and pay for additional samples and tests required for Contractor's convenience.

## **PART 2 - PRODUCTS (NOT USED)**

## **PART 3 - EXECUTION**

### **3.01 PAYMENT**

- A. Testing of materials and products will be performed by an independent testing laboratory appointed and paid for by the District. Testing will be performed so as to least encumber the performance of Work.
- B. The District will authorize the cost of one (1) series of tests only, on the area or item being evaluated. The Contractor shall pay for costs of additional testing as required due to improper performance of Work.
- C. When work of this contract or portions of work are completed, notify the Engineer so that arrangements can be made with the laboratory to perform or witness the tests. Do not proceed with additional portions of Work until results have been verified.

END OF SECTION

## **SECTION 01500**

### **CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS**

#### **PART 1 - GENERAL**

##### **1.01 REQUIREMENTS INCLUDED**

- A. Furnish, install and maintain temporary utilities required for construction, remove on completion of Work.

##### **1.02 RELATED REQUIREMENTS**

- A. Section 01015 entitled: Miscellaneous Requirements.

##### **1.03 REQUIREMENTS OF REGULATORY AGENCIES**

- A. Comply with National Electric Code.
- B. Comply with Federal, State and local codes and regulations and with utility company requirements.

#### **PART 2 - PRODUCTS**

##### **2.01 MATERIALS, GENERAL**

- A. Materials may be new or used, but must be adequate in capacity for the required usage, must not create unsafe conditions, and must not violate requirements of applicable codes and standards.

##### **2.02 CONSTRUCTION WATER**

- A. The Contractor shall make his own arrangements for developing water sources and supply all labor and equipment to collect, load, transport, and apply water as necessary for compaction of materials, concrete construction operations, testing, dust control, and other construction use.
- B. Develop sources of water supply or obtain water from private sources. Payment for all costs connected with utilization of the source shall be made by the Contractor. Water shall be clean and free from objectionable deleterious amounts of acids, alkalies, salts, or organic materials.

- C. Include the cost of construction water in the appropriate bid item to which it is appurtenant. The cost shall include full compensation for furnishing all labor, materials, tools, and equipment and doing all the work necessary to develop a sufficient water supply and furnishing the necessary equipment for applying the water as described in these specifications.

#### 2.03 TEMPORARY ELECTRICITY AND LIGHTING

- A. Arrange with utility company, provide service required for power and lighting, and pay all costs for service and for power used. The cost of power shall be included in the appropriate bid items to which it is appurtenant and shall include full compensation for furnishing all labor, materials, tools, and equipment required to obtain and distribute power for construction purposes.
- B. Install circuit and branch wiring, with area distribution boxes located so that power and lighting is available throughout the construction by the use of construction-type power cords.
- C. Provide adequate artificial lighting for all areas of work when natural light is not adequate for work, and for areas accessible to the public.

#### 2.04 TEMPORARY HEAT AND VENTILATION

- A. Provide temporary heat and ventilation as required to maintain adequate environmental conditions to facilitate progress of the Work, to meet specified minimum conditions for the installation of materials, and to protect materials and finishes from damage due to temperature or humidity.
- B. Provide adequate forced ventilation of enclosed areas for curing of installed materials, to disperse humidity, and to prevent hazardous accumulations of dust, fumes, vapors or gases.
- C. Portable heaters shall be standard approved units complete with controls.
- D. Pay all costs of installation, maintenance, operation and removal, and for fuel consumed.

#### 2.05 TEMPORARY SANITARY FACILITIES

- A. Provide sanitary facilities in compliance with laws and regulations.
- B. Service, clean and maintain facilities and enclosures.
- C. Existing plumbing facilities shall not be used by construction personnel.

## 2.06 TEMPORARY ACCESS ROAD AND PARKING

### A. Site Access Roads:

1. Construct new temporary access roads over designated easements from public thoroughfare to site entrance.

### B. On-Site Roads and Parking Areas:

1. Locate roads, drives, walks and parking facilities to provide uninterrupted access to construction offices, mobilization, work, storage areas, and other areas required for execution of the contract.
2. Submit proposed location for Engineer's approval.
3. Provide access for emergency vehicles.
  - a. Maintain driveways a minimum of 15 feet wide, between and around combustible materials in storage and mobilization areas.
4. Maintain traffic areas free as possible of excavated materials, construction equipment, products and debris.
5. Keep fire hydrants and water control valves free from obstruction and accessible for use.
6. Provide traffic control devices as required by governing authorities along established public thoroughfares which will be used as haul routes to site access.
7. Provide additional steel plates and dewatering appurtenances to bench down dewatering system as required to allow for unhindered traffic flow through work areas.

## 2.07 TEMPORARY CONTROLS

### A. Noise Control:

1. Not used.

### B. Dust Control:

1. Provide positive methods and apply dust control materials to minimize raising dust from construction operations, and provide positive means to prevent air-borne dust from dispersing into the atmosphere. Use water or dust preventative to control dust. Their supply and application shall be at the expense of the Contractor.

### C. Water Control:

1. Provide methods to control surface water to prevent damage to the Project, the site, or adjoining properties.
    - a. Control fill, grading and ditching to direct surface drainage away from excavations, pits, tunnels and other construction areas; and to direct drainage to proper runoff.
  2. Provide, operate and maintain hydraulic equipment of adequate capacity to control surface water.
  3. Dispose of drainage water in a manner to prevent flooding, erosion, or other damage to any portion of the site or to adjoining areas.
- D. Pest Control:
1. Not used.
- E. Rodent Control:
1. Provide rodent control as necessary to prevent infestation of construction or storage area.
    - a. Employ methods and use materials which will not adversely affect conditions at the site or on adjoining properties.
    - b. Should the use of rodenticides be considered necessary, submit an informational copy of the proposed program to District with a copy to Engineer. Clearly indicate:
      - (1) The area or areas to be treated.
      - (2) The rodenticides to be used, with a copy of the manufacturer's printed instructions.
      - (3) The pollution preventative measures to be employed.
  2. The use of any rodenticide shall be in full accordance with the manufacturer's printed instructions and recommendations.
- F. Debris Control:
1. Maintain all areas under Contractor's control free of extraneous debris.
  2. Initiate and maintain a specific program to prevent accumulation of debris at construction site, storage and parking areas, or along access roads and haul routes.
    - a. Provide acceptable containers for deposit of debris.
    - b. Prohibit overloading of trucks to prevent spillages on access and haul routes.
      - (1) Provide periodic inspection of traffic areas to enforce requirements.

3. Schedule periodic collection and disposal of debris.
  - a. Provide additional collections and disposals of debris whenever the periodic schedule is inadequate to prevent accumulation.

G. Pollution Control:

1. Provide methods, means and facilities required to prevent contamination of soil, water or atmosphere by the discharge of noxious substances from construction operations.
2. Provide equipment and personnel, perform emergency measures required to contain any spillages, and to remove contaminated soils or liquids.
  - a. Excavate and dispose of any contaminated earth off-site, and replace with suit- able compacted fill and topsoil.
3. Take special measure to prevent harmful substances from entering public waters.
  - a. Prevent disposal of wastes, effluents, chemicals, or other such substances adjacent to streams, or in sanitary or storm sewers.
4. Provide systems for control of atmospheric pollutants.
  - a. Prevent toxic concentrations of chemicals.
  - b. Prevent harmful dispersal of pollutants; into the atmosphere.

H. Erosion Control:

1. Plan and execute construction and earth work by methods to control surface drainage from cuts and fills, and from borrow and waste disposal areas, to prevent erosion and sedimentation.
  - a. Hold the areas of bare soil exposed at one time to a minimum.
  - b. Provide temporary control measures such as berms, dikes and drains.
2. Construct fills land waste areas by selective placement to eliminate surface silts or clays which will erode.
3. Periodically inspect earthwork to detect any evidence of the start of erosion, apply corrective measures as required to control erosion.

2.08 FIRE DANGER

- A. Minimize fire danger in the vicinity of and adjacent to the construction site. provide labor and equipment to protect the surrounding private property from fire

damage resulting from construction operations. All costs arising from fire or the prevention of fire shall be at the expense of the Contractor.

2.09 CONSTRUCTION STAKING

- A. The Contractor will furnish all construction staking.

2.10 STAGING AREA

- A. The Contractor staging area shall be one mutually agreed upon by Loxahatchee River District, Palm Beach County and property owner and the Contractor. Contractor is responsible for securing a staging area within (10) calendar days of NTP.

**PART 3 - EXECUTION**

3.01 GENERAL

- A. Comply with applicable requirements specified in Division 16 - Electrical.
- B. Maintain and operate systems to assure continuous service.
- C. Modify and extend systems as work progress requires.

3.02 REMOVAL

- A. Completely remove temporary materials and equipment when their use is no longer required.
- B. Clean and repair damage caused by temporary installations or use of temporary facilities.
- C. Restore permanent facilities used for temporary services to specified condition.
  - 1. Prior to final inspection, remove temporary lamps and install new lamps.

3.03 UTILITY CLEARANCES

- A. Contractor shall be responsible for obtaining all utility clearances. No work will be permitted on site until all utility clearances have been obtained and utility locations clearly identified on the ground, and provisions made to insure the safe conduct of work at the construction sites.

- B. The Contractor shall also check and ensure that any airport clearances are accounted for prior to starting construction.

#### 3.04 HURRICANE PRECAUTIONS

- A. During such periods of time as are designated by the United States Weather Service as being a hurricane warning or alert, the Contractor shall take all precautions necessary to respond to all threatened storm events, regardless of whether the District or Engineer has given notice of the same.
- B. Suspension of the work caused by a threatened or actual storm event, regardless of whether the District or Engineer has directed such suspension, will entitle the Contractor to additional Contract Time as an excusable delay, and shall not give rise to a claim for compensation.

#### 3.05 STRINGING PIPE

- A. **No construction material or equipment is to be placed on Homeowner's yards and/or empty lots.**

END OF SECTION

## **SECTION 01530 BARRIERS**

### **PART 1 - GENERAL**

#### **1.01 REQUIREMENTS INCLUDED**

- A. Furnish, install and maintain suitable barriers as required to prevent public entry, and to protect the Work, existing facilities, trees and plants from construction operations; remove when no longer needed, or at completion of Work.

#### **1.02 RELATED REQUIREMENTS**

- A. Section 01015 entitled: Miscellaneous Requirements.
- B. Section 01500 entitled: Construction Facilities and Temporary Controls.

### **PART 2 - PRODUCTS**

#### **2.01 MATERIALS, GENERAL**

- A. Materials may be new or used, suitable for the intended purpose, but must not violate requirements of applicable codes and standards.

#### **2.02 FENCING**

- A. Minimum fence height six feet.
- B. Open-Mesh Fence:
  - 1. No. 11 gauge, 2-inch mesh, 72 inches high galvanized chain link fabric, with extension arms and three (3) strands of galvanized barbed wire.
  - 2. Galvanized steel posts; 1½ inch line posts and 2-inch corner posts.

#### **2.03 BARRIERS**

- A. Materials are Contractor's option, as appropriate to serve required purpose.

### **PART 3 - EXECUTION**

### 3.01 GENERAL

- A. Install facilities of a neat and reasonably uniform appearance, structurally adequate for the required purposes.
- B. Maintain barriers during entire construction period.
- C. Relocate barriers as required by the progress of construction.

### 3.02 FENCES

- A. Provide and maintain fences necessary to assure security of the site during construction to keep unauthorized people and animals from the site when construction is not in progress.
- B. Gates shall have locks; and keys shall be furnished to the District.
- C. Provide additional security measures as deemed necessary and approved by the Engineer.

### 3.03 TREE AND PLANT PROTECTION

- A. Preserve and protect existing trees and plants at site which are designated to remain, and those adjacent to site.
- B. Consult with the Engineer, and remove agreed-on roots and branches which interfere with construction.
  - 1. Employ qualified tree surgeon to remove branches and treat cuts.
- C. Provide temporary barriers to a height of six feet, around each, or around each group, of trees and plants.
- D. Protect root zones of trees and plants:
  - 1. Do not allow vehicular traffic or parking.
  - 2. Do not store materials or products.
  - 3. Prevent dumping of refuse or chemically injurious materials or liquids.
  - 4. Prevent puddling or continuous running water.
- E. Carefully supervise excavating, grading and filling, and other construction operations, to prevent damage.
- F. Replace, or suitably repair, trees and plants designated to remain which are damaged or destroyed due to construction operations.

3.04 REMOVAL

- A. Completely remove barricades, omit, when construction has progressed to the point that they are no longer needed and when approved by Engineer.
- B. Repair damage caused by construction. Fill and grade areas of the site to the required evaluations, and clean up the area.

END OF SECTION

## **SECTION 01535**

### **TEMPORARY EROSION AND SEDIMENTATION CONTROL**

#### **PART 1 - GENERAL**

##### **1.01 DESCRIPTION**

- A. Provide erosion control measures on the project and in areas outside the right-of-way where work is accomplished in conjunction with the project, so as to prevent pollution of water, detrimental effects to public or private property adjacent to the project right-of-way and damage to work on the project. Construct and maintain temporary erosion control features or, where practical, construct and maintain permanent erosion control features as shown in the plans or as may be directed by the District.

##### **1.02 GENERAL**

- A. Coordinate the installation of temporary erosion control features with the construction of the permanent erosion control features to the extent necessary to ensure economical, effective, and continuous control of erosion and water pollution throughout the life of the Contract.
- B. Contractor or his subcontractor must employ a person who holds a certification as a Florida Department of Environmental Protection NPDES Construction Site Inspector.
- C. Due to unanticipated conditions, the District may direct the use of control features or methods other than those included in the original Contract.

##### **1.03 CONTROL OF CONTRACTOR'S OPERATIONS WHICH MAY RESULT IN WATER POLLUTION.**

- A. Prevent pollution of streams, canals, lakes, reservoirs, and other water impoundments with fuels, oils, bitumens, calcium chloride, or other harmful materials. Also, conduct and schedule operations to avoid or otherwise minimize pollution or siltation of such water impoundments, and to avoid interference with movement of migratory fish. Do not dump any residue from dust collectors or washers into any live stream.
- B. Restrict construction operations in rivers, streams, lakes, tidal waters, reservoirs, canals, and other water impoundments to those areas where it is necessary to perform filling or excavation to accomplish the work shown in the plans and to those areas which must be entered to construct temporary or permanent structures.

As soon as conditions permit, promptly clear rivers, streams, and impoundments of all obstructions placed therein or caused by construction operations.

- C. Except as necessary for construction, do not deposit excavated material in rivers, streams, canals, or impoundments, or in a position close enough thereto, to be washed away by high water or runoff.
- D. Where pumps are used to remove highly turbid waters from enclosed construction areas such as cofferdams or forms, treat the water by one or more of the following methods prior to discharge into State waters: pumping into grassed swales or appropriate vegetated areas or sediment basins, or confined by an appropriate enclosure such as turbidity barriers when other methods are not considered appropriate.
- E. Do not disturb lands or waters outside the limits of construction as staked, except as authorized by the District.
- F. Obtain the District's approval for the location of, and method of operation in, borrow pits, material pits, and disposal areas furnished for waste material from the project (other than commercially operated sources) such that erosion during and after completion of the work will not result in probability of detrimental siltation or water pollution.

## **PART 2 - PRODUCTS**

### **2.01 MATERIALS FOR TEMPORARY EROSION CONTROL.**

- A. The District will not require testing of materials used in construction of temporary erosion control features other than as provided for geotextile fabric in 985-3 unless such material is to be incorporated into the completed project. When no testing is required, the District will base acceptance on visual inspection.
- B. The Contractor may use new or used materials for the construction of temporary silt fence, staked turbidity barriers, and floating turbidity barrier not to be incorporated into the completed project, subject to the approval of the District.

### **2.02 PRECONSTRUCTION REQUIREMENTS.**

- A. At the Preconstruction Conference, provide to the District an Erosion Control Plan meeting the requirements or special conditions of all permits authorizing project construction. If no permits are required or the approved permits do not contain special conditions or specifically address erosion and water pollution, the project Erosion Control Plan will be governed by Section 3.02 herein, and FDOT Section 104.

- B. Ensure the Erosion Control Plan includes procedures to control off-site tracking of soil by vehicles and construction equipment and a procedure for cleanup and reporting of non-storm water discharges, such as contaminated groundwater or accidental spills. Do not begin any soil disturbing activities until District's direction.
- C. Failure to sign any required documents or certification statements will be considered a default of the Contract. Any soil disturbing activities performed without the required signed documents or certification statements may be considered a violation of the DEP Generic Permit.
- D. When the Stormwater Pollution Prevention Plan (SWPPP) is required, prepare the Erosion Control Plan in accordance with the planned sequence of operations and present in a format acceptable to the District. The Erosion Control Plan shall describe, but not be limited to, the following items or activities:
  - 1. For each phase of construction operations or activities, supply the following information:
    - a. Locations of all erosion control devices
    - b. Types of all erosion control devices
    - c. Estimated time erosion control devices will be in operation
    - d. Monitoring schedules for maintenance of erosion control devices
    - e. Methods of maintaining erosion control devices
    - f. Containment or removal methods for pollutants or hazardous wastes
  - 2. The name and telephone number of the person responsible for monitoring and maintaining the erosion control devices.
  - 3. Do not begin construction activities until after the District has received the Erosion Control Plan.
- E. Comply with the approved Erosion Control Plan.

## **PART 3 - EXECUTION**

### **3.01 CONSTRUCTION REQUIREMENTS**

- A. **Limitation of Exposure of Erodible Earth:** The District may limit the surface areas of unprotected erodible earth exposed by the construction operation and may direct the Contractor to provide erosion or pollution control measures to prevent contamination of any river, stream, lake, tidal waters, reservoir, canal, or other water impoundments or to prevent detrimental effects on property outside the

project right-of-way or damage to the project. Limit the area in which excavation and filling operations are being performed so that it does not exceed the capacity to keep the finish grading, grassing, sodding, and other such permanent erosion control measures current in accordance with the accepted schedule.

Do not allow the surface area of erodible earth that clearing and grubbing operations or excavation and filling operations expose to exceed 750,000 sq ft without specific prior approval by the Engineer. This limitation applies separately to clearing and grubbing operations and excavation and filling operations.

The Engineer may increase or decrease the amount of surface area the Contractor may expose at any one time.

B. **Incorporation of Erosion Control Features:** Incorporate permanent erosion control features into the project at the earliest practical time. Use approved temporary erosion control features to correct conditions that develop during construction which were not foreseen at the time of design, to control erosion prior to the time it is practical to construct permanent control features, or to provide immediate temporary control of erosion that develops during normal construction operations, which are not associated with permanent erosion control features on the project. The District may authorize temporary erosion control features when Topsoil is specified in the Contract and the limited availability of that material from the grading operations will prevent scheduled progress of the work or damage the permanent erosion control features.

C. **Scheduling of Successive Operations:** Schedule operations such that the area of unprotected erodible earth exposed at any one time is not larger than the minimum area necessary for efficient construction operations, and the duration of exposure of uncompleted construction to the elements is as short as practicable.

Schedule and perform clearing and grubbing so that grading operations can follow immediately thereafter. Schedule and perform grading operations so that permanent erosion control features can follow immediately thereafter if conditions on the project permit.

D. **Details for Temporary Erosion Control Features:**

1. **General:** Use temporary erosion and water pollution control features that consist of, but are not limited to, temporary grassing, temporary sodding, temporary mulching, sandbagging, slope drains, sediment basins, sediment checks, berms, baled hay or straw, floating turbidity barrier, staked turbidity barrier and silt fence. For design details for some of these items, refer to the Water Quality Section of the FDOT Design Standards.
2. **Temporary Grassing:** The District may designate certain areas of grassing constructed in accordance with Section 570 as temporary erosion control features. The District may direct the Contractor to omit permanent

type grass seed from grassing and reduce the specified rate of spread for fertilizer used in conjunction with grassing operations when such work is designated as a temporary erosion control feature.

3. **Temporary Sod:** Furnish and place sod in accordance with Section 575 within areas designated by the District to temporarily control erosion. If the District determines that the sod will be of a temporary nature, he may not require fertilizer and lime. Keep the sod in a moist condition in order to ensure growth. The Contractor will pay for all required watering.
4. **Temporary Mulching:** Furnish and apply a 2 to 4-inch thick blanket of straw or hay mulch to designated areas, then mix or force the mulch into the top 2 inches of the soil in order to temporarily control erosion. Use only un-decayed straw or hay which can readily be cut into the soil and which otherwise complies with 981-3. The Contractor may substitute other measures for temporary erosion control, such as hydro-mulching, chemical adhesive soil stabilizers, etc., for mulching with straw or hay, if approved by the District. When beginning permanent grassing operations, plow under temporary mulch materials in conjunction with preparation of the ground.
5. **Sandbagging:** Furnish and place sandbags in configurations to control erosion and siltation.
6. **Slope Drains:** Construct slope drains in accordance with the details shown in the plans, the Design Standards, or as may be approved as suitable to adequately perform the intended function.
7. **Sediment Basins:** Construct sediment basins in accordance with the details shown in the plans, the Design Standards, or as may be approved as suitable to adequately perform the intended function. Clean out sediment basins as necessary in accordance with the plans or as directed.
8. **Berms:** Construct temporary earth berms to divert the flow of water from an erodible surface.
9. **Baled Hay or Straw:** Provide bales having minimum dimensions of 14 by 18 by 36 inches at the time of placement. Construct Baled Hay or Straw dams according to details shown in the plans, as directed by the District or as shown in the FDOT Design Standards to protect against downstream accumulations of sediment.

Use natural baled hay or straw meeting the requirements of 981-3 or synthetic hay bales may be used as an alternative to natural baled hay or straw. Synthetic hay bales should be interlocking, have pre-made stake holes, are made of synthetic fibers (polypropylene, nylon, polyester) that meet the Environmental Protection Agency's TCLP standards, and produced into a filter medium with needle-punched fibers. Use synthetic hay bales listed on

the Qualified Products List. Wash out and remove sediment deposits when the deposits reach 1/2 the height of the reusable synthetic hay bale or as directed by the District. Dispose of the washout in accordance with 104-3 or in an area approved by the District. Synthetic hay bales that have had sediment deposits removed may be reinstalled on the project as approved by the District.

10. Temporary Silt Fences:

- a. **General:** Furnish, install, maintain, and remove temporary silt fences, in accordance with the manufacturer's directions, these Specifications, the details as shown on the plans, and the FDOT Design Standards.
- b. **Materials and Installation:** Use a geotextile fabric made from woven or nonwoven fabric, meeting the physical requirements of Section 985 according to those applications for erosion control.

Choose the type and size of posts, wire mesh reinforcement (if required), and method of installation. Do not use products which have a separate layer of plastic mesh or netting. Provide a durable and effective temporary silt fence that controls sediment comparable to the Design Standards, Index No. 102.

Install all sediment control devices in a timely manner to ensure the control of sediment and the protection of lakes, streams, gulf or ocean waters, or any wetlands associated therewith and to any adjacent property outside the right-of-way as required.

At sites where exposure to such sensitive areas is prevalent, complete the installation of any sediment control device prior to the commencement of any earthwork.

After installation of sediment control devices, repair portions of any devices damaged at no expense to the District.

Erect temporary silt fence at upland locations across ditchlines and at temporary locations shown on the plans or approved by the Engineer where continuous construction activities change the natural contour and drainage runoff. Do not attach temporary silt fence to existing trees unless approved by the District.

- c. **Inspection and Maintenance:** Inspect all temporary silt fences immediately after each rainfall and at least daily during prolonged rainfall. Immediately correct any deficiencies. In addition, make a daily review of the location of silt fences in areas where construction activities have changed the natural contour and

drainage runoff to ensure that the silt fences are properly located for effectiveness. Where deficiencies exist, install additional silt fences as directed by the Engineer.

Remove sediment deposits when the deposit reaches approximately 1/2 of the volume capacity of the temporary silt fence or as directed by the Engineer. Dress any sediment deposits remaining in place after the temporary silt fence is no longer required to conform with the finished grade, and prepare and seed them in accordance with Section 570.

11. **Floating Turbidity Barriers and Staked Turbidity Barriers:** Install, maintain, and remove turbidity barriers to contain turbidity that may occur as the result of dredging, filling, or other construction activities which may cause turbidity to occur in the waters of the State. The Contractor may need to deploy turbidity barriers around isolated areas of concern such as seagrass beds, coral communities, etc. both within as well as outside the right-of-way limits. The District will identify such areas. Place the barriers prior to the commencement of any work that could impact the area of concern. Install the barriers in accordance with the details shown in the plans or as approved by the District. Ensure that the type barrier used and the deployment and maintenance of the barrier will minimize dispersion of turbid waters from the construction site. The District may approve alternate methods or materials.

Operate turbidity barriers in such a manner to avoid or minimize the degradation of the water quality of the surrounding waters.

12. **Rock Bags:** Furnish and place rock bags to control erosion and siltation. Place the bags as shown in the plans, the FDOT Design Standards or as directed by the District. Use a fabric material with openings that are clearly visible to minimize clogging yet small enough to prevent rock loss. Use material of sufficient strength to allow removing and relocating bags without breakage. The bag size when filled with rocks shall be approximately 12 by 12 by 4 inch. Use No. 4 or No. 5 coarse aggregate rock.

13. Artificial Coverings:

- a. General: Install artificial coverings in locations where temporary protection from erosion is needed. Two situations occur that require artificial coverings. The two situations have differing material requirements, which are described below.

- 1) Use artificial coverings composed of natural or synthetic fiber mats, plastic sheeting, or netting as protection against erosion, when directed by the District, during temporary pauses in construction caused by inclement weather or

other circumstances. Remove the material when construction resumes.

- 2) Use artificial coverings as erosion control blankets, at locations shown in the plans, to facilitate plant growth while permanent grassing is being established. For the purpose described, use non-toxic, biodegradable, natural or synthetic woven fiber mats. Install in accordance with 571-3 as for plastic erosion mat. Install erosion control blankets capable of sustaining a maximum design velocity of 6.5 ft/sec as determined from tests performed by Utah State University, Texas Transportation Institute or an independent testing laboratory approved by the District. Furnish to the District, two certified copies of manufacturers test reports showing that the erosion control blankets meet the requirements of this Specification. Certification must be attested, by a person having legal authority to bind the manufacturing company. Also, furnish two 4 by 8 inch samples for product identification. The manufacturers test records shall be made available to the District upon request. Leave the material in place, as installed, to biodegrade.

- E. **Removal of Temporary Erosion Control Features:** In general, remove or incorporate into the soil any temporary erosion control features existing at the time of construction of the permanent erosion control features in an area of the project in such a manner that no detrimental effect will result. The Engineer may direct that temporary features be left in place.

### 3.02 INSPECTIONS AND REPORTING

- A. The Contractor's certified NPDES Construction Site Inspector shall complete the required NPDES construction site inspection reports and provide them to the District. Reports shall be done on a weekly basis, at a minimum.

### 3.03 MAINTENANCE OF EROSION CONTROL FEATURES.

- A. **General:** Provide routine maintenance of permanent and temporary erosion control features, at no expense to the District, until the project is complete and accepted. If reconstruction of such erosion control features is necessary due to the Contractor's negligence or carelessness or, in the case of temporary erosion control features, failure by the Contractor to install permanent erosion control features as scheduled, the Contractor shall replace such erosion control features at no expense to the District. If reconstruction of permanent or temporary erosion control features is necessary due to factors beyond the control of the Contractor,

the District will pay for replacement under the appropriate Contract pay item or items.

Inspect all erosion control features at least once every seven calendar days and within 24 hours of the end of a storm of 0.50 inch or greater. Maintain all erosion control features as required in the Stormwater Pollution Prevention Plan, Contractor's Erosion Control plan and as specified in the State of Florida Department of Environmental Protection Generic Permit for Stormwater Discharge from Large and Small Construction Activities.

- B. **Mowing:** The District may direct mowing of areas within the limits of the project, in addition to and apart from those areas specified in Section 580. Mow these designated areas within seven days of receiving such order. Remove and properly dispose of all litter and debris prior to the mowing operation. Use conventional and specialized equipment along with hand labor to mow the entire area including slopes, wet areas, intersections, overpasses and around all appurtenances. Mow all areas to obtain a uniform height of 6 inches, unless directed otherwise by the District.

### 3.04 PROTECTION DURING SUSPENSION OF CONTRACT TIME.

- A. If it is necessary to suspend the construction operations for any appreciable length of time, shape the top of the earthwork in such a manner to permit runoff of rainwater, and construct earth berms along the top edges of embankments to intercept runoff water. Provide temporary slope drains to carry runoff from cuts and embankments that are in the vicinity of rivers, streams, canals, lakes, and impoundments. Locate slope drains at intervals of approximately 500 feet, and stabilize them by paving or by covering with waterproof materials. Should such preventive measures fail, immediately take such other action as necessary to effectively prevent erosion and siltation. The District may direct the Contractor to perform, during such suspensions of operations, any other erosion control work deemed necessary.

END OF SECTION

## **SECTION 01570 TRAFFIC CONTROL**

### **PART 1 - GENERAL**

#### **1.01 REQUIREMENTS INCLUDED**

- A. Provide, operate and maintain equipment, services and personnel, with traffic control and protective devices, as required to expedite vehicular traffic flow around the construction area.
- B. Remove temporary equipment and facilities when no longer required, restore grounds to original, or to specified conditions.

#### **1.02 REFERENCES**

Traffic regulation shall be in accordance with F.D.O.T. Roadway and Traffic Design Standards Series 600, latest Edition, Manual on Uniform Traffic Control Devices, latest Ed., and FDOT Standard Specifications, latest Ed.

#### **1.03 TRAFFIC CONTROL PLAN**

- A. The Contractor is to prepare a traffic control plan and/or policy statement for each phase of construction. This plan is to be presented to the District's Engineer at or before the pre-construction meeting.
- B. All proposed traffic control plans and policy statements shall be complete and in compliance with Section 1.02.

#### **1.04 TRAFFIC SIGNALS AND SIGNS**

- A. Provide and operate traffic control and directional signals required to direct and maintain an orderly flow of traffic in all areas under Contractor's control, or affected by Contractor's operations.
- B. Provide traffic control and direction signs, post mounted, at all areas required by Section 1.02.
- C. Traffic Signals - Construction requiring traffic signal modification shall be reported to the Palm Beach County Traffic Dept. at least 72 hours prior to the commencement of such activities. All excavation work within 30 feet of any traffic signal shall be reported to the Palm Beach County Traffic Dept. at least 72 hours prior to its commencement.

- D. All existing traffic signs shall remain visible throughout construction activities unless superseded by required construction signing.

1.05 FLAGMEN

Provide qualified and suitably equipped flagmen when construction operations encroach on traffic lanes, as required for regulation of traffic (See Section 1.02).

1.06 FLARES AND LIGHTS

- A. Provide lights as required by Section 1.02.
  - 1. To clearly delineate traffic lanes and to guide traffic as required in Section 1.02
  - 2. For use by flagmen in directing traffic.
- B. Provide illumination of critical traffic and parking areas as required in Section 1.02.

1.07 CONSTRUCTION PARKING CONTROL

- A. Control vehicular parking to preclude interference with public traffic or parking, access by emergency vehicles, District's operations, or construction operations.
- B. Monitor parking of construction personnel's private vehicles.
  - 1. Maintain free vehicular access to and through parking areas and driveways.
  - 2. Prohibit parking on or adjacent to access roads, or in non-designated areas.

1.08 CONSTRUCTION VEHICLES

- A. All slow moving construction vehicles shall have a slow moving sign visible from the rear of the vehicle.
- B. All vehicles used for construction activities shall have audible back-up warning devices.

1.09 ROAD CLOSURES

- A. No road shall be closed prior to receiving approval from the respective roadway owner (Palm Beach County Roadway Dept., FDOT, Town of Juno Beach).

- B. At least thirty days prior to a proposed road closure, the contractor shall submit to the respective roadway owner (Palm Beach County Roadway Dept., FDOT, Town of Juno Beach) a complete traffic control plan. This plan shall include the following minimum information:
  - 1. Sketch of work site and all area roads, streets and mark driveways.
  - 2. Proposed detour route.
  - 3. All necessary traffic control devices to be used.
  - 4. Emergency contractor contact person name and phone to be available 24 hours a day.
  - 5. Estimated times/dates of road closure.
- C. The respective roadway owner (Palm Beach County Roadway Dept., FDOT, Town of Juno Beach) shall have the authority to approve an emergency road closure.

## **PART 2 - PRODUCTS**

- A. All traffic control devices shall meet or exceed FDOT certification standards and the Manual of Uniform Traffic Control Devices.
- B. All traffic signs shall have high intensity face material.

## **PART 3 - EXECUTION**

- A. Upon notification by the District either verbally or in writing, the contractor shall correct any noted deficiencies within one hour.
- B. Inspection of all traffic control items shall be accomplished at least twice per day. One of these inspections shall be at the end of the work day or at night.

END OF SECTION

## **SECTION 01600 MATERIAL AND EQUIPMENT**

### **PART 1 - GENERAL**

#### **1.01 PERFORMANCE**

- A. Section generally defines Contractor's responsibilities, unless otherwise indicated, for the following:
  - 1. Products.
  - 2. Transportation and handling.
  - 3. Storage and protection.
  - 4. Product options.
  - 5. Substitutions.

#### **1.02 PRODUCTS**

- A. Products: Means new material, machinery, components, equipment, fixtures, and systems forming the Work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components required for reuse.
- B. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.

#### **1.03 TRANSPORTATION AND HANDLING**

- A. Transport and handle Products in accordance with manufacturer's instructions.
- B. Promptly inspect shipments to assure that Products comply with requirements, quantities are correct, and Products are undamaged.
- C. Provide equipment and personnel to handle Products by methods which prevent soiling, disfigurement, or damage.

#### **1.04 STORAGE AND PROTECTION**

- A. Store and protect Products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive Products in weather-tight, climate controlled enclosures.

- B. For exterior storage of fabricated Products, place on secure supports, above ground.
- C. Provide off-site storage and protection when site does not permit on-site storage or protection.
- D. Cover Products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation.
- E. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- F. Arrange storage of Products to permit access for inspection. Periodically inspect to assure Products are undamaged and are maintained under specified conditions.

#### 1.05 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Any Product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Products of manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

#### 1.06 SUBSTITUTIONS

- A. Instructions to Bidders specify time restrictions for submitting requests for Substitutions during the bidding period to requirements specified in this Section.
- B. Substitutions may be considered when a Product becomes unavailable through no fault of the Contractor.
- C. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.
- D. A request constitutes a representation that the Bidder:
  - 1. Has investigated proposed Product and determined that it meets or exceeds the quality level of the specified Product.
  - 2. Will provide the same warranty for the Substitution as for the specified Product.
  - 3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to District.

4. Waives claims for additional costs or time extension which may subsequently become apparent.
  5. Will reimburse District for review or redesign services associated with re-approval by the Engineer or governing authorities.
- E. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals without separate written request, or when acceptance will require revision to the Contract Documents.
- F. Substitution Submittal Procedure:
1. Submit three copies of request for Substitution for consideration. Limit each request to one proposed Substitution.
  2. Submit shop drawings, Product data, and certified test results attesting to the proposed Product equivalence.
  3. The Engineer will notify Contractor, in writing, of decision to accept or reject request.

## **PART 2 - PRODUCTS (NOT USED)**

## **PART 3 - EXECUTION (NOT USED)**

END OF SECTION

## **SECTION 01630 SUBSTITUTIONS AND PRODUCT OPTIONS**

### **PART 1 - GENERAL**

#### **1.01 REQUIREMENTS INCLUDED**

- A. Furnish and install Products specified, under options and conditions for substitutions stated in this Section.

#### **1.02 RELATED REQUIREMENTS**

- A. Information for Bidders and General Conditions.
- B. Section 01300 entitled: Submittals.
- C. Section 01700 entitled: Contract Closeout.

#### **1.03 PRODUCTS LIST**

- A. Within 30 days after award of Contract, submit to Engineer five copies of complete list of major Products which are proposed for installation.
- B. Tabulate Products by specification section number and title.
- C. For products specified only by reference standards, list for each such Product:
  - 1. Name and address of manufacturer.
  - 2. Trade Name.
  - 3. Model or catalog designation.
  - 4. Manufacturer's data:
    - a. Reference standards.
    - b. Performance test data.

#### **1.04 CONTRACTOR'S OPTIONS**

- A. For Products specified only by reference standard, select product meeting that standard, by any manufacturer.
- B. For products specified by naming several products or manufacturers, select any one or those products and manufacturers names which complies with

Specifications.

- C. For products specified by naming only one or more products or manufacturers and stating "or equal", submit a request as for substitutions, for any product or manufacturer which is not specifically named.

#### 1.05 SUBSTITUTIONS

- A. Within a period of 30 days after award of Contract, Engineer will consider formal requests from the Contractor for substitution of products in place of those specified:
- B. After the end of that period, the request will be considered only in case of product unavailability or other conditions beyond the control of the Contractor.
- C. Submit a separate request for each substitution. Support each request with:
  - 1. Complete data substantiating compliance of the proposed substitution with requirements stated in the Contract Documents:
    - a. Product identification, including manufacturer's name and address.
    - b. Manufacturer's literature; identify:
      - 1) Product description.
      - 2) Reference standards.
      - 3) Performance and test data.
    - c. Samples, as applicable.
    - d. Name and address of similar projects on which product has been used, and the date of each installation
  - 2. Itemized comparison of the proposed substitution with product specified; List significant variations.
  - 3. Data relating to changes in the construction schedule.
  - 4. Any effect of the substitution on separate contracts.
  - 5. List of changes required in other work or products.
  - 6. Accurate cost data comparing proposed substitution with product specified.
  - 7. Designation of required license fees or royalties.
  - 8. Designation of availability of maintenance services, and sources of replacement materials.
- D. Substitutions will not be considered for acceptance when:

1. They are indicated or implied on Shop Drawings or product data submittals without a formal request from Contractor.
  2. They are requested directly by a subcontractor or supplier.
  3. No Data relating to changes in construction schedule.
  4. Any effect of substitution on separate contracts.
  5. List of changes required in other work or products.
  6. Accurate cost data comparing proposed substitution with product specified.
  7. Designation of required license fees or royalties.
  8. Designation of availability of maintenance services, sources of replacement materials.
  9. Acceptance will require substantial revision of Contract Documents.
- E. Substitute products shall not be ordered or installed without written acceptance of Engineer.
- F. Engineer will determine the acceptability of proposed substitutions.

#### 1.06 CONTRACTOR'S REPRESENTATION

- A. In making formal request for substitution Contractor represents that:
1. He has investigated proposed product and has determined that it is equal to or superior in all respects to that specified.
  2. He will provide the same warranties or bonds for substitution as for product specified.
  3. He will coordinate installation of accepted substitution into the Work, and will make such changes as may be required for the Work to be complete in all respects.
  4. He waives claims for additional costs caused by substitution which may subsequently become apparent.
  5. Cost data is complete and includes related costs under his Contract, but not:
    - a. Costs under separate contracts.
    - b. Engineer's costs of redesign or revision of Contract Documents.

1.07 ENGINEER DUTIES

- A. Review Contractor's requests for substitutions with reasonable promptness.
- B. Notify Contractor, in writing, of decision to accept or reject requested substitution.

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION (NOT USED)**

END OF SECTION

## **SECTION 01700 CONTRACT CLOSEOUT**

### **PART 1 - GENERAL**

#### **1.01 REQUIREMENTS INCLUDED**

- A. Substantial Completion
- B. Final inspection after completion
- C. Final cleaning
- D. Contractor's closeout submittals
- E. Final adjustment of accounts

#### **1.02 SUBSTANTIAL COMPLETION**

- A. When Contractor considers work has reached substantial completion, he shall submit to the Engineer the following:
  - 1. Written notice that the work is substantially complete in accordance with Contract Documents.
  - 2. A list of items yet to be completed or corrected and explanations thereof.
- B. Within a reasonable time upon receipt of such notice, the Engineer will make an inspection, if necessary, to determine the status of completion.
- C. Should the Engineer determine that the work is not substantially complete:
  - 1. The Engineer will promptly notify the Contractor in writing, giving the reasons thereof.
  - 2. Contractor shall remedy the deficiencies in the work and send a second written notice of Substantial Completion to the Engineer.
  - 3. Upon receipt of the second notice, the Engineer will re-inspect the Work.
- D. When the Engineer finds that the Work is substantially complete he will issue a Certificate of Substantial Completion with a tentative list of items to be completed or corrected before final inspection.
- E. Substantial completion shall be generally defined as when the sewer system is operational for intended use and restoration has been completed. This shall

include at a minimum: entire sewer system; lift station start-up; and restoration of driveways, roadways & swales. The permit certification from PBCHD must also be obtained prior to issuing substantial completion.

#### 1.03 FINAL INSPECTION AFTER COMPLETION

- A. When Contractor considers the Work is complete with all minor deficiencies completed or corrected, he shall submit written certification that:
  - 1. Contract Document requirements have been met.
  - 2. Work has been inspected for compliance with Contract Documents.
  - 3. Work has been completed in accordance with Contract Documents.
  - 4. All minor deficiencies have been corrected or completed and the Work is ready for final inspection.
  - 5. Project record documents are complete and submitted.
- B. Within a reasonable time upon receipt of such certification, the Engineer will make an inspection to verify the status of completion.
- C. Should the Engineer determine that the work is incomplete or defective:
  - 1. The Engineer will promptly notify the Contractor in writing, listing the incomplete or defective work.
  - 2. Contractor shall remedy the deficiencies in the work and send a second written certification to the Engineer that the Work is complete.
  - 3. Upon receipt of the second certification, the Engineer will re-inspect the Work.
- D. When the Engineer determines that the work is acceptable, under the Contract Documents, he shall request the Contractor to make closeout submittals.

#### 1.04 FINAL CLEANING

- A. Execute prior to final inspection.
- B. Clean site; sweep paved areas, rake clean other surfaces.
- C. Remove waste and surplus materials, rubbish, and construction facilities from the Project and from the site.

#### 1.05 CONTRACTOR'S CLOSEOUT SUBMITTALS

##### A. Project Record Documents

1. At Contract closeout, submit documents with transmittal letter containing date, Project title, Contractor's name and address, list of documents, and signature of Contractor.
2. Drawings; Legibly marked to record actual construction:
  - a. Horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
  - b. Drawings shall be signed and sealed by a surveyor registered in the State of Florida.
3. Specifications and Addenda; Legibly mark each Section to record.
4. Changes made by Field Order or by Change Order.

##### B. Evidence of payment and Release of Liens.

#### 1.06 FINAL ADJUSTMENT OF ACCOUNTS

##### A. Submit a final statement of accounting to the Engineer.

##### B. Statement shall reflect all adjustments to the Contract Sum.

1. The original Contract sum.
2. Additions and deductions resulting from:
  - a. Previous change orders or written amendment.
  - b. Allowances
  - c. Unit prices
  - d. Deductions for uncorrected work.
  - e. Penalties and bonuses
  - f. Deductions for liquidated damages
  - g. Other adjustments
3. Total Contract Sum as adjusted
4. Previous payments
5. Sum remaining due

#### **PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION (NOT USED)**

END OF SECTION

## **SECTION 01720 PROJECT RECORD DOCUMENTS**

### **PART 1 - GENERAL**

#### **1.01 REQUIREMENTS INCLUDED**

- A. Maintain at the site of the District a record copy of:
  - 1. Drawings
  - 2. Specifications
  - 3. Addenda
  - 4. Change Orders and other modifications to the Contract.
  - 5. Approved Shop Drawings, Product Data and Samples.
  - 6. Field Test Records.

#### **1.02 RELATED REQUIREMENTS**

- A. All applicable sections of the Specifications.
- B. Conditions of the Contract.
- C. District Record Drawing Submittal Guide (SD-29).

#### **1.03 MAINTENANCE OF DOCUMENTS AND SAMPLES**

- A. Store documents and samples in Contractor's field office apart from documents used for construction.
  - 1. Provide files and racks for storage of documents.
  - 2. Provide locked cabinet or secure storage space for storage of samples.
- B. File documents and samples in accordance with CSI format.
- C. Maintain documents in a clean, dry, legible condition and in good order. Do not use record documents for construction purposes.
- D. Make documents and samples available at all times for inspection by District's Representative.

#### 1.04 MARKING DEVICES

- A. Provide felt tip marking pens for recording information in the color code designated by District's Representative.

#### 1.05 RECORDING

- A. Label each document, "PROJECT RECORD" in neat large printed letters, or by rubber stamp.
- B. Record information concurrently with construction progress. Do not conceal any work until required information is recorded.
- C. Drawings: Legibly mark to record actual construction (hard copy):
  - 1. Horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
  - 2. Location of internal utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structures.
  - 3. Field changes of dimension and detail.
  - 4. Changes made by Field Order or by Change Order.
  - 5. Details not on original Contract Drawings.
- D. Specifications and Addenda; legibly mark each Section to record:
  - 1. Manufacturer, trade name, catalog number, and supplier of each produce and item of equipment actually installed.
  - 2. Changes made by Field Order or by Change Order.

#### 1.06 AS-BUILT PLANS (RECORD DRAWINGS)

- A. The Contractor shall maintain full size (22"x34") field drawings to reflect the "as-built" items of work as the work progresses. Upon completion of the work, the Contractor shall prepare a record set of "as-built" drawings on full-size, reproducible material and an electronic file in ACAD 2018 Format or Latest Version. One set of full size design drawings on reproducible material will be furnished to the Contractor by the design Engineer at the current square foot price. An electronic file of the design drawings on a compact disk will be furnished to the Contractor by the design Engineer at no additional cost. No additional payment will be made for those "as-built" drawings.

- B. The cost of maintaining record changes, and preparation of the Record Drawings shall be included in the unit prices bid for the affected items. Upon completion of the work the Contractor shall furnish the Engineer the reproducible “as-built” Drawings and the electronic files. The completed Record drawings shall be delivered to the Engineer at least 5 working days prior to substantial inspection of the work. **The Substantial inspection will not be conducted unless the Record Drawings are in the possession of the Engineer.**
- C. The completed (or final) record drawings shall be certified by a Professional Land surveyor registered in the State of Florida. This certification shall consist of the surveyor’s embossed seal bearing his registration number, the surveyor’s signature and date on each sheet of the drawing set. In addition, the key sheet, cover sheet or first sheet of the plans set shall list the business address and telephone number of the surveyor.
- D. Representative items of work that should be shown on the record drawings as verified, changed or added are shown below:
1. Plans:
    - a. Structure types, location with grade of rim and flow-line elevations.
    - b. Sewer type, length, size and elevations.
    - c. Utility type, length, size and elevation in conflict structures.
    - d. All maintenance access structures, valves and hydrants within right-of way.
    - e. Spot (critical) elevations at plateaued intersections, P.C., P.T., midpoint of all intersections.
    - f. Sewer laterals shall be stationed between maintenance access structures.
  2. Pavement Marking and Signing Plans: Sign location where installed if different from plans.
  3. Water and Sewer Plans: Location (horizontal and vertical) of all pipe lines, structures, fittings, valves and appurtenances and water /sanitary sewer pipe crossings.
  4. Any utility discovered to be in the wrong location during construction shall be shown on the record drawings.
  5. Record Drawings shall also show survey data (horizontal and vertical) for all surface feature items replaced during construction including roadways, driveways, sidewalks, swales, etc.
- E. **The Contractor shall submit progress record drawings (in electronic .pdf format) and one Autocad file with each application for payment.** These

drawings shall accurately depict the work completed and for which payment is being requested.

F. As-built drawings shall include the following criteria at a minimum. Also include GPS coordinates for all as-built data.

1. As-builts of water lines shall include the following information:
  - a. Top of pipe elevations and horizontal location every 100 lf.
  - b. Locations and elevations of all fittings including bends, tees, gate valves, double detector check valves, fire hydrant, etc.
  - c. All tie-ins to existing lines shall be as-built.
  - d. The ends of all water services at the buildings or homes shall be as-built or where the water service terminates.
2. As-builts of all gravity sanitary sewer lines include the following information:
  - a. Rims, inverts and length of piping between structures as well as slopes.
  - b. The stub ends of all sewer laterals shall be located and if there are any cleanouts installed on the sewer laterals then the invert elevation of these cleanouts need to be obtained.
  - c. Lift station as-builts shall consist of top of wet well elevation, invert elevation of the incoming line, bottom of the wet well and as-builts of the compound area.
3. Force main as-builts shall be prepared the same as the water line as-builts.
4. As-builts of all drainage lines shall include the following information:
  - a. Rims, inverts and length of piping between structures and weir elevations if applicable.
  - b. The size of the piping shall be verified by the survey crew at the time of as-built.
5. All rock as-builts for parking lot, roadways and swales areas shall consist of the following:
  - a. Rock elevations at all high and low points, and at enough intermediate point's to confirm slope consistency and every 50' for roadways.
  - b. Rock as-builts shall be taken at all locations where there is a finish grade elevation shown on the design plans.
  - c. All catch basin and manhole rim elevations shall be shown.
  - d. Elevations around island areas will also be required.

- e. As-builts shall be taken on all paved and unpaved swales prior to placement of asphalt and/or topsoil/sod, at enough intermediate points to confirm slope consistency and conformance to the plan details.
  - f. Final driveway elevations shall be shown.
6. Lake and canal bank as-builts shall include a key sheet of the lake for the location of cross sections. Lake and canal bank cross sections shall be plotted at a minimum of every 100 lf, unless otherwise specified. As built shall consist of the location and elevation of the top of bank, edge of water and the deep cut line, with the distance between each shown on the drawing.
  7. Retention area as-built elevations shall be taken at the bottom of the retention area and at the top of bank. If there are contours indicated on the design plans, then they shall be as-built as well
  8. If a change is made via field order or deviation to any structure, pipeline, etc., a new location shall be noted on the as-builts. The Engineer may request additional as-built information to verify horizontal or vertical locations.

#### 1.07 SUBMITTAL – FINAL RECORD DRAWINGS

- A. At Contract closeout, deliver Record Documents to District's Representative, or presentation to the District.
- B. After District Engineering staff has completed the final inspection and all work is to the satisfaction of the District Engineer, the final Record Drawings shall be submitted to the District, as follows:
  1. Two (2) final black line record drawings, signed and sealed by a Florida licensed Professional Surveyor & Mapper. This record drawing shall meet the technical standards for "Record Survey" set forth by the Florida Board of Professional surveyors and mappers, pursuant to Chapter 472 of the Florida Statutes and Chapter 61G17-6, Florida Administrative Code.
  2. One (1) compact disc with the record drawing in AutoCAD 2008 or later format. Only one (1) AutoCAD file shall be accepted containing the entire record drawing (additional files used for x-referencing are acceptable) and one Adobe Acrobat file with the entire record drawing as seen on the paper copy. The District will no longer accept separate AutoCAD and/or Adobe Acrobat files for separate record drawing pages. The AutoCAD files must be established in state plane coordinate system, NAD 83, Florida East Zone. The vertical datum referenced shall be NGVD 29.

- C. Accompany submittal with transmittal letter in duplicate, containing:
1. Date
  2. Project title and number
  3. Contractor's name and address
  4. Title and number of each Record Document
  5. Signature of Contractor or his authorized representative

**PART 2 - PRODUCTS (NOT APPLICABLE)**

**PART 3 - EXECUTION (NOT APPLICABLE)**

END OF SECTION

**DIVISION 2**

**SITE WORK**

## **SECTION 02010 SUBSURFACE INVESTIGATION**

### **PART 1 - GENERAL**

#### **1.01 RESPONSIBILITY**

- A. Subsurface explorations have been made and copies of the results are included herein for information only. Data on indicated subsurface conditions is not intended as representative or a warranty of accuracy or continuity between soil borings. It is expressly understood that District and Engineer will not be responsible for interpretations or conclusions drawn by Contractor from the soils investigation report. Data is made available only for convenience of Contractor. No claim for extra compensation or for extension of time will be allowed on account of subsurface conditions inconsistent with the data shown. Additional test borings and other exploratory operations may be performed by Contractor, at the Contractor's option; however, no change in the Contract Sum will be authorized for such additional exploration.
- B. Data in the soft-dig reports was used for the basis of design and is available to the Contractor for information only. Conditions are not intended as representations or warranties of accuracy or continuity of pot-hole locations. The District and Engineer will not be responsible for interpretations or conclusions drawn from this data by Contractor. The Contractor is required to provide pot-holing in order to field verify location of all utility crossings, including paralleling of utilities, prior to construction of the proposed work.

### **PART 2 - PRODUCTS**

#### **2.01 SOIL BORINGS**

- A. Copies of the following are included herein:
  - 1. Soil boring data.

#### **2.02 SOFT DIG REPORTS**

- A. Copies of the following are included herein:
  - 1. Test hole reports.

### **PART 3 - EXECUTION (NOT USED)**

END OF SECTION

# **SOIL BORINGS**



# Geotechnical Engineering Report

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**Olympus Drive Force Main & Low Pressure Sewer Replacement  
Juno Beach, Florida**

April 17, 2020

Terracon Project No. HD205030

**Prepared for:**

Baxter & Woodman Consulting Engineers  
West Palm Beach, FL

**Prepared by:**

Terracon Consultants, Inc.  
West Palm Beach, Florida



April 17, 2020

Baxter & Woodman Consulting Engineers  
477 S. Rosemary Avenue, Suite 330  
West Palm Beach, FL 33401



Attn: Ms. Courtney Marshall, P.E.  
P: (561) 655-6175  
E: CMarshall@baxterwoodman.com

Re: Geotechnical Engineering Report  
Olympus Drive Force Main & Low Pressure Sewer Replacement  
Juno Beach, Florida  
Terracon Project No. HD205030

Dear Ms. Marshall:

We have completed the Geotechnical Engineering services for the above referenced project. This study was performed in general accordance with Terracon Proposal No. PHD205030 dated March 16, 2020 and the Baxter & Woodman Consulting Subconsultant Agreement for Professional Services signed March 20, 2020. This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning the planned pipeline construction.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,  
**Terracon Consultants, Inc.**

Jason DuBois  
Project Manager

Douglas S. Dunkelberger, P.E.  
Principal  
FL License No. 33317

This item has been digitally signed and sealed by Douglas S. Dunkelberger, P.E. on the date adjacent to the seal.  
Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.



## REPORT TOPICS

INTRODUCTION.....	1
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Note: This report was originally delivered in a web-based format. **Orange Bold** text in the report indicates a referenced section heading. The PDF version also includes hyperlinks which direct the reader to that section and clicking on the [GeoReport](#) logo will bring you back to this page. For more interactive features, please view your project online at [client.terracon.com](http://client.terracon.com).

## ATTACHMENTS

**EXPLORATION AND TESTING PROCEDURES**  
**SITE LOCATION AND EXPLORATION PLANS**  
**EXPLORATION RESULTS**  
**SUPPORTING INFORMATION**

**Note:** Refer to each individual Attachment for a listing of contents.

## Geotechnical Engineering Report

Olympus Drive Force Main & Low Pressure Sewer Replacement ■ Juno Beach, Florida

April 17, 2020 ■ Terracon Project No. HD205030



## REPORT SUMMARY

Topic <sup>1</sup>	Overview Statement <sup>2</sup>
Project Description	We understand that the Loxahatchee River District plans to install a new 6-inch PVC or HDPE force main and low pressure sewer pipe via horizontal directional drill (HDD) and open-cut methods. The maximum depth of the pipe installed via open-cut methods is 5 feet below the existing ground surface (bgs). The maximum depth for HDD construction is to be about 12 feet bgs.
Geotechnical Characterization	The borings generally found loose to medium dense sands from the surface to depths of ranging from about 13.5 to 15 feet bgs. At the location of Boring B-2, a very dense (cemented) coquina formation was encountered in the final sample collected from about 13 ½ to 15 feet bgs. Groundwater was found at about 8 feet in Boring B-2.
Trench Backfill Recommendations	This section of the report provides recommendations for cut-and-cover construction.
Lateral Earth Pressures	This section of the report provides recommended soil parameters for use in the design of the HDD.
General Comments	This section contains important information about the limitations of this geotechnical engineering report.
<ol style="list-style-type: none"><li>1. If the reader is reviewing this report as a pdf, the topics above can be used to access the appropriate section of the report by simply clicking on the topic itself.</li><li>2. This summary is for convenience only. It should be used in conjunction with the entire report for design purposes.</li></ol>	

**Geotechnical Engineering Report**  
**Olympus Drive Force Main & Low Pressure Sewer Replacement**  
**Project Address**  
**Juno Beach, Florida**  
**Terracon Project No. HD205030**  
**April 17, 2020**

## INTRODUCTION

This report presents the results of our subsurface exploration and geotechnical engineering services performed for the proposed Olympus Drive Force Main & Low Pressure Sewer Replacement to be located in Juno Beach, Florida. The purpose of these services is to provide information and geotechnical engineering recommendations relative to:

- Subsurface soil conditions
- Groundwater conditions
- Soil parameters for HDD design
- Site preparation and earthwork

The geotechnical engineering Scope of Services for this project included the advancement of two test borings to 15 feet below the ground surface (bgs).

Maps showing the site and boring locations are shown in the **Site Location** and **Exploration Plan** sections, respectively.

## SITE CONDITIONS

The following description of site conditions is derived from our site visit in association with the field exploration and our review of publicly available geologic and topographic maps.

Item	Description
<b>Parcel Information</b>	The project site is located along Olympus Drive, State Road A1A and Celestial Way in Juno Beach, Florida (See <b>Site Location</b> ).
<b>Existing Improvements</b>	Two-lane residential roadways with grass and landscaped shoulders.
<b>Current Ground Cover</b>	Asphalt pavement and short grasses.

Item	Description
<b>Existing Topography</b>	A Base Drawing (dated March 2020) was provided by Baxter & Woodman. The drawing shows the area of the proposed force main has ground surface elevations that generally slope downward from west to east. At the west end of the alignment the elevation is about +30 feet-NGVD while at the eastern end the approximate elevation is +6 feet NGVD.
<b>Soil Survey Information</b>	Review of the Web Soil Survey indicates the site is mapped with St. Lucie-Urban land complex, Arents-Urban land complex and Quartzipsamments, shaped. Urban land generally consists of areas that have been disturbed by earthmoving activities. The St. Lucie, Arents, and Quartzipsamments soil units typically consist of nearly level to sloping, excessively drained to somewhat poorly drained, deep, sandy soils.

## PROJECT DESCRIPTION

Our final understanding of the project conditions is as follows:

Item	Description
<b>Project Description</b>	We understand that the Loxahatchee River District plans to install a new 6-inch PVC or HDPE force main and low pressure sewer pipe via horizontal directional drill (HDD) and open-cut methods. The maximum depth of the pipe installed via open-cut methods is 5 feet below the existing ground surface (bgs). The maximum depth for HDD construction is to be about 12 feet bgs.

## GEOTECHNICAL CHARACTERIZATION

We have developed a general characterization of the subsurface conditions based upon our review of the subsurface exploration, laboratory data, geologic setting and our understanding of the project. This characterization, termed GeoModel, forms the basis of our geotechnical calculations and evaluation of site preparation and foundation options. Conditions encountered at each exploration point are indicated on the individual logs. The GeoModel and individual logs can be found in the **Exploration Results** section of this report.

As part of our analyses, we identified the following model layers within the subsurface profile. For a more detailed view of the model layer depths at each boring location, refer to the GeoModel.

Model Layer	Layer Name	General Description
1	Pavement	Asphalt over shellrock base course
2	Sand	Poorly graded sand with varying amounts of silt and shell fragments (SP, SP-SM), loose to medium dense
3	Coquina	Cemented sand and shell, very dense

## Groundwater

Groundwater was not encountered in Boring B-1. However, the soil sample at 13.5 feet below the ground surface was moist. At the location of Boring B-2, groundwater was found at a depth of about 8 feet below the ground surface while drilling which corresponds to an elevation of about +3 feet (NGVD). Groundwater level fluctuations occur due to topographical differences at the boring locations, seasonal variations in the amount of rainfall, runoff and other factors not evident at the time the borings were performed. Therefore, groundwater levels during construction or at other times in the life of the project may be higher or lower than the levels indicated on the boring log. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project.

## GEOTECHNICAL OVERVIEW

The borings generally found loose to medium dense sands from the surface to depths of ranging from about 13 ½ to 15 feet bgs. At the location of Boring B-2, a very dense (cemented) coquina formation was encountered in the final sample collected from about 13 ½ to 15 feet bgs.

The **Trench Backfill Recommendations** section addresses excavations, ground support, bedding and backfill while the **Lateral Earth Pressures** section provides recommended soil parameter and shear moduli values for the HDD installation.

The **General Comments** section provides an understanding of the report limitations.

## **TRENCH BACKFILL RECOMMENDATIONS**

- Any open trench (excavation) areas should be accomplished in the dry (i.e. not in saturated or submerged conditions). Dewatering to a depth of 2 feet below the bottom of all excavations should be performed prior to placement of backfill materials.
- Should the excavation bottom become unstable due to persistent moisture or hydrostatic pressure, the bottom should be “over-excavated” a minimum of 12 inches (deep) and replaced with clean gravel (FDOT No. 57 Stone).
- Backfill below the existing water level at the time of construction should consist of sands or gravels, with a maximum of 15% passing the U.S. No. 200 sieve and no particle size larger than 1 inch in any dimension. Backfill above the existing water level at the time of construction should consist of sands or gravels with particle sizes of less than 1 inch in any dimension, no more than 35 percent fines, and of low plasticity (i.e. Liquid Limit less than 40 and Plasticity Index less than 10). The fill should be placed in the dry in lifts that do not exceed 12 inches in vertical measure. Each lift should be compacted to at least 95% of the Modified Proctor maximum dry density (ASTM D-1557). Backfill in pavement areas should be compacted to at least 98% density (ASTM D-1557).
- The GeoModel Layer 1 and 2 soils should generally meet the backfill gradation requirements of a maximum of 15% passing the U.S. No. 200 sieve.
- As a minimum, all temporary excavations should be sloped or braced as required by Occupational Health and Safety Administration (OSHA) regulations to provide stability and safe working conditions. Temporary excavations will probably be required during pipe installation operations. The utility contractor, by contract, is usually responsible for designing and constructing stable, temporary excavations and should shore, slope, or bench the sides of the excavations, as required, to maintain stability of both the excavation sides and bottom. All excavations should comply with applicable local, state, and federal safety regulations including the current OSHA Excavation and Trench Safety Standards.

### **Temporary Dewatering**

Dewatering may be needed to facilitate earthwork and underground construction operations for this project. The necessity for dewatering will be dependent on the depth of excavation below existing grade and the groundwater levels at the time of construction. Actual dewatering “means and methods” should be left up to a contractor experienced in installation and operation of dewatering systems. The contractor should provide a dewatering plan for review and approval by the engineer prior to the installation of the dewatering systems.

Also, the dewatering plan should consider the potential impact of lowered groundwater (i.e. increased vertical stress on subsoils which could trigger settlement) on nearby, existing construction.

## LATERAL EARTH PRESSURES

### Design Parameters

The soil parameters shown in the table below are based on empirical correlations with SPT blow counts (N-values) and should be assumed for design of the monopole foundation.

GeoModel Layer	USCS	Depth (ft, bgs)	SPT N-Values	Total Weight (pcf)	Submerged Weight (pcf)	Friction Angle (phi) <sup>1</sup>	Cohesion (psf) <sup>2</sup>	Coefficients		
								Active (K <sub>a</sub> )	Passive (K <sub>p</sub> )	At-Rest (K <sub>0</sub> )
Near Boring B-1										
1	SP	0 to 13	11 to 23	110	48	33	0	0.295	3.39	0.455
1	SP	13 to 15	9	135	73	30	0	0.333	3.00	0.50
Near Boring B-2										
1	SP, SP-SM	0 to 13	4 to 8	115	53	29	0	0.347	2.88	0.515
2	Coquina	13 to 15	50+	105	43	41	0	0.208	4.81	0.344

1. Based on Florida Department of Transportation Soils and Foundations Handbook (2020)

2. Based on Essentials of Soil Mechanics and Foundations, 7<sup>th</sup> Edition by David F. McCarthy

Estimated shear modulus values based on depth are also provided in the following table.

Boring No.	Depth (feet)	U.S.C.S	Relative Density	Estimated Shear Modulus, G (psf)
B-1	0 to 13	SP	Medium dense	252,000
	13 to 15	SP	Medium dense	162,000
B-2	0 to 13	SP, SP-SM	Loose	144,000
	13 to 15	Coquina	Very dense	962,000

In estimating shear modulus values, an empirical formula (Coduto, 2001) was used to relate the elastic modulus to both N-value and soil type. For the granular soils, we assumed drained conditions and assigned Poisson's ratios of 0.1 for loose soils, 0.2 for medium dense soils, and 0.3 for very dense soils (Rowe, 2000).

## **GENERAL COMMENTS**

Our analysis and opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from our site exploration. Natural variations will occur between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the Geotechnical Engineer to provide observation and testing services during pertinent construction phases. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Our services and any correspondence or collaboration through this system are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly impact excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety, and cost estimating including, excavation support, and dewatering requirements/design are the responsibility of others. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

## ATTACHMENTS

## EXPLORATION AND TESTING PROCEDURES

### Field Exploration

Number of Borings	Boring Depth (feet)	Location
2	15	See Exploration Plan

**Boring Layout and Elevations:** Terracon personnel marked the boring location using nearby referenced points. The boring locations were provided to us by Baxter Woodman.

- Prior to drilling, Sunshine State One Call was contacted to mark public utilities at the site.
- Once underground utility clearance was obtained, we mobilized a truck mounted drilling rig and drilled the Standard Penetration Test (SPT) borings.
- The Standard Penetration Test (SPT) borings were drilled using mud rotary methods. Soil sampling in the SPT borings were completed in general accordance with industry standard procedures wherein split-barrel samples were obtained using an automatic hammer. SPT split spoon sampling was continuous to a depth of 10 feet, and at 5-foot vertical intervals thereafter. In addition, we observed and recorded groundwater levels during drilling. Once the samples were collected and classified in the field, they were placed in appropriate sample containers for transport to our laboratory. The boreholes were backfilled with bentonite chips upon completion and surfaced with cold patch asphalt.

### Laboratory Testing

All samples were examined in the laboratory by a geotechnical engineer and classified in accordance with the Unified Soil Classification System.

## **SITE LOCATION AND EXPLORATION PLANS**

### **Contents:**

Site Location Plan

Exploration Plan

Note: All attachments are one page unless noted above.

## SITE LOCATION

Olympus Drive Force Main & Low Pressure Sewer Replacement ■ Juno Beach, Florida  
April 17, 2020 ■ Terracon Project No. HD205030

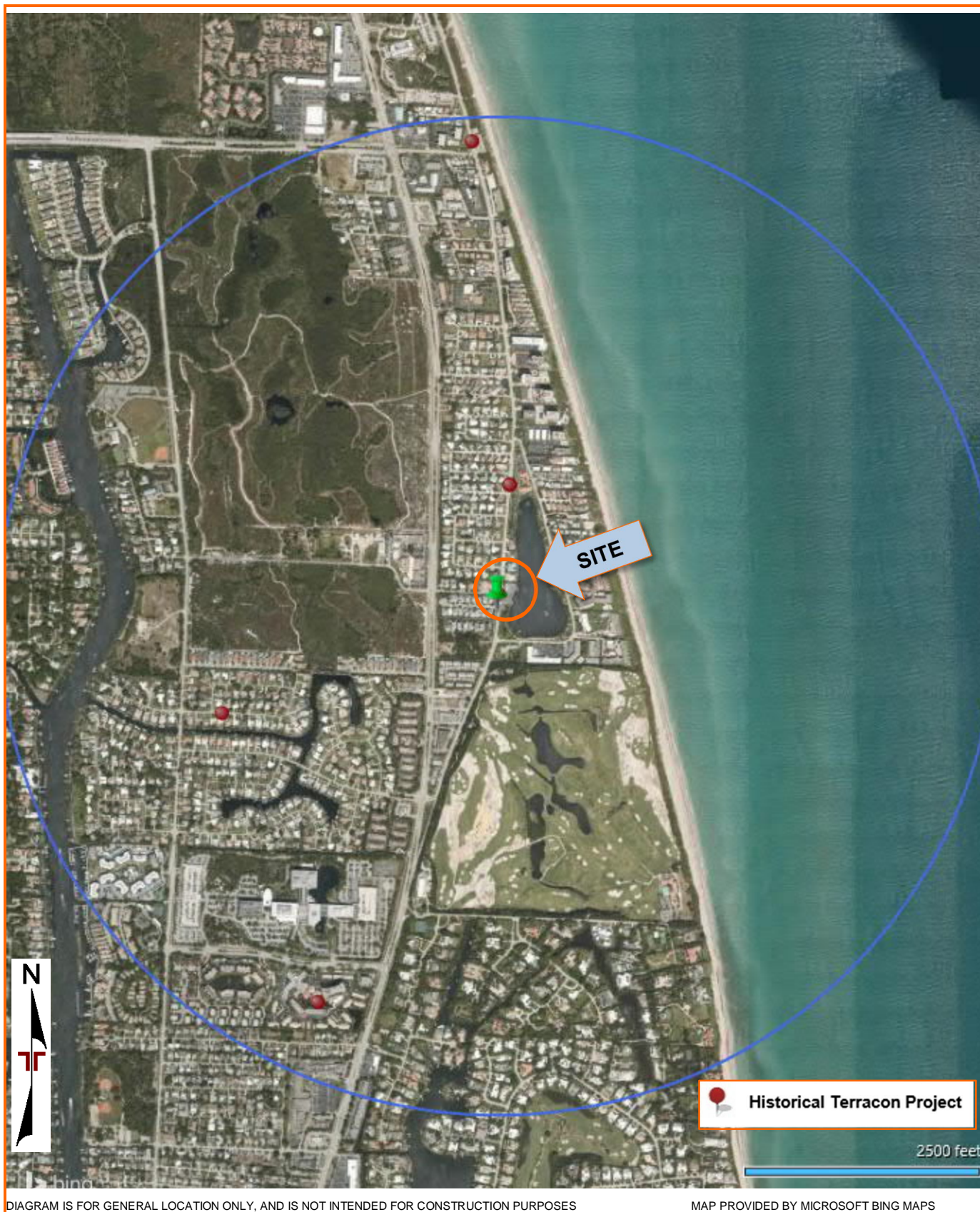


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

## EXPLORATION PLAN

Olympus Drive Force Main & Low Pressure Sewer Replacement ■ Juno Beach, Florida  
April 17, 2020 ■ Terracon Project No. HD205030

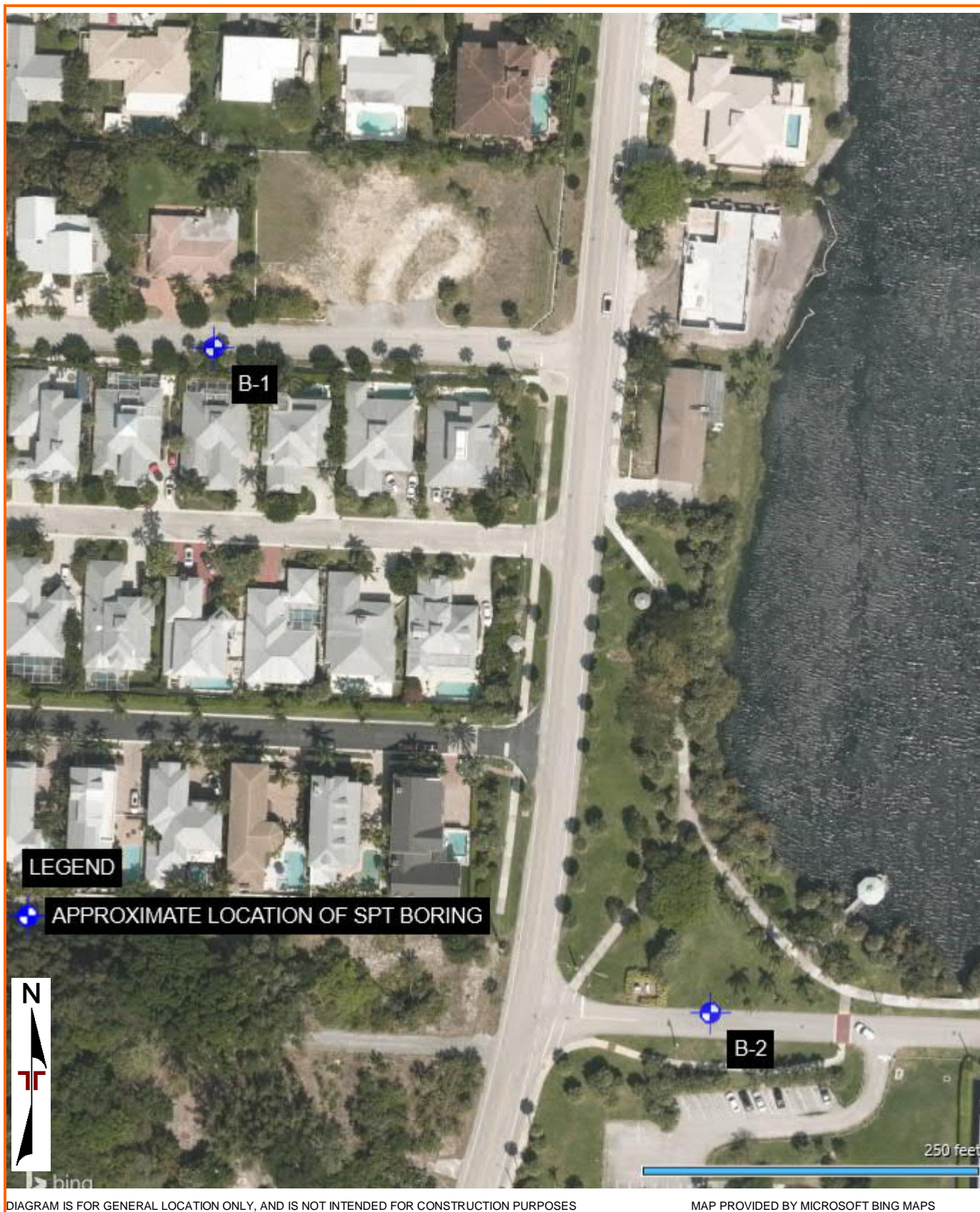


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

## **EXPLORATION RESULTS**

### **Contents:**

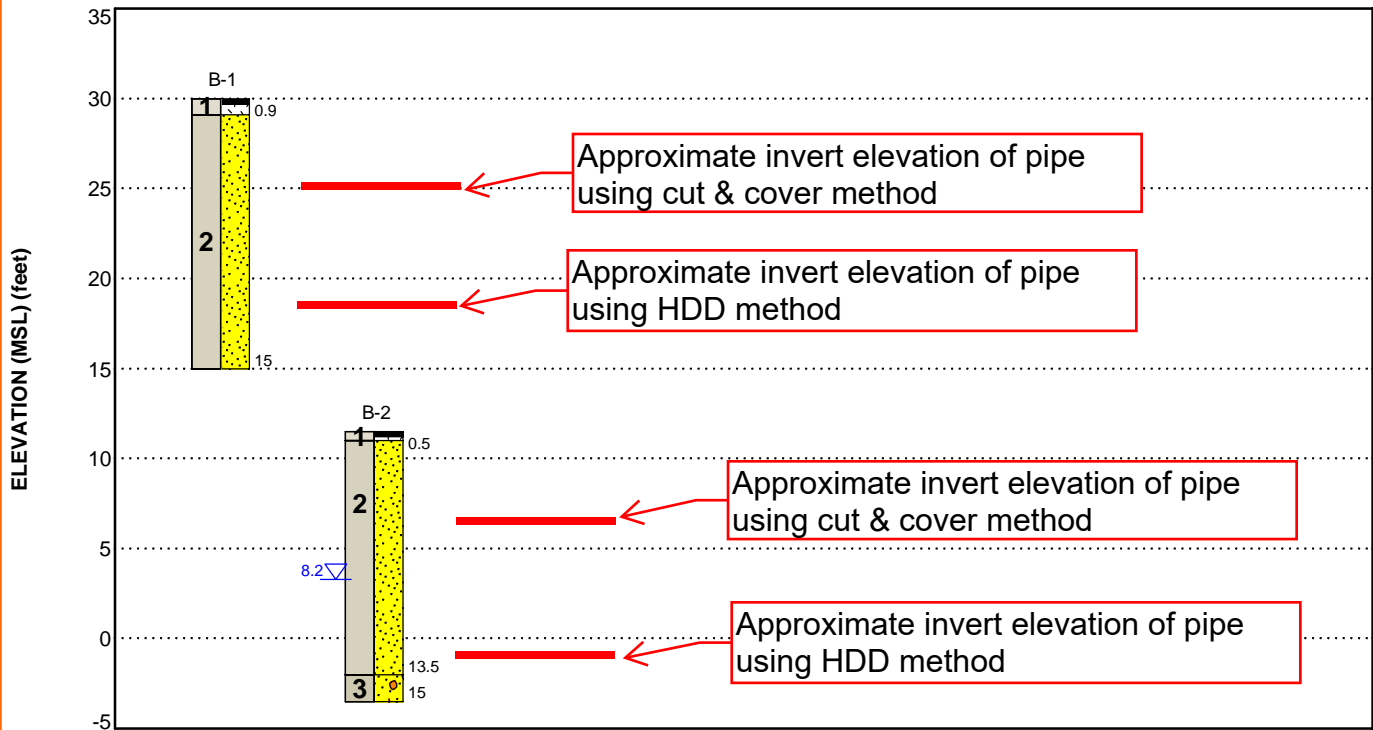
GeoModel

Boring Logs (B-1 and B-2)

Note: All attachments are one page unless noted above.

## GEOMODEL

Olympus Drive Force Main & Low Pressure Sewer Replacement ■ Juno, FL  
Terracon Project No. HD205030



This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

Model Layer	Layer Name	General Description
1	Pavement	Asphalt over shellrock base course
2	Sand	Poorly graded sand with varying amounts of silt and shell fragments (SP, SP-SM), loose to medium dense
3	Coquina	Cemented sand and shell, very dense

### LEGEND

■ Asphalt

■ Poorly-graded Sand with Gravel

■ Base

■ Poorly-graded Sand

△ First Water Observation

### NOTES:

Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project.

Numbers adjacent to soil column indicate depth below ground surface.

Groundwater levels are temporal. The levels shown are representative of the date and time of our exploration. Significant changes are possible over time. Water levels shown are as measured during and/or after drilling. In some cases, boring advancement methods mask the presence/absence of groundwater. See individual logs for details.



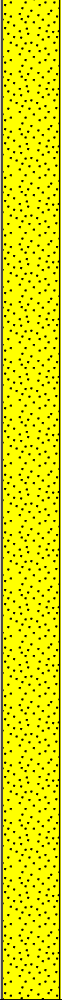
# BORING LOG NO. B-1

Page 1 of 1

**PROJECT:** Olympus Drive Force Main & Low Pressure Sewer Replacement

**CLIENT:** Baxter & Woodman Consulting Engineers  
West Palm Beach, FL

**SITE:** Olympus Drive  
Juno, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 26.8688° Longitude: -80.0538°	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
1		0.3 <b>ASPHALT</b> , 4 inches of asphalt	0.3	29.5+/-				
		0.9 <b>SHELLROCK BASE</b> , Light brown, 7 inches of base course	0.9	29+/-				
2		<b>SAND (SP)</b> , fine to medium grained, Orange-brown, loose to medium dense			5			8-11-12 N=23
								8-7-7-6 N=14
								9-6-8-10 N=14
								9-8-8-10 N=16
								4-5-6-6 N=11
					10			
								3-4-5 N=9
			15.0	15+/-	15			
		<b>Boring Terminated at 15 Feet</b>						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:  
Mud rotary  
Continuous sampling upper 10 feet  
Samples at 5 foot intervals thereafter

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:  
Approximate ground surface elevation is +30 feet NGVD  
Began mud rotary at 6 feet

Abandonment Method:  
Boring backfilled with bentonite chips and surface with cold patch asphalt

See [Supporting Information](#) for explanation of symbols and abbreviations.

NGVD

## WATER LEVEL OBSERVATIONS

Groundwater Not Encountered  
sample at 13.5 feet was moist

**Terracon**  
1225 Omar Rd  
West Palm Beach, FL

Boring Started: 04-03-2020

Boring Completed: 04-03-2020

Drill Rig: CME-45

Driller: T.R.

Project No.: HD205030

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL HD205030 OLYMPUS DRIVE IMP.GPJ TERRACON\_DATATEMPLATE.GDT 4/14/20





# BORING LOG NO. B-2

Page 1 of 1

**PROJECT:** Olympus Drive Force Main & Low Pressure Sewer Replacement

**CLIENT:** Baxter & Woodman Consulting Engineers  
West Palm Beach, FL

**SITE:** Olympus Drive  
Juno, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 26.8674° Longitude: -80.0527°	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
1		<b>ASPHALT</b> , 3.25 inches of asphalt	0.3	11+/-				
		<b>SHELLROCK BASE</b> , light brown, 3 inches of base course	0.5	11+/-				
2		<b>POORLY GRADED SAND WITH TRACE TO SLIGHTLY SILTY (SP, SP-SM)</b> , some lenses with sand-sized shell fragments and silt, fine to medium grained, brown to dark brown, loose to medium dense  with organic staining from 4 to 8 feet			5			5-2-2 N=4
								2-3-4-4 N=7
								4-3-4-4 N=7
								4-4-4-4 N=8
								3-4-3-4 N=7
3		<b>CEMENTED SAND AND SHELL (COQUINA)</b> , light brown, very dense	13.5	-2+/-				8-50/3"
		<b>Boring Terminated at 15 Feet</b>	15.0	-3.5+/-	15			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:  
Mud rotary  
Continuous sampling upper 10 feet  
Samples at 5 foot intervals thereafter

Abandonment Method:  
Boring backfilled with bentonite chips and surface with cold patch asphalt

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).


See [Supporting Information](#) for explanation of symbols and abbreviations.

00

Notes:

Approximate ground surface elevation is +11.5 feet NGVD  
Began mud rotary at 6 feet

## WATER LEVEL OBSERVATIONS

 at 8.2 feet while drilling

**Terracon**

1225 Omar Rd  
West Palm Beach, FL

Boring Started: 04-03-2020

Drill Rig: CME-45

Project No.: HD205030

Boring Completed: 04-03-2020

Driller: T.R.

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL HD205030 OLYMPUS DRIVE IMP.GPJ TERRACON\_DATATEMPLATE.GDT 4/14/20

## **SUPPORTING INFORMATION**

### **Contents:**










General Notes

Unified Soil Classification System

Note: All attachments are one page unless noted above.

# GENERAL NOTES

## DESCRIPTION OF SYMBOLS AND ABBREVIATIONS

<b>SAMPLING</b>	 Auger Cuttings	 Rock Core	<b>WATER LEVEL</b>	 Water Initially Encountered	<b>FIELD TESTS</b>	(HP) Hand Penetrometer
	 Grab Sample	 No Recovery		 Water Level After a Specified Period of Time		(T) Torvane
	 Shelby Tube	 Standard Penetration Test		 Water Level After a Specified Period of Time		(DCP) Dynamic Cone Penetrometer
						(PID) Photo-Ionization Detector
						(OVA) Organic Vapor Analyzer

Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.

## DESCRIPTIVE SOIL CLASSIFICATION

Soil classification is based on the Unified Soil Classification System. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

## LOCATION AND ELEVATION NOTES

Unless otherwise noted, Latitude and Longitude are approximately determined using a hand-held GPS device. The accuracy of such devices is variable. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

<b>STRENGTH TERMS</b>	<b>RELATIVE DENSITY OF COARSE-GRAINED SOILS</b> (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance		<b>CONSISTENCY OF FINE-GRAINED SOILS</b> (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance		
	<b>Descriptive Term (Density)</b>	<b>Automatic Hammer SPT N-Value (Blows/Ft.)</b>	<b>Descriptive Term (Consistency)</b>	<b>Unconfined Compressive Strength Qu, (psf)</b>	<b>Automatic Hammer SPT N-Value (Blows/Ft.)</b>
	Very Loose	< 3	Very Soft	less than 500	< 1
	Loose	3 - 8	Soft	500 to 1,000	1 - 3
	Medium Dense	8 - 24	Medium Stiff	1,000 to 2,000	3 - 6
	Dense	24 - 40	Stiff	2,000 to 4,000	6 - 12
	Very Dense	> 40	Very Stiff	4,000 to 8,000	12 - 24
			Hard	> 8,000	> 24

## RELATIVE PROPORTIONS OF SAND AND GRAVEL

<b>Descriptive Term(s) of other constituents</b>	<b>Percent of Dry Weight</b>
Trace	< 15
With	15 - 29
Modifier	> 30

## GRAIN SIZE TERMINOLOGY

<b>Major Component of Sample</b>	<b>Particle Size</b>
Boulders	Over 12 in. (300 mm)
Cobbles	12 in. to 3 in. (300mm to 75mm)
Gravel	3 in. to #4 sieve (75mm to 4.75 mm)
Sand	#4 to #200 sieve (4.75mm to 0.075mm)
Silt or Clay	Passing #200 sieve (0.075mm)

## RELATIVE PROPORTIONS OF FINES

<b>Descriptive Term(s) of other constituents</b>	<b>Percent of Dry Weight</b>
Trace	< 5
With	5 - 12
Modifier	> 12

## PLASTICITY DESCRIPTION

<b>Term</b>	<b>Plasticity Index</b>
Non-plastic	0
Low	1 - 10
Medium	11 - 30
High	> 30

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests <sup>A</sup>					Soil Classification	
					Group Symbol	Group Name <sup>B</sup>
Coarse-Grained Soils: More than 50% retained on No. 200 sieve	Gravels: More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels: Less than 5% fines <sup>C</sup>	$Cu \geq 4$ and $1 \leq Cc \leq 3$ <sup>E</sup>	GW	Well-graded gravel <sup>F</sup>	
			$Cu < 4$ and/or $[Cc < 1 \text{ or } Cc > 3.0]$ <sup>E</sup>	GP	Poorly graded gravel <sup>F</sup>	
		Gravels with Fines: More than 12% fines <sup>C</sup>	Fines classify as ML or MH	GM	Silty gravel <sup>F, G, H</sup>	
			Fines classify as CL or CH	GC	Clayey gravel <sup>F, G, H</sup>	
	Sands: 50% or more of coarse fraction passes No. 4 sieve	Clean Sands: Less than 5% fines <sup>D</sup>	$Cu \geq 6$ and $1 \leq Cc \leq 3$ <sup>E</sup>	SW	Well-graded sand <sup>I</sup>	
			$Cu < 6$ and/or $[Cc < 1 \text{ or } Cc > 3.0]$ <sup>E</sup>	SP	Poorly graded sand <sup>I</sup>	
		Sands with Fines: More than 12% fines <sup>D</sup>	Fines classify as ML or MH	SM	Silty sand <sup>G, H, I</sup>	
			Fines classify as CL or CH	SC	Clayey sand <sup>G, H, I</sup>	
Fine-Grained Soils: 50% or more passes the No. 200 sieve	Silts and Clays: Liquid limit less than 50	Inorganic:	$PI > 7$ and plots on or above “A”	CL	Lean clay <sup>K, L, M</sup>	
			$PI < 4$ or plots below “A” line <sup>J</sup>	ML	Silt <sup>K, L, M</sup>	
		Organic:	Liquid limit - oven dried	< 0.75	OL	Organic clay <sup>K, L, M, N</sup>
			Liquid limit - not dried		Organic silt <sup>K, L, M, O</sup>	
	Silts and Clays: Liquid limit 50 or more	Inorganic:	$PI$ plots on or above “A” line	CH	Fat clay <sup>K, L, M</sup>	
			$PI$ plots below “A” line	MH	Elastic Silt <sup>K, L, M</sup>	
		Organic:	Liquid limit - oven dried	< 0.75	OH	Organic clay <sup>K, L, M, P</sup>
			Liquid limit - not dried		Organic silt <sup>K, L, M, Q</sup>	
Highly organic soils:	Primarily organic matter, dark in color, and organic odor			PT	Peat	

<sup>A</sup> Based on the material passing the 3-inch (75-mm) sieve.

<sup>B</sup> If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

<sup>C</sup> Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

<sup>D</sup> Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay.

$$^E Cu = D_{60}/D_{10} \quad Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$$

<sup>F</sup> If soil contains  $\geq 15\%$  sand, add "with sand" to group name.

<sup>G</sup> If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

<sup>H</sup> If fines are organic, add "with organic fines" to group name.

<sup>I</sup> If soil contains  $\geq 15\%$  gravel, add "with gravel" to group name.

<sup>J</sup> If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

<sup>K</sup> If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

<sup>L</sup> If soil contains  $\geq 30\%$  plus No. 200 predominantly sand, add "sandy" to group name.

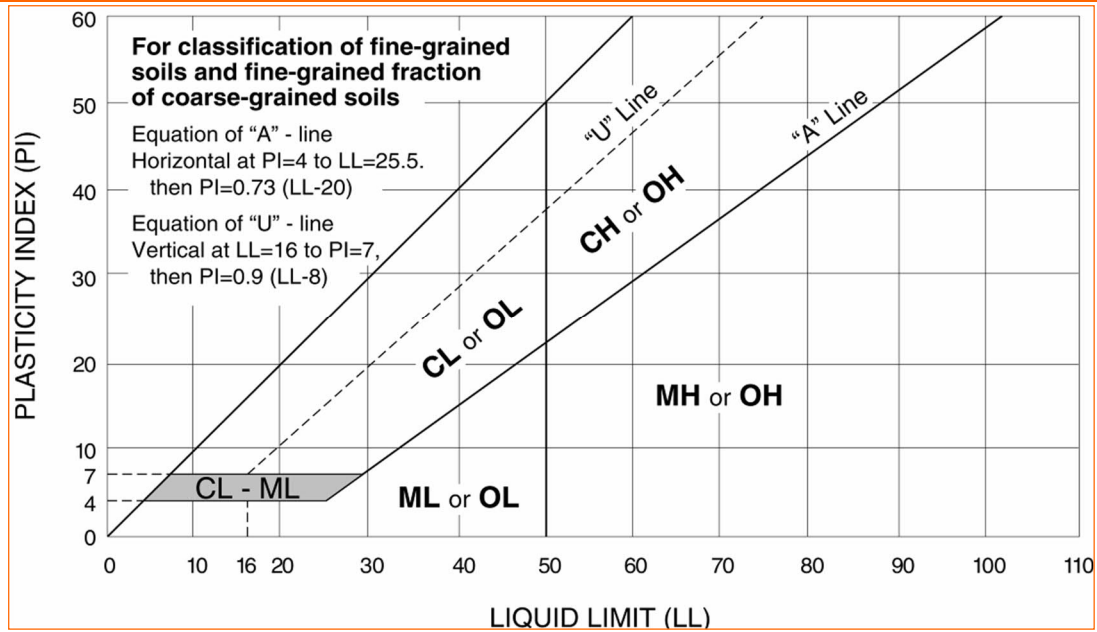
<sup>M</sup> If soil contains  $\geq 30\%$  plus No. 200, predominantly gravel, add "gravelly" to group name.

<sup>N</sup>  $PI \geq 4$  and plots on or above "A" line.

<sup>O</sup>  $PI < 4$  or plots below "A" line.

<sup>P</sup>  $PI$  plots on or above "A" line.

<sup>Q</sup>  $PI$  plots below "A" line.



**UTILITY LOCATES  
(Soft Digs)**

## TEST HOLE INVENTORY

Date: 1/9/2019

Client: Baxter & Woodman

# Project: Olympus Drive Force Main Replacement

Client Contact: Tom English, PSM

Location: Olympus Drive and Ocean Drive (Work Area #1)

Client Ref: 181193.22

City: Juno Beach

BCG No.: 030110-01-001

County: Palm Beach

BCG Crew: FB GG ZV

State Road: A1A

FB / Pg.: Stuart SUE #1 / PG 9

Type of Utility		Material		Marked By		Abbreviations	
BT	- Buried Telephone	AC	- Asbestos Cement	HL	- Hub & Lath	BL	- Baseline
CATV	- Cable Television	CONC	- Concrete	IRC	=- 5/8" IR & Cap	BOC	- Back of Curb
E	- Electrical	CI	- Cast Iron Pipe	ND	- Nail & Disk	CL	- Centerline
FM	- Force Main	CMP	- Corrugated Metal Pipe	N	- Nail	EOP	- Edge of Pavement
FOC	- Fiber Optic Cable	DB	- Duct Bank	X	- "x" in Concrete	NA	- Not Applicable
G	- Gas	DBC	- Direct Buried Cable			NUF	- No Utility Found
PP	- Petroleum Products	DIP	- Ductile Iron Pipe			ROW	- Right-of-Way
RW	- Reclaimed Water	HDPE	- High Density Polyethylene				
SAN	- Sanitary Sewer	PE	- Polyethylene Pipe			T or B	- Top or Bottom
SL	- Street Light	PVC	- Polyvinyl Chloride			E or W	- East or West
STM	- Storm Drainage	RCP	- Concrete Pipe			N or S	- North or South
TC	- Traffic Control	STL	- Steel				
UNK	- Unknown	UNK	- Unknown				
W	- Water Main	VCP	- Verified Clay Pipe				

[illegible]

## TEST HOLE INVENTORY

Date: 1/10/2019

Client: Baxter & Woodman

# Project: Olympus Drive Force Main Replacement

Client Contact: Tom English, PSM

Location: Celestial Way and Ocean Drive (Work Area #2)

Client Ref: 181193.22

City: Juno Beach

BCG No.: 030110-01-001

County: Palm Beach

BCG Crew: FB GG ZV

State Road: A1A

FB / Pg.: Stuart SUE #1 / PG 10

Type of Utility				Material			Marked By			Abbreviations		
BT	- Buried Telephone			AC	- Asbestos Cement		HL	- Hub & Lath		BL	- Baseline	
CATV	- Cable Television			CONC	- Concrete		IRC	=- 5/8” IR & Cap		BOC	- Back of Curb	
E	- Electrical			CI	- Cast Iron Pipe		ND	- Nail & Disk		CL	- Centerline	
FM	- Force Main			CMP	- Corrugated Metal Pipe		N	- Nail		EOP	- Edge of Pavement	
FOC	- Fiber Optic Cable			DB	- Duct Bank		X	- “x” in Concrete		NA	- Not Applicable	
G	- Gas			DBC	- Direct Buried Cable					NUF	- No Utility Found	
PP	- Petroleum Products			DIP	- Ductile Iron Pipe					ROW	- Right-of-Way	
RW	- Reclaimed Water			HDPE	- High Density Polyethylene							
SAN	- Sanitary Sewer			PE	- Polyethylene Pipe					T or B	- Top or Bottom	
SL	- Street Light			PVC	- Polyvinyl Chloride					E or W	- East or West	
STM	- Storm Drainage			RCP	- Concrete Pipe					N or S	- North or South	
TC	- Traffic Control			STL	- Steel							
UNK	- Unknown			UNK	- Unknown							
W	- Water Main			VCP	- Verified Clay Pipe							

Test Hole No.	Picture No.	Marked By	Approximate Station / Location	Offset Distance		Distance Measured From	Type of Utility	Size (inches)	Material	Utility Direction ↑ N	Cross Section View	Depth (feet)
				L (feet)	R (feet)							
7A	7443	HL	Celestial Wy and Ocean Dr W Side of Rd	18.2'	--	EOP	CATV	0.50"	DBC	↑	O	2.30'
7B	7444	HL	Celestial Wy and Ocean Dr W Side of Rd	17.5'	--	EOP	CATV FO	1.5"	PE	↑	O	2.22'
8	7446	HL	Celestial Wy and Ocean Dr W Side of Rd	12.6'	--	EOP	BT	2" (2)	DBC	↑	OO	2.40'
9A	7447	HL	Celestial Wy and Ocean Dr W Side of Rd	10.4'	--	EOP	W	6"	AC	↑	O	2.72'
9B	7448	HL	Celestial Wy and Ocean Dr W Side of Rd	10.4'	--	EOP	BT	0.50" (1) 2" (1)	DBC	↑	o O	2.26'
10	7449	HL	Celestial Wy and Ocean Dr W Side of Rd	2.8'	--	EOP	BT FOC	0.50" (2)	DBC	↑	OO	2.36'
11	7450 7451	HL	Celestial Wy and Ocean Dr W Side of Rd	2.0'	--	EOP	G	2" (1) 4" (1)	PE	↑	oO	2.30'
12	7452	HL	Celestial Wy and Ocean Dr W Side of Rd	1.4'	--	EOP	TC	0.50" (1) 2" (1)	DBC PE	↑	Oo	2.44'

## TEST HOLE INVENTORY

Date: 1/15/2019

Client: Baxter & Woodman

## Project: Olympus Drive Force Main Replacement

Client Contact: Tom English, PSM

Location: Celestial Way and Ocean Drive (Work Area #3)

Client Ref: 181193.22

City: Juno Beach

BCG No.: 030110-01-001

County: Palm Beach

BCG Crew: FB GG ZV

State Road: A1A

FB / Pg.: Stuart SUE #1 / PG 10

Type of Utility		Material		Marked By		Abbreviations	
BT	- Buried Telephone	AC	- Asbestos Cement	HL	- Hub & Lath	BL	- Baseline
CATV	- Cable Television	CONC	- Concrete	IRC	- 5/8" IR & Cap	BOC	- Back of Curb
E	- Electrical	CI	- Cast Iron Pipe	ND	- Nail & Disk	CL	- Centerline
FM	- Force Main	CMP	- Corrugated Metal Pipe	N	- Nail	EOP	- Edge of Pavement
FOC	- Fiber Optic Cable	DB	- Duct Bank	X	- "x" in Concrete	NA	- Not Applicable
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RW	- Reclaimed Water	HDPE	- High Density Polyethylene				
SAN	- Sanitary Sewer	PE	- Polyethylene Pipe			T or B	- Top or Bottom
SL	- Street Light	PVC	- Polyvinyl Chloride			E or W	- East or West
STM	- Storm Drainage	RCP	- Concrete Pipe			N or S	- North or South
TC	- Traffic Control	STL	- Steel				
UNK	- Unknown	UNK	- Unknown				
W	- Water Main	VCP	- Verified Clay Pipe				

[illegible]

## TEST HOLE INVENTORY

Date: 1/17/2019

Client: Baxter & Woodman

# Project: Olympus Drive Force Main Replacement

Client Contact: Tom English, PSM

Location: Celestial Way and Ocean Drive (Work Area #4)

Client Ref: 181193.22

City: Juno Beach

BCG No.: 030110-01-001

County: Palm Beach

BCG Crew: FB GG ZV

State Road: A1A

FB / Pg.: Stuart SUE #1 / PG 10

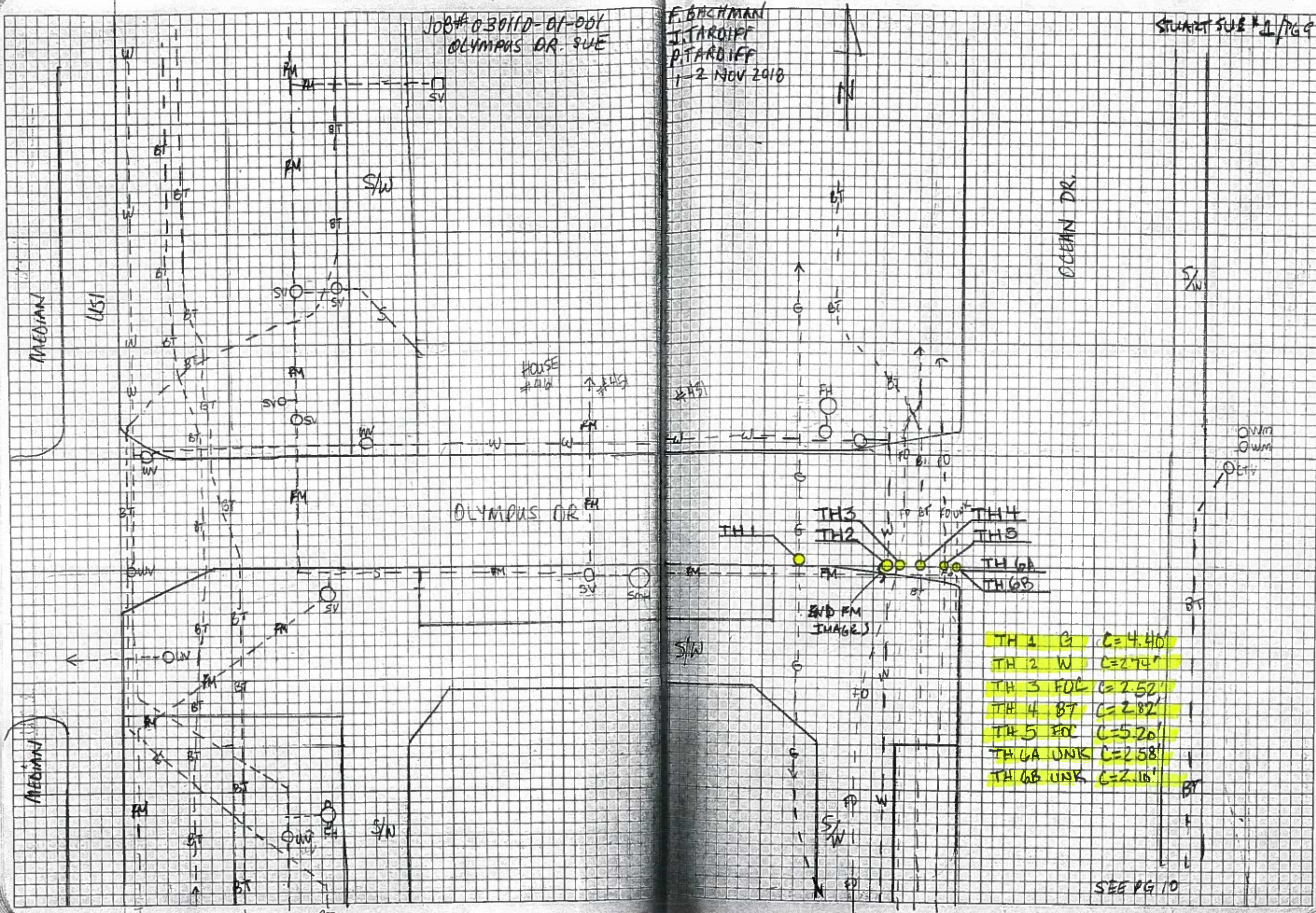
Type of Utility		Material		Marked By		Abbreviations	
BT	- Buried Telephone	AC	- Asbestos Cement	HL	- Hub & Lath	BL	- Baseline
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FOC	- Fiber Optic Cable	DB	- Duct Bank	X	- "x" in Concrete	NA	- Not Applicable
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SAN	- Sanitary Sewer	PE	- Polyethylene Pipe			T or B	- Top or Bottom
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STM	- Storm Drainage	RCP	- Concrete Pipe			N or S	- North or South
TC	- Traffic Control	STL	- Steel				
UNK	- Unknown	UNK	- Unknown				
W	- Water Main	VCP	- Verified Clay Pipe				

[illegible]

JOB# 03011D-01-001  
OLYMPUS DR. SUE

F. BACHMAN  
I. TARDIFF  
P. TARDIFF  
1-2 NOV 2018

START SUB #1/PG 9





## **SECTION 02012**

### **PROTECTING EXISTING UNDERGROUND UTILITIES**

#### **PART 1 - GENERAL**

##### **1.01 DESCRIPTION**

- A. This section includes materials and procedures for protecting existing underground utilities.

##### **1.02 RELATED WORK SPECIFIED ELSEWHERE**

- A. Section 02225 entitled: Trench Excavation and Backfill

#### **PART 2 - MATERIALS**

##### **2.01 REPLACEMENT IN KIND**

- A. Except as indicated below or as specifically authorized by the District's Representative, reconstruct utilities with new material of the same size, type, and quality as that removed.

#### **PART 3 - EXECUTION**

##### **3.01 GENERAL**

- A. Replace in kind street improvements, such as curbs and gutters, barricades, traffic islands, signalization, fences, signs, etc., that are cut, removed, damaged, or otherwise disturbed by the construction.
- B. Where utilities are parallel to or cross the construction but do not conflict with the permanent work to be constructed, follow the procedures given below and as indicated in the drawings. Notify the utility owner 48 hours in advance of the crossing construction and coordinate the construction schedule with the utility owner's requirements. For utility crossings not shown in the drawings, refer to the General Conditions and the instructions of the District's Representative for guidance.
- C. Determine the true location and depth of utilities and service connections which may be affected by or affect the work. Determine the type, material, and condition of these utilities. In order to provide sufficient lead-time to resolve unforeseen conflicts, order materials and take appropriate measures to ensure that there is no delay in work.

- D. **Expose utilities 200 feet in advance of the pipeline construction.**

3.02 PROCEDURES

- A. Protect in Place: Protect utilities in place, unless abandoned, and maintain the utility in service, unless otherwise specified in the drawings or in the specifications.
- B. Cut and Plug Ends: Cut abandoned utility lines and plug the ends. Plug storm drains and sewers with an 8-inch wall of brick and mortar. Cap waterlines with a cast-iron cap or install a 3-foot-long concrete plug. Dispose of the cut pipe as unsuitable material.
- C. Remove and Reconstruct: Where so indicated in the drawings or as required by the District's Representative, remove the utility and, after passage, reconstruct it with new materials. Provide temporary service for the disconnected utility.
- D. In the event an existing utility is damaged by the Contractor which was accurately marked in the field, shown on the drawings, or previously identified through potholing procedures, the Contractor shall be responsible to make the repair if directed by District or pay the Utility Company's current repair rate if Utility Company is required to make the repair.

3.03 COMPACTION

- A. Utilities Protected in Place: Backfill and compact under and around the utility so that no voids are left.
- B. Utilities Reconstructed: Prior to replacement of the utility, backfill the trench and compact to an elevation 1 foot above the top of the ends of the utility. Excavate a cross trench of the proper width for the utility and lay, backfill, and compact.

END OF SECTION

## **SECTION 02100 SITE PREPARATION**

### **PART 1 - GENERAL**

#### **1.01    SECTION INCLUDES:**

- A.     This Section covers clearing, grubbing and stripping along the construction sites, complete as specified herein.
- B.     The Contractor shall clear and grub all of the area within the limits of construction or as required. This shall be limited to the road rights-of-way and easements.

#### **1.02    PAYMENT**

- A.     Unless noted otherwise on the Bid Form, no separate payment will be made for Work covered under this Section. All costs in connection therewith or incidental thereto are to be included in the respective Contract Price for the item or structure to which the Work pertains.

### **PART 2 - PRODUCTS (NOT USED)**

### **PART 3 - EXECUTION**

#### **3.01    PROTECTION**

- A.     Locate, identify and protect existing utilities.
- B.     Protect trees, plant growth that are not required to be removed in the construction.

#### **3.02    CLEARING**

- A.     The surface of the ground, for the area to be cleared and grubbed shall be completely cleared of all timber, brush, stumps, roots, grass, weeds, rubbish and all other objectionable obstructions resting on or protruding through the surface of the ground. However, those trees which are designated by the Engineer shall be preserved as hereinafter specified. Clearing operations shall be conducted so as to prevent damage to existing structures and installations, and to those under construction, and so as to provide for the safety of employees and others. Clearing for structures shall consist of topsoil and vegetation removal.

- B. Unless otherwise shown on the plans, standard clearing and grubbing shall be performed over the limits of the construction, with the exception that, where so directed by the District, desirable trees shall be protected and left standing. No trees shall be removed beyond right-of-way limits or easements where construction will occur until the Contractor receives the District's direction and approval.

### 3.03 GRUBBING

- A. Grubbing shall consist of the complete removal of all stumps, roots, matted roots, brush, timber, logs and any other organic or metallic debris not suitable for foundation purposed or subgrade, resting on, under or protruding through the surface of the ground to a depth of 12 inches below the subgrade. All depressions excavated below the original ground surface for or by the removal of such objects, shall be refilled with suitable materials and compacted to a density as required by these Specifications.

### 3.04 DEMUCKING, BACKFILLING AND COMPACTION REQUIREMENTS

- A. All organic surface soils and muck shall be removed from backfill and under all structures and pipes.

### 3.05 DISPOSAL OF CLEARED, GRUBBED, AND DEMUCKED MATERIAL

- A. The Contractor shall dispose of all material and debris from the clearing and grubbing operation by hauling such material and debris away to an approved disposal site. Disposal by burial will not be permitted. Disposal by burning may be allowed if permitted by local regulation and is subject to approval of the District. The Contractor shall be responsible for obtaining all required approvals and permits for any burning operation and shall include any costs for same in the various contract prices. Burning shall be allowed only at location where adjacent trees and shrubs will not be harmed. The cost of disposal (including hauling) of cleared and grubbed material and debris shall be considered a subsidiary obligation of the Contractor, the cost of which shall be included in the contract prices.

### 3.06 PRESERVATION OF TREES, SHRUBS, AND OTHER PLANT MATERIAL

- A. All plant materials (trees, shrubbery, and plants) beyond the easement and right-of-way limits shall be saved and protected from damage resulting from the work. No filling, excavating, trenching, or stockpiling of materials will be permitted within the drip lines of these plant materials.

### 3.07 PRESERVATION OF DEVELOPED PRIVATE PROPERTY

- A. The Contractor shall exercise extreme care to avoid unnecessary disturbance of developed private property as applicable. Trees, shrubbery, gardens, lawn and other landscaping, which in the opinion of the Engineer must be removed, shall be replaced and replanted to restore the construction easement to the condition existing prior to construction.
- B. All soil preparation procedures and replanting operations shall be under the supervision of a nurseryman experienced in such operations.
- C. Improvements to the land such as fences, walls, outbuildings, etc., which of necessity must be removed shall be replaced with equal quality materials and workmanship. All costs to be included in the contract prices.
- D. The Contractor shall clean up the construction site across developed private property directly after construction is completed upon approval of the Engineer.

### 3.08 PRESERVATION OF PUBLIC PROPERTY

- A. The appropriate paragraphs of Articles 3.05 and 3.06 of these specifications shall apply to the preservation and restoration of all damaged areas of public lands, parks, rights-of-way, easements, etc.

END OF SECTION

## **SECTION 02210 SITE GRADING**

### **PART 1 - GENERAL**

#### **1.01 WORK INCLUDED**

- A. Remove topsoil and stockpile on site for later use.
- B. Excavate sub-soil and reform to grades, contours and levels.
- C. Excavate or fill for roadways, walks, curbs, gutters, parking areas, landscaped areas and as shown on the Drawings.

#### **1.02 RELATED WORK**

- A. Section 02100 entitled: Site Preparation.
- B. Section 02225 entitled: Trench Excavation and Backfill.

#### **1.03 EXISTING CONDITIONS**

- A. Known underground, surface and aerial utility lines, and buried objects are based on best available data and indicated on the Drawings. Contractor shall verify all locations.

#### **1.04 PROTECTION**

- A. Protect trees, shrubs and lawns and other features remaining as part of final landscaping.
- B. Protect bench marks, and existing structures, fences, roads, sidewalks, paving and curbs against damage from equipment and vehicular traffic.
- C. Protect aerial, surface, or underground utility lines or appurtenance which are to remain.
- D. Repair any damage, at no cost to District.

### **PART 2 - PRODUCTS**

## 2.01 MATERIALS

- A. Excavated fill material: Soil free from roots, rocks larger than 3-inches, and building debris.
- B. Additional fill material: Shall be approved by the Engineer.

## **PART 3 - EXECUTION**

### 3.01 PREPARATION

- A. Establish and identify required lines, levels, contours and datum.
- B. Maintain bench marks, monuments, and other reference points. Re-establish if disturbed or destroyed, at no cost to District.
- C. Before start of grading, establish the location and extent of utilities in the work areas. Notify utilities to remove and relocate lines which are in the way of construction.
- D. Maintain, protect, reroute or extend as required existing utilities to remain which pass through the work area.

### 3.02 REMOVAL OF TOPSOIL

- A. Topsoil of horticultural value shall be stripped from areas of construction under this contract and stockpiled in area designated by Engineer. Said material shall be stockpiled separately from fill material.
- B. Do not permit topsoil to be mixed with subsoil
- C. Do not strip topsoil when wet.
- D. Do not drive heavy equipment over stockpiled topsoil.

### 3.03 ROUGH GRADING

- A. Rough grade site to required levels, profiles, contours and elevations ready for finish grading and surface treatment. Maintain the following:
  - 1. Sodded areas - 4 1/2-inches below finished grade elevation.
  - 2. Seeded areas - 6-inches below finished grade.
  - 3. Paved areas - 18-inches below finished grade elevations.

4. Shrub beds - 24-inches below finished grade elevations.
  5. Flower beds - 18-inches below finished grade elevations.
  6. Concrete sidewalks - 8-inches below finished grade elevations.
- B. Prior to placing fill material over undisturbed subsoil, scarify surface to depth of 6-inches.

3.04 SURPLUS MATERIAL

- A. Remove surplus materials from site.
- B. Dispose of surplus material at no cost to District.

END OF SECTION

## **SECTION 02224**

### **PIPE EMBEDMENT MATERIALS**

#### **PART 1 - GENERAL**

##### **1.01    GENERAL**

- A.     Pipe embedment materials, as specified herein, shall be installed as shown on the details, and/or as specified.

#### **PART 2 - PRODUCTS**

##### **2.01    CLASS 1 MATERIALS (BEDDING ROCK)**

- A.     The material shall be  $\frac{3}{4}$  inch to  $\frac{1}{4}$  inch graded material such as coral, crushed stone, crushed shells or bedding rock, well graded in size, 100% passing a 1-inch sieve opening, and as specified in ASTM 57. The bedding rock shall consist of clean hard and durable particles or fragments, free from dirt, vegetable or other objectionable matter. Samples and gradation analysis shall be approved by the Design Engineer before any material is delivered to the job site.

##### **2.02    CLASS 2 MATERIAL**

- A.     The material shall be well graded, clean course sand and gravels with a maximum particle size of  $\frac{3}{4}$  inch, containing a small percentage of fines and free of organic and other deleterious matter.

##### **2.03    CLASS 3 MATERIAL (SELECT BACKFILL)**

- A.     The material shall be fine sand and clayey gravels, including fine sands, sand-clay mixtures and gravel-clay mixtures, free of organic and other deleterious matter.

#### **PART 3 - EXECUTION**

##### **3.01    PLACING AND COMPACTING**

- A.     The material shall be spread in layers of uniform thickness and installed to the densities and where shown on the Standard Details or as required.
- B.     After each pipe has been brought to grade, aligned and placed in final position, the Embedment material shall be deposited and densified under the pipe haunches

on each side of the pipe. Following this operation, the remainder of the embedment material shall be installed as shown on the Standard Details and as specified herein.

END OF SECTION

## **SECTION 02225 TRENCH EXCAVATION AND BACKFILL**

### **PART 1 - GENERAL**

#### **1.01 WORK INCLUDED**

- A. This section covers the work necessary for the trench excavation and backfill, complete.
- B. Trenches in existing paved areas shall be backfilled to the level of the bottom of the base course. Installation of base course and pavement shall be as specified in Section 02575 Surface Restoration.
- C. Concrete backfill will be used where, in the opinion of the Engineer, there is insufficient cover over the pipe for proper cover and protection.

#### **1.02 TRENCH EXCAVATION**

- A. Excavation is unclassified. Complete all excavation regardless of the type of materials encountered. The Contractor shall make Contractor's own estimate of the kind and extent of the various materials which will be encountered in the excavation.

### **PART 2 - PRODUCTS**

#### **2.01 TRENCH SAFETY SYSTEM**

- A. The Contractor shall follow the provisions of the "Florida Trench Safety Act," (CS/HB 3183), which incorporates OSHA Standards 29 CFR's 1926.650, Subpart P as the state's trench safety standards. Trench excavation 5' or deeper shall have an adequate safety system consisting of sheeting and shoring, suitable trench box, or other suitable system meeting the requirements of the Act.
- B. The Contractor shall be solely responsible for making all excavations in a safe manner. Provide appropriate measures to retain side slopes to ensure that persons working in or near the excavation are protected.

#### **2.02 FOUNDATION STABILIZATION**

- A. Foundation stabilization shall conform to No. 57 coarse aggregate.

## 2.03 TRENCH BACKFILL

- A. Select Granular Backfill for Pipe Base, and Pipe Zone in Dewatered or Dry Trench: Excavated trench material free from dirt, clay balls, muck, roots, and organic matter and containing less than 10 percent by weight passing the No. 200 sieve. Trench excavated materials may require processing to obtain the required gradation and/or to obtain the moisture contents necessary to meet the compaction requirements. Provide imported material of equivalent quality, if required to accomplish the work.
- B. Granular Backfill Above the Pipe Zone: Excavated trench material free from dirt, clay balls, muck, and organic matter. The material, shall have a maximum particle size of 3" and less than 20 percent passing the No. 200 sieve. Trench excavated materials may require processing to obtain the required gradation and/or to obtain the moisture contents necessary to meet the compaction requirements. Provide imported material of equivalent quality, if required to accomplish the work.
- C. Imported Granular Pipe Bedding and Pipe Zone for Wet Laying (Trench) Condition as Approved by Engineer: Pipe bedding and pipe zone material are identical and shall be drain field lime rock, graded crushed lime rock with a maximum particle size of 1/2", with no more than 5 percent passing the No. 200 sieve, or similar accepted material and shall be imported if necessary at the Contractor's own expense. Lime rock screenings or material resulting from trench excavation, except for lime rock which has been crushed and graded to size as specified, will not be accepted for pipe bedding material.
- D. Imported Granular Pipe Bedding and Pipe Zone Material Acceptance: Imported pipe bedding and pipe zone materials specified in this section are subject to the following requirements:
  - 1. All tests necessary for the Contractor to locate an acceptable source of imported material shall be made by the Contractor. Certification that the material conforms to the Specification requirements along with copies of the test results from a qualified commercial testing laboratory shall be submitted to the Engineer for acceptance at least 10 days before the material is required for use. All material samples shall be furnished to the laboratory by the Contractor at the Contractor's sole expense. Samples shall be representative and be clearly marked to show the source of the material and the intended use on the project. Sampling of the material source shall be done by the Contractor in accordance with ASTM D75. Notify the Engineer at least 24 hours prior to sampling. The Engineer may, at the Engineer's option, observe the sampling procedures. Tentative acceptance of the material source shall be based on an inspection of the source by the Engineer and/or certified test results submitted by the Contractor to the Engineer, at the Engineer's discretion. No imported materials shall be delivered to the site until the proposed source and materials' tests have been tentatively accepted in writing by the Engineer. Final acceptance will be based on tests made on samples of

material taken from the completed and compacted course by the laboratory. The completed course is defined as a course or layer that is ready for the next phase of construction.

- E. Gradation tests by the Contractor shall be made on samples taken at the place of production prior to shipment. Samples of the finished product for gradation testing shall be taken from each 1,500 tons of prepared materials or more often as determined by the Engineer, if variation in gradation is occurring, or if the material appears to depart from the Specifications. Test results shall be forwarded to the Engineer within 48 hours after sampling.
- F. If tests conducted by the Contractor or the Engineer indicate that the material does not meet Specification requirements, material placement will be terminated until corrective measures are taken. Material which does not conform to the Specification requirements and is placed in the work shall be removed and replaced at the Contractor's sole expense. Sampling and testing performed by the Contractor shall be done at the Contractor's sole expense.
- G. Concrete for Trench Backfill: Conform to ASTM C94, Alternate 3. Proportion to obtain a 28-day compressive strength of 2,500 pounds per square inch. Use a minimum of five sacks of cement per cubic yard of concrete.

#### 2.04 SELECTED FILL MATERIAL FOR MINIMUM COVER REQUIREMENTS

- A. Where shown or directed, waste trench material shall be used to provide minimum cover, provided no piece of material is larger than 3".

#### 2.05 IMPORTED TOPSOIL

- A. Imported topsoil shall be suitable sandy loam from an approved source, which possesses friability and a high degree of fertility. It shall be free of clods, roots, gravel, and other inert material. It shall be free of quack grass, horsetail, and other noxious vegetation and seed. Should such regenerative material be present in the soil, the Contractor shall remove, at his expense, all such growth, both surface and root, which may appear in the imported topsoil within 1 year following acceptance of the job in a manner satisfactory to the District.

#### 2.06 COMPACTION EQUIPMENT

- A. Compaction equipment shall be of suitable type and adequate to obtain the amount of compaction specified. Compaction equipment shall be operated in strict accordance with the manufacturer's instructions and recommendations and shall be maintained in such condition that it will deliver the manufacturer's rated compactive effort.

## 2.07 DRAIN GRAVEL

- A. Drain gravel shall be No. 57 stone size as specified in Section 901 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction.

## **PART 3 - EXECUTION**

### 3.01 TRENCH SAFETY SYSTEM

- A. Install in trench excavations 5' or deeper to meet requirements of the Florida Trench Safety Act.

### 3.02 PREPARATION OF RIGHT-OF-WAY

- A. Where clearing or partial clearing of the right-of-way is necessary, complete prior to the start of trenching. Cut trees and brush as near to the surface of the ground as practicable, remove all stumps, and pile for disposal. Do not permit excavated materials to cover brush or trees prior to disposal.
- B. Do not remove existing trees or tree limbs whether on public or private property, unless they are within 4' of the pipe centerline, without permission from the Engineer.

### 3.03 DISPOSAL OF CLEARED MATERIAL

- A. The Contractor shall bear all costs of disposing of trees, stumps, brush, roots, limbs, and other waste materials from the clearing operation. Material shall be disposed in such a manner as to meet all requirements of state, county, and local regulations regarding health, safety, and public welfare.
- B. In no case shall any material be left on the project, shoved onto abutting private properties, or be buried in embankments or trenches on the project.

### 3.04 OBSTRUCTIONS

- A. This item refers to obstructions which may be removed and do not require replacement. Remove obstructions within the trench area or adjacent thereto such as tree roots, stumps, abandoned piling, buildings and concrete structures, logs, and debris of all types without additional compensation. The Engineer may, if requested, make changes in the trench alignment to avoid major obstructions, if such alignment changes can be made within the easement or right-of-way without adversely affecting the intended function of the facility. The Contractor shall pay all additional costs or credit the District for any savings resulting from such alignment changes.

- B. Dispose of obstructions removed from the excavation in accordance with Paragraph DISPOSAL OF CLEARED MATERIAL.

### 3.05 PAVEMENT, CURB, AND SIDEWALK REMOVAL

- A. Where adjoining pavement is to remain, cut all bituminous and concrete pavements, regardless of the thickness, and all curbs and sidewalks, prior to excavation of the trenches with an approved pavement saw, hydrohammer, or approved pavement cutter. Pavement and concrete materials removed shall be hauled from the site and not used for trench backfill.
- B. The entire roadway, including stabilized subgrade, base and paving, shall be removed and replaced in areas where gravity sewers are installed. The Contractor will install 12 inches of base and 2 inches of pavement for all areas so cut.

### 3.06 TRENCH WIDTH

- A. Minimum width of unsheeted trenches in which pipe is to be laid shall be 18" greater than the inside of the pipe, or as approved. Sheet piling requirements shall be independent of trench widths.
- B. The maximum width at the top of the landside trench will be the pipe outside diameter plus 24", except where excess width of excavation would cause damage to adjacent pavement, structures or property.
- C. Confine trench widths to dedicated rights-of-way or construction easements, unless special written agreements have been made with the affected property owner.

### 3.07 GRADE

- A. Excavate the trench to the lines and grades shown or as established by the Engineer with proper allowance for pipe thickness and for pipe base or special bedding when required. If the trench is excavated below the required grade, correct any part of the trench excavated below the grade at no additional cost to the District, with gravel of the type specified for pipe base. Place the gravel over the full width of trench in compacted layers not exceeding 6" deep to the established grade with allowance for the pipe base or special bedding.

### 3.08 ADDITIONAL EXCAVATION

- A. When unsuitable material is encountered in the excavation, the Contractor shall notify the Engineer for his review. Unsuitable materials existing below the Contract bottom limits for excavation shall be removed as directed in writing by the Engineer.

Such Additional Excavation shall be conducted at a time when the Engineer is present and shall not exceed the vertical and lateral limits as prescribed by the Engineer. Such determination will only be made after the trench has been dewatered.

- B. The voids left by the removal of unsuitable material shall be filled with material consisting of either: (1) select granular backfill; (2) imported granular pipe bedding material; (3) concrete for backfill; whichever is ordered by the Engineer. Select granular backfill or pipe bedding shall be compacted to 100 % density as specified under compaction requirements.

### 3.09 SHORING, SHEETING, AND BRACING OF TRENCHES

- A. Sheet and brace the trench when necessary to prevent caving during excavation in unstable material, or to protect adjacent structures, property, workers, and the public. Increase trench widths accordingly by the thickness of the sheeting. Maintain sheeting in place until the pipe has been placed and backfilled at the pipe zone. Shoring and sheeting shall be removed, as the backfilling is done, in a manner that will damage the pipe or permit voids in the backfill. All sheeting, shoring, and bracing of trenches shall conform to the safety requirements of the federal, state or local public agency having jurisdiction. The most stringent of these requirements shall apply.

### 3.10 LOCATION OF EXCAVATED MATERIALS

- A. During trench excavation, place the excavated material only within the construction easement, right-of-way, permitted, or approved working area. Do not obstruct any private or public-traveled roadways or streets. Conform to all federal, state and local codes governing the safe loading of all trenches with excavated material. For subaqueous installations, place the excavated material as shown on the Drawings.

### 3.11 REMOVAL OF WATER

- A. At all times, except as approved by the Engineer, provide and maintain ample means and devices to promptly remove and dispose of all water entering the trench or effluent junction box excavation during the time the trench is being prepared for the pipe laying, during the laying of the pipe, and until the backfill at the pipe zone has been completed. These provisions shall apply during the noon hour as well as overnight.
- B. The Contractor shall, where applicable, backfill and compact all voids left by dewatering well points located within 3 feet of any paved areas. Compact to 95 percent of maximum dry density per ASTM D-1557, AASHTO T-180.
- C. Dispose of the water in a manner to prevent damage to adjacent property. Drainage of trench water through the pipeline under construction is prohibited.

### 3.12 FOUNDATION STABILIZATION

- A. When, in the opinion of the Engineer, after dewatering, the existing material in the bottom of the trench is unsuitable for supporting the pipe, excavate below the flow line of the pipe, as directed by the Engineer. Backfill the trench to subgrade of pipe base with FOUNDATION STABILIZATION material specified hereinbefore. Place the foundation stabilization material over the full width of the trench and compact in layers not exceeding 6" deep to the required grade.

### 3.13 PIPE BASE AND PIPE ZONE BACKFILL

- A. Pipe base and pipe zone backfill are included in specification for pipe.

### 3.14 TRENCH BACKFILL ABOVE PIPE ZONE

- A. When backfill is placed mechanically, push the backfill material onto the slope of the backfill previously placed and allow to slide down into the trench. Do not push backfill into the trench in such a way as to permit free fall of the material until at least 3' of cover is provided over the top of the pipe. Under no circumstances allow sharp, heavy pieces of material to drop directly onto the pipe or the tamped material around the pipe. Do not use backfill material of consolidated masses larger than 1/2 cubic foot. Place in 6" maximum lifts and compact each layer to 100% of maximum dry density per AASHTO T-99.

### 3.15 MAINTENANCE OF TRENCH BACKFILL

- A. Maintain the backfilled trench surface between any two manholes until the following operations have been completed and approved by the Engineer.
  - 1. Manholes and manhole castings installed.
  - 2. Compaction testing.
  - 3. Cleanup and restoration of all physical features.
  - 4. Utilities restored to their original condition or better.
  - 5. And, in general, all work required between the two manholes accomplished with the exception of repaving.
- B. This maintenance shall include, but not be limited to, stabilized subgrade, limestone base, prime coat and sanded in paved areas to keep the surface of backfilled trenches reasonably smooth, free from ruts and potholes, and suitable for normal traffic flow. No more than 1500 linear feet of trench shall be opened without such maintenance being performed, except as provide for elsewhere.

- C. No additional payment will be made for the maintenance of the trench backfill prior to completion of the work outlined above.
- D. No pavement replacement shall be undertaken until all items outlined above have been completed and approved by the Engineer.

### 3.16 DISPOSAL OF EXCESS EXCAVATED MATERIAL

- A. Dispose of all excess excavated materials. Make arrangements for the disposal and bear all costs incidental to such disposal. Comply with District's Special Conditions.

### 3.17 DRAINAGE CULVERTS

- A. Replace in kind drainage culverts which are removed and are at or near right angles to the pipe centerline. If the pipe is damaged during removal, dispose of it and furnish and install at no additional cost to the District. Pay Items for drainage work are only as shown on the drawings, and listed in the Bid Form.
- B. All culverts with centerlines over 4' from the pipe centerline shall be protected from damage or restored to equivalent condition, if damaged, at no additional cost to the District.
- C. Replace culverts to the lines and grades established by the District. Do not replace culverts until the proposed pipeline is installed and the backfill of the trench as been completed to the subgrade of the culvert.

### 3.18 BLASTING

- A. No blasting of any kind will be permitted.

### 3.19 PIPE COVER

- A. In locations where insufficient pipe cover exists, place SELECTED FILL material as specified hereinbefore over the pipe as shown or directed and to provide a minimum cover of 3'. No additional payment will be made for furnishing additional pipe cover. Otherwise, concrete backfill shall be provided.

### 3.20 SETTLEMENT

- A. Any settlement noted in backfill, fill, or in structures built over the backfill or fill within the 1-year warranty period in accordance with the General Conditions will be considered to be caused by improper compaction methods and shall be corrected at no cost to the District. Structures damaged by settlement shall be restored to their original condition by the Contractor at no cost to the District.

### 3.21 TESTING

- A. The District shall have an independent testing laboratory determine in-place density and moisture content by any one or combination of the following methods; ASTM D2822, D1556, D2216, D3017, or other methods as selected by the Engineer. Cooperate with the testing work by leveling small test areas designated by the Engineer. The District will authorize the cost of one (1) series of tests only, on the area or item being evaluated. The Contractor shall pay for costs of additional testing as required due to improper performance of Work.
- B. The frequency and location of testing shall be one test per lift for every 300' or portion thereof of pressure pipe.

### 3.22 SPECIAL PROVISIONS

- A. **The Contractor shall deliver all excess backfill material to District's designated site, which is the LRD Wastewater Treatment Plant on Central Boulevard, in the Town of Jupiter, Florida.** Broken pavement of any kind will be properly disposed of by the Contractor at his own expense elsewhere.

END OF SECTION

## **SECTION 02226**

### **GRAVEL AND CRUSHED ROCK BASE FOR STRUCTURES**

#### **PART 1 - GENERAL**

##### **1.01 DESCRIPTION**

- A. This includes materials, testing, and installation of gravel and crushed rock bases for structures such as manholes and vaults.

##### **1.02 SUBMITTALS**

- A. Submit six copies of a report from a testing laboratory verifying that material contains less than 1% asbestos by weight or volume and conforms to the specified gradations or characteristics.

##### **1.03 TESTING FOR COMPACTION**

- A. The Contractor will test for compaction or relative density as described in Section 02225 Trench Excavation and Backfill.

#### **PART 2 - MATERIALS**

##### **2.01 CRUSHED ROCK AND GRAVEL**

- A. Crushed rock base shall be No. 57 stone conforming to Section 901, "Coarse Aggregate" of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction.

#### **PART 3 - EXECUTION**

##### **3.01 PLACEMENT OF CRUSHED ROCK OR GRAVEL**

- A. Place crushed rock or gravel base beneath structures where shown in the drawings, 6 inches thick unless otherwise indicated. Excavate below the required grade for the bottom of the structure and refill with crushed rock or gravel as specified above. The rock base shall extend a minimum of 12 inches beyond the structure base, floor slab, or footing.
- B. Compact base as follows unless otherwise indicated:
  - 1. Lower Lift: 95% relative density.
  - 2. Upper Lifts: 95% relative density.

C. Place base material in maximum lifts of 6 inches.

END OF SECTION

## **SECTION 02507 PRIME AND TACK COATS**

### **PART 1 - GENERAL**

#### **1.01 WORK INCLUDED**

- A. The work includes the application of bituminous material on previously prepared bases.

### **PART 2 - PRODUCTS**

#### **2.01 MATERIALS**

- A. Prime Coat: The material used for the prime coat shall be one of the following:
  - 1. Cutback asphalt, Grade RC-70 or RC-250 shall meet the requirements of AASHTO Specifications M81 except that the penetration range shall be from 60-120.
  - 2. Emulsified Asphalt SS-1 or CSS-1, SS-1H diluted in equal proportions with water and shall meet the requirements of AASHTO Specification M208.
  - 3. Emulsified Asphalt, grades AE-60, AE-90, AE-150 or AE-200 shall meet the requirements of AASHTO Specification M140.
- B. Tack Coat: The material used for the tack coat shall be one of the following:
  - 1. Emulsified Asphalt Grades SS-1, CSS-1 or AE-60, AE-90, AE-150 or 200 shall meet the requirements of AASHTO M140 or M200.
  - 2. Emulsified Asphalt, grade RS-2 or CRS-2 shall meet the requirements of AASHTO Specification M208.

#### **2.02 EQUIPMENT**

- A. The pressure distributor used for placing the tack or prime coat shall be equipped with pneumatic tires having sufficient width of rubber in contact with the road surface to avoid breaking the bond of or forming a rut in the surface. The distance between the centers of openings of the outside nozzles of the spray bar shall be equal to the width of the application required, within an allowable variation of 2-inches. The outside nozzle at each end of the spray bar shall have an area of opening of not less than 25 percent, nor more than 75 percent in excess of the other nozzles which shall have uniform openings. When the application

covers less than the full width, the normal opening of the end nozzle at the junction line may remain the same as those of the interior nozzle.

## **PART 3 - EXECUTION**

### **3.01 PREPARATION**

- A. Before applying any bituminous material, all loose material, dust, dirt, and foreign material, which might prevent proper bonding with the existing surface, shall be removed. Particular care shall be taken to clean the outer edges of the strip to be treated in order to insure that the prime or tack coat will adhere.
- B. When the prime or tack coat is applied adjacent to curb and gutter, or any other concrete surface (except where they are to be covered with a bituminous wearing course) such concrete surfaces shall be protected by heavy paper or other protective material while the prime or tack coat is being applied. Any bituminous material deposited on such air temperature is less than 50°F in the shade, or when the weather conditions or the condition of the existing surface is unsuitable. In no case shall bituminous material be applied while rain is falling or when there is water on the surface to be covered.

### **3.02 APPLICATION OF PRIME COAT**

- A. After the base has been finished, the full width of surface shall be swept with a power broom supplemented with hand coat. Care shall be taken to remove loose dust, dirt and objectionable matter. If deemed necessary, the base shall be lightly sprinkled with water immediately in advance of the prime coat.
- B. The temperature of the prime material shall be such as to insure uniform distribution. The material shall be applied with a pressure distributor as specified above. The amount to be applied shall be sufficient to coat the surface thoroughly and uniformly without any excess to form pools or to flow off the base. For limerock base, the rate of application shall not be less than 0.10 gallons per square yard.
- C. If the roadway is to be opened for use following the application of the prime material, a light uniform application of clean sand shall be applied and rolled. The sand shall be non-plastic, shall be free from silt and rock particles and shall not contain any sticks, vegetation, grass, roots or organic matter. After the sand covering has been applied, the surface may be opened to traffic.

### **3.03 APPLICATION OF TACK COAT**

- A. Tack coat shall not be applied until the surface has been cleaned and is free from sand, dust or other objectionable material.

- B. The tack coat shall be heated to a suitable consistency and applied in a thin uniform layer at the rate of between 0.02 gallons and 0.08 gallons per square yard and applied as specified above.
- C. The tack coat shall be applied sufficiently in advance of the laying of the asphaltic concrete to permit drying, but shall not be applied so far in advance or over such an area as to lose its adhesiveness as a result of being covered with dust or other foreign material. Suitable precautions shall be taken by the Contractor to protect the surface while the tack coat is drying and until the wearing surface is applied.
- D. Tack coat in quantities prescribed by 3.03 B above shall be applied prior to the application of any asphaltic concrete leveling course.

END OF SECTION

## **SECTION 02521 FLOWABLE FILL**

### **PART 1 - GENERAL**

#### **1.01 SCOPE OF WORK**

- A. This Section specifies the requirements for flowable fill used for trenches, support for pipe structures, culverts, utility cuts and other works where cavities exist and where firm support is needed for pavements and structural elements. Flowable fill may also be used to fill wastewater pipes that need to be abandoned in place and at other locations approved by the Engineer.

#### **1.02 REFERENCE SPECIFICATIONS**

- A. Section 01010 entitled: Summary of Work
- B. Section 01090 entitled: Reference Standards
- C. Section 01300 entitled: Submittals
- D. Section 02225 entitled: Trench Excavation and Backfill

### **PART 2 - PRODUCTS**

#### **2.01 MATERIALS**

- A. The materials used shall conform with the requirements specified in Division III of the F.D.O.T. Standard Specification for Road and Bridge Construction, latest edition, and herein. Specific reference are as follows:
  - 1. Portland Cement (Type I, II or III) Section 921
  - 2. Fly Ash, Slag and other Pozzolanic materials for Portland Cement Concrete Section 929
  - 3. Fine Aggregate (Sand)\* Section 902
  - 4. Water Section 923

\*Any clean sand with 100% passing 3/8" sieve and not more than 10% passing with 200 mesh may be used.

## 2.02 MIX PROPORTIONS

- A. The Contractor shall be responsible for producing a flowable mixture using these guidelines and by adjusting his mixture design as called for by circumstances or as may be directed by the Engineer.
- B. Flowable fill material shall be proportioned to produce a 28-day compressive strength of a minimum of 100 psi for flowable fill for piping structures.
- C. General mix quantities are as follows:

<u>Components</u>	<u>Pounds per Cubic Yard</u>
Cement	50-100*
Fly Ash or Granulated Blast Furnace Slag	0-600
Fine Sand	2,750 (Adjust to yield one cubic yard of flowable fill)
Water	500 (Max.)

\*The percentage of cement may be increased above these limits only when early strength is required and future removal is unlikely.

- D. Weights for fine aggregates and water shall be adjusted for removability, pumpability and flowability. If required, strength test data shall be provided prior to batching.
- E. If required by the Engineer, the flowability can be measured by afflux time determined in accordance with ASTM C 939 and shall be 30 seconds +/- 5 seconds as measured on mortar passing the No. 4 sieve. The equipment required to perform this test shall be provided by the Contractor.

## PART 3 - EXECUTION

### 3.01 PRODUCTION AND PLACING

- A. Flowable fill shall be produced and delivered using ready mix concrete trucks and placed easily by chute in a flowable condition directly into the cavity to be filled or into a pump for final placement.
- B. The flowable fill shall be placed to the designated fill line without vibration or other means of compaction. Placement shall be avoided during inclement weather, e.g. rain. The Contractor shall take all necessary precautions to prevent any damages caused by hydraulic pressure of the fill during placement prior to hardening. Also, necessary means to confine the material within the designated space shall be provided by the Contractor.

### 3.02 ACCEPTANCE

- A. The flowable shall be proportioned and placed as specified herein. In general, the strength desired is the maximum hardness that can be excavated at a later date using conventional excavation equipment. No curing protection is required.
- B. The fill shall be left undisturbed until material obtains sufficient strength. Sufficient strength is 250 psi penetration resistance as measured using a hand held penetrometer. The penetrometer shall be provided by the Contractor.
- C. All flowable fill areas subject to traffic loads must have a durable riding surface.
- D. An approved type of accelerator may be approved for the placement of “Flowable Fill” in traffic areas when submitted to the Engineer. Depending on the condition of the cavity, paving can begin from 8-24 hours after placement.

END OF SECTION

## SECTION 02551

### SUPERPAVE HOT MIX ASPHALT

#### PART 1 -- GENERAL

##### 1.01 DESCRIPTION

- A. Construct a Superpave Hot Mix Asphalt pavement using the type of mixture specified in the Contract, Traffic Level A. Superpave mixes are identified as Type SP-9.5, Type SP-12.5 or Type SP-19.0.
- B. All test methods designated as FM refer to the FDOT Florida Sampling and Testing Methods. Any incorrect references to FDOT specifications, test methods, or standards should be brought to the attention of the Engineer for clarification.
- C. FHWA: Federal Highway Administration
- D. Meet the requirements of Section 320 for plant and equipment, and meet the general construction requirements of Section 330.
- E. Layer Thicknesses: Use only fine graded Superpave mixes. Fine graded mixes are defined as having a gradation that passes above the restricted zone when plotted on an FHWA 0.45 Power Gradation Chart.
  - 1. Fine Mixes: The allowable structural layer thicknesses for fine Type SP Hot Mix Asphalt mixtures are as follows:

Type SP-9.5.....	3/4 – 1 1/4 inches
Type SP-12.5.....	1 1/4 – 2 1/2 inches
Type SP-19.0.....	2- 2 3/4 inches

    - a. In addition to the minimum and maximum thickness requirements, the following restrictions are placed on fine mixes when used as a structural course:

Type SP-9.5 - Limited to the final (top) structural layer, one layer only.
Type SP-12.5 - May not be used in the first layer of courses over 3 1/2 inches thick, nor in the first layer of courses over 2 3/4 inches thick on limited access facilities.
Type SP-19.0 - May not be used in the final (top) structural layer.
  - 2. Additional Requirements: The following requirements also apply to fine Type SP Hot Mix Asphalt mixtures:
    - a. A minimum 1 1/2 inch initial lift is required over an Asphalt Rubber Membrane Interlayer (ARMI).

- b. When construction includes the paving of adjacent shoulders ( $\leq 5$  feet wide), the layer thickness for the upper pavement layer and shoulder shall be the same and paved in a single pass, unless shown differently in the plans.
- c. All overbuild layers shall be Type SP Hot Mix Asphalt designed at the traffic level as stated in the Contract. Use the minimum and maximum layer thicknesses as specified in 1.01.D.1 unless shown differently in the plans. On variable thickness overbuild layers, the minimum allowable thickness may be reduced by 1/2 inch, and the maximum allowable thickness may be increased 1/2 inch, unless shown differently in the plans.

## PART 2 -- PRODUCTS

### 2.01 GENERAL REQUIREMENTS

- A. FDOT Standard Specification for Road and Bridge Construction, specific references are as follows:  
 Superpave PG Asphalt Binder or Recycling Agent .....916-1, 916-2  
 Coarse Aggregate, Stone, Slag or Crushed Gravel .....Section 901  
 Fine Aggregate .....Section 902
- B. Crushed Reclaimed Portland Cement Concrete Pavement may be used as a coarse aggregate or screenings component subject to meeting all applicable specifications.

### 2.02 GRADATION REQUIREMENTS

- A. Combine the coarse and fine aggregate in proportions that will produce an asphalt mixture meeting all of the requirements defined in this Specification and conform to the gradation requirements at design as defined in Table 334-2. Aggregates from various sources may be combined.

Table 334-2 Aggregate Gradation Control Points (Gradation Design Ranges)						
Sieve Size	Superpave Mixture (Percent Passing)					
	SP-9.5		SP-12.5		SP-19.0	
	Min.	Max.	Min.	Max.	Min.	Max
1 inch	-	-	-	-	100	-
3/4 inch	-	-	100	-	90	100
1/2 inch	100	-	90	100	-	90
3/8 inch	90	100	-	90	-	-
No. 4	-	90	-	-	-	-
No. 8	32	67	28	58	23	49
No. 200	2	10	2	10	2	8

## 2.03 AGGREGATE CONSENSUS PROPERTIES

Meet the following consensus properties at design for the aggregate blend:

- A. Coarse Aggregate Angularity: When tested in accordance with ASTM D 5821, meet the coarse aggregate angularity requirement defined in Table 334-4.
- B. Fine Aggregate Angularity: When tested in accordance with AASHTO T-304, meet the fine aggregate angularity requirement defined in Table 334-5.

Table 334-3 Aggregate Gradation Restricted Zone (Design Only)						
Sieve Size within Restricted Zone	Boundaries of Restricted Zone Superpave Mixture (Percent Passing)					
	SP-9.5		SP-12.5		SP-19.0	
	Min.	Max.	Min.	Max.	Min.	Max.
No. 4	-	-	-	-	-	-
No. 8	47.2	47.2	39.1	39.1	34.6	34.6
No. 16	31.6	37.6	25.6	31.6	22.3	28.3
No. 30	23.5	27.5	19.1	23.1	16.7	20.7

Table 334-4 Coarse Aggregate Angularity Criteria (Minimum Percent Fractured Faces)				
Traffic Level	Depth of Top of Pavement Layer From Surface			
	≤4 inches		>4 inches	
	1 or More Fractured Faces (%)	2 or More Fractured Faces (%)	1 or More Fractured Faces (%)	2 or More Fractured Faces (%)
A	55	-	-	-
B	75	-	50	-
C	85	80	60	-
D	95	90	80	75
E	100	100	100	100

Table 334-5 Fine Aggregate Angularity Criteria		
Traffic Level	Depth of Top of Pavement Layer From Surface	
	≤4 inches	>4 inches
	Minimum Uncompacted Void Content (%)	Minimum Uncompacted Void Content (%)
A	-	-
B	40	40
C	45	40

D	45	40
E	45	45

- C. Flat and Elongated Particles: When tested in accordance with ASTM D 4791, use a ratio of maximum to minimum dimensions of 5:1 and do not exceed 10% as the maximum amount of flat and elongated particles for the coarse aggregate blend for all projects with Traffic Levels B and higher. This criteria does not apply for Traffic Level A.
- D. Clay Content: When tested in accordance with AASHTO T 176, meet the sand equivalent value for fine aggregate blend defined in Table 334-6.

Table 334-6 Clay Content	
Traffic Level	Sand Equivalent Minimum (%)
A	40
B	40
C	45
D	45
E	50

## 2.04 USE OF RECLAIMED ASPHALT PAVEMENT

### A. General Requirements:

Reclaimed Asphalt Pavement (RAP) may be used as a component material of the asphalt mixture subject to the following:

1. The Contractor assumes responsibility for the design of asphalt mixes which incorporate RAP as a component material.
2. For design purposes, the Contractor assumes responsibility for establishing accurate specific gravity values for the RAP material. This may be accomplished by one of the following methods:
  - a. Calculation of the bulk specific gravity value based upon the effective specific gravity of the RAP, determined on the basis of the asphalt binder content and maximum specific gravity. The Engineer will approve the estimated asphalt binder absorption value used in the calculation.
  - b. Testing of the extracted aggregate obtained through a vacuum extraction or ignition oven extraction.
3. For projects with Traffic Levels D and E, do not permit the amount of RAP material used in the mix to exceed 30% by weight of total aggregate. For projects with Traffic Levels A, B and C, do not permit the amount of RAP material used in the mix to exceed 50% by weight of total aggregate.

4. Use a grizzly or grid over the RAP cold bin, in-line roller crusher, screen, or other suitable means to prevent oversized RAP material from showing up in the completed recycled mixture.

If oversized RAP material appears in the completed recycled mix, take the appropriate corrective action immediately. If the appropriate corrective actions are not immediately taken, stop plant operations.

5. Provide stockpiled RAP material that is reasonably consistent in characteristics and contains no aggregate particles which are soft or conglomerates of fines.
  6. Provide RAP having a minimum average asphalt content of 4.0% by weight of total mix. The Engineer may sample the stockpile to verify that this requirement is met.
- B. Binder for Mixes with RAP: Select the appropriate binder based on Table 334-7. The Engineer reserves the right to change binder type and grade at design based on the characteristics of the RAP binder, and reserves the right to make changes during production. Maintain the viscosity of the recycled mixture within the range of 4,000 to 12,000 poises. Obtain a sample of the mixture for the Engineer within the first 1,000 tons and at a frequency of approximately one per 4,000 tons of mix.

Table 334-7 Binder Grade for Mixes Containing RAP	
% RAP	Asphalt Binder Grade
<20	PG 67-22
20-29	PG 64-22
≥30	Recycling Agent

Note: When a PG 76-22 Asphalt Binder is called for in the Contract, limit the amount of RAP material used in the mix to a maximum of 15%.

## 2.05 GENERAL COMPOSITION OF MIXTURE.

### A. General:

Compose the asphalt mixture using a combination of aggregate (coarse, fine or mixtures thereof), mineral filler, if required, and asphalt binder material. Size, grade and combine the aggregate fractions to meet the grading and physical properties of the approved mix design. Aggregates from various sources may be combined.

### B. Mix Design:

1. General: Design the Superpave asphalt mixture in accordance with AASHTO PP-28, except as noted herein, to meet the requirements of this Specification. Use only FDOT verified mix designs. (Note: For Fine graded Traffic Level D & E mixes, if an FDOT verified design is not available, use a design as approved by the Engineer.) Prior to the production of any Superpave asphalt mixture, submit

the proposed mix design with supporting test data indicating compliance with all Superpave mix design criteria.

The Engineer will consider any marked variations from original test data for a mix design or any evidence of inadequate field performance of a mix design as sufficient evidence that the properties of the mix design have changed, and the Engineer will no longer allow the use of the mix design.

2. Grading Requirements: Meet the gradation design ranges of Table 334-2.
3. Gyratory Compaction: Compact the design mixture in accordance with AASHTO TP-4. Use the number of gyrations as defined in Table 334-8.

Table 334-8 Superpave Design Gyratory Compactive Effort			
Traffic Level	N <sub>initial</sub>	N <sub>design</sub>	N <sub>maximum</sub>
A	6	50	75
B	7	75	115
C	7	75	115
D	8	100	160
E	9	125	205

4. Volumetric Criteria: Use an air void content of the mixture at design of 4.0% at the design number of gyrations (N<sub>design</sub>). Meet the requirements of Table 334-9.

Table 334-9 Mixture Densification Criteria			
Traffic Level	% G <sub>mm</sub>		
	N <sub>initial</sub>	N <sub>design</sub>	N <sub>maximum</sub>
A	≤91.5	96.0	≤98.0
B	≤90.5	96.0	≤98.0
C	≤89.0	96.0	≤98.0
D	≤89.0	96.0	≤98.0
E	≤89.0	96.0	≤98.0

5. VMA Criteria: Meet the requirements of Table 334-10 for voids in the mineral aggregate (VMA) of the mixture at the design number of gyrations.

Table 334-10 VMA Criteria	
Type Mix	Minimum VMA (%)
SP-9.5	15.0
SP-12.5	14.0
SP-19.0	13.0

6. VFA Criteria: Meet the requirements of Table 334-11 for voids filled with asphalt (VFA) of the mixture at the design number of gyrations.

Table 334-11 VFA Criteria	
Traffic Level	Design VFA (%)
A	70 - 80
B	65 - 78
C	65 - 75
D	65 - 75
E	65 - 75

Note: For Type SP-9.5 mixtures at Traffic Levels C, D & E, the specified VFA range shall be 73% to 76%.

7. Dust Proportion: Use a dust to effective asphalt binder content by weight between 0.6 to 1.2.
8. Moisture Susceptibility: Test the specimens in accordance with FM 1 T 283. Provide a mixture (4 inch specimens) having a retained tensile strength ratio of at least 0.80 and a minimum tensile strength (dry and unconditioned) of 100 psi. If necessary, add a liquid anti-stripping agent, which is on the FDOT Qualified Products List or hydrated lime (meeting the requirements of Section 337) in order to meet these criteria.
9. Additional Information: In addition to the requirements listed above, provide the following information with each proposed mix design submitted for use:
- The design traffic level and the design number of gyrations ( $N_{\text{design}}$ ).
  - The source and description of the materials to be used.
  - The FDOT source number product code of the aggregate components furnished from an FDOT approved source.
  - The gradation and proportions of the raw materials as intended to be combined in the paving mixture. The gradation of the component materials shall be representative of the material at the time of use. Compensate for any change in aggregate gradation in handling and processing as necessary.
  - A single percentage of the combined mineral aggregate passing each specified sieve. Degradation of the aggregate due to processing (particularly -No. 200 [-75  $\mu\text{m}$ ]) should be accounted for and identified for the applicable sieves.
  - The bulk specific gravity value for each individual aggregate (and RAP) component, as identified in the FDOT aggregate control program.
  - A single percentage of asphalt binder by weight of total mix intended to be incorporated in the completed mixture, shown to the nearest 0.1%.

- h. A target temperature at which the mixture is to be discharged from the plant and a target roadway temperature (per 330 6.3). Do not exceed a target temperature of 340°F for modified asphalts and 315°F for unmodified asphalts.
  - i. Evidence that the completed mixture conforms to all specified physical requirements.
  - j. The name of the Mix Designer.
  - k. The ignition oven calibration factor(s).
- C. Revision of Mix Design: During production, the Contractor may request a target value revision to a mix design, subject to: (1) the target change falls within the limits defined in Table 334-12; (2) appropriate data exists demonstrating that the mix complies with production air voids specification criteria; and (3) the mixture gradation meets the basic gradation requirements defined in 2.02 and 2.03.

Table 334-12 Limits for Potential Adjustments to Mix Design Target Values	
Characteristic	Limit from Original Mix Design
No. 8 sieve and Coarser	± 5.0%
No. 16 sieve	± 4.0%
No. 30 sieve	± 4.0%
No. 50 sieve	± 3.0%
No. 100 sieve	± 3.0%
No. 200 sieve	± 1.0%
Asphalt Binder Content <sup>(1)</sup>	± 0.3%

<sup>(1)</sup> Reductions to the asphalt binder content will not be permitted if the VMA during production is lower than 1.0% below the design criteria.

- D. Submit all requests for revisions to mix designs, along with supporting documentation, to the Engineer. In order to expedite the revision process, the request for revision or discussions on the possibility of a revision may be made verbally, but must be followed up by a written request. The initial mix design will remain in effect until a change is authorized by the Engineer. In no case may the effective date of the revision be established earlier than the date of the first communication between the Contractor and the Engineer regarding the revision.
- E. A new design mix will be required for any substitution of an aggregate product with a different aggregate code, unless approved by the Engineer.

## PART 3 -- EXECUTION

### 3.01 CONTRACTOR'S PROCESS CONTROL

- A. Personnel: Provide the necessary quality control personnel to comply with the requirements of the Contract.
- B. Initial Production Test Strip: For initial use of a Type SP mix design at a particular plant, limit full-scale production and placement of the mix to a test strip of 500 tons (for each mix) to demonstrate the capability of producing, placing, and compacting the mix as specified, unless waived by the Engineer. Upon agreement between the Contractor and the Engineer, test strips of up to 1,000 tons may be used. Initial production requirements do not apply if the total quantity of mix to be placed is less than 2,000 tons.
  - 1. Calibration of the Superpave Gyratory Compactor: Calibrate the Superpave Gyratory Compactor in accordance with the manufacturer's recommendations prior to producing the Superpave mixture for the test strip. Check the height calibration, the speed of rotation, ram pressure and angle of gyration. (Following completion of the test strip, calibrate the height daily, the ram pressure and speed of rotation weekly, and the angle of gyration monthly.)
  - 2. Plant Testing Requirements: During the initial production period, take a minimum of three separate sets of mixture samples which will be used for extraction gradation analysis and determination of volumetric properties. Provide a split sample of one of the samples for comparison testing with the Engineer if determined necessary by the Engineer.
  - 3. Roadway Testing Requirements: For density determination, obtain 6 inch diameter roadway cores at random locations as directed by the Engineer within the test strip, at a frequency shown in Table 334-16.
  - 4. Criteria for Passing Test Strip: Resume production when authorized by the Engineer based upon acceptable extraction gradation analysis as determined in accordance with 3.01.C, acceptable volumetric properties as determined in accordance with 3.01.D, acceptable density in accordance with 3.01.D.2, and a favorable comparison with the Engineer's test results ( $G_{mb}$  at  $N_{design}$  (within 1%) and  $G_{mm}$  (within 0.019) only). In the event that the test strip fails to meet any of the above mentioned criteria, remove and replace the material at no cost to the District if so directed by the Engineer.
- C. Extraction Gradation Analysis: Sample the asphalt mixture at the plant in accordance with FM 1-T 168. The percent asphalt binder content of the mixture will be determined in accordance with FM 5-563 (ignition oven). The gradation of the extracted mixture will be determined in accordance with FM 1-T 030.
  - 1. Run an extraction gradation analysis on the mixture at a minimum frequency of once per production day when the daily production is less than 1,000 tons. If the daily production exceeds 1,000 tons, perform the extraction gradation analysis of the mix a minimum of two times per production day.

2. During normal production, the Engineer will not require extraction gradation analysis on days when mix production is less than 100 tons. However, when mix production is less than 100 tons per day on successive days, run the test when the accumulative tonnage on such days exceeds 100 tons.
3. The target gradation and asphalt content will be as shown on the mix design.
4. If the percentage of asphalt binder deviates from the optimum asphalt binder content by more than 0.55%, or the percentage passing any sieve falls outside the limits in Table 334-13, immediately resample the mix and test to validate the previous test result, and if needed, make the necessary correction. If the results for two consecutive tests deviate from the optimum asphalt binder content by more than 0.55%, or exceed the limits in Table 334-13 for any sieve, notify the Engineer and take immediate steps to identify and correct the problem, then resample the mix. If the results from this test deviate from the optimum asphalt binder content by more than 0.55%, or exceed the limits in Table 334-13 for any sieve, stop plant operations until the problem has been corrected.

Table 334-13 Tolerances for Quality Control Tests (Extraction Gradation Analysis)	
Size	Percent Passing
1 inch	7.0
3/4 inch	7.0
1/2 inch	7.0
3/8 inch	7.0
No. 4	7.0
No. 8	5.5
No. 16	5.0
No. 30	4.5
No. 50	4.5
No. 100	3.0
No. 200	2.0

Maintain control charts showing the results of the extraction gradation analysis (asphalt binder content and sieve analysis).

- D. Volumetric Control: During production of the mix, monitor the volumetric properties of the Superpave mix with a Superpave Gyratory Compactor to determine the air voids, VMA, VFA, and dust-to-effective asphalt binder ratio (dust proportion) at N design.
  1. Take appropriate corrective actions in order to maintain an air void content at  $N_{\text{design}}$  between 3.0 and 5.0% during production. When the air void content at N design drops below 2.5 or exceeds 5.5%, stop plant operations until the appropriate corrective actions are made and the problem is resolved to the satisfaction of the Engineer. Evaluate any failing material in accordance with 3.03.

2. Determine the volumetric properties of the mixture at a minimum frequency of once per production day when the daily production is less than 1,000 tons. If the daily production exceeds 1,000 tons, monitor the volumetric properties two times per production day.
  3. During normal production, volumetric properties of the mixture will not be required on days when mix production is less than 100 tons. However, when mix production is less than 100 tons per day on successive days, run the test when the accumulative tonnage on such days exceeds 100 tons.
  4. Testing required for volumetric property determination includes AASHTO TP-4, FM 1-T 209, FM 5-563 and FM 1-T 030. Prior to testing samples in accordance with AASHTO TP-4 and FM 1-T 209, condition the test-sized sample for one hour at the compaction temperature in a covered container.
  5. Maintain control charts showing the results of the volumetric testing (air voids,  $G_{mm}$ ,  $G_{mb}$ ).
- E. Viscosity of Asphalt Binder in Mixes Containing Reclaimed Asphalt Pavement: When RAP is a component material, assure that the viscosity of the asphalt binder material in the asphalt mixture, when determined in accordance with FM 1-T 202, will be within the range of 4,000 - 12,000 poises. This determination will be made on samples obtained by the Engineer on a random basis at a frequency of approximately one per 2,000 tons of mix.
- If the viscosity determined by the Engineer is out of the specified range, adjust the binder formulation or blend or RAP in the mix to bring the viscosity within tolerance.
- F. Process Control of In-Place Compaction: Develop and implement a method to control the compaction of the pavement and ensure its compliance with the minimum specified density requirements. Include density determinations by the use of a nuclear density gauge at a frequency of one test per 1,000 feet of compacted pavement in the process control. Other density measuring devices may be used in lieu of the nuclear density gauge, provided that it is demonstrated to the satisfaction of the Engineer that the device can accurately measure the relative level of density in the pavement on a consistent basis.

### 3.02 ACCEPTANCE OF THE MIXTURE.

- A. General: The asphalt mixture will be accepted based on one of the following methods as determined by the Engineer and/or Contract Documents:
1. Certification by the Contractor
  2. Certification and Process Control Testing by the Contractor
  3. Acceptance testing by the Engineer
  4. Other method(s) as determined by the Contract

- B. Certification by the Contractor: Submit a Notarized Certification of Specification Compliance letter on company letterhead to the Engineer that all material produced and placed on the project was in substantial compliance with the Specifications.
- C. Certification and Process Control Testing by the Contractor: Submit a Notarized Certification of Specification Compliance letter on company letterhead to the Engineer that all material produced and placed on the project was in substantial compliance with the Specifications, along with supporting test data documenting all process control testing as described in 3.01. If so required by the Contract, utilize an Independent Laboratory as approved by the Engineer for the Process Control testing.
- D. Acceptance Testing by the Engineer:
  - 1. Acceptance at the Plant: The asphalt mixture will be accepted at the plant, with respect to gradation and asphalt binder content, on a LOT to LOT basis. However, any load or loads of mixture which, in the opinion of the Engineer, are unacceptable for reasons of excessive segregation, aggregates improperly coated, or of excessively high or low temperature will be rejected for use in the work.
    - a. A standard size LOT at the asphalt plant will consist of 4,000 tons with four equal sublots of 1,000 tons each.
    - b. A partial LOT may occur due to the following:
      - (1) the completion of a given mix type on a project.
      - (2) an approved LOT termination by the Engineer due to a change in process, extended delay in production (greater than 60 days), or change in mix design.
    - c. If the partial LOT contains one or two sublots with their appropriate test results, then the previous full-size LOT will be redefined to include this partial LOT and the evaluation of the LOT will be based on either five or six sublot determinations. If the partial LOT contains three sublots with their appropriate test results, this partial LOT will be redefined to be a whole LOT and the evaluation of it will be based on three sublot determinations.
    - d. When the total quantity of any mix is less than 3,000 tons, the partial LOT will be evaluated for the appropriate number of sublots from n=1 to n=3. When the total quantity of any mix type is less than 500 tons, the Engineer will accept the mix on the basis of visual inspection. The Engineer may run extraction and gradation analysis for verification purposes; however, the provisions for partial payment will not apply.
    - e. On multiple project contracts, the LOT(s) at the asphalt plant will carry over from project to project.

- f. Acceptance Procedures: Control all operations in the handling, preparation, and production of the asphalt mix so that the percent asphalt binder content and the percent passing the No. 8 and No. 200 sieves will meet the targets from the mix design within the tolerances shown in Table 334-14.

Table 334-14 Tolerances for Acceptance Tests	
Characteristic	Tolerance*
Asphalt Binder Content	±0.55%
Passing No. 8 Sieve	±5.50%
Passing No. 200 Sieve	±2.00%
*Tolerances for sample size of n=1. See Table 334-15 for other sample sizes n=2 through n=6.	

- (1) Acceptance of the mixture will be on the basis of test results on consecutive random samples from each LOT. The Engineer will take one random sample from each subplot. The asphalt mixture will be sampled at the plant in accordance with FM 1-T 168. The percent asphalt binder content of the mixture will be determined in accordance with FM 5-563. The percentages passing the No. 8 and No. 200 sieves will be determined in accordance with FM 1-T 030.
  - (2) Calculations for the acceptance test results for asphalt binder content and gradation (percentages passing the No. 8 and No. 200 sieves) will be shown to the nearest 0.01.
- g. Automatic Batch Plant With Printout: Acceptance determinations for asphalt binder content and gradation for mixtures produced by automatic batch plants with printout will be based on extraction results as specified in 3.02.D.1.a.
2. Acceptance on the Roadway:
- a. Density Control: The in-place density of each course of asphalt mix construction will be evaluated by the use of 6 inch diameter roadway cores. The required average density of a completed course will be based on the maximum specific gravity ( $G_{mm}$ ) of the as-produced mix. The Engineer will not perform density testing on patching courses, leveling courses, open-graded friction courses, or any course with a specified thickness less than 1 inch or a specified spread rate less than 105 lb/yd<sup>2</sup>. In addition, density testing will not be performed on the following areas when they are less than 1,000 feet in length: crossovers, intersections, turning lanes, acceleration lanes or deceleration lanes. Compact these courses (with the exception of open-graded friction courses) in accordance with the rolling procedure as approved by the Engineer.

- (1) **LOTs:** For the purpose of acceptance and determination of payment, each day's production will be divided into LOTs, and all LOTs are to be closed out at the end of the day. The standard size of a LOT will consist of 5,000 feet of any pass made by the paving train regardless of the width of the pass. Changes in thickness, mix design, or underlying layer shall constitute a separate LOT. Mix placed on the shoulder shall also be considered a separate LOT. Pavers traveling in echelon will be considered as two separate passes. When at the end of a day's production (production day) or the completion of a given course, layer, or mix, or at the completion of the project, a LOT size is determined to be less than 5,000 feet, it is considered a partial LOT. Partial LOTs are to be handled as follows:

If the length of the partial LOT is 2,000 feet or less, then the previous full-size LOT will be redefined to include this partial LOT and the number of tests required for the combined LOT will be as shown in Table 334-16. If the partial LOT is 2,000 feet or less, and a previous full-size LOT from the same day, mix, layer and project is not available, then the partial LOT will be evaluated separately and the number of tests required for the partial LOT will be as shown in Table 334-16. If the partial LOT is greater than 2,000 feet long, it will be evaluated separately, with the number of tests required as shown in Table 334-16.

Table 334-16 Density Testing Requirements for Partial LOTs	
(feet)	Number of Tests
Less than 3,000	3
3,001 - 4,000	4
4,001 - 5,000	5
5,001 - 6,000	6
6,001 - 7,000	7
Greater than 7,000	2 LOTs

- (2) **Target Maximum Specific Gravity:** The target maximum specific gravity of the mix will be based on the average daily value as determined by the Contractor's Process Control testing described in 3.01. Obtain two separate samples for maximum specific gravity determination on a daily basis. If only one maximum specific gravity test value is available, this value shall be used as the target maximum specific gravity. If a maximum specific gravity value is not determined for a day's production, the previous day's value will be used. Obtain, under the Engineer's supervision, split

samples of the asphalt mixture used for the maximum specific gravity test for verification purposes. The minimum size of the split sample will be 4,000 g. The split samples shall be conditioned in accordance with 3.01.D prior to testing and will become the property of the District. The split samples will become the property of the District. In the event of an obvious sampling or testing error, the Engineer may allow the Contractor to retest a portion of the split sample. The Engineer will run verification tests on the split samples in order to determine the acceptability of the Contractor's test results.

- (3) Acceptance: The completed pavement will be accepted with respect to density on a LOT basis. For each LOT, 6 inch diameter roadway cores will be obtained at random locations within the LOT, at the frequency shown in Table 334-16. Obtain the roadway cores at the random locations as directed by the Engineer, at the end of each day's production prior to opening the roadway to traffic. The locations of the cores will be determined by the District. The locations of the cores transversely will be uniformly spaced across the width of the pavement, with no cores located closer than 1 foot of any unsupported edge. These will also be used for partial LOTs. Assume responsibility for maintenance of traffic, coring, patching the core holes, and trimming the cores to the proper thickness prior to density testing.

The density of the cores will be determined in accordance with FM 1-T 166, and will be averaged for each LOT. To receive full payment for density, the average density of a LOT shall be a minimum of 92% of  $G_{mm}$ . Partial payment will be made for those LOTs that have an average density less than 92% of  $G_{mm}$  based on Table 334-17 (for pavements with an unrestricted compactive effort). As an exception, if the Engineer (or Contract Documents) limits compaction to the static mode, the percent of payment will be based on the Restricted Compactive Effort schedule defined in Table 334-17.

Once the average density of a LOT has been determined, do not provide additional compaction to raise the average.

Table 334-17 Payment Schedule For Density			
Unrestricted Compactive Efforts (Vibratory and/or Static)		Restricted Compactive Efforts (Static Only)	
Percent of Maximum Specific Gravity ( $G_{mm}$ )	Percent of Payment	Percent of Maximum Specific Gravity ( $G_{mm}$ )	Percent of Payment
92.0 and above	100		
91.0 and above	100		
91.0 to less than 92.0	95	90.5 to less than 91.0	95
90.0 to less than 91.0	90	90.0 to less than 91.5	90
Less than 90.0 *	0 Remove and Replace	Less than 90.0 *	0 Remove and Replace

\*The District will require removal and replacement at no cost. The Contractor may remove and replace at no cost to the District at any time.

- (4) Additional Density Requirement:  
On shoulders with a width of 5 feet or less, the Engineer will not require density. Compact the pavement in accordance with the rolling procedure (equipment and pattern) approved by the Engineer. Stop the production of the mix if the rolling procedure deviates from the approved procedure.
- b. Surface Tolerance: The asphalt mixture will be accepted on the roadway with respect to surface tolerance in accordance with the applicable requirements of 330-12.
- E. Additional Tests: The District reserves the right to run any test at any time for informational purposes and for determining the effectiveness of the Contractor's quality control.
  1. Verification of Volumetric Properties: The Engineer will verify the densification properties of the mix during production with the Superpave Gyratory Compactor and will determine volumetric properties of the mix (air voids, VMA, VFA, and dust-to-effective asphalt binder ratio). The Engineer will condition the specimens as specified in 3.01.D prior to testing.
    - a. Take appropriate corrective actions to maintain an air void content at  $N_{design}$  between 3.0 and 5.0% during production. When the air void content at  $N_{design}$  drops below 2.5 or exceeds 5.5%, stop plant operations until the appropriate corrective actions are made and the problem is resolved. Evaluate any failing material in accordance with 3.03.
    - b. When plant operations are stopped for mixes that have failing volumetric properties, obtain the Engineer's approval prior to resuming production of

the mix. Limit production to 500 tons until passing volumetric properties are obtained.

### 3.03 DISPOSITION OF FAILING MATERIAL.

- A. Any material that is represented by failing test results identified in 3.01.D or 3.02.E.1 (less than 2.5% air voids at  $N_{\text{design}}$ ) will be evaluated to determine if removal and replacement is necessary. Remove and replace any material, if required, at no cost to the District. The evaluation will be conducted by the Engineer. If so directed, obtain an engineering analysis, as directed by the Engineer, by an independent laboratory (as approved by the Engineer) to determine if the material can (a) remain in place, for this case the appropriate pay factor will be applied, or (b) be removed and replaced at no cost to the District. The analysis will be a signed and sealed report by a Professional Engineer licensed in the State of Florida.

### 3.04 COLORED STAMPED ASPHALT CONCRETE.

- A. Where indicated on the plans, Contractor to provide epoxy modified acrylic coating as per the FDOT Qualified Products List (QPL) and in accordance with FDOT Standard Specification for Road and Bridge Construction, latest edition, Section 523 Patterned/Textured Pavement.
- B. Final installation shall be tested by an independent source verifying friction performance and shall meet or exceed an FN40R value of 35 in accordance with ASTM E-274.
- C. Color and pattern as indicated on the plans and details.

END OF SECTION

## **SECTION 02575 SURFACE RESTORATION**

### **PART 1 - GENERAL**

#### **1.01 WORK INCLUDED**

- A. This section covers the work necessary to replace all pavement, curbs, sidewalks, drainage facilities, and other street features damaged either directly or indirectly by the operation incidental to the construction of the sewer system, complete.

### **PART 2 - PRODUCTS**

#### **2.01 ROCK FOR SURFACING AND BASE**

- A. Limestone quality and gradation shall conform to Section 911, FDOT Standard Specifications.
- B. Submit proof in the form of test results from a commercial testing laboratory or other evidence satisfactory to the Engineer to show that the materials meet the quality and gradation requirements.

#### **2.02 ASPHALT PAVEMENT**

- A. Asphalt mix conforming to the Standard Specifications Type SP-12.5 for pavement restoration
- B. The asphalt for overlay shall be Type SP-12.5 in conformance with Section 331, FDOT Standard Specifications.

#### **2.03 ASPHALT PRIME**

- A. Liquid asphalt for use as a prime coat under asphalt concrete shall be RC-70 or MC-70 liquid asphalt conforming to AASHTO M 81 or M 82.

#### **2.04 CONCRETE**

- A. Concrete for curbs, sidewalks, pavement, and miscellaneous construction shall conform to ASTM C94, Alternate 3; and shall have a design mix proportioned for 3,000 pounds per square inch compressive strength at 28 days. Concrete mix shall contain no less than 5½ sacks of cement per cubic yard.

1. Concrete Forms: All forms for curbs and sidewalks shall be either 2" dimensioned lumber, plywood, or metal forms. Forms on the face of the curb shall have no horizontal form joints within 7" of the top of the curb.
2. Curbing Compound: Commercial grade conforming to ASTM C309, Type I.
3. Reinforcing Steel: Conform to ASTM A615, Grade 60.

## 2.05 PIPE FOR STORM SEWER AND CULVERT REPLACEMENT

- A. Pipe 15" and under shall be Class 2, conforming to ASTM C14. Pipe 18" and over shall conform to ASTM C76, Class III.

## **PART 3 - EXECUTION**

### 3.01 CONSTRUCTION PROCEDURE

- A. The Engineer reserves the right to vary the classes of backfill and the type of resurfacing as best serves the interest of the District. Trench backfill shall be as specified in Section 02225 Trench Excavation and Backfill.
- B. Replace all bituminous pavement damaged under this Contract with asphalt concrete regardless of original type.
- C. Concrete pavement replacement will be required where existing concrete driveways are disturbed.
- D. In addition to the requirements set forth herein, the work shall conform to the applicable workmanship requirements of the state highway and municipal specifications.

### 3.02 REMOVAL OF PAVEMENT, SIDEWALK, CURBS, AND GUTTERS

- A. Removal of all pavement, sidewalks, curbs, and gutters shall conform to Section 02225 Trench Excavation and Backfill.

### 3.03 STREET MAINTENANCE

- A. Maintain all trenches as specified under Section 02225 Trench Excavation and Backfill.

### 3.04 ASPHALT PAVEMENT REPLACEMENT

- A. Subgrade:

1. Bring the trench to a smooth, even grade at the correct distance below the top of the existing pavement surface so as to provide adequate space for the base course and pavement.
2. Stabilize the top 12 inches per FDOT Section 160.
3. Compact the subgrade to 98 percent of maximum dry density as determined by AASHTO T-99 with mechanical vibratory or impact tampers. Determine the amount and method of compaction necessary to prevent settlement. Any subsequent settlement of the finished surfacing during the warranty period shall be promptly repaired by the Contractor, at the Contractor's sole expense.

B. Limestone Base Course:

1. Place sufficient base course on the subgrade in one lift to obtain a minimum thickness of 6 1/2" after compaction. Place and process as required to provide a smooth surface without segregation.
2. Compact the base course to 98 percent of maximum dry density as determined by AASHTO T-180 with mechanical vibratory or impact tampers. Determine the amount and method of compaction necessary to prevent subsequent settlement. Any subsequent settlement of the finished surfacing during the warranty period shall be promptly repaired by the Contractor, at the Contractor's sole expense.
3. Place base course under all pavement to be replaced and, in addition, under gravel surfaced shoulders and other graveled areas.
4. Testing frequency shall be as specified in Section 02225 Trench Excavation and Backfill.

C. Prime Coat: After the base course has been compacted, apply an asphalt prime coat, specified above, at 0.25- to 0.45-gallon per square yard to the surface of the base course and to the edges of the existing pavement. Sand to minimize tracking.

D. Asphalt Pavement

1. Place the asphalt concrete on the prepared base course to yield a compacted thickness of not less than 1 3/4" for pavement replacement. Place asphalt concrete after the prime coat has set. Spread and level the asphalt concrete with hand tools or by use of a mechanical spreader, depending upon the area to be paved. Bring the asphalt concrete to the proper grade and compact by rolling or the use of hand tampers where rolling is impossible or impractical.
2. Roll with power rollers capable of providing compression of 200 to 300 pounds per linear inch. Begin the rolling from the lower edge of the section progressing toward the center. Overlap each preceding track by at least 1/2 the width of the roller and make sufficient passes over the entire area to

remove all roller marks and to produce the desired result, as determined by the Engineer.

3. Comply with provisions of FDOT Section 330.

E. Asphalt Overlay

1. Prior to the laying of the asphalt prime coat and asphalt overlay the surface of the pavement to be covered shall be cleaned of all loose and deleterious materials by the use of power brooms or blowers, and supplemented by hand brooming when necessary. An asphalt prime coat (tack coat) is required on all asphalt prior to the laying the asphalt overlay.
2. Rolling as specified above - Asphalt Pavement.
3. When joining existing pavement, the finished surface of the new paving shall be flush with the surface and shall conform to the grade and crown of the adjacent pavement.

3.05 WEATHER CONDITIONS

- A. Asphalt shall not be applied to wet material. Asphalt shall not be applied during rainfall, sand or dust storms, or any imminent storms that might adversely affect the construction. The Engineer will determine when surfaces and material are dry enough to proceed with construction. Asphalt concrete shall not be placed (1) when the atmospheric temperature is lower than 40 degrees F, (2) during heavy rainfall, or (3) when the surface upon which it is to be placed is frozen or wet. Asphalt for prime coat shall not be applied when the surface temperature is less than 50 degrees F. Exceptions will be permitted only in special cases and only with prior written approval of the Engineer.

3.06 PROTECTION OF STRUCTURES

- A. Provide whatever protective coverings may be necessary to protect the exposed portions of bridges, culverts, curbs, gutters, posts, guard fences, road signs, and any other structures from splashing oil and asphalt from the paving operations. Remove any oil, asphalt, dirt, or any other undesirable matter that may come upon these structures by reason of the paving operations.
- B. Where water valve boxes, manholes, catch basin, or other underground utility appurtenances are within the area to be surfaced, the resurfacing shall be level with the top of the existing finished elevation of these facilities. If it is evident that these facilities are not in accordance with the proposed finished surface, the Contractor shall notify the proper authority and either raise or lower the appurtenances or make arrangement with that authority in order to have the facility altered before proceeding with the resurfacing around the obstruction. Consider any delays experienced from

such obstructions as incidental to the paving operation. No additional payment will be made. Protect all covers during asphalt application.

3.07 EXCESS MATERIALS

- A. Dispose of all excess backfill material to District's designated site, which is the LRD Wastewater Treatment Plant on Central Boulevard, in the Town of Jupiter, Florida. Make arrangements for the disposal and bear all costs incidental to such disposal.

3.08 CONTRACTOR'S RESPONSIBILITY

- A. Settlement of replaced pavement over trenches within the warranty period shall be considered the result of improper or inadequate compaction of the subbase or base materials. The Contractor shall promptly repair all pavement deficiencies noted during the warranty period at the Contractor's sole expense.

3.09 CONCRETE PAVEMENT

- A. Pavement replaced shall be the same thickness as that removed, except that in no instance shall it be less than a minimum of 6". Protect the newly placed concrete from traffic for a period of 7 days and cure by covering with burlap, sand, earth, or sawdust, which is kept continuously wet. Finish to match existing.
- B. Handle and place concrete pavement in accordance with the Standard Specifications.

3.10 SIDEWALKS AND CURBS

- A. Replace concrete sidewalks and curbs to the same section width, depth, line, and grade as that removed or damaged. Cut ends of existing curb to a vertical plane. Prior to replacing the sections, properly backfill and compact the trench to prevent subsequent settlement.
- B. Cut ends of existing curbs to a vertical plane. Construct forms to match existing. Place concrete and finish exposed surfaces similar to adjacent curb.
- C. Replace concrete sidewalks between scored joints and make replacement in a manner that will avoid a patched appearance. Provide a minimum 2" thick compacted base of clean 3/4" minus crushed rock or gravel of quality hereinbefore specified. Finish concrete surface similar to the adjacent sidewalks. Score joints and finish edges with a steel edging tool.
- D. Tunneling under curbs and sidewalks is optional. However, should any subsequent cracking, subsidence, or any other indication of failure occur within the warranty

period, the damaged section shall promptly be replaced at the Contractor's sole expense.

3.11 ASPHALT DRIVEWAYS AND WALKS

- A. Replace asphalt driveways and walks in accordance with ASPHALT PAVEMENT REPLACEMENT.

3.12 STORM SEWERS, CULVERTS, AND CATCH BASINS

- A. All storm sewers, catch basins, or culverts that are removed because of interference with the new construction shall be removed so as to do the least possible damage to the pipe or basin. Dispose of culvert pipe that is in too poor condition for replacement because of age, physical condition, or other reasons and install suitable pipe furnished by the Contractor.
- B. Replace all pipe to the lines and grades established by Engineer. Pipe 15" and smaller shall be laid on a minimum 4" thick gravel base conforming to leveling or surfacing course under rock for surfacing and base, this section. Use a minimum 6" thick gravel base under pipe 18" and larger.
- C. Replace culvert headwalls of all types to a condition at least equivalent to their original shape or form.
- D. Reinstall catch basins in their original locations and reconnect to the drainage system in a manner equal to the original. If the existing catch basins are damaged beyond repair by the operations, construct new basins of similar size, cross section, and design as the original at the Contractor's sole expense.

3.13 SODDING

- A. Installation of sodding shall be as specified in Section 02936 Sodding.

END OF SECTION

## **SECTION 02580 PAVEMENT MARKING**

### **PART 1 - GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Reflectorized traffic striping and marking (in accordance with FDOT Specifications, Section 710).
- B. Thermoplastic traffic striping and marking (in accordance with FDOT Specifications, Section 711).
- C. Reflective pavement markers (in accordance with FDOT Specifications, Section 706).

#### **1.02 PAYMENT**

- A. Payment for traffic striping and marking as detailed on the Drawing shall be made as indicated on the Bid Form.

#### **1.03 REFERENCES**

- A. Florida Department of Transportation - Standard Specifications for Road and Bridge Construction, herein after referred to as the FDOT Specification. This document must be on site during the Work.
- B. Manual on Uniform Traffic Control Devices for Streets and Highways
- C. Palm Beach County Typical No. T-P-06-001.

### **PART 2 - PRODUCTS**

#### **2.01 MATERIALS**

- A. Reflectorized Traffic Paint: In accordance with Section 710 of the FDOT Specifications.
- B. Thermoplastic Traffic Paint: In accordance with Sections 711 of the FDOT Specifications.
- C. Reflective Pavement Markers: In accordance with Section 706 of the FDOT Specifications.

## 2.02 EQUIPMENT

- A. In accordance with the following FDOT Specifications: Section 710 for reflectorized striping and marking, and Section 711 for thermoplastic striping and marking.

## **PART 3 - EXECUTION**

### 3.01 PREPARATION

- A. Contractor shall establish the necessary tack points and other controls for alignment of the stripes.
- B. Tolerances in dimensions and alignment shall be in accordance with FDOT Specification 710.
- C. Prior to placing any pavement markings, Contractor shall contact the Engineer and the Town of Jupiter to review locations in the field.

### 3.02 APPLICATION

- A. Apply reflectorized striping and marking in accordance with FDOT Specification 710-6.
- B. Apply thermoplastic striping and marking in accordance with FDOT Specification 711.
- C. Apply reflective pavement markers in accordance with Sections 706 of the FDOT Specifications.

### 3.03 FIELD QUALITY CONTROL

- A. All Work under this Section which fails to meet the Specifications, including the permissible tolerances and the appearance requirements, or are marred or damaged by traffic or from other cause, shall be corrected at the Contractor's expense to the approval of the Engineer.

### 3.04 PROTECTION

- A. Protection of newly painted stripes and of traffic shall be in accordance with FDOT Specification Section 710.

END OF SECTION

## **SECTION 02645 VALVES AND APPURTENANCES**

### **PART 1 - GENERAL**

#### **1.01    THE REQUIREMENT**

- A.     The Contractor shall provide all tools, supplies, materials, equipment and all labor necessary for the finishing, epoxy coating, installing, adjusting and testing of all valves and appurtenant work, complete and operable in accordance with the requirements of the Contract Documents. Where buried valves are shown, the Contractor shall furnish and install valve boxes to grade, with covers, extensions and position indicators.

### **PART 2 - PRODUCTS**

#### **2.01    GENERAL**

- A.     All buried valves and appurtenances including exposed nuts, bolts, and retainer glands shall be given an exterior approved bitumastic or epoxy coating.
- B.     All valves shall open counterclockwise. All valves shall have extension stems pinned to the operating nut with a stainless steel pin extension. Stems will not be required where the valve operation nut is less than 30" from finished grade.

#### **2.02    PLUG VALVES**

- A.     All plug valves shall be of the non-lubricated eccentric type. Valves shall be rated for not less than 125 psi pressure differential acting in either direction (bi-directional). At this differential, the valve shall provide drip tight shutoff. All components shall be of corrosion resistant construction. Valve flanges shall be ANSI B16.5, Class 150 pound with a full round or other acceptable type port to assure minimum turbulence and minimum pressure drop. Valve bodies shall be ductile iron, ASTM A536, Grade 65-45-12 construction and seats shall be of nickel alloy. Valves are to have a balance plug, coated with a resilient material solidly bonded to a ductile iron core, as required, to assure low torque and bubble-tight shutoff. The valve plug shall touch on the seat when in the closed position.
- B.     Plug valve port areas shall be at least 100% through 24 inches in diameter. For plug valves 30 inches and larger, a port area of at least 75% is required.

- C. Buried plug valves shall be installed vertically with non-rising stems and shall open by turning a two (2) inch square operating nut counterclockwise. An arrow shall be cast into the nut skirt to indicate the open direction.
- D. Plug valves shall be as manufactured by DeZurik Corporation, Keystone Valve Manufacturing Company (Ballcentric Type), Milliken, or approved equal.

#### 2.03 AIR RELEASE, AIR VACUUM VALVES, AND COMBINATION TYPE VALVES

- A. The air release and air vacuum valves shall be of the type especially designed for forced sewer systems. The valve shall be of the short body type and capable of releasing air, gas, or vapor under pressure during system operation or allow air to enter the system when the system is draining, as applicable. The valve shall be as shown on the Standard Details with a two inch inlet. The venting orifice shall be sized by the Design Engineer based on a working pressure of 75 psi. The valve shall be constructed of a composite body and cover, stainless steel trim and float, with an adjustable orifice button to insure positive seating. The valve shall be furnished with back flushing accessories. All rubber seats shall be Buna N.
- B. It shall be the responsibility of the design engineer to determine which valve is necessary for the pipeline conditions encountered.
- C. Air release and air vacuum valves shall be ARI D-025 (see detail on Dwg. D-1).

#### 2.04 VALVE BOXES AND VAULTS

- A. All buried plug valves and resilient seat gate valves shall be equipped with valve boxes. Valve boxes shall be heavy duty construction for traffic loading type, cast iron, three piece, slide type, or screw type with drop covers. The valve boxes shall be adjustable to six inches up or down from the nominal required cover of the pipe. A number six base section shall be provided. Minimum shaft diameter shall be 5-1/4 inches and minimum metal thickness shall be 3/16 inch. Boxes shall be coated with an approved bitumastic or epoxy coating. Valve box covers shall have the word "SEWER" or "REUSE" cast thereon depending on the application. Swing check valves shall be installed in an approved suitable vault for easy access by the District maintenance staff.
- B. Valve boxes shall be installed on firmly compacted material at a level approximately equal to the elevation of the valve packing plate. No contact between the valve and the box shall be permitted. On plug valves, the positioner on the operating mechanism shall be kept free of rocks, debris, etc.
- C. Where valves are installed with over six feet of cover, or where the ground water table is within three feet of the ground level, an extension stem shall be provided to bring an operating nut within two feet of the finished grade. This extension

stem shall be satisfactorily pinned to the valve operation nut to prevent dislodging during operation of the valve.

## **PART 3 - EXECUTION**

### **3.01 VALVE INSTALLATION**

- A. All valves and appurtenances shall be installed in accordance with the manufacturer's written instructions and in the locations shown, true to alignment and rigidly supported. Any damage to the valves and appurtenances shall be repaired to the satisfaction of the Engineer before they are installed.
- B. All valves shall be installed to provide easy access for operation, removal, and maintenance and to avoid conflicts between valve operators and structural members or handrails.
- C. Install all floor boxes, brackets, extension rods, guides, the various types of operators and appurtenances as shown on the Drawings that are in masonry floors or walls, and install concrete inserts for hangers and supports as soon as forms are erected and before concrete is poured. Before setting these items, the Contractor shall check all plans and figures which have a direct bearing on their location, and he shall be responsible for the proper location of these valves and appurtenances during the construction of the structures.
- D. Valve boxes with concrete bases shall be installed as shown on the Drawings. Mechanical joints shall be made in the standard manner. Valve stems shall be vertical in all cases. Place cast iron box over each stem with base bearing on compacted fill and top flush with final grade. Boxes shall have sufficient bracing to maintain alignment during backfilling. Knobs on cover shall be parallel to pipe. Remove any sand or undesirable fill from valve box.

### **3.02 PAINTING AND COATINGS**

- A. Valves shall be shop primed and field finish painted for interior and exposed service in accordance with the Section "Painting". Except where otherwise specified, all exposed interior ferrous surfaces, exclusive of stainless steel surfaces, of valves 4-inch and larger, as well as the exterior surfaces of all submerged and buried valves, shall receive a fusion-bonded epoxy coating in accordance with AWWA C550. Flange faces of valves shall not be epoxy coated. The Contractor through the valve manufacturer shall certify in writing that such coating has been applied and tested in the manufacturing plant prior to shipment, in accordance with these Specifications.

### 3.03 TESTING

- A. All valves shall be hydrostatically field tested at the specified pipeline test pressures specified in the piping sections. Any leakage or "sweating" of joints shall be stopped and all joints shall be tight.

END OF SECTION

## SECTION 02664

### HORIZONTAL DIRECTIONAL DRILLING AND PIPE INSTALLATION

#### PART 1 - GENERAL

##### 1.01 REQUIREMENTS INCLUDED

- A. This Section covers the work necessary for the furnishing and installation of pipe by horizontal directional drilling as described herein and as shown on the Drawings.
- B. The directional drill shall be accomplished by first drilling a pilot hole to design standards, then enlarging (reaming) the pilot hole to accommodate the pull back of high density polyethylene (HDPE) pipe for force main service and then pulling the HDPE pipe through the enlarged hole. Pushing of the pipe is not permitted.
- C. Coordination of any additional soil borings as required for certain subsurface conditions are the responsibility of the Contractor. Refer to Section 02010 entitled "Subsurface Investigation".
- D. The Contractor shall not construct any entrance or exit pits in locations that would impact paved driveways, above ground structures, or heavily landscaped areas unless specifically located on the Drawings. Exit pits shall not be wider than 8-feet. **The Contractor shall obtain the approval of the Engineer and District prior to locating any entrance or exit pits.**
- E. All drilling operations shall be performed in the presence of the Engineer. The Contractor is responsible for notifying the Engineer a minimum of **five (5) working days** in advance of all drilling operations.
- F. Notify Town a minimum of 48-hours prior to any tie-ins to existing utilities.
- G. The Contractor shall perform vibration monitoring at all times when any drilling operation is in progress.

##### 1.02 SUBMITTALS

- A. Shop Drawings:
  - 1. Description of how pilot hole drill will be steered and of how position and inclination of bore head will be monitored.
  - 2. Installation plan, including detailed plan and profile of bore plotted at scale no smaller than 1-inch equals 20-feet horizontal and vertical.
  - 3. Record drawing plan and profile showing as constructed position of pipeline.

4. Information on the pipe and fittings including, but not limited to, catalog and engineering information, hydrostatic test reports, sustained pressure reports, and burst strength test reports.
5. Chemical composition of the drilling fluids.

### 1.03 QUALITY ASSURANCE

- A. Provide key personnel with at least 5 years Florida experience in directional drilling and associated pipe installation, including as large as 4-inches in diameter. Key personnel include field supervisor and operators of directional drilling equipment, including position monitoring and steering equipment.

## **PART 2 - PRODUCTS**

### 2.01 GENERAL

- A. The directional drilling equipment shall consist of a directional drilling rig of sufficient capacity to perform the bore and the pull back, a drilling fluid mixing, delivery and recovery system, a magnetic tracking system to accurately guide boring operations, a vacuum truck of sufficient capacity to handle the drilling fluid volume, a mud motor and hole opener for any rock conditions, and experienced personnel to operate the system.

### 2.02 DRILLING RIG

- A. The drilling rig shall consist of a hydraulically powered system to rotate, push, and pull hollow drill pipe into the ground at a variable angle while delivering a pressurized fluid mixture to guidable drill head. The rig shall be anchored to the ground to withstand the pulling, pushing, and rotating pressure required to complete the installation. The hydraulic power system shall be self contained with sufficient pressure and volume to power the drilling operations. Hydraulic system shall be free of leaks. Rig shall have a system to monitor and record maximum pull-back pressure during pull-back.

### 2.03 HDPE PIPE

- A. The pipe shall be extruded from a polyethylene compound which conforms to ASTM D1248 and which possesses the following properties:
  1. The polyethylene shall be obtained by polymerization of no less than 85 percent ethylene and no less than 95 percent of total olefins by weight.
  2. The polyethylene resin shall be classified as a Type III, Grade P34, Class C, Category 5 with a density of 0.955 g/cm<sup>3</sup> and have a minimum ASTM

D3350 cell classification of 335434C and a designation of PE 3408 by the Plastic Pipe Institute.

3. Environmental Stress: Greater than 192 hours: Crack resistance. ASTM D1693 Condition C.
4. Minimum Hydrostatic: 1,600 psi. Design basis at 73.4° F, ASTM D2837.
5. The polyethylene compound shall be suitably protected against degradation by ultraviolet light by means of carbon black, well dispersed by precompounding in a concentration of not less than 2 percent.
6. The maximum allowable hoop stress shall be 800 psi at 73.4° F.
7. The pipe manufacturer shall be listed with the Plastic Pipe Institute as meeting the recipe and mixing requirements of the resin manufacturer for the resin used to manufacture the pipe for this project.
8. Pipe sizes shall conform to ASTM F714.
9. The pipe shall conform to the following schedule:

<u>Nominal Pipe Size</u>	<u>Piping System and/or Location</u>	<u>SDR</u>	<u>PSI</u>
<b>2-Inches (IPS)</b>	<b>As Shown on the Drawings</b>	<b>7</b>	<b>265</b>
<b>2-Inches (DIPS)</b>	<b>As Shown on the Drawings</b>	<b>11</b>	<b>200</b>
<b>8-Inches (DIPS)</b>	<b>As Shown on the Drawings</b>	<b>11</b>	<b>200</b>

10. The pipe shall contain no recycled compound except that generated in the manufacturer's own plant from resin of the same specification from the same raw material. The pipe shall be homogenous throughout and free of visible cracks, holes, foreign inclusions, or other deleterious defects, and shall be identical in color, density, melt index, and other physical properties. The resin used for manufacture of the pipe shall be manufactured by the pipe manufacturer, this maintaining complete control of the pipe quality.
11. The Engineer may request, as part of the quality control records submittal, certification that the pipe produced is represented by the quality assurance testing. Additionally, test results from manufacturer's testing or random sampling by the Engineer that do not meet appropriate ASTM Standards or manufacturer's representations may be cause for rejection of pipe represented by the testing. These tests may include density and flow rate measurements from samples taken as selected locations within the pipe wall and thermal stability determinations according to ASTM D3350, 10.1.9.

- B. Pipe Design: The pipe shall be designed according to the ISO modified formula ASTM D3035. The design pressure rating shall be expressed in terms of the static working pressure in psi for water at 73.4° F according to ASTM D2837. The minimum allowable pressure rating for the pipe shall be 160 psi except as noted on the Drawings.
- C. Pipe Manufacturer: HDPE piping for sewer service suitable for direction drilling, **force main green color identifier**, water blue color identifier, reclaimed Pantone 522C color identifier. Piping shall be Driscopipe Series 4300, Chevron Plexco, or equal.

#### 2.04 ANCILLARY PIPING

- A. PVC Pipe, ASTM D3034: Standard dimension ratio less than 35, except that cell classification shall be 12454-B or 12454-C as defined in ASTM D1784.
- B. Ductile Iron Pipe: ANSI/AWWA C151/A21.51 pressure class 350. Fitting shall be ANSI/AWWA C110/A21.10 with a working pressure of 250-psi. Push on joints shall be ANSI/AWWA C111/A21.11, 40-mil polyethylene lined ASTM D1248.

#### 2.05 FITTINGS

- A. Polyethylene fittings shall be manufactured by molding or fabrication from polyethylene pipe using thermal butt-fusion. All polyethylene fittings shall have the same or higher pressure rating, inside diameter, and composition, and same manufacturer as the pipe.
- B. Fabricated pipe fittings shall be joined to the polyethylene pipe by using flanges, butt-fused to the pipe unless otherwise specified. Backup flange rings, bolts, and nuts shall be Type 304 stainless steel. Gaskets shall be reinforced black rubber, asbestos-rubber compound, Buna-N, red rubber, or other material as approved by the Engineer and shall be made to fit the joint.
- C. Polyethylene pipe fittings shall meet the following minimum dimensional requirements as manufactured by Phillips Driscopipe, Inc., Dupont Sclairpipe; Chevron Plexco, or equal.

<u>Nominal Pipe Size (Inches)</u>	<u>*SDR</u>	<u>PSI</u>
<b>2</b>	<b>7 (IPS)</b>	<b>265</b>
<b>2</b>	<b>11 (DIPS)</b>	<b>200</b>
<b>8</b>	<b>11 (DIPS)</b>	<b>200</b>

\*Standard Dimensional Ratio – Wall Thickness

2.06 JOINTS

- A. Thermal butt-fusion, except where connecting to dissimilar pipe.

2.07 FLANGES

- A. ASTM A 240, Type 304 stainless steel backing flanges with 125-pound, ANSI B16.1 standard drilling. Flanges shall be supplied by the pipe manufacturer, complete. Flanges shall be complete with one-piece, molded polyethylene stub ends. Flanged connections shall have the same pressure rating as the pipe or greater.

2.08 GASKETS

- A. Flat ring, full-face, 1/8-inch ethylene propylene rubber (EPR).

2.09 BOLTING

- A. Type 304 stainless steel, ASTM A193, Grade B8 hex head bolts; and ASTM A194, Grade 8 hex head nuts. Bolts shall be fabricated in accordance with ANSI B18.2 and provided with washers of the same material as bolts.

**PART 3 - EXECUTION**

3.01 GENERAL

- A. Provide freshwater, free of hazardous or toxic substances, for drilling and grouting purposes.

3.02 PREPARATIONS

- A. Locate positions of entry and exit pits, establish elevation and horizontal datum for bore head control, and lay out pipe assembly area.
- B. Layout and assemble pipe in manner that does not obstruct adjacent roads, and commercial or residential activities adjacent to construction easements. Elevate pipe over streets and driveways or provide gently sloping ramps as necessary to avoid disruption to traffic.
- C. Pipe shall be stored on level ground free of sharp objects which could damage pipe. Pipe shall not be dragged over sharp and cutting objects and hooks shall not

be used. Ropes, fabric, slings, straps or rollers should be used when handling pipes.

### 3.03 DRILLING PILOT HOLE

- A. Drill pilot hole from entrance point to exit point following vertical and horizontal alignment shown.
- B. Provide an experienced operator to conduct a guided wireline while the pilot hole is advanced and plot actual horizontal and vertical alignment of pilot hole continuously. Provide Engineer with position or inclination of pilot bore upon request. Provide a full computer generated mapping of the bore log to the Engineer.
- C. Contractor shall provide and maintain instrumentation to accurately locate the pilot hole, measure drill string axial and torsional loads, and measure drilling fluid discharge rate and pressure. These readings shall be provided to the Engineer upon request.
- D. The pilot hole shall be drilled along the path shown on the drawings. However, right-of-way and utility conflicts take precedence over the alignment as shown on the Drawings.
- E. Alignment Requirements:
  - 1. Pilot hole exit point shall be within 1-foot horizontally of exit point location shown.
  - 2. Throughout its alignment, pilot hole shall be within 1-foot of horizontal alignment shown and no shallower than vertical alignment shown.
  - 3. Alignment shall have no intermediate high points that might trap air in pipe after installation.
  - 4. Curvature of completed pilot hole shall not exceed that which after pipe installation will result in pipe wall stresses greater than 0.50 of yield stress.
- F. Acceptance: If pilot hole alignment fails to conform to specified requirements, drill new pilot hole with alignment meeting specified requirements.

### 3.04 REAMING PILOT HOLE AND PULLING PIPE

- A. **The entire pull section shall be subjected to an above ground visual hydrostatic pretest prior to being installed in the hole. No leakage will be permitted during the pretest.**

- B. Obtain District's approval to proceed before enlarging pilot hole and pulling pipe into position.
- C. While pulling pipe, enlarge pilot hole ahead of pipe to diameter sufficient for pulling pipe into position.
- D. While pulling pipe, handle pipe in manner that does not overstress pipe. Limit radius of curvature along length of pipe during installation to 75 percent of minimum radius as recommended by piping manufacturer. If pipe buckles or is otherwise damaged, remove damaged section and replace it with new pipe.
- E. Protect interior lining and exterior coating from damage.
- F. Pull pipe so that minimum of 10 feet of pipe is exposed at both ends of bore.
- G. Reinforced tracer wire (#12 AWG) solid (HDPE) coated copper wire (.0808" diameter) shall be attached to both sides of the pulling head and the crown of the HDPE pipe with duct tape at 24" O.C. and a minimum of two full wraps around the pipe. Manufacturer shall be Copperhead Industries or approved equal.

### 3.05 CLEANING PIPE ENDS

- A. After pulling pipe, clean exposed ends for installation of fittings.

### 3.06 HANDLING AND DISPOSAL OF DRILLING MUD AND CUTTINGS

- A. Make adequate provisions for handling and containing muddy water, drilling mud, and cuttings during drilling operations. Do not discharge these contaminants into waterways.
- B. Construct mud pits at entry and exit points in manner that completely contains mud and prevents its escape.
- C. When onsite provisions for storing muddy water, drilling mud, or cuttings onsite are exceeded, haul contaminant away to suitable legal disposal site.
- D. Conduct directional drilling operation in such manner that drilling mud is not forced into areas when it might be objectionable.

### 3.07 JOINING PIPE SECTIONS

- A. Pipes shall be joined to one another, to the polyethylene fittings, and to the flange connections by means of thermal butt-fusion. Polyethylene pipe lengths, fittings, and flanged connection to be joined by thermal butt-fusion shall be of the same type, grade, and class of polyethylene compound and supplied from the same raw material supplier.

- B. Connection of the polyethylene pipe to dissimilar pipe shall be through transition connections provided by the HDPE supplier which shall consist of the following:
1. A self restraining MJ adapter assembly kit that is butt-fused to the HDPE pipe. For smaller diameter HDPE pipe (1/2"-3"), HDPE to PVC connections shall use pack joint style fittings as manufactured by Ford Meter Box Co.
  2. Adapters shall include a stainless steel insert to prevent deformation of the HDPE pipe end.
  3. Type 304 stainless steel bolts and nuts of sufficient length to show a minimum of three complete threads when the joint is made and tightened to the manufacturer's standard. Antigalling compound, as provided by the manufacturer, shall be applied before initial torquing of bolts. Retorque the nuts after 4 hours.
  4. Gaskets as specified shall be made by the manufacturer of the pipe to fit the joint.
- C. Butt-Fusion Joining: Butt-fusion of pipes and fittings shall be performed in accordance with ASTM D2657 and the pipe manufacturer's recommendations as to equipment and technique. The manufacturer's representative must be onsite to certify the results are satisfactory. Depending on site conditions, butt-fusion joining shall be performed in or outside of the excavation at the Contractor's option.
- D. Fusion equipment shall be operated by technicians who have a minimum of 5 years experience and have been certified by a major public utility or by the fusion equipment suppliers.
- E. The intent of this specification is that **all** segments of HDPE piping be fused **and** tested prior to being pulled into final position. It is the Contractor's responsibility to coordinate and submit a maintenance of traffic (MOT) plan to the appropriate agencies for approval. Contractor shall be responsible for supplying, installing and maintaining all MOT devices indicated in the approved MOT plan for the duration of the drilling, fusing, testing and pulling activities.

### 3.08 END FITTINGS

- A. Fabricate and install flanged fittings at end of pipe for attachment of adjacent sections of pipe. Fitting angles shall correspond to field conditions and shall be as approved by Engineer. Coat and line fittings as specified for pipe.

### 3.09 PIPE LEAK TESTING – GENERAL

- A. General

1. Prior to pulling pipe into position the Contractor shall conduct pressure and leakage tests on all new pipeline string segments and appurtenances to be installed, in accordance with ASTM F2164, most recent edition.
2. Furnish necessary equipment and material and make taps in piping, as necessary for testing and as specified.
3. Engineer will observe the tests.
4. Provide ten (10) days advance written notice of start of testing to Engineer.
5. Test Pressures and Type of Test: 150-psi, hydrostatic leak and pressure tests for HDPE piping per the procedures and requirements stipulated in ASTM F2164.
6. Separately test pressure pipe sections that can be isolated by valves.
7. Test Records: Make records of each piping system during the test to document the following:
  - a. Date and time of day of test.
  - b. Weather conditions.
  - c. Description and identification of piping tested.
  - d. Test fluid.
  - e. Test pressure.
  - f. Types of gauges and instruments including calibration certificates.
  - g. Remarks, including:
    - 1) Leaks (type, location).
    - 2) Repairs made on leaks.
  - h. Certification by Contractor and signed acknowledgement by Engineer that tests have been satisfactorily completed.

B. Testing New Pipe Connected to Existing Pipe:

1. Isolate new pipe.
2. Test Joint between new piping and existing piping by methods, approved by the Engineer, that do not place the entire existing system under test load.

C. Buried Pressure Piping: Final Hydrostatic Acceptance Test: Upon pulling the entire HDPE pipe into position, the Contractor shall conduct a final acceptance test. The test shall be performed in accordance with the requirements stipulated in ASTM F2164.

- D. Exposed Pressure Piping: Conduct tests after piping has been completely installed and inspected for proper installation including all supports, hangers, and anchors, but prior to installation of insulation.
- E. **Contractor is not allowed to perform leakage and/or pressure tests against any valve and shall cap the ends of the HDPE force main segment to be evaluated prior to testing. The directional drill segment and open cut segments (i.e. C-900 PVC) of the force main shall be isolated and tested independently. Upon completion of successful testing of each segment, the segments shall be tied-in to each other and the entire force main installation tested.**

### 3.10 HYDROSTATIC LEAK AND PRESSURE TESTING PROCEDURES

- A. Testing Equipment: The Contractor shall supply all temporary pumps, valves, fittings, caps, backflow devices, gauges, piping, etc. required to perform the hydrostatic leak and pressure tests in accordance with ASTM F2164. All temporary material and equipment shall be suitable for the proposed test pressure and intended use. Temporary equipment shall be in good working order. All instrumentation and gauges shall have been calibrated within the last six months. The Contractor shall submit calibration certificates verifying the calibration schedule.
- B. Procedure:
  - 1. Use water as the hydrostatic test fluid.
  - 2. Provide clean test water of such quality to prevent corrosion of the materials in the piping system.
  - 3. Maximum Velocity During Filling: 0.25-foot per second applied over full area of pipe.
  - 4. Open vents at all high points of the piping system to purge air pockets while the piping system is filling.
  - 5. Test all parts of the piping system at the test pressure specified.
  - 6. Cover large sections of exposed piping with white cloths to minimize thermally induced pressure expansion.
  - 7. During the test period the hydrostatic test pressure shall be continuously maintained for 60-minutes (1-hour) minimum and for such additional time as necessary to conduct examinations for leakage.
  - 8. Examine all joints and connections for leakage.
  - 9. The piping system exclusive of possible localized instances at pump or valve packing, shall show no visual evidence of leaking.

10. In the event of failure of either or both the hydrostatic leak test or pressure test the affected piping segment shall be allowed to normalize in a depressurized state for a minimum 8-hours after which time the deficiencies shall be corrected and the test performed again.
11. Empty pipe of water prior to final cleaning or disinfection.

**C. Buried HDPE Pressure Piping (installed only by directional drill methods):**

1. HDPE Pipe: Slowly fill test section with water and pressurize the piping to the specified test pressure. Continue to add water as required to maintain the test pressure for a period of up to 4-hours or until the pressure is maintained without the addition of water. Apply and maintain the specified test pressure using a hydraulic pressure pump.
2. Expel all air from piping system prior to testing.
3. Upon completion of the 4-hour expansion phase, the test pressure shall be reduced by 10-psi and the piping shut-in and isolated.
4. The hydrostatic test pressure shall be maintained within 5% of the starting pressure for a period no less than 1-hour without addition of water. A change in pressure greater than 5% will indicate a failed test.
5. The entire test period including the fill, expansion, test and depressurization phases shall be completed within an 8-hour duration. All test equipment shall be sized as required to comply with this requirement.
6. No leakage of HDPE piping which has butt-fused joints is permitted.

**3.11 FINAL CLEANING**

**A. Interim Cleaning:**

1. Prevent accumulation of pipe cuttings, filings, gravel, cleaning rags, and other foreign material within piping sections during fabrication.
2. Examine piping to assure removal of these and other foreign objects prior to assembly and installation.

**B. Following assembly and testing, and prior to final acceptance, pig and flush pipelines (except as stated below) with water to remove accumulated construction debris and other foreign matter.**

**C. The Contractor shall pig the new force main in the following manner:**

1. The Contractor will insert a flexible polyurethane foam "swab" (2 lbs./CF) complete with rear polyurethane drive seal, into the first section of pipe. The "swab" shall remain there until the pipeline construction is complete.

2. Cleaning and flushing shall be accomplished by propelling the "swab" down the pipeline to the exit point with water during the initial filling of the main. Flushing shall continue until the pig exits.
- D. Provide hoses, temporary pipes, ditches, and other items as required to properly dispose of flushing water without damage to adjacent properties.
- E. Minimum Flushing Velocity: 2.5-fps.
- F. For large diameter pipe where it is impractical to flush the pipe at 2.5-fps velocity, clean the pipeline in-place from the inside by pigging, then flush the line at a lower velocity.

### 3.12 PIPE ABANDONMENT

- A. In event of failure to install pipe, retain possession of pipe and remove it from site. Completely fill borehole with grout or sand so as to prevent future settlement.
- B. If pipe cannot be withdrawn, cut pipe off at least 3-feet below ground surface and cap ends of pipe with blind flange. Fill annular space with grout.

### 3.13 SURFACE RESTORATION

- A. Promptly replace damaged pavement. Restore pavement around entry and exit pits as soon as Work specified in this section is completed, even if this pavement will later be removed by other Work.

END OF SECTION

## **SECTION 02670 PIPELINE CLEANING**

### **PART 1 - GENERAL**

#### **1.01 REQUIREMENTS INCLUDED**

- A. The Contractor shall furnish all supervision, tools, equipment, materials, labor, and other incidental items required to thoroughly clean and flush and/or pig all piping specified herein.
- B. Furnish all equipment, materials and labor to install temporary piping required to direct all water used for flushing or pigging the pipelines to the disposal points designated herein or as otherwise directed by the District.
- C. Provide all necessary radio communication units, job site transportation, and auxiliary centrifugal pumps for cleaning.
- D. Provide detailed pipeline cleaning plan as a shop drawing for review and approval.
- E. Piping to be cleaned shall include the following:
  - 1. All new wastewater force main to be installed under this Contract shall be cleaned by pigging.

#### **1.02 RELATED REQUIREMENTS**

- A. Section 02732: Force Mains – Polyvinyl Chloride (PVC) Pressure Pipe
- B. Section 02664: Horizontal Directional Drilling and Pipe Installation
- C. Section 01700: Contract Closeout

#### **1.03 TOOLING AND EQUIPMENT**

- A. Contractor shall furnish and install poly-pigs and pigging apparatus. Remove upon successful completion of all pipeline cleaning. The pig shall be 2-inches larger than the diameter of the force main.
- B. Contractor must provide poly-lined flushing discharge pits.
- C. Contractor is solely responsible for all costs associated with supplying, maintaining and operating any and all vac-trucks necessary to complete the

flushing and pigging activities. Contractor is also solely responsible for all costs and fees associated with the disposal of all vacuum collected fluids. The Contractor will not be permitted under any circumstance to use any District owned equipment or material to perform any of the work associated with the Contract.

#### 1.04 SCHEDULE

- A. All pipeline flushing shall be performed between the hours of 8:00 A.M. and 4:00 P.M.

#### 1.05 WORKMANSHIP

- A. The Contractor may furnish the services of a specialty subcontractor for the proper cleaning and flushing of all pipelines specified herein.
- B. The subcontractor shall provide knowledgeable and experienced personnel for supervision of the entire pipeline cleaning. The subcontractor shall be certified and licensed by the State of Florida as an Underground Contractor.
- C. All personnel shall be trained and accredited to be in compliance with OSHA 29, CFR 1910.120, Health and Safety Training.

### **PART 2 - PRODUCTS (NOT USED)**

### **PART 3 - EXECUTION**

#### 3.01 GENERAL

- A. Excavations, temporary piping and fittings required for access to the pipelines to be cleaned, and restoration of excavations shall be performed and installed by the Contractor. Excavations shall provide access one foot below the pipeline.
- B. If required, sheeting, bracing, and other appropriate means, methods and techniques of maintaining excavations to prevent accidents, cave-ins, or breaking of the ground outside of the excavation area shall be provided by the Contractor.
- C. The Contractor shall maintain and submit to Engineer accurate record drawing information for the pipeline detailing all valves, fittings and appurtenances, etc.
- D. Contractor shall provide sufficient labor and supervision necessary or required for the duration of the cleaning operation with valve keys for operation of the system.

- E. Barricades, cones, lights and other traffic control items that may be required to conform to existing safety and traffic regulations.
- F. **Contractor shall secure a source of potable water which is suitable to complete the required flushing and/or pigging activities per the Specifications. The Contractor shall coordinate with the District to identify a source and acquire a temporary service meter, if required. The Contractor shall be responsible for all costs associated with setting up a temporary account as well as for payment for the volume of potable water used during the completion of the work.**
- G. The Engineer must verify flushing and/or pigging procedures. Notify Engineer 48-hours in advance of the completion of all flushing and/or pigging activities.

END OF SECTION

## **SECTION 02680 PIPELINE INTEGRITY TESTS**

### **PART 1 - GENERAL**

#### **1.01 THE REQUIREMENT**

- A. The Contractor shall perform flushing and testing of all pipelines and appurtenant piping, complete, including conveyance of test water to point of use and all disposal thereof, in accordance with the requirements of the Contract Documents. The cost of all testing shall be borne by the Contractor.

#### **1.02 TESTING RECORDS**

- A. Provide records of each piping installation during the testing. These records shall include:
  - 1. Date and times of test
  - 2. Identification of pipeline, or pipeline section tested or retested
  - 3. Identification of pipeline material
  - 4. Identification of pipe specification
  - 5. Test fluid
  - 6. Test pressure
  - 7. Remarks: Leaks identified (type and location), types of repairs, or corrections made
  - 8. Certification by Contractor that the leakage rate measured conformed to the specifications

#### **1.03 DESCRIPTION**

- A. Perform testing of piping systems in accordance with AWWA C600 and as specified below.
- B. Provide instruments required for testing of piping systems.
  - 1. Make instruments available to Engineer to facilitate spot checks during testing.
  - 2. Retain possession of instruments, remove from site at completion of services.
- C. Provide all water required for flushing and testing.

- D. Provide all necessary pumping equipment and other equipment, materials and facilities required for proper completion of the flushing and testing specified.
- E. Source and quality of water, procedure and test equipment shall be by approval of the Engineer.
- F. All tests shall be made in the presence of the Engineer. Notify Engineer at least 72 hours before any Work is to be inspected or tested.
- G. If inspection or test shows defects, the piping system(s) shall be repaired and replaced and inspection repeated, until such piping is acceptable to the Engineer.
- H. Sections of the system may be tested separately, but when so tested it shall be distinctly understood that any defect which may subsequently develop in a section already tested and accepted shall promptly be corrected and that section retested.
- I. Disposal of the water used for testing shall be subject to the approval of the Engineer.

## **PART 2 - PRODUCTS**

### **2.01 TESTING FLUID**

- A. Testing fluid shall be water potable water for hydrostatic testing and flushing.
- B. Submit request for use of water from waterlines of Town of Jupiter 48 hours in advance.
- C. The Contractor may obtain the water from the Town of Jupiter at the Town of Jupiter's rate of charges.

### **2.02 TESTING EQUIPMENT**

- A. Provide calibrated pressure gauges, pipes, bulkheads, pumps, and meters to perform the hydrostatic testing.

## **PART 3 - EXECUTION**

### **3.01 GENERAL**

- A. The District will inspect all sewer facilities prior to acceptance and again just prior to the expiration of the one year guarantee.
- B. When a section of pipe of a length deemed adequate by the Design Engineer is ready for testing, the pipe shall be flushed and then tested in accordance with the

applicable testing method as described herein. Suitable temporary testing plugs or caps shall be installed. All necessary pressure pumps, pipe connections, meters, gauges, water, weirs, bulkheads, and other necessary equipment and all labor required for carrying out these tests shall be furnished. The Design Engineer shall notify the District at least 48 hours prior to any testing so that it may, at its option, have representative present during the testing.

- C. If the section fails to pass the applicable tests, the Contractor shall do everything necessary to locate, uncover and repair or replace the defective pipe, fitting or joint, all at his own expense. Additional testing will be required to assure passage of the test.

### 3.02 PRESSURE AND LEAKAGE TEST FOR FORCE MAINS

- A. Before conducting hydrostatic tests, flush pipes with water to remove dirt and debris. Maintain a flushing velocity of at least 4 fps for water testing. Flush pipes for time period as given by the formula

$$T = \frac{2L}{4}$$

in which:

T = flushing time (seconds)

L = pipe length (feet).

A pig will be required where minimum velocity cannot be obtained or the pipeline diameter is greater than 12-inches.

- B. Except as otherwise directed by the District, all pipelines shall be given combined pressure and leakage tests in sections of length approved by the District's Engineer. The Contractor shall furnish and install suitable temporary plugs or caps; all necessary pressure pumps, pipe connections, meters, gauges, and other necessary equipment; and all labor required. The Design Engineer shall witness all tests.
- C. Subject to approval of the Design Engineer and provided that the tests are made within a reasonable time considering the progress of the project as a whole, and the need to put the section into service, the Contractor may make the tests when he desires.
- D. The section of pipe to be tested shall be filled with water of approved quality and all air shall be expelled from the pipe. If air release valves are not available at high points for releasing air, the Contractor shall make the necessary excavations and do the necessary backfilling and make the completion of the test.
- E. The section under test shall be maintained full of water for a period of 24 hours prior to the combined pressure and leakage test being applied.

- F. Two pressure and leakage tests shall be conducted for each pipeline segment. The first test shall be conducted at the average working pressure of the pipeline segment. The second test shall be conducted at a test pressure of 100 pounds per square inch.
- G. The pressure and leakage test shall consist of first raising the water pressure (based on the elevation of the lowest point of the section under test and corrected to the gauge location) to the specified pressure. If the Contractor cannot achieve the specified pressure and maintain it for a period of one hour with no loss of pressure and no additional pumping, the section shall be considered as having failed to pass the pressure test. The District may require that the pressure and leakage test be run in accordance with AWWA C 600 Standards, latest revision. (Four Hour Test)

### **AIR TEST TABLE**

Based on Formulas from ASTM C828-75T  
Specification time (min:sec) required for pressure drop from 3.5 to 2.5 PSIG

When testing one pipe diameter only

Length of Line (ft)	PIPE DIAMETER							
	6	8	10	12	15	18	21	24
25	0:10	0:18	0:28	0:40	1:02	1:20	2:01	2:38
50	0:20	0:35	0:55	1:19	2:04	2:58	4:03	5:17
75	0:30	0:53	1:23	1:59	3:06	4:27	6:04	7:55
100	0:40	1:10	1:50	2:38	4:08	5:56	8:05	10:34
125	0:50	1:28	2:18	3:18	5:09	7:26	9:55	11:20
150	0:59	1:46	2:45	3:58	6:11	8:30	9:55	11:20
175	1:09	2:03	3:13	4:37	7:05	8:30	9:55	11:20
200	1:19	2:21	3:40	5:17	7:05	8:30	9:55	12:06
225	1:29	2:38	4:08	5:40	7:05	8:30	10:25	13:36
250	1:39	2:56	4:35	5:40	7:05	8:31	11:35	15:07
275	1:49	3:14	4:43	5:40	7:05	9:21	12:44	16:38
300	1:59	3:31	4:43	5:40	7:05	10:12	13:53	18:09
350	2:19	3:47	4:43	5:40	8:16	11:54	16:12	21:10
400	2:38	3:47	4:43	6:03	9:27	13:36	18:31	24:12
450	2:50	3:47	4:43	6:48	10:38	15:19	20:50	27:13
500	2:50	3:47	5:14	7:34	11:49	17:01	23:09	30:14
550	2:50	3:47	5:45	8:19	13:00	18:43	25:28	33:16

For pipe diameters other than what's shown, please contact the District's Director of Engineering for testing specifications.

END OF SECTION

**SECTION 02732**  
**FORCE MAINS - POLYVINYL CHLORIDE (PVC) PRESSURE PIPE**

**PART 1 - GENERAL**

1.01 GENERAL REQUIREMENT

- A. The Work under this Section shall include furnishing and installing Polyvinyl Chloride (PVC) Pressure Pipe, complete, with appurtenances.
- B. All fittings furnished hereunder with PVC C900 pipe shall be ductile iron restrained mechanical joint with an interior ceramic epoxy lining.
- C. All fittings furnished hereunder with Schedule 80 PVC pipe shall be Schedule 80.

1.02 WORK INCLUDED

- A. The Work under this Section shall also include, but is not limited to, the furnishing of all labor, materials, equipment, transportation, and temporary services of every nature necessary for the proper construction of the project in accordance with these Specifications and as shown on the Contract Documents.
- B. Wherever the term "road crossing" is used herein, this shall be understood to mean work under or across an existing paved roadway or thoroughfare using equipment and methods that are accepted practice for such work.

1.03 RELATED REQUIREMENTS

- A. Section 01010 entitled: Summary of Work
- B. Section 01300 entitled: Submittals.
- C. Section 02225 entitled: Trench Excavation and Backfill.
- D. Section 02670 entitled: Pipeline Cleaning
- E. Section 02680 entitled: Pipeline Integrity Tests.

1.04 REFERENCES

- A. ASTM D618, D1598, D1599, D1784, D1785, D2122, D2152, D2241, D2412, D2774, D2837, D3139, and F477.
- B. ANSI 21.11 and 21.53.

- C. National Sanitation Foundation (NSF) Testing Laboratory Standard No. 61
- D. AWWA C900-88, C900-89, C905, C111, C153, and M23.
- E. Department of Commerce PS22-70 (SDR-PR) (pressure rated pipe).
- F. PPI Standard TR3.

#### 1.05 SUBMITTALS

- A. Submit to the Engineer within ten (10) days a listing of all PVC pipe and ductile iron restrained joint fittings which the Contractor requires to complete the Work. **All bell restraint and fitting restraints must include 316 SS nuts & bolts.**
- B. PVC pipe physical and chemical data sheets shall be submitted to the Engineer for approval prior to purchase of the pipe.
- C. The Contractor shall furnish an Affidavit of Compliance as provided by the PVC pipe manufacturer certifying that all materials delivered conform to the requirements of this Specification.

#### 1.06 CONNECTION TO EXISTING LINES

- A. Connection to existing lines, to which piping of this Contract must connect, the following work shall be performed:
  - 1. Expose buried lines to confirm pipe diameter, end connection, and pipe material.
  - 2. Furnish and install appropriate pipe, fittings, specials, and appurtenances to make proper connections.

### **PART 2 - PRODUCTS**

#### 2.01 PIPE MATERIALS

- A. GENERAL
  - 1. PVC pressure pipe shall conform to ASTM D1785 and shall be made from a 12454A or 12454B virgin PVC compound which is a Type 1, Grade 1 plastic as defined by ASTM D1784. Rerun or reclaimed materials are not acceptable.
  - 2. Pipe to be used shall comply with the National Foundation Standard No. 61 and shall have markings on the pipe to indicate that it has been tested and is in compliance with this Standard.

3. **All gaskets shall be EPDM.** One (1) gasket shall be furnished with each length of elastomeric-gasket bell-end pipe.
4. Gaskets shall not support bacterial growth or affect the quality of the water to be transported.
5. All PVC material for pipe and couplings shall be blue in color for water and **green in color for wastewater** and as uniform as commercially practical in density and other physical properties.
6. PVC pipe shall be homogeneous throughout and free from voids, cracks, holes, foreign inclusions and other defects. Pipe surfaces shall be free of nicks and scratches.
7. Joining surfaces of spigots and joints shall be free of gouges and imperfections that could cause leakage.
8. Standard lengths of pipe shall be available of 20 feet, plus or minus one inch (1").
9. At least 85% of the total footage of pipe of any class and size shall be furnished in standard lengths. The remaining 15% in random lengths. Random lengths shall not be less than ten feet (10') long.
10. Wall thickness shall be in accordance with PS22-70, ASTM D2122, and ASTM D-2241.
11. PVC pipe shall be furnished with ductile iron pipe equivalent outside diameters.
12. Pipe ends shall be tapered to accept the gasket coupling.
13. Pipe shall bear identification markings that will remain legible after normal handling, storage, and installation. Markings shall be applied in a manner that will not weaken or damage the pipe. Marking shall be applied at intervals of not more than five feet on the pipe. Pipe markings shall include the following information:
  - a. Manufacturer's Name or Trademark.
  - b. Nominal Size and O.D. base.
  - c. PVC
  - d. Dimension Ratio (DR).
  - e. AWWA Pressure Rating (PR).
  - f. AWWA standard designation number (AWWA C900).
  - g. NSF Logo.

B. GASKETED PVC PIPE

1. Polyvinyl Chloride (PVC) DR 18 pipe – 4 inch through 12 inch shall conform to AWWA C900; 20 inch shall conform to AWWA C905. **Pipe shall be manufactured by PW Eagle, IPEX, National Plastic or Northern Pipe. These pipe manufacturers allow at least up to 1.5 degrees of deflection at the pipe joint.**
2. Restrained Joints - Restrained joints are to be used for changes in elevation or alignment as shown on the Plans or as required in the field by the Engineer. The length of restraint required shall be approved by the engineer. These joints may be U.S. Pipe and Foundry "TR Flex" Joints, MEGALUGS, or approved equal. Restraining devices for PVC pipe is as follows:
  - Series 2000PV (mechanical joint restraint for PVC pipe) as manufactured by EBBA Iron - For restraining plain end PVC pipe at mechanical joint fittings. **All nuts and bolts shall be 316 SS.**
  - Series 1600 (bell restraint harness for C900 PVC pipe) as manufactured by EBBA Iron - For use on restraining C900 PVC pipe bells. **All nuts and bolts shall be 316 SS.**
3. All fittings for use with push-on type PVC pipe shall be ductile iron restrained mechanical joint with an interior ceramic epoxy lining. **All nuts and bolts shall be 316 SS.**

C. SOLVENT WELD PVC PIPE

1. All PVC pipe three inches or smaller in diameter intended for buried service shall be socket weld joint.
2. Wall thickness shall be Schedule 80 minimum, unless otherwise specified or noted.
3. For above ground piping, joints shall be socket welded for nominal pipe sizes less than three inches in diameter. Where threaded connections are required, socket type threaded adapters shall be provided.
4. Socket type joints shall be made up in accordance with ASTM D2855 with a PVC solvent cement complying with ASTM D2564. The cement shall have a minimum viscosity of 2,000 cps.
5. Socket type pipe fittings for Schedule 80 pipe shall conform to ASTM D2466.
6. Fittings shall be extruded and shall have the same schedule designation, joint type, and be made of the same PVC compound as the connecting pipe.

7. The dry fit of fittings and coupling sockets must be snug. If the fit is such that it is loose, the pipe and/or fittings shall be rejected as faulty because of improper size. Building up the joint to overcome a loose fit with multiple layers of filler solvent is not permitted.
8. Elbows shall be of the long radius type with minimum walls equal to that of the pipe joining. Tapered welding sockets shall be equal to those required for couplings.
9. Mechanical joint adapters at least 12" long and made of Schedule 80 PVC shall be furnished. One end shall be built up to an O.D. equal to that required by the mechanical joint fitting.
10. Tees shall be a molded fitting with deep socket adapters having a socket depth equal to the coupling. The socket and wall must be equal to the coupling requirements.
11. Solvent shall be compounded to conform with the socket fit and be such as to assure minimum installation cost and a weld of maximum strength.

## 2.02 FITTINGS

- A. Ductile Iron Fittings - Ductile iron fittings shall be mechanical joint type and shall conform to ANSI/AWWA C110/A21.10. All fittings shall have a working pressure rating of 350 psi in sizes 4-inch through 24-inch and 250 psi for sizes 30-inch through 54-inch, and shall be coated and lined as specified for pipe. **All nuts and bolts shall be 316 SS.**
- B. DIP fittings shall have an interior ceramic epoxy lining. The lining material for fittings shall be epoxy coatings, 40 mil thick, and shall be "Protecto 401", "Permite 9043 Type III", or "Linerguard" and conform to the latest standards of ANSI/AWWA C104/A21.4.
- C. All buried DIP fittings shall receive an external bituminous coating in accordance with ANSI 21.10.
- D. Schedule 80 Fittings – Schedule 80 fittings shall be socket weld and conform to ASTM D1785 for physical dimensions and ASTM D1784 for materials.

## PART 3 - EXECUTION

### 3.01 GENERAL

- A. Pipe must be delivered to the job site by means which will adequately support it, and not subject it to undue stresses.

- B. Loads shall be supported so that the bottom rows of pipe are not damaged by crushing.
- C. Pipe shall be unloaded carefully and strung or stored as close to the final point of placement as practical.

### 3.02 PREPARATION

- A. Clean off scale and dirt both inside and outside before assembly. All interior surfaces of bells and couplings and the male ends of the pipe shall be free of foreign matter.
- B. Before running lines, the Contractor shall carefully verify the location, depth, type of joint needed, and size of pipe to which connection is proposed. The Contractor shall then assure itself that the lines can be run as contemplated without interfering with footings, walls, other piping, fixtures, etc. Any necessary deviations shall be referred to the Engineer for final adjustment before lines are run.
- C. All lengths of pipe shall be dimensioned accurately to measurements established at the site, and shall be worked into place without springing or forcing.
- D. The Contractor shall cut all pipe and drill all holes that may be necessary, whenever and wherever so required. This work shall be done in a thorough and workmanlike manner.

### 3.03 INSTALLATION

- A. PVC pipes shall be installed in accordance with ASTM D 2321 and ASTM D 2774.
- B. All changes in direction, unless otherwise noted on the Contract Drawings or approved by the Engineer, shall be made with restrained mechanical joint fittings. The bending of pipe is strictly prohibited.
- C. Any transition from one pipe size to another shall be made with a reducing fitting. Reducing bushings are prohibited except where specifically called for on the Contract Drawings.
- D. Deflection of piping at joints is permitted. The maximum allowable deflection shall be 75% of the maximum allowable deflection recommended by the pipe manufacturer.
- E. Lines, Grades, Stakes and Templates:

1. The Contractor shall, at its own expense, furnish all stakes, templates, patterns, platforms, and labor required in the layout of any part of the Work.
2. The line and grade of all piping, as well as the location of all appurtenances, will be as shown on the Contract Drawings, or as directed by the Engineer.
3. The Contractor shall give the Engineer a minimum of 48 hours notice for any engineering or inspection necessary to continue or complete the Work.
4. The Contractor shall establish all limit marks and bench marks reasonably necessary for the execution of the Work. The locations of all such marks so established shall be indicated and identified on the project record drawings as maintained by the Contractor.

F. Excavation:

1. The Contractor shall perform all excavation required for the installation of all parts of the project. All excavation shall be in strict accordance with the requirements of Section 02225.
2. The excavation of the trench shall not advance more than 100 feet ahead of the completed pipe work except where, in the opinion of the Engineer, it is necessary to drain wet ground, or for other reasons as approved by the Engineer.
3. All excavations shall be made by open cut except as shown on the Contract Drawings.
4. The bottom of trenches shall be accurately graded to provide uniform bearing and support for each section of pipe on undisturbed soil at every point along its entire length, except for portions of the pipe sections where it is necessary to excavate for bell holes. Bell holes shall be excavated only to an extent sufficient to permit accurate work in the making of the joints and to ensure that the pipe, for a maximum of its length, will rest upon the prepared bottom of the trench.
5. Excavation carried beyond or below grades specified by the Engineer shall be backfilled at the Contractor's expense with earth, sand, or gravel as directed by the Engineer, and shall be thoroughly tamped.
6. The materials excavated shall be deposited on the sides of the trenches and beyond the reach of slides, with the banks trimmed up so as little inconvenience as possible is made to public travel or occupants of adjoining property.
7. Sidewalks, roads, streets, and pavements shall not be obstructed by excavated materials, except as authorized by the Engineer. In this case,

adequate temporary provisions will be made for a satisfactory temporary passage of pedestrians and vehicles.

8. Adequate bridging and planked crossings must be provided and maintained across all open trenches for pedestrians and vehicles. Barriers, lights, flares and any other necessary warning devices shall be provided and maintained by the Contractor at trenches, excavations and embankments, at no additional compensation.
9. In case it is necessary to place excavated material adjacent to buildings, the Contractor shall erect barriers to keep the earth at least four feet from the front of such buildings. In case earth is deposited on grass plots, the Contractor shall remove it carefully when backfilling so as to not destroy the grass. All shade trees, shrubs, etc., along the line of construction shall be reasonably protected.
10. The Contractor shall, without additional expense, provide suitable temporary channels for any water that may flow along or across the site of the Work.
11. Where the bottom of the trench is found to consist of material which is unstable to such a degree that, in the opinion of the Engineer, it cannot be removed and shaped to adequately support the pipe, the trench bottom shall be stabilized by the Contractor to the satisfaction of the Engineer, without extra compensation.

G. Pipe Clearances in Rock:

1. Ledge rock, boulders and large stones shall be removed to provide a clearance of at least six inches below and on each side of all pipe, valves and fittings. Before the pipe is laid, all irregularities of the rock are to be filled with earth or sand well rammed into place and the bottom of the trench brought to proper grade.
2. The specified minimum clearances are the minimum clear distances which will be permitted between any part of the pipe and appurtenances being laid and any part, projection, or point of such rock, boulder or stone.

H. Blasting:

1. Blasting for rock excavation will not be permitted.

I. Bracing and Shoring:

1. The Contractor shall do all bracing, sheeting and shoring necessary to perform and protect all excavations as required for safety and as otherwise directed by the Engineer.

J. Dewatering:

1. The Contractor shall at all times during construction of the Work, provide and maintain ample means and devices with which to promptly and efficiently remove and properly dispose of all water entering trenches and excavations and keep said excavations dry until the structures to be built thereon are completed.

K. Bedding and Base Fill:

1. After pipe joints have been inspected and given preliminary approval, and sufficient time has elapsed for setting of joints, backfilling shall be performed by hand, together with tamping, until fill has progressed to an elevation at least one foot above the top of the pipe.
2. During this initial stage of backfilling, approved granular materials or loose soil free from lumps, clods, organic materials or stones shall be deposited in layers or approximately six inches thick and compacted by hand, or with manually operated machine tampers actuated by compressed air or other suitable means.
3. Tamps and machines shall be suitable for the Work, and subject to the approval of the Engineer.
4. In no case shall the gradient or alignment of any piping be changed from that indicated on the Drawings without permission of the Engineer.

L. Backfilling:

1. The Contractor shall perform all backfilling that may be required for the installation of any and all parts of the Project.
2. Backfilling shall be performed in strict accordance with Section 02225 - Trenching, Backfilling and Compaction, or as directed by the Engineer.
3. After the pipe is laid as specified herein, the trench shall be backfilled with selected fine materials from the excavation or borrow.

M. Clean-Up:

1. The Contractor shall clean up and dispose of all excess excavated material, trash, wood forms and other debris and restore the job site to a condition acceptable to the District.
2. Pipe laying operations shall not be permitted to extend excessive distances ahead of clean-up. Unless otherwise directed by the Engineer, clean-up activities shall not lag behind pipe installation by more than 300 feet.

N. Plugs, Caps, Blind Flanges and Anchorage:

1. Standard plugs shall be inserted into the bells of all dead end pipes, tees or crosses; spigot ends shall be capped; flanged ends shall have suitable blind flanges.

O. Temporary Plugging:

1. Installed piping systems shall be temporarily plugged at the end of each day's work. Plugging shall be installed in a manner satisfactory to the Engineer, and shall be adequate to prevent the entry of animals into the pipe or the entrance or insertion of deleterious materials.
2. Plugs installed for pressure testing shall be fully secured and blocked to withstand the test pressure.
3. Where plugging is required because of contract division or phasing for later connection, the ends of such lines shall be equipped with a permanent type plug or blind flange. Installation or removal of such plugging shall be considered incidental to the Work.

3.04 THRUST AND ANCHORAGE AT BENDS, FITTINGS, AND VALVES

A. Approved thrust restraint system shall be used wherever the pipeline:

1. Changes direction at tees, bends, crosses, and wyes.
2. Changes size as at reducers.
3. Stops as at a dead end.
4. Has a valve installed.

3.05 PIPELINE CLEANING

- A. The entire length of pipeline (force main) shall be cleaned and flushed in accordance with Section 02670. Potable water supplied by the Contractor shall be used for flushing the pipeline.

3.06 TESTING

- A. All pipe shall be hydrostatically tested in accordance with Section 02680.
- B. Before testing, all parts of the pipeline must be backfilled and braced sufficiently to prevent movement under pressure. If concrete thrust blocks are used, ample curing time must be provided prior to pressure testing to allow time for concrete to gain strength.

- C. Test ends shall be capped and braced to withstand the thrust developed under test pressure.
- D. All sections of pipelines must be thoroughly flushed and filled with clean water obtained from an approved source. Air shall be vented from all high points in the pipeline before conducting pressure and leakage tests.
- E. Prior to beginning testing, the temperature of the pipeline and of the test water shall be allowed to equalize.

END OF SECTION

## **SECTION 02734**

### **FLOW BYPASS PUMPING SYSTEM**

#### **PART 1 - GENERAL**

##### **1.01 REFERENCES**

A. The following is a list of standards which may be referenced in this Section:

1. American Society for Testing and Materials (ASTM): D3350-84, Polyethylene Plastics, Pipe and Fittings Materials.

##### **1.02 REQUIREMENTS INCLUDED**

A. Performance Requirements:

1. It is essential to the operation of the existing sewerage system that there be no interruption in the flow of sewage throughout the duration of the Project. Provide, maintain, and operate all temporary facilities such as dams, plugs, pumping equipment (both primary and backup units as required), conduits, and all necessary power to intercept the sewage flow before it reaches the point where it would interfere with the Work, carry it past the Work, and return it to the existing sewer downstream of the Work.
2. Design, install, and operate the temporary pumping system.
3. Convey the sewage safely past this Work area. Do not stop or impede the main flows under any circumstances.
4. Maintain sewer flow around the Work area in a manner that will not cause surcharging of sewers, damage to sewers, and that will protect public and private property from damage and flooding.
5. Protect water resources, wetlands, and other natural resources.

B. Design Requirements:

1. Provide all pipeline plugs, pumps of adequate size to handle peak flow, and temporary discharge piping, to ensure that the total flow of the sewer and service connections can be safely diverted around the section to be replaced. Bypass pumping system will be required to be operated 24 - hours per day 7-days per week, including holidays during bypass pumping operation. The system operating pressure shall be as required to pump into the system.
2. Install one bypass pump at each pump station or manhole to be bypassed. There shall be one back-up pump on-site ready for immediate use in the event of an emergency or breakdown of any of the pumps. Each pumping

location shall have provisions for immediate installation of a redundant pump without shutting the system down.

3. Single discharge piping shall be provided for all bypass pumping operations. Each individual discharge pipeline shall be of adequate size to convey the required flow for the system's normal operating pumps.
4. Provide adequate enclosure around all bypass pumping equipment.
5. To minimize odors, install the discharge piping to within 2-feet of the manhole bottom and provide lockable security covers with an inspection door over all suction and discharge manholes. Covers can be made of ¾-inch plywood, securely fastened over the manholes.
6. Maintain onsite portable lights for emergency use only.
7. Discharge must have an isolation valve and a check valve.
8. Pump station cleanouts shall not be used for bypass pumping.

### 1.03 SUBMITTALS

- A. Shop Drawings: Detailed plans and descriptions outlining all provisions and precautions regarding the handling of existing wastewater flows. This plan must be specific and complete including such items as schedules, locations, elevations, capacities of equipment, materials and all other incidental items necessary and/or required to ensure proper protection of the facilities, including protection of public and private property from damage and flooding by surcharging of sewers. The plan shall include, but not be limited to, details of the following:
  1. Staging areas for pumps.
  2. Sewer plugging method and types of plugs.
  3. Size, material, location and method of installation of suction piping.
  4. Size, material, method of installation and location of installation of discharge piping.
  5. Bypass pump sizes, capacity, and power requirements.
  6. Calculations of static lift, friction losses, and flow velocity (pump curves showing pump operating range shall be submitted).
  7. Standby power generator size, location.
  8. Downstream discharge plan.
  9. Method of protecting discharge manholes or structures from surface water infiltration, erosion, and damage.
  10. Thrust and restraint block sizes and locations.
  11. Sections showing any suction and discharge pipe depth, embedment, select fill and special backfill where required.

12. Method of noise control for each pump and/or generator.
  13. Any temporary pipe supports and anchoring required.
  14. Plans for access to bypass pumping locations.
  15. Calculations for selection of bypass pumping pipe size.
  16. Schedule for installation of and maintenance of bypass pumping lines.
  17. Plan shall indicate the selected location of bypass pumping line and air valve locations.
  18. Inventory of disinfection materials in case of spillage.
- B. Quality Control Submittals:
1. Certification of vendor's compliance with qualifications included in Article QUALITY ASSURANCE.
  2. Weekly maintenance and inspection logs.

#### 1.04 QUALITY ASSURANCE

- A. System operators to be full-time employees or specialized vendor with minimum 1 year experience in operating and maintaining bypass systems.
1. Provide five references from projects of similar size performed in the past 3 years.
- B. Be responsible for any spillage of raw sewage that results in civil or criminal charge from any local, state, or federal agency. Bear costs for these charges and any required restoration.

#### 1.05 MAINTENANCE

- A. Maintenance Service: Ensure that the temporary pumping system is properly maintained and that a responsible operator is on call at all times when pumps are operating.
- B. Extra Materials: Spare parts for pumps and piping shall be kept onsite as necessary. Spare parts shall include, but not be limited to, the following: Extra pipe for each size and repair clamps for each bypass discharge line installed.
- C. Adequate hoisting equipment for each pump and accessories shall be maintained on the site.

## **PART 2 - PRODUCTS**

### **2.01 BYPASS PIPING MATERIALS**

- A. Header Piping: Header piping shall be used to connect the pumps to the discharge piping. The header shall be constructed of rigid pipe with positive, restrained joints, with a total maximum length of 50-feet. Under no circumstances will aluminum "irrigation" type piping or glued PVC pipe be allowed. Header piping will only be allowed in short sections and by specific permission from the Engineer or District.
- B. Discharge Piping: Discharge piping shall be used from the connection at the header piping to the discharge point. At the beginning of the Project, all discharge piping shall be new high density polyethylene pressure piping conforming to ASTM D3350 with a minimum SDR of 32.5. Discharge piping may be reused for subsequent flow bypass pumping system placements, however, the District or Engineer at their sole discretion shall have the right to reject sections of discharge piping deemed by either of them to be unserviceable. Joints shall be butt fusion welded. Discharge piping shall be as manufactured by Phillips Driscopipe, Inc., or equal.

### **2.02 EQUIPMENT**

- A. All pumps used shall be fully automatic self priming units that do not require the use of foot-valves or vacuum pumps in the priming system. The primary pumps must be electric with diesel powered backup. Pumps can be trailer mounted. All pumps used must be constructed to allow dry running for long periods of time to accommodate the cyclical nature of effluent flows.
- B. Provide the necessary stop/start controls and a visual alarm indicating a pump malfunction for each pump.
- C. The back-up pumps shall be online, isolated from the primary system by a valve.
- D. Incorporate noise prevention measures for any and all equipment being used to insure minimum noise impact on the surrounding areas.
  - 1. Include: hospital grade silencers or mufflers, equipment modifications, and special equipment or sound barrier walls as necessary to limit noise levels below 70-decibels at a distance of 21-feet (7 meters) in the direction of any residential home for all diesel powered back-up pumps.
  - 2. In the event the Contractor fails to comply with maximum permissible noise level decibels in the operation of the flow bypass pumping system, the District or Engineer may order the Contractor to stop operation of the flow bypass pumping system until such time as specified noise levels are achieved. The termination of the flow bypass pumping system for such

reason shall not be the basis for any extension of Contract time not for any claim for additional compensation.

- E. Repair clamps shall be full circle, stainless steel clamps, Style FS2 or FS3 as manufactured by the Ford Meter Box Company, Inc., or equal.

## **PART 3 - EXECUTION**

### **3.01 PREPARATION**

#### **A. Precautions:**

1. Locate any existing utilities in the area selected to locate the bypass pipelines. Locate bypass pipelines to minimize any disturbance to existing utilities and adjacent property owners. Prior to installation the Contractor shall obtain approval of the pipeline locations from District, adjacent property owners, all utility entities, and the Engineer.
2. Contractor shall bypass pump all wastewater flows during all required phases of the work. All bypass pumping operations shall be coordinated with and approved by the Engineer or District.

### **3.02 INSTALLATION**

- A. Plugging or blocking of sewage flows shall incorporate a primary and secondary plugging device. When plugging or blocking is no longer needed for performance and acceptance of Work, it is to be removed in a manner that permits the sewage flow to slowly return to normal without surge, to prevent surcharging or causing other major disturbances downstream.
- B. When working inside manholes, exercise caution and comply with combustible or oxygen-deficient atmospheres, and confined spaces.
- C. The bypass pipeline must be located off streets, sidewalks, and shoulders of the roads. When the bypass pipeline crosses local streets and private driveways, place the bypass pipelines in trenches and cover with temporary pavement or other approved methods. Obtain approvals for placement of the temporary pipeline within public rights-of-ways.
- D. Protect the bypass discharge line from damage in the areas of backhoe operations. Protection shall be by either concrete jersey barriers or wood timbers.
- E. Confine the bypass discharge pipeline to the area within the temporary construction area and permanent easement, for in-place or during relocation of the pipeline. Concrete barriers or timber deadman posts can be used to confine the movement of the discharge pipeline during relocation.

### 3.03 FIELD QUALITY CONTROL

- A. Test: Perform a hydrostatic pressure test for each section of discharge piping with a maximum pressure equal to 1.5 times the maximum operation pressure of the system. The Engineer or District shall witness the test to ensure that there are no leaks in the discharge piping prior to actual operation.
- B. The Operator shall inspect the bypass pumping system every hour, or on a schedule approved by the Engineer or District.
  - 1. An inspection log shall be kept at each pumping location. Each inspection log shall be marked with a time clock stamp to ensure the required maintenance and inspections are being performed.

### 3.04 CLEANING

- A. Sewage remaining in the bypass discharge pipeline and/or pumping equipment shall be flushed with Town water and discharged to a working sewer before the bypass pumping system is broken down and moved to the next section. Town water service must be protected by use of a backflow preventor.
- B. Disturbed Areas: Upon completion of the bypass pumping operation, the Contractor shall clean up all areas disturbed by these operations, restoring same to a condition, including pavement restoration, at least equal to that which existed prior to the start of the Work.

END OF SECTION

## **SECTION 02936 SODDING**

### **PART 1 - GENERAL**

#### **1.01 PERFORMANCE**

- A. Section generally defines Contractors responsibilities, unless otherwise indicated for the following:
  - 1. Preparation of subsoil
  - 2. Placing topsoil
  - 3. Fertilizing
  - 4. Sod installation
  - 5. Maintenance

#### **1.02 REFERENCES**

- A. FDOT - Florida Department of Transportation - Standard Specifications for Road and Bridge – Latest Edition.

#### **1.03 QUALITY ASSURANCE**

- A. Sod Producer: Company specializing in sod production and harvesting with minimum five (5) years of experience, and certified by the State of Florida.
- B. Installer: Company approved by the sod producer.
- C. Sod: Minimum age of 18 months, with root development that will support its own weight, without tearing, when suspended vertically by holding the upper two corners.
- D. Submit sod certification for grass species and location of sod source.
- E. The Engineer reserves the right to test, reject or approve all materials before application.

#### **1.04 REGULATORY REQUIREMENTS**

- A. Comply with regulatory agencies for fertilizer.

#### 1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site under provisions of Section 01600.
- B. Store and protect products under provisions of Section 01600.
- C. Deliver sod on pallets. Protect exposed roots from dehydration.
- D. Do not deliver more sod than can be laid within 48 hours.
- E. Deliver fertilizer in water proof bags showing weight, chemical analysis, and name of manufacturer.
- F. The Contractor shall furnish the Engineer invoices of all materials received in order that the minimum application rate of materials may be determined.

#### 1.06 MAINTENANCE SERVICE

- A. Maintain sodded areas immediately after placement until grass is well established and exhibits a vigorous growing condition.

### **PART 2 - PRODUCTS**

#### 2.01 MATERIALS

- A. Sod:
  - 1. The sod shall be Argentine Bahia or Floratam, to closely match existing as directed, with well matted roots.
  - 2. The sod shall be commercial size rectangular measuring 12-inches by 24 inches or larger.
  - 3. The sod shall be sufficiently thick to secure a dense stand of live grass, with a minimum thickness of 2-inches.
  - 4. The sod shall be live, fresh and uninjured at the time of planting.
  - 5. The sod shall have a soil matt of sufficient thickness adhering firmly to the roots to withstand all necessary handling and be reasonably free of weeds and other grasses.
  - 6. The sod shall be planted as soon as possible after being harvested and shall be shaded kept moist from the time of harvesting until it is planted.
  - 7. The source of the sod may be inspected and approved by the Engineer prior to construction

- B. Topsoil:
  - 1. Excavated from site and free of weeds.
- C. Fertilizer:
  - 1. In accordance with FDOT 982-1.
- D. Water:
  - 1. Clean, fresh, and free of substances or matter which could inhibit vigorous growth of grass.

### **PART 3 - EXECUTION**

#### **3.01 INSPECTION**

- A. Verify that prepared subsoil is ready to receive the work of this Section.

#### **3.02 FERTILIZING**

- A. Apply fertilizer in accordance with manufacturer's instructions.
- B. Apply after smooth raking of topsoil and prior to installation of sod.
- C. Apply fertilizer no more than 48 hours before laying sod.
- D. Mix thoroughly into upper 2 inches of topsoil.
- E. Lightly water to aid the dissipation of fertilizer.

#### **3.03 LAYING SOD**

- A. Moisten prepared surface immediately prior to laying sod.
- B. Lay sod tight with no open joints visible, and no overlapping; stagger end joints 12 inches minimum. Do not stretch or overlap sod pieces.

#### **3.04 MAINTENANCE**

- A. Water to prevent grass and soil from drying out.
- B. Immediately replace sod in areas which show deterioration or bare spots.

- C. Contractor shall include in pricing, water and equipment to insure adequate survival of the sod for sixty days after substantial completion.

END OF SECTION

**DIVISION 3**

**CONCRETE**

## **SECTION 03300 CONCRETE**

### **PART 1 - GENERAL**

#### **1.01 WORK INCLUDED**

- A. This section covers all work necessary for providing, testing and placing ready mix concrete.
- B. See GENERAL CONDITIONS which contain information and requirements which apply to the Work specified herein and are mandatory for this project.

#### **1.02 RELATED WORK SPECIFIED ELSEWHERE**

- A. Section 01410 – Testing Laboratory Services
- B. Section 02521 – Flowable Fill

#### **1.03 REFERENCE STANDARDS, CODES AND SPECIFICATIONS**

- A. ACI 214 "Recommended Practice for Evaluation of Compressive Test Results of Field Concrete".
- B. ACI 318 "Building Code Requirement for Reinforced Concrete".
- C. ASTM C31 "Standard Method for Making and Curing Concrete Compressive and Flexure Test Specimens in the Field".
- D. ASTM C33 "Standard Specification for Concrete Aggregates".
- E. ASTM C94 "Standard Specification for Ready-Mix Concrete".

#### **1.04 SUBMITTALS**

- A. Submittals shall be in accordance with the GENERAL CONDITIONS and shall include the following:
  - 1. Concrete mix designs and trial mix laboratory reports.
  - 2. Manufacturer's certification of admixtures.
  - 3. Contractor's schedule and sequence of placement.
  - 4. All Test Results.

5. Drawings showing locations of construction joints.

#### 1.05 QUALITY ASSURANCE

- A. Submit certificates of mill reports on all foreign cements for review by Engineer before batching concrete.
- B. Secure the services of a reputable manufacturer for counseling regarding the use of any specified admixture, as required.
- C. The Engineer shall have access to and have the right to inspect all batch plants, cement mills, and supply facilities of suppliers, manufacturers, subcontractors, and contractors providing products included in these Specifications. Batch plants shall have current certification that all weighing scales have been tested and are within the tolerances as set forth in the National Bureau of Standards Handbook No. 44.

#### 1.06 CERTIFICATION

- A. Submit batch delivery tickets to the Engineer in compliance with and in accordance to ASTM C94.

#### 1.07 TESTING

- A. Performed by an acceptable Engineering Laboratory at District's expense. Contractor shall assist in the collection of samples. Any retests shall be within the Scope of the Contract.
- B. Criteria:
  1. Each test: not less than 5 cylinders; retain one after 28 days.
  2. One test for every 50 consecutive cubic yards of concrete cast.
  3. Furnish Engineer with 4 certified copies of tests made of 2 at 7 days, and 2 at 28 days.
  4. (1) Slump and temperature verification. Concrete temperature shall not exceed 100°F when placed.
- C. Questionable strength of in-place concrete:
  1. Additional tests may be ordered by the Engineer.
  2. Execute the core tests in accordance with ASTM C42 procedure.
  3. Costs of additional tests showing strength of in-place concrete conforming to design criteria are the responsibility of the District.

4. Costs of additional tests showing noncompliance with the design criteria are the responsibility of the Contractor.
5. Additional items at Contractor 's expense:
  - a. Provide load tests as directed by the Engineer.
  - b. Reinforce structure as directed or remove and replace all Under strength concrete structure in place.

## **PART 2 - PRODUCTS**

### **2.01 MATERIALS**

- A. Cement
  1. Portland cement Type I or Type II conforming to ASTM C 150. In addition, the tricalcium aluminate content of Type I cement shall not exceed 12 percent.
  2. Type I or Type II cement, at the Contractor's option, may be used for nonhydraulic structures, slabs on grade, sidewalks, thrust blocks and miscellaneous.
  3. Type II cement or Type I cement, in combination with pozzolan (fly ash) as hereinafter specified, shall be used for all precast sanitary structures.
- B. Water: potable, salt free.
- C. Fine Aggregate: salt free and clean, conforming to ASTM C33.
- D. Coarse Aggregate: salt free and clean, conforming to ASTM C33.
- E. All Aggregate: quarried/mined in fresh water only.

### **2.02 MIXES**

- A. Slab on Grade, Thrust Blocks, sidewalks, curb and Miscellaneous Cast-In-Place
  1. 28 day compressive strength: 3000 psi
  2. Minimum cement content: 470 lbs/yd<sup>3</sup>.
  3. Admixture: As required below, use only specified product.
  4. Slump: 4-inches  $\pm$  1 inch. (Thrust blocks, curbs, footers)  
Slump: 6-inches  $\pm$  1 inch. (Sidewalk, driveways, slab on grade)
  5. Air Content: (ASTM C231): 2 ½ - 5 ½ percent.

6. Maximum water/cement ratio: 0.55 lb/lb.
- B. Precast concrete:
1. 28 day compressive strength: 4000 psi, minimum, or as illustrated on the Drawings.
  2. Minimum cement content for 4000 psi concrete: 6 bags per cubic yard.
  3. Admixture: As required below, use only specified products.

## 2.03 ADMIXTURES

- A. Provide air-entraining admixture in all concrete. Admixture shall conform to ASTM C 260, except it shall be nontoxic after 30 days and shall contain no chlorides. Furnish manufacturer's compliance statement for these requirements.
- B. All concrete shall contain a water-reducing admixture. The admixture shall conform to ASTM C 494, Type A or Type D, except it shall contain no chlorides, shall be nontoxic after 30 days, and shall be compatible with the air-entraining admixtures. The amount of admixture added to the concrete shall be in accordance with the manufacturer's recommendations. Furnish a compliance statement that the admixture used satisfies all requirements of this Specification.
- C. The pozzolan to be used in combination with Type I cement, as previously specified, shall be Class C or Class F fly ash conforming to ASTM C 618-78. Furnish test data confirming that the fly ash in combination with the cement to be used meets all strength requirements, is compatible with air-entraining agents and other additives, and provides increased sulfate resistance equivalent to or better than Type II cement.

## 2.04 CURING COMPOUNDS

- A. Normal placement without special finish; approved products:
1. Master Builders Company: "Masterseal".
  2. Sonneborn-Contech: "Kure-N'Seal".

## 2.05 DEFORMED REINFORCING BARS

- A. ASTM A615: "Standard Specification for Deformed and Plain Billet-Steel Bars for concrete Reinforcement".
1. Grade: 60
  2. Minimum yield strength: 60,000 psi.

- B. Sizes shall be as indicated on the Drawings.

## 2.06 WELDED WIRE FABRIC

- A. Welded wire fabric shall conform to ASTM A185.

## 2.07 ACCESSORIES

- A. Tie wires shall be 16-gauge, black, soft-annealed wire.
- B. Bar supports shall be of proper type for use intended. Bar supports in beams and slabs exposed to view after stripping shall be galvanized or plastic coated. Use concrete supports for reinforcing in concrete placed on grade.

# PART 3 - EXECUTION

## 3.01 EXAMINATION

- A. Place no concrete until all reinforcing steel, pipes, inserts, sleeves, etc., have been set in place and reviewed by the Engineer. Notify the Engineer of scheduled pours 24 hours prior to placement.

## 3.02 PLACING

- A. Place concrete expeditiously in clean forms that are not hot to the touch; spray forms with water just prior to placing concrete. Before placing concrete directly against earth, install vapor barrier to prevent water absorption, secure reinforcement in position, inspect, and approve before placing concrete. Do not rest runways for transporting concrete on the reinforcing steel. Deposit concrete as nearly as practical in final position; and, do not allow concrete to drop freely more than 5 feet. Place all concrete during daylight, unless otherwise authorized. Where reinforcing steel above the top of the cast is coated with concrete while placing below, remove all concrete from such reinforcing steel after the placing is complete and prior to the next cast.
- B. Place slabs-on-grade carefully to avoid damages to the vapor barrier.
- C. Concrete shall not be placed in the rain or when it looks as if it is going to rain unless specifically authorized by the Engineer.

### 3.03 CONSOLIDATION

- A. Consolidate concrete in layers by internal vibrating equipment, supplemented by hand rodding and tamping as required. Do not use vibrators to move the concrete laterally inside the forms.
- B. Maintain internal vibrators at speed of at least 5000 impulses per minute when submerged in concrete. Maintain at least 1 spare vibrator in working condition at site at all times.
- C. Limit duration of vibration to time necessary to produce satisfactory consolidation without causing segregation. In no case more than 15 seconds per square foot of exposed surface. Move the vibrator constantly and place in each specific spot only once.

### 3.04 JOINTS

- A. Construction joints:
  - 1. Locate as illustrated on the Drawings and as reviewed by the Engineer for slabs.
  - 2. Key joints.
- B. Expansion Joints. Place pre-formed expansion joints as indicated on the Drawings.

### 3.05 CURING

- A. Begin curing of concrete as soon as practicable after placing, but not more than 3 hours thereafter.
- B. Begin curing of the structural elements immediately after removal of forms.
- C. Apply curing compounds as specified.

### 3.06 FINISHES

- A. Formed surfaces:
  - 1. Patching: immediately after stripping forms, patch all defective areas with mortar similar to the concrete mix; but, without coarse aggregate. Patch minor honeycombs, bulges and other minor defects as designed by the Engineer, only where exposed to view. Clean, dampen, and fill all the holes with patching mortar.

- a. Major defective areas, as judged by the Engineer, including those resulting from the leakage of forms, excessive honeycombs, large bulges, and large offsets at form joints: chip away to a depth of at least 1/4 inch; and, the surfaces that are to be patched coat with an epoxy-polysulfide adhesive. Press patching mortar in for a complete bond and finish to match adjacent areas.
    - b. Minor defective areas, as judged by the Engineer, including honeycombs, air bubbles, holes resulting from removal of ties and those resulting from leakage of forms: patch with grout without resorting to chipping. Minor bulges and offsets at form joints: finish as specified herein below.
  - 2. Finishes; locations:
    - a. Rough or board finish: for all concrete surfaces not exposed to public view.
  - 3. Finishes; definitions:
    - a. Rough or board finish: reasonably true to line and plane. Tie holes and defects patched, and the fins exceeding 1/4 inch rubbed down, otherwise, surfaces may be left with texture imparted by forms.
- B. Unformed surfaces (flatwork):
- 1. Finishes:
    - a. General: grade and screed slab to exact elevation, as required. After screeding, tamp mixture thoroughly to drive the coarse aggregate down from surfaces and apply finish specified hereinafter.
    - b. Broom finish: slab on grade.
  - 2. Finishes; definition:
    - a. Broom finish: finish with street type broom as soon as surface water sheen has disappeared.

### 3.07 FIELD QUALITY CONTROL

- A. Only ready mixed concrete in accordance with ASTM C94 will be accepted.
- B. Place all concrete within 1-1/2 hours after introduction of water to mix.
- C. Under no circumstances may additional water be added to mix.
- D. Discard unused concrete older than 1-1/2 hours. Retempering is prohibited.

END OF SECTION

## **SECTION 03732 CONCRETE REPAIRS**

### **PART 1 - GENERAL**

#### **1.01 THE REQUIREMENT**

- A. The Contractor shall furnish all materials, labor, equipment, tools, etc., required for the repair, renovation, and replacement of concrete and/or reinforcing steel as indicated on the Drawings, specified herein, and determined by field survey.

The Contractor, in conjunction with the Engineer, shall determine the extent of cracked or deteriorated concrete to be rehabilitated and/or resurfaced. A summary of the work to be performed shall be submitted to the Engineer for review, and such summary shall be approved by the Engineer prior to commencement of the Work.

#### **1.02 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS**

- A. Shall be as specified in Section 01090, Reference Standards.

#### **1.03 SUBCONTRACTOR/APPLICATOR QUALIFICATIONS**

The Contractor shall furnish the name of all subcontractors/applicators which he proposes to use for this work, including necessary evidence and/or experience records to ascertain their qualifications in the application of epoxy, urethane, and polymer-modified mortars. Approved applicator qualifications shall include:

- A. A minimum of 5-years of experience in applying epoxy, urethane, and polymer-modified and cement-based compounds similar to those specified in this Section.
- B. A letter from the manufacturer of the specified materials, on the manufacturer's letterhead, signed by an officer of the company, stating that the subcontractor/applicator has been trained in the proper techniques for applying the product, including surface preparation and mixing, placing, curing, and caring for the manufacturer's products. This letter shall further state that the subcontractor/applicator is on the manufacturer's approved list of contractors.

#### **1.04 SUBMITTALS**

- A. Material certifications and technical data sheets on all grouts, mortars, epoxy resins, aggregates and repair products specified in this Section.
- B. Subcontractor/Applicator qualifications as specified in Section 1.03.

- C. Shop Drawings detailing any planned deviation from the proposed construction sequence and/or method of repair.
- D. The Contractor, based on their experience in their profession, may submit to the Engineer for approval, alternative materials and/or methods of work to assure the durability and watertight integrity of the repair work performed.

#### 1.05 ADDITIONAL GUARANTEE

- A. The Contractor shall guarantee all repair work performed under this Contract against defects in workmanship resulting in leakage and/or failure of concrete bond for a period of two years from the date of the Certificate of Substantial Completion.

### **PART 2 - MATERIALS**

#### 2.01 WATER

- A. The water used for mixing concrete repair products shall be clean, potable, and free of deleterious substances.

#### 2.02 AGGREGATE

- A. All aggregate shall conform to ASTM C-33. The aggregate supplier shall submit to the Engineer documentation that the proposed aggregates comply with ASTM C-33 and the requirements listed below:
- B. Pea Gravel - Pea gravel shall meet the gradation and material requirements of Standard Size 14 as defined by ASTM C-33. Pea gravel shall be clean and free from deleterious matter and shall contain no limestone.

#### 2.03 EPOXY BONDING AGENT

- A. An epoxy bonding agent shall be used when applying fresh concrete to previously placed concrete. Epoxy bonding agent shall conform to ASTM C-881 Type I, II, IV or V; Grade 2 for epoxy resin adhesives, depending on the application. The class of epoxy bonding agent shall be suitable for all ambient and substrate temperatures. The epoxy resin shall be "Sika Armatec 110" as manufactured by the Sika Corp, Lyndhurst, NJ, "CR 246" as manufactured by Sto Concrete Restoration Division, Atlanta, GA, "Duralbond" as manufactured by Tamms Industries Co., Mentor OH, or equal.

## 2.04 ANTI-CORROSION REBAR COATING

- A. All reinforcing steel cut or exposed during demolition and/or repair operations shall be protected with an anti-corrosive coating. The anti-corrosive coating shall be a two- component, polymer-modified cementitious material such as "Sika Armatex 110" manufactured by Sika Corp., Lyndhurst, NJ, IOCR 246" manufactured by Sto Concrete Restoration Division, Atlanta, GA, or equal.

## 2.05 WATERPROOF INJECTION GROUT

- A. Waterproof crack repair material shall be a one-component, water-activated polyurethane hydrophilic/hydrophobic injection grout capable of 700% expansion. Polyurethane grout shall form a tough flexible/rigid foam seal that is impenetrable to water. Hydrophilic injection grout shall be "Prime Flex 900 LV" manufactured by Prime Resins, Conyers, GA, "Scotch-Seal 5600 Chemical Grout" manufactured by 3M Construction Markets, St. Paul, MN, "Hydro- Active Flex LV" manufactured by De Neef Construction Chemicals, Waller, TX, or approved equal. Hydrophobic injection grout shall be "Prime Flex 920" manufactured by Prime Resins, Conyers, GA, "Sikafix HH" manufactured by Sika Corp., Lyndhurst, NJ, "Hydro-Active Cut" manufactured by De Neef Construction Chemicals, Waller, TX, or equal.

## 2.06 SPALL REPAIR PATCHING MATERIAL

- A. All spall repairs not requiring formwork shall be repaired using a two-component, polymer- modified cementitious mortar and shall have a minimum 28-day compressive strength of 7000 psi. Spall repair mortar for use in horizontal applications shall be manufactured by Sika Corp., Lyndhurst, NJ, "Duraltop Fast Set" manufactured by Tamms Industries, Mentor, OH, IOCR 700" manufactured by Sto Concrete Restoration Division, Atlanta, GA, or approved equal.
  - 1. Spall repair mortar for use in vertical applications shall be "Sikatop III" manufactured by Sika Corp., Lyndhurst, NJ, "Duraltop Gel" manufactured by Tamms Industries, Mentor, OH, "CR730" manufactured by Sto Concrete Restoration Division, Atlanta, GA, or equal.
- B. All spall repairs requiring formwork shall be repaired using a two-component, polymer- modified cementitious mortar/pea gravel mixture and shall have a minimum 28-day compressive strength of 6000 psi. Each unit of mortar shall be mixed with Saturated Surface Dry (SSD) pea gravel to form the repair material following the manufacturer's recommendations. Spall repair mortar shall be "Sikatop 111 Plus" manufactured by Sika Corp., Lyndhurst, NJ, "Duraltop Flowable Grout" manufactured by Tamms Industries, Mentor, OH, "CR 730" manufactured by Sto Concrete Restoration Division, Atlanta, GA, or equal.

- C. All spall repair materials shall conform to EPA/USPHS standards for surface contact with potable water supplies.

## 2.07 STORAGE OF MATERIALS

- A. The Contractor shall provide an area for repair material storage free from exposure to moisture in any form, before, during, and after delivery to the site. Manufactured materials shall be delivered in unbroken containers labeled with the manufacturer's name and product type. All mortar products shall be stored on raised platforms. Materials susceptible to damage by freezing shall be stored in a dry, heated, insulated area. Any material that has hardened, partially set, become caked and/or has been contaminated or deteriorated shall be rejected. All aggregates shall be stored in clean bins, scows or platforms.

## **PART 3 - INSTALLATION**

### 3.01 GENERAL REQUIREMENTS

- A. No repair work shall be undertaken when ambient temperatures are below manufacturer's safe recommendations. No admixtures, except those required by the manufacturer, shall be used in the repairs specified herein. All products shall be applied in strict accordance with manufacturer's recommendations. The Contractor shall furnish and install safe scaffolding and ladders for the Engineer's prework inspection, the repair work activities, and the Engineer's final inspection
- B. Sandblast or waterblast (3000-4000 psi waterjet) deteriorated areas to remove all loose concrete, existing coatings, unsound material, debris, and laitance. All surfaces shall be clean, free of dirt, grease, loose particles, and deleterious substances and shall be prepared according to manufacturer's requirements.

### 3.02 EPOXY BONDING AGENT

- A. Existing concrete surfaces shall be roughened prior to application of bonding agent. Concrete surface shall be clean and sound, free of all foreign particles and laitance. Repair material shall be placed while bonding agent is still tacky. If bonding agent cures prior to placement of repair material, bonding agent shall be reapplied.
- B. Repairing concrete with epoxy mortars shall conform to all the requirements of ACI 503.4 "Standard Specification for Repairing Concrete with Epoxy Mortars" (latest edition), except as modified herein.

### 3.03 ANTI-CORROSION REBAR COATING

- A. Reinforcing steel cut or exposed during demolition and/or repair operations shall be sandblasted and cleaned prior to coating with an anti-corrosive coating. Coating shall thoroughly cover all exposed parts of the steel and shall be applied according to manufacturer's recommendations.

### 3.04 WATERPROOF INJECTION GROUT

- A. All existing, leaking cracks 1/4" or smaller shall be repaired by pressure injecting a waterproof injection grout into the prepared crack. Seal crack surface and install injection ports per manufacturer's recommendations. Holes drilled for injection ports shall not cut rebar. If rebar is encountered during drilling, the hole shall be abandoned and relocated, and the abandoned hole shall be patched immediately with non-shrink grout flush with the surface of the existing concrete. Once the surface sealing material has cured, inject crack with waterproof injection grout using standard pressure injection equipment as directed by the manufacturer.

### 3.05 SPALL REPAIR PATCHING MATERIAL

- A. All voids or spalled areas to be repaired shall be chipped back to sound concrete a minimum 1/8" deep, cleaned and repaired with spall repair patching material according to manufacturer's recommendations. All patching shall provide a final finished surface which is flat, level and even with the existing concrete surface. Repair mortar shall not be feathered to meet existing concrete surface. Final patching on horizontal surfaces shall receive a broom finish consistent with the finish on the existing structure.

### 3.06 CURING

- A. All repair products shall be cured in strict accordance with manufacturer recommendations.

### 3.07 WORK IN CONFINED SPACES

- A. The Contractor shall provide and maintain safe working conditions for all employees and subcontractors. Fresh air shall be supplied continuously to confined spaces through the combined use of existing openings, forced-draft fans and temporary ducts to the outside, or by direct air supply to individual workers. Fumes shall be exhausted to the outside from the lowest level of the confined space. Electrical fan motors shall be explosion-proof if in contact with fumes. No smoking or open fires shall be permitted in or near areas where volatile fumes may accumulate.

END OF SECTION

## **APPENDIX A**

### **PBCHD WASTEWATER COLLECTION/TRANSMISSION SYSTEM PERMIT**

**Mission:**

To protect, promote & improve the health of all people in Florida through integrated state, county & community efforts.



**Ron DeSantis**  
Governor

**Scott A. Rivkees, MD**  
State Surgeon General

**Vision:** To be the Healthiest State in the Nation

October 15, 2020

In the Matter of an  
Application for Permit by:

**PERMITTEE:**

D. Albrey Arrington, Ph.D., Executive Director  
Loxahatchee River District  
2500 Jupiter Park Drive  
Jupiter, FL 33458  
[Albrey.arrington@lrcd.org](mailto:Albrey.arrington@lrcd.org)

**PERMIT NUMBER:** 138774-391-DWC

**COUNTY:** Palm Beach

**PROJECT NAME:** Olympus Drive Force  
Main and Low Pressure Sewer  
Replacement

**WASTEWATER TREATMENT:** LRECD

**FACILITY ID:** FL0034649

**NOTICE OF PERMIT ISSUANCE**

Enclosed is Permit Number **138774-391-DWC** to construct a domestic wastewater collection/transmission system, issued pursuant to 403.087(1), Florida Statutes.

The Department's proposed agency action shall become final unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, Florida Statutes, within fourteen days of receipt of notice. The procedures for petitioning for a hearing are set forth below.

A person whose substantial interests are affected by this permit may petition for an administrative proceeding (hearing) in accordance with Sections 120.569 and 120.57, F.S.

The petition must contain the information set forth below and must be filed (received) in this Office, Division of Environmental Public Health, Florida Department of Health Palm Beach County, 800 Clematis Street, West Palm Beach, Florida 33401. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen (14) days of receipt of this notice of permit. Petitions filed by any other person must be filed within fourteen (14) days of publication of the public notice or within fourteen days of receipt of this notice of permit whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the discretion of the presiding officer upon the filing of a motion in compliance with rule 28-5.207 of the Florida Administrative Code.

**Florida Department of Health**

Palm Beach County, Division of Environmental Public Health  
P.O. Box 29, 800 Clematis Street, West Palm Beach, FL 33402  
PHONE: 561-837-5900 • FAX: 561-837-5294

**FloridaHealth.gov, Flhealthpalmbeach.org**



**Accredited Health Department**  
Public Health Accreditation Board

A petition must contain the following information:

- a. The name, address and telephone number of each petitioner, the Permit File Number and the county in which the subject matter or activity is located;
- b. A statement of how and when each petitioner received notice of the Department's action or proposed action;
- c. A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
- d. A statement of the material facts disputed by the petitioner, if any;
- e. A statement of facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action;
- f. A statement of which rules or statutes the petitioner contends require reversal or modification of the Department's action; and
- g. A statement of the relief sought by petitioner, stating precisely the action the petitioner wants the Department to take.


Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the final action of the Department may be different from the position taken by it in this permit. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation under Section 120.573 of the Florida Statutes is not available for this proceeding. This permit is final and effective on the date filed with Clerk of the Department unless a petition is filed in accordance with the above. Upon timely filing of a petition this permit will not be effective until further Order of the Department.

Any party to the order has the right to seek judicial review of the order under Section 120.68 of the Florida Statutes, by filing a notice of appeal under rule 9.110 of the Florida Rules of Appellate Procedure with the Clerk of the Department in this Office, Division of Environmental Public Health, Florida Department of Health Palm Beach County, 800 Clematis Street, West Palm Beach, Florida 33401; and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice of appeal must be filed within thirty (30) days from the date the final order is filed with the Clerk of the Department.

Executed in Palm Beach County, Florida.

**FLORIDA DEPARTMENT OF HEALTH  
PALM BEACH COUNTY**

  
\_\_\_\_\_  
Jorge R. Patino, P.E., Environmental Administrator  
Division of Environmental Public Health  
800 Clematis Street, West Palm Beach, FL 33401  
(561) 837-5900

JH/JP

### FILING AND ACKNOWLEDGMENT

FILED, on this date, under Section 120.52, Florida Statutes, with the designated deputy clerk, receipt of which is hereby acknowledged.

Clerk Stamp

### CERTIFICATE OF SERVICE

The undersigned hereby certifies that this NOTICE OF PERMIT ISSUANCE was mailed by certified mail and all copies were electronically sent before the close of business on October 15, 2020 to the listed persons.

  
\_\_\_\_\_  
[Clerk] [Date]

Copies furnished to:

*Courtney Marshall P.E. - LRECD*  
*Chris Weller - FDEP*

**Mission:**

To protect, promote & improve the health of all people in Florida through integrated state, county & community efforts.



**Ron DeSantis**  
Governor

**Scott A. Rivkees, MD**  
State Surgeon General

**Vision:** To be the Healthiest State in the Nation

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**STATE OF FLORIDA  
DOMESTIC WASTEWATER COLLECTION/TRANSMISSION INDIVIDUAL PERMIT**

**PERMITTEE:**

D. Albrey Arrington, Ph.D., Executive Director  
Loxahatchee River District  
2500 Jupiter Park Drive  
Jupiter, FL 33458  
[Albrey.arrington@lrecd.org](mailto:Albrey.arrington@lrecd.org)

**PERMIT NUMBER:** 138774-391-DWC

**ISSUANCE DATE:** October 15, 2020

**EXPIRATION DATE:** April 7, 2025

**COUNTY:** Palm Beach

**PROJECT NAME:** Olympus Drive Force  
Main and Low Pressure Sewer Replacement

**WASTEWATER TREATMENT:** LRECD

**FACILITY ID:** FL0034649

This permit is issued under the provisions of Chapter 403, Florida Statutes (F.S.), and Chapters 62-4 and 62-604, Florida Administrative Code (F.A.C.).

The above named permittee is hereby authorized to construct the facilities shown on the application and other documents on file with the Department and made a part hereof and specifically described as follows:

**DESCRIPTION OF PROJECT:**

Construct approximately 215 LF of 2" schedule 40 PVC and 570 LF of 2" HDPE low pressure force main to serve an addition 3 single family homes and one medical office. An existing 6" asbestos cement force main will be replaced with 315 LF of 8" PVC and 1,750 LF of 8" HDPE.

**LOCATION OF PROJECT:**

Located within Olympus Drive, A1A and Celestial Way right of ways in the Town of Juno Beach, Florida

**IN ACCORDANCE WITH:** The limitations, requirements and other conditions set forth in pages 1 through 3 of this permit.

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**Florida Department of Health**

Palm Beach County, Division of Environmental Public Health  
P.O. Box 29, 800 Clematis Street, West Palm Beach, FL 33402  
PHONE: 561-837-5900 • FAX: 561-837-5294

**FloridaHealth.gov, FHealthpalmbeach.org**



**Accredited Health Department**  
Public Health Accreditation Board

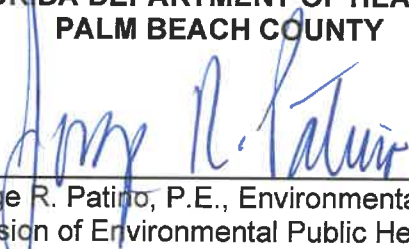
## PERMIT CONDITIONS:

1. This permit is subject to the general conditions of Rule 62-4.160, F.A.C., as applicable. This rule is available at the FDEP's Internet site at: <http://www.dep.state.fl.us/water/rulesprog.htm#ww> [62-4.160]
2. Upon completion of construction of the collection/transmission system project, and before placing the facilities into operation for any purpose other than testing for leaks or testing equipment operation, the permittee shall submit to the Florida Department of Health Palm Beach County DEP Form 62-604.300(8)(b), Request for Approval to Place a Domestic Wastewater Collection/Transmission System into Operation. This form is available at the FDEP's Internet site at: <http://www.dep.state.fl.us/water/wastewater/forms.htm> [62-604.700(2)]
3. The new or modified collection/transmission facilities shall not be placed into service until the Department clears the project for use. [62-604.700(3)]
4. Permit revisions shall only be made in accordance with Rule 62-4.050(4)(s), F.A.C. Request for revisions shall be made to the Department in writing and shall include the appropriate fee. Revisions not covered under Rule 62-4.050(4)(s), F.A.C., shall require a new permit. [62-604.600(8)]
5. Abnormal events shall be reported to the Florida Department of Health Palm Beach County **(561) 837-5900 during business hours; all other times (561) 471-2502** in accordance with Rule 62-604.550, F.A.C. For unauthorized spills of wastewater in excess of 1000 gallons per incident, or where information indicates that public health or the environment may be endangered, oral reports shall be provided to the STATE WATCH OFFICE TOLL FREE NUMBER, (800) 320-0519, as soon as practical, but no later than 24 hours from the time the permittee or other designee becomes aware of the circumstances. Unauthorized releases or spills less than 1000 gallons per incident are to be reported orally to the Florida Department of Health- Palm Beach County Office within 24 hours from the time the permittee, or other designee becomes aware of the circumstances. [62-604.550]
6. This permit is for CONSTRUCTION ONLY of the collection/transmission system project. This permit does not authorize the connection of this collection/transmission system project to the designated wastewater treatment plant. This permit shall not be construed to infer that the clearance necessary for connection shall be granted. Any such clearance shall be granted only when reasonable assurance is given that adequate treatment and disposal is available in accordance with Department rules, regulations, and permits. Partial clearance may be granted, if required. [62-604.130(1) and 62-604.600(7)]

7. The permittee shall be responsible for the operation and maintenance of the low pressure sewer system including the pump units and related appurtenances located on private property. An agreement for access to the pump units shall be obtained from the property owner. As a minimum the following resources shall be implemented to prevent overflow and back up of sewage.
- a. Sufficient staffing shall be provided to conduct periodic inspection, maintenance, and repairs in order to respond to emergencies in a timely manner. The pump units shall be inspected on a routine and periodic basis. Preventative maintenance shall be conducted to prevent malfunctioning of the system.
  - b. An inventory of spare parts shall be maintained.
  - c. Sufficient equipment shall be maintained at all times for emergency conditions, including but not limited to pump out trucks, emergency generators, and portable pumps.

Executed in *Palm Beach County, Florida.*

**FLORIDA DEPARTMENT OF HEALTH  
PALM BEACH COUNTY**



Jorge R. Patino, P.E., Environmental Administrator  
Division of Environmental Public Health  
800 Clematis Street, West Palm Beach, FL 33401  
DATE: October 15, 2020



## Florida Department of Environmental Protection

### NOTIFICATION/APPLICATION FOR CONSTRUCTING A DOMESTIC WASTEWATER COLLECTION/TRANSMISSION SYSTEM

#### PART I - GENERAL

##### Subpart A: Permit Application Type

Permit Application Type (mark one only)	EDUs Served	Application Fee*	"X"
Are you applying for an individual permit for a domestic wastewater collection/transmission system? Note: an EDU is equal to 3.5 persons. Criteria for an individual permit are contained in Rule 62-604.600(7), F.A.C.	≥ 10	\$500	
	< 10	\$300	X
Is this a Notice of Intent to use the general permit for wastewater collection/transmission systems? Criteria for qualifying for a general permit are contained in Rule 62-604.600(6), F.A.C. Projects not meeting the criteria in Rule 62-604.600(6), F.A.C., must apply for an individual permit.	N/A	\$250	

\*Note: Each non-contiguous project (i.e., projects that are not interconnected or are not located on adjacent streets or in the same neighborhood) requires a separate application and fee.

##### Subpart B: Instructions

- (1) This form shall be completed for all domestic wastewater collection/transmission system construction projects as follows:
  - If this is a Notice of Intent to use the general permit, this notification shall be submitted to the Department **at least 30 days prior to initiating construction.**
  - If this is an application for an individual permit, the permit must be obtained prior to initiating construction.
- (2) One copy of the completed form shall be submitted to the appropriate DEP district office or delegated local program along with the appropriate fee, and one copy of the following supporting documents. Checks should be made payable to the Florida Department of Environmental Protection, or the name of the appropriate delegated local program.
  - If this is a Notice of Intent to use the general permit, attach a site plan or sketch showing the size and approximate location of new or altered gravity sewers, pump stations and force mains; showing the approximate location of manholes and isolation valves; and showing how the proposed project ties into the existing or proposed wastewater facilities. The site plan or sketch shall be signed and sealed by a professional engineer registered in Florida.
  - If this is an application for an individual permit, one set of plans and specifications shall be submitted with this application, or alternatively, an engineering report shall be submitted. Plans and specifications and engineering reports shall be prepared in accordance with the applicable provisions of Chapters 10 and 20 of *Recommended Standards for Wastewater Facilities*. The plans and specifications or engineering report shall be signed and sealed by a Professional Engineer registered in Florida.
- (3) All information shall be typed or printed in ink. Where attached sheets (or other technical documentation) are utilized in lieu of the blank spaces provided, indicate appropriate cross-references on the form. For Items (1) through (4) of Part II of this application form, if an item is not applicable to your project, indicate "NA" in the appropriate space provided.

**RECEIVED**

OCT 02 2020

Florida Department of Health - PBC  
Plan Review

## PART II – PROJECT DOCUMENTATION

### (1) Collection/Transmission System Permittee

Name D. Albrey Arrington, Ph.D. Title Executive Director  
 Company Name Loxahatchee River Environmental Control District  
 Address 2500 Jupiter Park Drive  
 City Jupiter State FL Zip 33458  
 Telephone 561-747-5700 Fax 561-747-9929 Email albrey@lrecd.org

### (2) General Project Information

Project Name Olympus Drive Force Main & Low-Pressure Sewer Replacement  
 Location: County Palm Beach City Juno Beach Section 28 Township 41S Range 41E  
 Project Description and Purpose (including pipe length, range of pipe diameter, total number of manholes, and total number of pump stations):  
 This project includes a proposed wastewater collection system consisting of four (4) single grinder pump stations each equipped with a two (2) horsepower pump, approximately 215 LF of 2" PVC SCH 80 and approximately 570 LF of 2" HDPE low-pressure force mains, and 4 service laterals. After project completion, four (4) single grinder pump stations each equipped with a two (2) horsepower pump will be connected. This project also includes replacement of an existing 6" asbestos cement (AC) force main with approximately 315 LF of 8" PVC and 1750 LF of 8" HDPE force main. The nominal pipe size was increased to 8" due to the average ID of 8" HDPE pipe = 6.96", which is closer to the existing force main piping ID of 6".  
 Estimated date for: Start of construction January 2021 Completion of construction December 2021  
 Connections to existing system or treatment plant 4 low-pressure services

### (3) Project Capacity

A = Type of Unit	B = Number of Units	C = Population Per Unit	D = Total Population (Columns B x C)	E = Per Capita Flow	F = Total Average Daily Flow (Columns D x E)	G = Peak hour flow
Single-Family Home	3	2.5	7.5	108	810	3240
Mobile Home						
Apartment						
Commercial, Institutional, or Industrial Facility*	1	-	-	-	295	1180
Total			7.5		1105	4420

\* Description of commercial, institutional, and industrial facilities and explanation of method used to estimate per capita flow for these facilities:

Provides service to 3 single family homes and 1 commercial facility (Hearing and Speech Doctor's office; 1 practitioner and 3 employees per 8 hour shift). Peak hour flow in gallons per hour (gph) = average daily flow x 4.0.  
 There will be no changes to the existing wastewater flows for the replacement of the existing asbestos cement (AC) force main.

### (4) Pump Station Data (attached additional sheets as necessary) N/A

Location	Type	Estimated Flow to the Station (GPD)			Operating Conditions [GPM @ FT (TDH)]
		Maximum	Average	Minimum	

### (5) Collection/Transmission System Design Information N/A

- A. This information must be completed for all projects by the applicant's professional engineer, and if applicable, those professional engineers in other disciplines who assisted with the design of the project.

If this project has been designed to comply with the standards and criteria listed below, the engineer shall initial in ink before the standards or criteria. If any of the standards or criteria do not apply to this project or if this project has not been designed to comply with the standards or criteria, mark "X" before the appropriate standard or criteria and provide an explanation, including any applicable rule references, in (5)B. below.

Note, if the project has not been designed in accordance with the standards and criteria set forth in Rules 62-604.400(1) and (2), F.A.C., an application for an individual permit shall be submitted. However, if Rules 62-604.400(1) and (2), F.A.C., specifically allow for another alternative that will result in an equivalent level of reliability and public health protection, the project can be constructed using the general permit.

#### General Requirements

- CM
1. The project is designed based on an average daily flow of 100 gallons per capita plus wastewater flow from industrial plants and major institutional and commercial facilities unless water use data or other justification is used to better estimate the flow. The design includes an appropriate peaking factor, which covers I/I contributions and non-wastewater connections to those service lines. [RSWF 11.243]
  - CM CM 2. Procedures are specified for operation of the collection/transmission system during construction. [RSWF 20.15]
  - CM 3. The project is designed to be located on public right-of-ways, land owned by the permittee, or easements and to be located no closer than 100 feet from a public drinking water supply well and no closer than 75 feet from a private drinking water supply well; or documentation is provided in Part II.(5)B., showing that another alternative will result in an equivalent level of reliability and public health protection. [62-604.400(1)(b) and (c), F.A.C.]
  - CM 4. The project is designed with no physical connections between a public or private potable water supply system and a sewer or force main and with no water pipes passing through or coming into contact with any part of a sewer manhole. [RSFW 38.1 and 48.5]
  - CM 5. The project is designed to preclude the deliberate introduction of storm water, surface water, groundwater, roof runoff, subsurface drainage, swimming pool drainage, air conditioning system condensate water, non-contact cooling water except as provided by Rule 62-610.668(1), F.A.C., and sources of uncontaminated wastewater, except to augment the supply of reclaimed water in accordance with Rule 62-610.472(3)(c), F.A.C. [62-604.400(1)(d), F.A.C.]
  - CM 6. The project is designed so that all new or relocated, buried sewers and force mains, are located in accordance with the separation requirements from water mains and reclaimed water lines of Rules 62-604.400(2)(g)(h) and (i) and (3), F.A.C. Note, if the criteria of Rules 62-604.400(2)(g) 4. or (2)(i) 3., F.A.C., are used, describe in Part II.(5)B.C. alternative construction features that will be provided to afford a similar level of reliability and public health protection. [62-604.400(2)(g), (h), and (i) and (3), F.A.C.]

#### Gravity Sewers

- X
7. The project is designed with no public gravity sewer conveying raw wastewater less than 8 inches in diameter. [RSWF 33.1]
  - X 8. The design considers buoyancy of sewers, and appropriate construction techniques are specified to prevent flotation of the pipe where high groundwater conditions are anticipated. [RSWF 33.3}
  - X 9. All sewers are designed with slopes to give mean velocities, when flowing full, of not less than 2.0 feet per second, based on Manning's formula using an "n" value of 0.013; or if it is not practicable to maintain these minimum slopes and the depth of flow will be 0.3 of the diameter or greater for design average flow, the owner of the system has been notified that additional sewer maintenance will be required. The pipe diameter and slope are selected to obtain the greatest practical velocities to minimize solids deposition problems. Oversized sewers are not specified to justify flatter slopes. [RSWF 33.41, 33.42, and 33.43]
  - X 10. Sewers are designed with uniform slope between manholes. [RWSF 33.44]
  - X 11. Where velocities greater than 15 fps are designed, provisions to protect against displacement by erosion and impact are specified. [RSWF 33.45]
  - X 12. Sewers on 20% slopes or greater are designed to be anchored securely with concrete, or equal, anchors spaced as follows: not over 36 feet center to center on grades 20% and up to 35%; not over 24 feet center to center on grades 35% and up to 50%; and not over 16 feet center to center on grades 50% and over. [RSWF 33.46]

- X 13. Sewers 24 inches or less are designed with straight alignment between manholes. Where curvilinear sewers are proposed for sewers greater than 24 inches, the design specifies compression joints; ASTM or specific pipe manufacturer's maximum allowable pipe joint deflection limits are not exceeded; and curvilinear sewers are limited to simple curves which start and end at manholes. [RSWF 33.5]
- X 14. Suitable couplings complying with ASTM specifications are required for joining dissimilar materials. [RSWF 33.7]
- X 15. Sewers are designed to prevent damage from superimposed loads. [RSWF 33.7]
- X 16. Appropriate specifications for the pipe and methods of bedding and backfilling are provided so as not to damage the pipe or its joints, impede cleaning operations and future tapping, nor create excessive side fill pressures and ovalation of the pipe, nor seriously impair flow capacity. [RSWF 33.81]
- X 17. Appropriate deflection tests are specified for all flexible pipe. Testing is required after the final backfill has been in place at least 30 days to permit stabilization of the soil-pipe system. Testing requirements specify: 1) no pipe shall exceed a deflection of 5%; 2) using a rigid ball or mandrel for the deflection test with a diameter not less than 95% of the base inside diameter or average inside diameter of the pipe, depending on which is specified in the ASTM specification, including the appendix, to which the pipe is manufactured; and 3) performing the test without mechanical pulling devices. [RSWF 33.85]
- X 18. Leakage tests are specified requiring that: 1) the leakage exfiltration or infiltration does not exceed 200 gallons per inch of pipe diameter per mile per day for any section of the system; 2) exfiltration or infiltration tests be performed with a minimum positive head of 2 feet; and 3) air tests, as a minimum, conform to the test procedure described in ASTM C-828 for clay pipe, ASTM C 924 for concrete pipe, ASTM F-1417 for plastic pipe, and for other materials appropriate test procedures. [RSWF 33.93, 33.94, and 33.95]
- X 19. If an inverted siphon is proposed, documentation of its need is provided in Part II.(5)BC. Inverted siphons are designed with: 1) at least two barrels; 2) a minimum pipe size of 6 inches; 3) necessary appurtenances for maintenance, convenient flushing, and cleaning equipment; and 4) inlet and discharge structures having adequate clearances for cleaning equipment, inspection, and flushing. Design provides sufficient head and appropriate pipe sizes to secure velocities of at least 3.0 fps for design average flows. The inlet and outlet are designed so that the design average flow may be diverted to one barrel, and that either barrel may be cut out of service for cleaning. [RSWF 35]

#### Manholes

- X 20. The project is designed with manholes at the end of each line; at all changes in grade, size, or alignment; at all intersections; and at distances not greater than 400 feet for sewers 15 inches or less and 500 feet for sewers 18 inches to 30 inches, except in the case where adequate modern cleaning equipment is available at distances not greater than 600 feet. [RSWF 34.1]
- X 21. Design requires drop pipes to be provided for sewers entering manholes at elevations of 24 inches or more above the manhole invert. Where the difference in elevation between the incoming sewer and the manhole invert is less than 24 inches, the invert is designed with a fillet to prevent solids deposition. Inside drop connections (when necessary) are designed to be secured to the interior wall of the manhole and provide access for cleaning. Design requires the entire outside drop connection be encased in concrete. [RSWF 34.2]
- X 22. Manholes are designed with a minimum diameter of 48 inches and a minimum access diameter of 22 inches. [RSWF 34.3]
- X 23. Design requires that a bench be provided on each side of any manhole channel when the pipe diameter(s) are less than the manhole diameter and that no lateral sewer, service connection, or drop manhole pipe discharges onto the surface of the bench. [RSWF 34.5]
- X 24. Design requires: 1) manhole lift holes and grade adjustment rings be sealed with non-shrinking mortar or other appropriate material; 2) inlet and outlet pipes be joined to the manhole with a gasketed flexible watertight connection or another watertight connection arrangement that allows differential settlement of the pipe and manhole wall; and 3) watertight manhole covers be used wherever the manhole tops may be flooded by street runoff or high water. [RSWF 34.6]
- X 25. Manhole inspection and testing for watertightness or damage prior to placing into service are specified. Air testing, if specified for concrete sewer manholes, conforms to the test procedures described in ASTM C-1244. [RSWF 34.7]
- X 26. Electrical equipment specified for use in manholes is consistent with Item 46 of this checklist. [RSWF 34.9]

### Stream Crossings

- X 27. Sewers and force mains entering or crossing streams are designed to be constructed of ductile iron pipe with mechanical joints or so they will remain watertight and free from changes in alignment or grade. Appropriate materials which will not readily erode, cause siltation, damage pipe during placement, or corrode the pipe are specified to backfill the trench. [RSWF 36.21 and 48.5]
- X 28. Stream crossings are designed to incorporate valves or other flow regulating devices (which may include pump stations) on the shoreline or at such distances ~~from~~ from the shoreline to prevent discharge in the event the line is damaged. [62-604.400(2)(k)5., F.A.C.]
- X 29. Sewers and force mains entering or crossing streams are designed at a sufficient depth below the natural bottom of the stream bed to protect the line. At a minimum, the project is designed with subaqueous lines to be buried at least three feet below the design or actual bottom, whichever is deeper, of a canal and other dredged waterway or the natural bottom of streams, rivers, estuaries, bays, and other natural water bodies; or if it is not practicable to design the project with less than three-foot minimum cover, alternative construction features (e.g. a concrete cap, sleeve, or some other properly engineered device to insure adequate protection of the line) are described in Part II.C. [62-604.400(2)(k)1., F.A.C., and RSWF 36.11]
- X 30. Specifications require permanent warning signs be placed on the banks of canals, streams, and rivers clearly identifying the nature and location (including depths below design or natural bottom) of subaqueous crossings and suitably fixed signs be placed at the shore, for subaqueous crossings of lakes, bays, and other large bodies of water, and in any area where anchoring is normally expected. [62-604.400(2)(k)2., F.A.C.]
- X 31. Provisions for testing the integrity of subaqueous lines are specified. [62-604.400(2)(k)4., F.A.C.]
- X 32. Supports are designed for all joints in pipes utilized for aerial crossings and to prevent overturning and settlement. Expansion jointing is specified between above ground and below ground sewers and force mains. The design considers the impact of floodwaters and debris. [RSWF 37 and 48.5]
- X 33. Aerial crossings are designed to maintain existing or required navigational capabilities within the waterway and to reserve riparian rights of adjacent property owners. [62-604.400(2)(k)3., F.A.C.]

### Pump Stations

- X 34. In areas with high water tables, pump stations are designed to withstand flotation forces when empty. When siting the pump station, the design considers the potential for damage or interruption of operation because of flooding. Pump station structures and electrical and mechanical equipment are designed to be protected from physical damage by the 100-year flood. Pump stations are designed to remain fully operational and accessible during the 25-year flood unless lesser flood levels are appropriate based on local considerations, but not less than the 10-year flood. [62-604.400(2)(e), F.A.C.]
- X 35. Pump stations are designed to be readily accessible by maintenance vehicles during all weather conditions. [RSWF 41.2]
- X 36. Wet well and pump station piping is designed to avoid operational problems from the accumulation of grit. [RSWF 41.3]
- X 37. Dry wells, including their superstructure, are designed to be completely separated from the wet well. Common walls are designed to be gas tight. [RSWF 42.21]
- X 38. The design includes provisions to facilitate removing pumps, motors, and other mechanical and electrical equipment. [RSWF 42.22]

- X 39. The design includes provisions for: 1) suitable and safe means of access for persons wearing self-contained breathing apparatus are provided to dry wells, and to wet wells; 2) stairway access to wet wells more than 4 feet deep containing either bar screens or mechanical equipment requiring inspection or maintenance; 3) for built-in-place pump stations, a stairway to the dry well with rest landings at vertical intervals not to exceed 12 feet; 4) for factory-built pump stations over 15 feet deep, a rigidly fixed landing at vertical intervals not to exceed 10 feet unless a manlift or elevator is provided; and 5) where a landing is used, a suitable and rigidly fixed barrier to prevent an individual from falling past the intermediate landing to a lower level. If a manlift or elevator is provided, emergency access is included in the design. [RSWF 42.23]
- X 40. Specified construction materials are appropriate under conditions of exposure to hydrogen sulfide and other corrosive gases, greases, oils, and other constituents frequently present in wastewater. [RSWF 42.25]
- X 41. Except for low-pressure grinder or STEP systems, multiple pumps are specified, and each pump has an individual intake. Where only two units are specified, they are of the same size. Specified units have capacity such that, with any unit out of service, the remaining units will have capacity to handle the design peak hourly flow. [RSWF 42.31 and 42.36]
- X 42. Bar racks are specified for pumps handling wastewater from 30 inch or larger diameter sewers. Where a bar rack is specified, a mechanical hoist is also provided. The design includes provisions for appropriate protection from clogging for small pump stations. [RSWF 42.322]
- X 43. Pumps handling raw wastewater are designed to pass spheres of at least 3 inches in diameter. Pump suction and discharge openings are designed to be at least 4 inches in diameter. [RSWF 42.33] (Note, this provision is not applicable to grinder pumps.)
- X 44. The design requires pumps be placed such that under normal operating conditions they will operate under a positive suction head, unless pumps are suction-lift pumps. [RSWF 42.34]
- X 45. The design requires: 1) pump stations be protected from lightning and transient voltage surges; and 2) pump stations be equipped with lightning arrestors, surge capacitors, or other similar protection devices and phase protection. Note, pump stations serving a single building are not required to provide surge protection devices if not necessary to protect the pump station. [62-604.400(2)(b), F.A.C.]
- X 46. The design requires 1) electrical systems and components (e.g., motors, lights, cables, conduits, switch boxes, control circuits, etc.) in raw wastewater wet wells, or in enclosed or partially enclosed spaces where hazardous concentrations of flammable gases or vapors may be present, comply with the National Electrical Code requirements for Class I Group D, Division 1 locations; 2) electrical equipment located in wet wells be suitable for use under corrosive conditions; 3) each flexible cable be provided with a watertight seal and separate strain relief; 4) a fused disconnect switch located above ground be provided for the main power feed for all pump stations; 5) electrical equipment exposed to weather to meet the requirements of weatherproof equipment NEMA 3R or 4; 6) a 110 volt power receptacle to facilitate maintenance be provided inside the control panel for pump stations that have control panels outdoors; and 7) ground fault interruption protection be provided for all outdoor outlets. [RSWF 42.35]
- X 47. The design requires a sump pump equipped with dual check valves be provided in dry wells to remove leakage or drainage with discharge above the maximum high water level of the wet well. [RSWF 42.37]
- X 48. Pump station design capacities are based on the peak hourly flow and are adequate to maintain a minimum velocity of 2 feet per second in the force main. [RSWF 42.38]
- X 49. The design includes provisions to automatically alternate the pumps in use. [RSWF 42.4]
- X 50. The design requires: 1) suitable shutoff valves be placed on the suction line of dry pit pumps; 2) suitable shutoff and check valves be placed on the discharge line of each pump (except on screw pumps); 3) a check valve be located between the shutoff valve and the pump; 4) check valves be suitable for the material being handled; 5) check valves be placed on the horizontal portion of discharge piping (except for ball checks, which may be placed in the vertical run); 6) all valves be capable of withstanding normal pressure and water hammer; and 7) all shutoff and check valves be operable from the floor level and accessible for maintenance. [RSWF 42.5]
- X 51. The effective volume of wet wells is based on design average flows and a filling time not to exceed 30 minutes unless the facility is designed to provide flow equalization. The pump manufacturer's duty cycle recommendations were utilized in selecting the minimum cycle time. [RSWF 42.62]
- X 52. The design requires wet well floors have a minimum slope of 1 to 1 to the hopper bottom and the horizontal area of hopper bottoms be no greater than necessary for proper installation and function of the inlet. [RSWF 42.63]

- X 53. For covered wet wells, the design provides for air displacement to the atmosphere, such as an inverted "j" tube or other means. [RSWF 42.64]
- X 54. The design provides for adequate ventilation all pump stations; mechanical ventilation where the dry well is below the ground surface; permanently installed ventilation if screens or mechanical equipment requiring maintenance or inspection are located in the wet well. Pump stations are designed with no interconnection between the wet well and dry well ventilation systems. [RSWF 42.71]
- X 55. The design requires all intermittently operated ventilation equipment to be interconnected with the respective pit lighting system and the manual lighting/ventilation switch to override the automatic controls. [RSWF 42.73]
- X 56. The design requires the fan wheels of ventilation systems be fabricated from non-sparking material and automatic heating and dehumidification equipment be provided in all dry wells. [RSWF 42.74]
- X 57. If wet well ventilation is continuous, design provides for at least 12 complete 100% fresh air changes per hour; if wet well ventilation is intermittent, design provides for at least 30 complete 100% fresh air changes per hour; and design requires air to be forced into wet wells by mechanical means rather than solely exhausted from the wet well. [RSWF 42.75]
- X 58. If dry well ventilation is continuous, design provides at least 6 complete 100% fresh air changes per hour; and dry well ventilation is intermittent, design provides for at least 30 complete 100% fresh air changes per hour, unless a system of two speed ventilation with an initial ventilation rate of 30 changes per hour for 10 minutes and automatic switch over to 6 changes per hour is used to conserve heat. [RSWF 42.76]
- X 59. Pump stations are designed and located on the site to minimize adverse effects from odors, noise, and lighting. [62-604.400(2)(c), F.A.C.]
- X 60. The design requires pump stations be enclosed with a fence or otherwise designed with appropriate features to discourage the entry of animals and unauthorized persons. Posting of an unobstructed sign made of durable weather resistant material at a location visible to the public with a telephone number for a point of contact in case of emergency is specified. [62-604.400(2)(d), F.A.C.]
- X 61. The design requires suitable devices for measuring wastewater flow at all pump stations. Indicating, totalizing, and recording flow measurement are specified for pump stations with a 1200 gpm or greater design peak flow. [RSWF 42.8]
- X 62. The project is designed with no physical connections between any potable water supplies and pump stations. If a potable water supply is brought to a station, reduced-pressure principle backflow-prevention assemblies are specified. [RSWF 42.9 and 62-555.30(4), F.A.C.]

Additional Items to be Completed for Suction-Lift Pump Stations

- X 63. The design requires all suction-lift pumps to be either self-priming or vacuum-priming and the combined total of dynamic suction-lift at the "pump off" elevation and required net positive suction head at design operating conditions not to exceed 22 feet. For self-priming pumps, the design requires: 1) pumps be capable of rapid priming and repriming at the "lead pump on" elevation with self-priming and repriming accomplished automatically under design operating conditions; 2) suction piping not to exceed the size of the pump suction or 25 feet in total length; and 3) priming lift at the "lead pump on" elevation to include a safety factor of at least 4 feet from the maximum allowable priming lift for the specific equipment at design operating conditions. For vacuum-priming pump stations, the design requires dual vacuum pumps capable of automatically and completely removing air from the suction-lift pumps and the vacuum pumps be adequately protected from damage due to wastewater. [RSWF 43.1]
- X 64. The design requires: 1) suction-lift pump equipment compartments to be above grade or offset and to be effectively isolated from the wet well to prevent a hazardous and corrosive sewer atmosphere from entering the equipment compartment; 2) wet well access not to be through the equipment compartment and to be at least 24 inches in diameter; 3) gasketed replacement plates be provided to cover the opening to the wet well for pump units to be removed for service; and 4) no valving be located in the wet well. [RSWF 43.2]

Additional Items to be Completed for Submersible Pump Stations

- X 65. Submersible pumps and motors are designed specifically for raw wastewater use, including totally submerged operation during a portion of each pump cycle and to meet the requirements of the National Electrical Code for such units. Provisions for detecting shaft seal failure or potential seal failure are included in the design. [RSWF 44.1]
- X 66. The design requires submersible pumps be readily removable and replaceable without dewatering the wet well or disconnecting any piping in the wet well. [RSWF 44.2]
- X 67. In submersible pump stations, electrical supply, control, and alarm circuits are designed to provide strain relief; to allow disconnection from outside the wet well; and to protect terminals and connectors from corrosion by location outside the wet well or through use of watertight seals. [RSWF 44.31]
- X 68. In submersible pump stations, the design requires the motor control center to be located outside the wet well, readily accessible, and protected by a conduit seal or other appropriate measures meeting the requirements of the National Electrical Code, to prevent the atmosphere of the wet well from gaining access to the control center. If a seal is specified, the motor can be removed and electrically disconnected without disturbing the seal. The design requires control equipment exposed to weather to meet the requirements of weatherproof equipment NEMA 3R or 4. [RSWF 44.32]
- X 69. In submersible pump stations, the design requires: 1) pump motor power cords be flexible and serviceable under conditions of extra hard usage and to meet the requirements of the National Electrical Code standards for flexible cords in wastewater pump stations; 2) ground fault interruption protection be used to de-energize the circuit in the event of any failure in the electrical integrity of the cable; and 3) power cord terminal fittings be corrosion-resistant and constructed in a manner to prevent the entry of moisture into the cable, provided with strain relief appurtenances, and designed to facilitate field connecting. [RSWF 44.33]
- X 70. In submersible pump stations, the design requires all shut-off and check valves be located in a separate valve pit. Provisions to remove or drain accumulated water from the valve pit are included in the design. [RSWF 44.4]

Emergency Operations for Pump Stations

- X 71. Pump stations are designed with an alarm system which activates in cases of power failure, sump pump failure, pump failure, unauthorized entry, or any cause of pump station malfunction. Pump station alarms are designed to be telemetered to a facility that is manned 24 hours a day. If such a facility is not available and a 24-hour holding capacity is not provided, the alarm is designed to be telemetered to utility offices during normal working hours and to the home of the responsible person(s) in charge of the lift station during off-duty hours. Note, if an audio-visual alarm system with a self-contained power supply is provided in lieu of a telemetered system, documentation is provided in Part II.(5)BC, showing an equivalent level of reliability and public health protection. [RSWF 45]
- X 72. The design requires emergency pumping capability be provided for all pump stations. For pump stations that receive flow from one or more pump stations through a force main or pump stations discharging through pipes 12 inches or larger, the design requires uninterrupted pumping capability be provided, including an in-place emergency generator. Where portable pumping and/or generating equipment or manual transfer is used, the design includes sufficient storage capacity with an alarm system to allow time for detection of pump station failure and transportation and connection of emergency equipment. [62-604.400(2)(a)1. and 2., F.A.C., and RSWF 46.423 and 46.433]
- X 73. The design requires: 1) emergency standby systems to have sufficient capacity to start up and maintain the total rated running capacity of the station, including lighting, ventilation, and other auxiliary equipment necessary for safety and proper operation; 2) special sequencing controls be provided to start pump motors unless the generating equipment has capacity to start all pumps simultaneously with auxiliary equipment operating; 3) a riser from the force main with rapid connection capabilities and appropriate valving be provided for all pump stations to hook up portable pumps; and 4) all pump station reliability design features be compatible with the available temporary service power generating and pumping equipment of the authority responsible for operation and maintenance of the collection/transmission system. [62-604.400(2)(a)3., F.A.C., and RSWF 46.431]
- X 74. The design provides for emergency equipment to be protected from operation conditions that would result in damage to the equipment and from damage at the restoration of regular electrical power. [RSWF 46.411, 46.417, and 46.432]

X

75. For permanently-installed internal combustion engines, underground fuel storage and piping facilities are designed in accordance with applicable state and federal regulations; and the design requires engines to be located above grade with adequate ventilation of fuel vapors and exhaust gases. [RSWF 46.414 and 46.415]

X

76. For permanently-installed or portable engine-driven pumps are used, the design includes provisions for manual start-up. [RSWF 46.422]

X

77. Where independent substations are used for emergency power, each separate substation and its associated transmission lines is designed to be capable of starting and operating the pump station at its rated capacity. [RSWF 46.44]

#### Force Mains

CM

78. Force mains are designed to maintain, at design pumping rates, a cleansing velocity of at least 2 feet per second. The minimum force main diameter specified for raw wastewater is not less than 4 inches. [RSWF 48.1]

CM

79. The design requires: 1) branches of intersecting force mains be provided with appropriate valves such that one branch may be shut down for maintenance and repair without interrupting the flow of other branches; and 2) stubouts on force mains, placed in anticipation of future connections, be equipped with a valve to allow such connection without interruption of service. [62-604.400(2)(f), F.A.C.]

CM

80. The design requires air relief valves be placed at high points in the force main to prevent air locking. [RSWF 48.2]

CM

81. Specified force main pipe and joints are equal to water main strength materials suitable for design conditions. The force main, reaction blocking, and station piping are designed to withstand water hammer pressures and stresses associated with the cycling of wastewater pump stations. [RSWF 48.4]

CM

82. When the Hazen and Williams formula is used to calculate friction losses through force mains, the value for "C" is 100 for unlined iron or steel pipe for design. For other smooth pipe materials, such as PVC, polyethylene, lined ductile iron, the value for C does not exceed 120 for design. [RSWF 48.61]

CM

83. Where force mains are constructed of material, which might cause the force main to be confused with potable water mains, specifications require the force main to be clearly identified. [RSWF 48.7]

CM

84. Leakage tests for force mains are specified including testing methods and leakage limits. [RSWF 48.8]

\*RSWF = *Recommended Standards for Wastewater Facilities* (1997) as adopted by rule 62-604.300(5)(g), F.A.C.

B. Explanation for Requirements or Standards Marked "X" in II(5)A. Above (Attach additional sheets if necessary):

See Attached - Page 9A.

### PART III - CERTIFICATIONS

#### (1) Collection/Transmission System Permittee

I, the undersigned owner or authorized representative\* of Loxahatchee River Environmental Control District am fully aware that the statements made in this application for a construction permit are true, correct and complete to the best of my knowledge and belief. I agree to retain the design engineer or another professional engineer registered in Florida, to conduct on-site observation of construction, to prepare a certification of completion of construction, and to review record drawings for adequacy. Further, I agree to provide an appropriate operation and maintenance manual for the facilities pursuant to Rule 62-604.500(4), F.A.C., and to retain a professional engineer registered in Florida to examine (or to prepare if desired) the manual. I am fully aware that Department approval must be obtained before this project is placed into service for any purpose other than testing for leaks and testing equipment operation.

Signed

Name

D. Albrety Arrington, Ph.D.

Date

Title

9/25/2020

Executive Director

\*Attach a letter of authorization.

**Notification/Application for Constructing a Domestic Wastewater  
Collection/Transmission System**

**B. Explanation for Requirements or Standards Marked "X" in II (5) A:**

- |         |  |
|---------|--|
| 7 – 19  | No gravity sewers are proposed for this project            |
| 20 - 26 | No new manholes are proposed for this project.             |
| 27 – 33 | No stream crossings are proposed for this project.         |
| 34 - 62 | No pump stations are proposed for this project.            |
| 63 – 64 | The design does not include any suction-lift pump stations |
| 65 – 70 | The design does not include a proposed pump station.       |
| 71 – 77 | The design does not include a proposed pump station.       |

(2) Owner of Collection/Transmission System

I, the undersigned owner or authorized representative\* of Loxahatchee River Env. Control District certify that we will be the Owner of this project after it is placed into service. I agree that we will operate and maintain this project in a manner that will comply with applicable Department rules. Also I agree that we will promptly notify the Department if we sell or legally transfer ownership of this project.

Signed [Signature] Date 9-25-2020  
Name D. Albrey Arrington, Ph.D. Title Executive Director  
Company Name Loxahatchee River Environmental Control District  
Address 2500 Jupiter Park Drive  
City Jupiter State FL Zip 33458  
Telephone 561-747-5700 Fax 561-747-9929 Email albrey@lrecd.org

\* Attach a letter of authorization.

(3) Wastewater Facility Serving Collection/Transmission System\*\*

If this is a Notice of Intent to use a general permit, check here:

- ☒ The undersigned owner or authorized representative\* of the Loxahatchee River Env. Control District wastewater facility hereby certifies that the above referenced facility has the capacity to receive the wastewater generated by the proposed collection system; is in compliance with the capacity analysis report requirements of Rule 62-600.405, F.A.C.; is not under a Department order associated with effluent violations or the ability to treat wastewater adequately; and will provide the necessary treatment and disposal as required by Chapter 403, F.S., and applicable Department rules.

If this is an application for an individual permit, check one:

- ☐ The undersigned owner or authorized representative\* of the \_\_\_\_\_ wastewater facility hereby certifies that the above referenced facility has and will have adequate reserve capacity to accept the flow from this project and will provide the necessary treatment and disposal as required by Chapter 403, F.S., and applicable Department rules.
- ☐ The undersigned owner or authorized representative\* of the \_\_\_\_\_ wastewater facility hereby certifies that the above referenced facility currently does not have, but will have prior to placing the proposed project into operation, adequate reserve capacity to accept the flow from this project and will provide the necessary treatment and disposal as required by Chapter 403, F.S., and applicable Department rules.

Name of Treatment Plant Serving Project Loxahatchee River Environmental Control District WWTP  
County Palm Beach City Jupiter  
DEP permit number FL 0034649 Expiration Date January 9, 2024  
Maximum monthly average daily flow over the last 12 month period 7.44 MGD Month(s) used 2/2020  
Maximum three-month average daily flow over the last 12 month period 7.35 MGD Month(s) used 12/19-2/20  
Current permitted capacity 11.0 MGD ☒ AADF ☐ MADF ☐ TMADF

Current outstanding flow commitments (including this project) against treatment plant capacity:

**0.273 MGD**

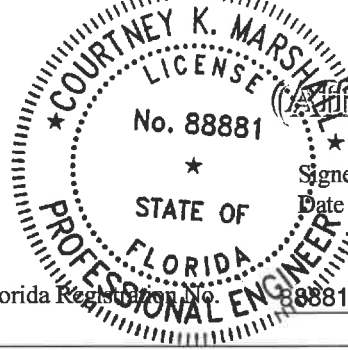
Signed [Signature] Date 9-25-2020  
Name D. Albrey Arrington, Ph.D. Title Executive Director  
Address 2500 Jupiter Park Drive  
City Jupiter State FL Zip 33458  
Telephone 561-747-5700 Fax 561-747-9929 Email albrey@lrecd.org

\* Attach a letter of authorization.

\*\* If there is an intermediate collection system, a letter shall be attached certifying that the intermediate downstream collection system has adequate reserve capacity to accept the flow from this project.

(4) Professional Engineer Registered in Florida

I, the undersigned professional engineer registered in Florida, certify that I am in responsible charge of the preparation and production of engineering documents for this project; that plans and specifications for this project have been completed; that I have expertise in the design of wastewater collection/transmission systems; and that, to the best of my knowledge and belief, the engineering design for this project complies with the requirements of Chapter 62-604, F.A.C.



Name Courtney K. Marshall, P.E. Florida Registration No. 88881  
Company Name Baxter & Woodman, Inc.  
Address 477 S. Rosemary Avenue, Suite 330  
City West Palm Beach State FL Zip 33401  
Telephone 655-6175 Fax 561-655-6179 Email cmarshall@baxterwoodman.com  
Portion of Project for Which Responsible Entire Project

((Affix Seal))

Signed \_\_\_\_\_  
Date \_\_\_\_\_

Name \_\_\_\_\_ Florida Registration No. \_\_\_\_\_  
Company Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
Telephone \_\_\_\_\_ Fax \_\_\_\_\_ Email \_\_\_\_\_  
Portion of Project for Which Responsible \_\_\_\_\_

((Affix Seal))

Signed \_\_\_\_\_  
Date \_\_\_\_\_

Name \_\_\_\_\_ Florida Registration No. \_\_\_\_\_  
Company Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
Telephone \_\_\_\_\_ Fax \_\_\_\_\_ Email \_\_\_\_\_  
Portion of Project for Which Responsible \_\_\_\_\_

## **APPENDIX B**

### **PALM BEACH COUNTY R-O-W CONSTRUCTION UTILITY PERMIT**

**PALM BEACH COUNTY LAND DEVELOPMENT DIVISION**  
**RIGHT-OF-WAY CONSTRUCTION - UTILITY PERMIT**

**PROJECT NAME:** olympus drive fm & lp sewer replacement  
**PERMIT NUMBER:** UT56207-1020  
**PERMITEE NAME:** Loxahatchee River Environmental Control Dis  
**EXPIRATION DATE:** 10/16/2021

- 1 . Improvements approved with this permit may be subject to removal due to Roadway Production's pending projects in the 5 year Road program.
- 2 . AFTER THE PERMIT CONDITIONS HAVE BEEN ACCEPTED BY THE PERMITTEE, HE/SHE SHALL CONTACT GRACIELA MCAUSLAND FOR PROJECTS NORTH OF STATE ROAD 80 AND SEAN REILLY FOR PROJECTS SOUTH OF STATE ROAD 80 AT THE PBC TRAFFIC DIVISION (561) 684-4030. THEY WILL DETERMINE IF MAINTENANCE OF TRAFFIC PLAN (FOR VEHICLES AND/OR PEDESTRIANS) IS REQUIRED. IF REQUIRED, THE PLAN SHALL BE SUBMITTED VIA EPERMITTING UNDER THE MAINTENANCE OF TRAFFIC APPLICATION. A MINIMUM OF 2 WEEKS PRIOR TO START OF CONSTRUCTION. THE PERMITTEE/DULY AUTHORIZED AGENT SHALL BE RESPONSIBLE TO HAVE THE PLAN APPROVED PRIOR TO CONSTRUCTION.

WHEN THE PLAN HAS BEEN APPROVED, OR DETERMINED NOT TO BE REQUIRED, THE PERMIT CONTACT, EITHER THE PERMITTEE OR THE ENGINEER OF RECORD, SHALL CONTACT THE CONSTRUCTION COORDINATION DIVISION AT (561) 684-4180, 48 HOURS BEFORE COMMENCEMENT OF WORK FOR A START DATE. (SEE CONDITION NUMBER 1 ON THE BACK OF THIS PERMIT)

- 3 . THE PERMITTEE SHALL BE RESPONSIBLE FOR REMOVING ALL OR ANY PORTION OF THE ABANDONED FACILITIES WITHIN 90 DAYS OF A REQUEST BY THE COUNTY ENGINEER. ALL REMOVAL AND RESTORATION COSTS SHALL BE COVERED BY THE PERMITTEE, WITH NO EXPENSE TO PALM BEACH COUNTY. THE PERMITTEE SHALL BE CHARGED A FINE OF \$1,000 PER DAY FOR EACH DAY BEYOND THE GIVEN 90 DAY PERIOD FOR REMOVAL OR RESTORATION NOT COMPLETED, UNLESS OTHERWISE WAIVED BY THE COUNTY ENGINEER.
- 4 . This condition applies to Advanced Wireless Infrastructure Pole installation permits that exclude the associated underground electric, fiber optics, cables and other types of service conduits required to operate the pole mounted communication system (s). These supporting service lines are required to be permitted by a separate permit (if not included in this approval). "Pole installation only permits" shall not be connected without the supporting underground infrastructure being permitted. Operation without the proper permits will result in the removal of illegally installed components by the permittee and suspension of the Antenna use until properly permitted.
- 5 . The Permittee is required to coordinate with the property's applicable Drainage District for all work proposed or drainage discharge into that District's rights of way or easements.
- 6 . This permit does not include approval of Maintenance of Traffic (MOT). Contact Graciela MCAusland for projects north of Southern Blvd. or Sean Reilly for projects south of Southern Blvd., Construction Coordinators- Palm Beach County Traffic Division at 561-684-4030.
- 7 . Coordinate with the local utility providers and provide the clearances to existing utilities established by those agencies. At a minimum, maintain 4 feet of horizontal clearance between proposed underground facilities and existing utilities (wall to wall) and a minimum of 12 inches of vertical clearance.
- 8 . The Permittee has executed an Interlocal Agreement with the County to guarantee proper restoration of the pavement cut(s). Two satisfactory reviews from the PBC Construction Coordination Division shall be obtained by the permittee; one for the initial final field review, the second six months after the initial final field review. Should the Permittee fail to restore the cut within 30 days of written notification, the County may do so and receive reimbursement per Interlocal Agreement No. R-2016-0602.
- 9 . If necessary as part of the permitted work pothole and groundwater discharge ( dewatering ) locations shall be coordinated with the PBC Construction Coordination Division. Milling and resurfacing of the road pavement may be required due to the number of pothole locations. Avoid disturbing travel lane wheel paths if possible.

10. The Permittee shall provide evidence of insurance to the Construction Coordination Division prior to receiving a construction start date, as required by Ordinance No. 2019-030, and as may be amended.

The Certificate Holder shall be:

Palm Beach County Land Development  
C/O Construction Coordination Division  
2300 N. Jog Road  
West Palm Beach, FL 33411

Under: DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES (Acord 101, additional Remarks Schedule):

The following must be added as Additional Insured for General Liability insurance:

Palm Beach County Board of County Commissioners, Its Employees, Agents and Contractors.

The limits of coverage of insurance required shall be not less than the following:

(a) Worker's Compensation and Employer's Liability Insurance

Worker's Compensation-Florida Statutory Requirements

Employer's Liability - \$100,000 each accident

- \$500,000 disease--policy limit

- \$100,000 disease--each employee

(b) Comprehensive General Liability

Bodily injury and property damage-

\$1,000,000 each occurrence

\$3,000,000 general aggregate

(c) Automobile Liability

Bodily injury and property damage-

\$1,000,000 combined single limit each accident

11. Please note that future roadway construction may require relocation of these facilities at no expense to Palm Beach County.
12. All inspections are scheduled through Construction Coordination (561) 684-4180 either by the permittee, the engineer of record or his/her representative, who must be present at the inspections. Prior to scheduling a final field review with Construction Coordination, the permittee shall submit to the Land Development Division a signed and sealed certification of completion from the Engineer-of-Record for the above work, referencing the permit number and indicating the work was completed in substantial accordance with the approved plans.
13. All inspections are scheduled through Construction Coordination (561) 684-4180 either by the permittee, the engineer of record or his/her representative, who must be present at the inspections. Prior to scheduling a final field review with Construction Coordination, the Permittee shall submit to the Land Development Division a signed and sealed certification of completion from the Engineer-of-Record for the above work, referencing the permit number and indicating the work was completed in substantial accordance with the approved plans.

If the Permittee is exempt from requirement to contract with a Professional Engineer for design, then the Permittee shall provide a certification of completion letter. The letter is not required to be signed and sealed by a Professional Engineer except in the case where a Professional Engineer is on staff and EOR for the usually exempt project.

14. WORK SHALL NOT COMMENCE UNTIL THE PERMITTEE HAS REQUESTED AND RECEIVED APPROVAL FOR A START DATE FROM THE CONSTRUCTION COORDINATION DIVISION AT 561-684-4180.  
FAILURE TO BEGIN CONSTRUCTION ON THE START DATE WITHOUT 24 HOUR NOTIFICATION WILL RESULT IN A CANCELED PERMIT.  
IF WORK COMMENCES WITHOUT AN APPROVED START DATE OR ON AN ALTERNATIVE DATE WITHOUT PROPER NOTICE, THIS PERMIT SHALL BE CANCELED.

15. All utility structures installed below grade, of any type, in the Palm Beach County right-of-way are required to have traffic bearing tops. This includes all valve boxes, meter boxes, hand holes, splice boxes, storm grates, manhole tops, traffic boxes etc. This requirement applies to structures within the sidewalks, grassed areas and/or pavement.

All pull boxes, hand holes, etc., in Palm Beach County Right-of-Way are to be a minimum of Tier 15, (15K design load/ 22.5K Test load) traffic bearing in locations that are subject to occasional traffic.. Pull boxes, hand holes, etc., in the roadway (deliberate vehicular traffic applications) are to be a minimum of AASHTO H 20.

16. Permittee shall coordinate the proposed installation with the existing utilities in the permitted work area.
17. The Permittee is responsible to contact Palm Beach County Department of Environmental Resources Management (561) 233-2400 to obtain any approvals that office may require due to the work proposed by this permit.

## CONDITIONS FOR RIGHT-OF-WAY CONSTRUCTION (UTILITIES)

1. The Construction Coordination Division shall be contacted 48 hours before commencement of work to establish the start date and establish a timeline when field review(s) of the work are required. Construction shall be done Monday through Friday. Weekend work shall be approved by Construction Coordination 48 hours before Saturday. Plans bearing the approval stamp of the County Engineer and the approved permit shall be at the work site. Work may proceed beyond the permit expiration date if a start date was established and work started prior to the permit expiration date. When work is complete and the engineer's certification of completion has been submitted to the Land Development Division, the permittee/representative/engineer (as applicable) shall schedule a final review with Construction Coordination Division. If a permitted project has been completed but does not require an engineer's certification, the permittee/representative (as applicable) shall submit a letter to the Land Development Division indicating the work is complete and ready for final field review. Land Development will notify the permittee/representative to schedule final field reviews with Construction Coordination.
2. The permittee understands and agrees that the rights and privileges herein set out are granted only to the extent of the County's right, title and interest in the land to be entered upon and used by the permittee. THE PERMITTEE WILL AT ALL TIMES ASSUME ALL RISK AND FURTHER WILL INDEMNIFY, DEFEND, AND SAVE HARMLESS PALM BEACH COUNTY FROM AND AGAINST ALL LOSS, DAMAGE, COST OR EXPENSE ARISING IN ANY MANNER (INCLUDING ALL LITIGATION COSTS AND ATTORNEY FEES), ON ACCOUNT OF THE EXERCISE OR ATTEMPTED EXERCISE BY SAID PERMITTEE OF THE AFORESAID RIGHTS AND PRIVILEGES REGARDLESS OF THE APPORTIONMENT OF NEGLIGENCE OF THE PARTIES INVOLVED. THE PERMIT HOLDER, THEREFORE, AGREES TO INDEMNIFY THE COUNTY FOR THE COUNTY'S OWN NEGLIGENCE. It is specifically understood that the limits of this indemnification are the COUNTY'S statutory liability limits under Section 768.28, Florida Statute, or any successor legislation in effect at the issuance of said permit. The existing statutory limits under 768.28, Florida Statute are hereby recognized as the Statue ("Construction Contracts") should that statute be deemed to apply.
- 2a. The following condition is applicable when the permittee is a governmental agency: That Agency shall indemnify, defend and hold County harmless against any actions, claims or damages arising out of Agency's negligence and Agency's exercise of the rights granted by this Agreement to the extent permitted by law. The foregoing indemnification shall not constitute a waiver of sovereign immunity beyond the limits set forth in Section 768.28, Florida Statutes, nor shall the same be construed to constitute an agreement by Agency to indemnify County of County's negligence.
3. Permittee assumes full responsibility to maintain all areas under construction safe for the public and to properly route and direct traffic through the construction area. All traffic control operations shall be done in accordance with the current *Manual on Uniform Traffic Control Devices* (Part VI). Supplements to this manual are the Florida Department of Transportation's Roadway and Traffic Design Standards (Index 600) and Standard Specifications for Road and Bridge Construction (latest edition). No obstruction of the travel lanes between 7 a.m. to 9 a.m. and 3 p.m. to 6 p.m. Monday thru Friday, unless approved by the Palm Beach County Traffic Engineering Division. No time restrictions for local and subdivision roads, or for construction done Saturday or Sunday.
4. Florida Statute 336.048 - Temporary closing traveling lane of road: Whenever any road on the county road or city street system is repaired, reconstructed, or otherwise altered in a manner that necessitates the closing of one or more traveling lanes of the road for a period of time exceeding 2 hours, the party performing such work shall give notice to the appropriate local law enforcement agency within whose jurisdiction such road is located prior to commencing work on the project. However, when the closing of one or more lanes is required because of emergency conditions, such notice shall be waived.
5. Permittee hereby acknowledges the COUNTY'S right to inspect the area governed by this permit at any time prior to final acceptance by the COUNTY to assure compliance with all plans and specifications. All reviews, however, shall be performed at the COUNTY'S discretion and are strictly to assure compliance with project plans and specifications. PERMITTEE HEREBY ACKNOWLEDGES THAT THE COUNTY VIA SAID REVIEWS IS NOT THE EMPLOYER, SUPERVISOR, PRINCIPAL OR AGENT OF PERMITTEE. Permittee is at all times an independent contractor with full responsibility for all obligations and responsibilities imposed under this permit and imposed by law.
6. If a County maintained Thoroughfare Plan Road is open cut, the procedures in Land Development Division PPM EL-O-3605, including Form 3605.1 (Open Cut Restoration for Thoroughfare Plan Roads) shall be adhered to. If a Non-Thoroughfare Plan Road is open cut, Land Development Division PPM EL-O-3606, including Form 3606.1 (Open Cut Restoration for Non-Thoroughfare Plan Roads) shall be adhered to.
- 6a. If an asphalt driveway is cut and patched, the entire driveway shall be overlaid with a minimum one inch of asphalt, or entirely replaced. If a concrete driveway is cut, it shall be entirely replaced. Replacement area is from the intersecting road to the property line.
7. All areas in the right-of-way shall be left in a condition equal to or better than existed prior to construction. Shoulders disturbed within 8 feet of the edge of pavement shall be stabilized a minimum 50 PSI Florida Bearing Value, 6 inches in depth. Existing drainage shall not be impeded. Sidewalk areas disturbed during construction shall be maintained until repaved. Prior to or concurrent with final review, the permittee shall submit to the Construction Coordination Division copies of density reports done by an independent testing laboratory. If the construction should fail within one year from the date of final review by the

Construction Coordination Division, the permittee is responsible for restoration.

8. The permittee certifies notification has or will be given at least 48 hours (excluding Saturday, Sundays and legal holidays) prior to starting excavation, to anyone having the right to bury gas pipe line within the public or private street, alley, right-of-way or gas utility easement for purposes of obtaining information concerning the possible location of gas pipe lines in the area of proposed excavation.
9. The permitted work shall be coordinated with any Utility or Cable TV facilities in the area of construction.
10. The permittee/developer shall provide and install pavement markings (thermoplastic, unless approved otherwise by the Palm Beach County Traffic Engineer), and reflective pavement markers in accordance with Palm Beach County Traffic Division's latest Typicals for Pavement Markings, Signing and Geometrics.
11. If traffic signalization equipment is in the area of construction, notify Palm Beach County Traffic Operations at (561) 233-3900. Do not disturb any material within six feet of a traffic signal pole or a guy wire and anchor. If damage to the equipment occurs during construction, it shall be repaired by Traffic Operations at the permittee's expense.
12. Provide a minimum cover of 36 inches in the right-of-way of Thoroughfare Plan Roads and a minimum of 30 inches for all others. Maintain a minimum clearance of 12 inches over or under drainage facilities.
13. When plastic pipe is permitted for boring, it shall meet the standards as set forth in the latest Florida Department of Transportation Design Standards.
14. If previously approved construction is underway in the same location as indicated on this permit, the permittee shall obtain permission to work from the contractor doing the underway construction. If not granted, the construction under this permit shall not be done until the underway construction is finished by the Palm Beach County Construction Coordination Division.

## **APPENDIX C**

### **FDOT UTILITY ROW PERMIT**

## UTILITY PERMIT

PERMIT NO: 2020-H-496-00566

### STATE ROAD INFORMATION

County: <b>Palm Beach</b>	Section: <b>93040000</b>	State Road No: <b>SR 5</b>	Beginning Mile Post: <b>5.206</b>	Ending Mile Post: <b>5.206</b>
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### APPLICANT INFORMATION

The Utility Agency Owner (UAO) shall be identified in this Applicant Information Box. When the UAO is a City or County and desires to have the Utility Builder make a joint permit applicant, as prescribed in Section 2.1(4) of the 2017 Utility Accommodation Manual (UAM), the Utility Builder shall also be identified in this Applicant Information Box. A Utility Builder alone cannot apply for a utility permit without the City or County adding them as a joint applicant.

<u>Utility Agency/Owner (UAO)</u>		<u>Utility Builder (only applicable when the UAO is a City or County)</u>	
Name:	<u>Loxahatchee River District</u>	Name:	_____
Contact Person:	<u>Loxahatchee River District</u>	Contact Person:	_____
Address:	<u>2500 Jupiter Park Dr</u>	Address:	_____
City:	<u>Jupiter</u>	City:	_____
State:	<u>Florida</u>	State:	_____
Zip:	<u>33458</u>	Zip:	_____
Telephone:	<u>5617475700</u>	Telephone:	_____
Email:	<u>kris.dean@loxahatcheeriver.org</u>	Email:	_____

### WORK DESCRIPTION

The Applicant(s) requests permission from the Florida Department of Transportation (FDOT) to construct, operate, and maintain the utilities as described below and as depicted in the incorporated documentation.

8" PVC C900 force main tie-in and 2" SCH 80 PVC low-pressure force main tie-in at the intersection of US Hwy 1 and Olympus Drive and associated roadway and sidewalk restoration. Abandonment of existing 6" force main with grout at the east-side of the intersection of US Hwy 1 and Olympus Drive. Abandonment of existing 10" force main with grout from the east-side of intersection of US Hwy 1 and Olympus Drive to existing wastewater lift station No. 133 on Rolling Green Road.

Utility Work No: \_\_\_\_\_

Additional sheets are attached and are incorporated into this permit Yes ☐ No ☒

For FDEP certification, the FDOT agency report is attached in accordance with UAM Section 2.4.1 (13) Yes ☐ No ☒

### TRAFFIC CONTROL (TCP)

☒ The TCP will comply with the following 600 series index(es) 611, 612, 613, 660

☐ A TCP has been attached and incorporated into this permit application in compliance with UAM Section 2.4.2.

MOT Technician's contact information (may be supplied at the two (2) business day notification to FDOT):

Name: \_\_\_\_\_ Telephone: \_\_\_\_\_ Email: \_\_\_\_\_

### COMMENCEMENT OF WORK

The UAO and/or Utility Builder shall commence actual construction in good faith within sixty (60) calendar days after approval of the permit application. If the beginning date is more than sixty (60) calendar days from the date of approval, the UAO and/or Utility Builder must review the permit with the FDOT Approving Engineer listed to make sure no changes have occurred to the transportation facility that would affect the permit's continued approval. The UAO and/or Utility Builder shall make good faith efforts to expedite the work and complete the work within the calendar days indicated.

Anticipated Start Date: 1/4/2021

Calendar days needed to completed: 120

Approved  
2020-H-496-00566  
Rosie Evert  
10/7/2020

**UTILITY PERMIT****PERMIT NO:** 2020-H-496-00566**APPLICANT SIGNATURE**

By the below signature(s) the UAO and/or Utility Builder agree(s) to construct, operate, and maintain the work as noted in the above Work Description, shown in plans and incorporated documents, in compliance with the UAM, all instructions noted in the FDOT Special Instructions Box, and special instructions incorporated into this permit. The UAO and/or Utility Builder declares, the location of all existing utilities that it owns or has an interest in, both aerial and underground, are accurately shown on the plans of the work areas. In accordance with UAM Section 2.8, the UAO and/or Utility Builder further declares that a letter of notification was delivered to the owners of other facilities within the work areas and that those listed below are the only facility owners known to be involved or potentially impacted by the proposed work.

Date Notified:	Name of other facility owners (attach additional sheets if necessary).
<u>3/13/2020</u>	<u>FP&amp;L</u>
<u>3/13/2020</u>	<u>FiberNet Direct</u>
<u>3/13/2020</u>	<u>Comcast</u>
<u>3/13/2020</u>	<u>AT&amp;T</u>
<u>3/18/2020</u>	<u>FPUC</u>

Utility Agency/Owner

Utility Builder (when applicable)

Signature: KRIS DEAN (digital signature) Date: 9/24/2020  
 Name (printed): KRIS DEAN  
 Title: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
 Name (printed): \_\_\_\_\_  
 Title: \_\_\_\_\_

**FDOT PROJECT INFORMATION**

Pursuant to UAM Section 2.1(10), the utility work is within FDOT projects listed below and must have a Utility Work Schedule for each project approved prior to commencement of work within the FDOT project limits:

**There are NO FDOT constructions (proposed or underway).**  
**This work is NOT related to an approved utility work Schedule.**

**FDOT SPECIAL INSTRUCTIONS**

In accordance with UAM Section 2.7, FDOT incorporates the below and attached special instructions into this permit.

**SEE ATTACHMENT A**

Additional FDOT Special Instructions are attached and incorporated into this permit. Yes ☒ No ☐

**PERMIT APPROVAL**

By signature below, FDOT gives permission to the UAO and /or Utility Builder to construct, operate, and maintain the utilities indicated in this Utility Permit in compliance with the UAM, all incorporated documents, and special instructions. Any changes to the approved work must be approved by the FDOT's Approving Engineer and attached and incorporated into this permit in accordance with UAM Section 2.11.

Approving Engineer: Rosie Evert (digital signature) Date: 10/7/2020  
 Name: Rosie Evert  
 Title: PERMITS COORDINATOR II

Notification of Utility Work to be provided to: Telephone (561) 370-1134 ext. \_\_\_\_\_ or Email: brett.drouin@dot.state.fl.us

An FDOT Representative is required to be present on the worksite prior to commencement of work. Yes ☒ No ☐  
 Rep. Name: Shawn Dolan Telephone 2027341736 Email: sdolan@louisberger.com

2020-H-496-00566  
 Rosie Evert  
 10/7/2020

Florida Department of Transportation  
**UTILITY PERMIT**

December 14, 2016

**PERMIT NO:** 2020-H-496-00566

**CERTIFICATION**

I, the undersigned UAO and/or Utility Builder, hereby CERTIFY that the utilities were constructed and inspected in compliance with the UAM all incorporated documents, and special instructions. Pursuant to UAM Section 2.11, all changes have been approved by the FDOT's Approving Engineer and incorporated into this permit along with all other material certifications, test results, bore logs, approved plans changes, as-built plans or other required documentation.

I also CERTIFY that work began on \_\_\_\_\_ and was completed on \_\_\_\_\_ and that the area was left in as good or better condition than when the work began.

Utility Agency/Owner

Utility Builder (when applicable)

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

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

Name (printed): \_\_\_\_\_

Name (printed): \_\_\_\_\_

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

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

**FINAL INSPECTION OF WORK**

☐ The work was inspected and found to be in non-compliance as noted below:

☐ All issues of non-compliance listed above have been brought into compliance and/or FDOT has no outstanding issues that need to be addressed by the UAO and/or Utility Builder. However, this final inspection does not release the UAO and/or Utility Builder of their continuing responsibilities pursuant to Rule 14-46.001, the UAM, all incorporated documents, and special instructions.

FDOT Inspector: \_\_\_\_\_ Date: \_\_\_\_\_

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

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

Approved  
2020-H-496-00566  
Rosie Evert  
10/7/2020

**PERMIT NO.:** 2020-H-496-00566

**STATE ROAD INFORMATION:**

**NAME OF OTHER FACILITY OWNERS / DATE NOTIFIED:**

Facility Name: TECO Gas Company, Date Notified: 3/13/2020, Facility Name: Town of Jupiter, Date Notified: 3/13/2020

**FDOT PROJECT INFORMATION:**

There are NO FDOT constructions (proposed or underway).  
This work is NOT related to an approved Utility Work Schedule.

**THE WORK WAS INSPECTED AND FOUND TO BE IN NON-COMPLIANCE AS NOTED BELOW:**

Approved  
2020-H-496-00566  
Rosie Evert  
10/7/2020



Intersection of Olympus Drive & US Hwy 1 - Looking West



Intersection of Olympus Drive & US Hwy 1 - Looking North

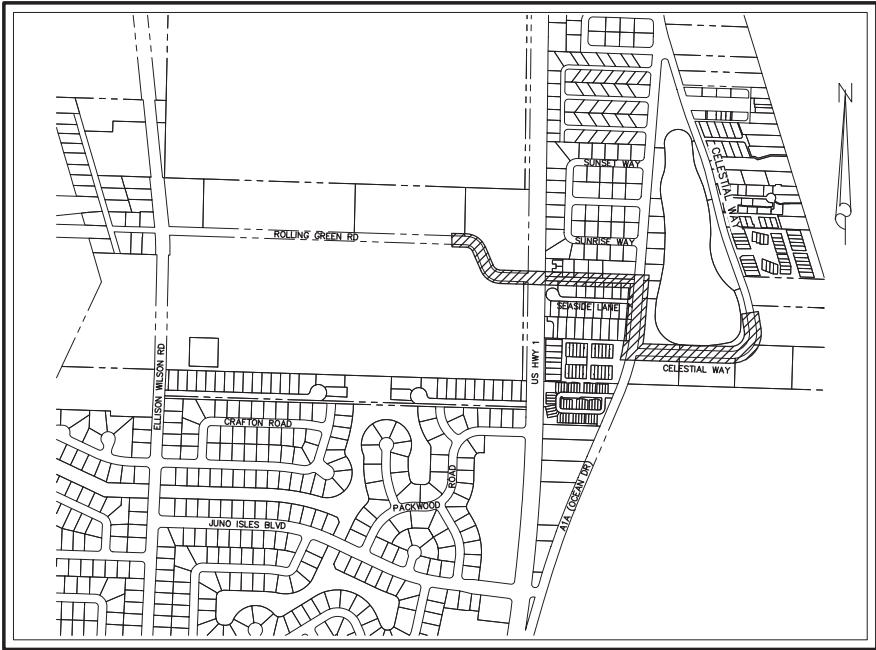
Approved  
2020-H-496-00566  
Rosis Evert  
10/7/2020



Intersection of Olympus Drive & US Hwy 1 - Looking South

Approved  
2020-H-496-00566  
Rosie Evert  
10/7/2020

# LOXAHATCHEE RIVER ENVIRONMENTAL CONTROL DISTRICT OLYMPUS DRIVE FORCE MAIN & LOW PRESSURE SEWER REPLACEMENT



PROJECT LIMITS

SEC. 28, TWP. 41 S, RNG. 43 E

LOCATION MAP  
NTS



## GOVERNING BOARD

CHAIRMAN	STEPHEN B. ROCKOFF
VICE CHAIRMAN	GORDON M. BOGGIE
TREASURER	HARVEY M. SILVERMAN
SECRETARY	JAMES D. SNYDER
ASST. SEC'Y/TREASURER	DR. MATT H. ROSTOCK

**100% DESIGN**  
**SEPTEMBER 2020**

## DRAWING LIST

SHEET	DRAWING	TITLE
<b>GENERAL</b>		
1	G-1	TITLE SHEET, LOCATION MAP AND DRAWING LIST
2	G-2	SURVEY LEGEND AND GENERAL NOTES
3	G-3	HORIZONTAL CONTROL DETAIL
4	G-4	KEY MAP
<b>CIVIL</b>		
5	C-1	OLYMPUS DRIVE PLAN AND PROFILE - STA. 10+00 TO STA. 14+00
6	C-1A	ROLLING GREEN ROAD - 10" FM ABANDONMENT PLAN
7	C-2	OLYMPUS DRIVE PLAN - STA. 14+00 TO STA. 17+14
8	C-2A	OLYMPUS DRIVE PROFILE - STA. 14+00 TO STA. 17+14
9	C-3	STATE ROAD A1A PLAN AND PROFILE - STA. 100+00 TO STA. 103+00
10	C-4	STATE ROAD A1A PLAN AND PROFILE - STA. 103+00 TO STA. 106+00
11	C-5	CELESTIAL WAY PLAN AND PROFILE - STA. 20+00 TO STA. 24+00
12	C-6	CELESTIAL WAY PLAN AND PROFILE - STA. 24+00 TO STA. 28+00
13	C-7	CELESTIAL WAY PLAN AND PROFILE - STA. 28+00 TO STA. 30+00
<b>DETAILS</b>		
14	D-1	STANDARD DETAILS - SHEET 1
15	D-2	STANDARD DETAILS - SHEET 2
16	D-3	STANDARD DETAILS - SHEET 3
17	D-4	STANDARD DETAILS - SHEET 4
18	D-5	STANDARD DETAILS - SHEET 5
19	D-6	STANDARD DETAILS - SHEET 6

FOR INFORMATION REGARDING THIS PROJECT, CONTACT:

COURTNEY K. MARSHALL, P.E.

BAXTER & WOODMAN, INC.  
477 S. ROSEMARY AVENUE, SUITE 330  
WEST PALM BEACH, FL 33401  
561-655-6175

**BAXTER & WOODMAN**  
Consulting Engineers

477 S. Rosemary Avenue, Suite 330, West Palm Beach, Florida 33401  
Phone: 561-655-6175 Fax: 561-655-6179  
www.baxterwoodman.com EB-31795

COURTNEY K. MARSHALL, P.E.  
No. 88881

(CIVIL)

TITLE SHEET, LOCATION MAP  
AND DRAWING LIST

SHEET: 1 of 19

DRAWING: C-1

Acad Version : R22.0s (LMS Tech) User Name : 78ddp Date/Time : Tue, 22 Sep 2020 - 3:09pm Current PlotStyle : BColor Ploth Name : L:\CAD\00\_Working Folder\191515-0052.DWG Layout Tab: G-2

GENERAL NOTES

- ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE LOXAHATCHEE RIVER DISTRICT, PALM BEACH COUNTY, FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION, PALM BEACH COUNTY HEALTH DEPARTMENT, FLORIDA DEPARTMENT OF TRANSPORTATION, AND NATIONAL CODES WHERE APPLICABLE.
- ALL CONSTRUCTION SHALL BE DONE IN A SAFE MANNER, SPECIFICALLY, THE RULES AND REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES SHALL BE STRICTLY OBSERVED.
- ALL CONSTRUCTION SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE AGENCIES HAVING JURISDICTION OVER THE R/W WHERE THE PROJECT IS CONSTRUCTED.
- CONTRACTOR SHALL PREPARE AND SUBMIT NOT PLANS TO PALM BEACH COUNTY, FDOT, TOWN OF JUNO BEACH & LOXAHATCHEE RIVER DISTRICT FOR REVIEW AND APPROVAL FOR WORK TO BE DONE WITHIN OR ADJACENT TO IMPROVED RIGHT-OF-WAY.
- CONTRACTOR SHALL MAINTAIN LOCAL TRAFFIC AT ALL TIMES DURING CONSTRUCTION AND SHALL BE REQUIRED TO PROVIDE ALL BARRICADES, LIGHTING, SIGNAGE AND FLAGMEN AS NECESSARY TO PROVIDE FOR THE SAFETY OF THE PUBLIC IN THE WORK AREA. THE CONTRACTOR SHALL SUBMIT A DETAILED TRAFFIC CONTROL PLAN FOR APPROVAL. THE TRAFFIC CONTROL PLAN SHALL BE SUBMITTED TO AND APPROVED BY THE PBC TRAFFIC DIVISION (Ms. GRACIELA McAUSLAND AT (561) 684-4030), FDOT, AND TOWN OF JUNO BEACH A MINIMUM OF 2 WEEKS PRIOR TO START OF CONSTRUCTION.
- CONTRACTOR SHALL MAINTAIN ACCESS TO PRIVATE PROPERTY AT ALL TIMES.
- LOCATIONS OF EXISTING FACILITIES AS SHOWN ON CONSTRUCTION DRAWINGS ARE APPROXIMATE AND ARE DRAWN FROM AVAILABLE RECORDS. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE FACILITIES SHOWN NOR FOR ANY FACILITY NOT SHOWN. THE CONTRACTOR SHALL LOCATE OR EXPOSE ALL UTILITIES WITHIN THE PROPOSED WORK AREAS AND AT CRITICAL LOCATIONS TO VERIFY UTILITY LOCATIONS AND PIPE LAYING SCHEDULES PRIOR TO SUBMITTING SHOP DRAWINGS. THIS SHALL BE DONE WITHIN 30 DAYS AFTER NOTICE TO PROCEED. THE INFORMATION OBTAINED (ELEVATION, SEPARATION DISTANCE, PIPE MATERIAL AND SIZE, ETC.) SHALL BE MADE PART OF THE CONTRACTOR'S SUBMITTAL FOR ALL PIPING.
- CONTRACTOR SHALL OBTAIN THE SERVICES OF SUNSHINE STATE ONE CALL OF FLORIDA (811), INC. AS REQUIRED BY FLORIDA STATUTES. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO ANY EXISTING UTILITIES.
- FORCEMAINS ARE TO BE LAID WITHIN 0.2 FEET OF THE DESIGN PROFILE.
- COVER SHALL BE A MINIMUM OF 3.0 FEET (TYPICAL) FOR FORCEMAINS UNLESS OTHERWISE NOTED ON DRAWINGS.
- ALL DELETERIOUS MATERIAL SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
- IF UPON EXCAVATION, AN EXISTING UTILITY IS FOUND TO BE IN CONFLICT WITH THE PROPOSED CONSTRUCTION OR TO BE OF A SIZE OR MATERIAL DIFFERENT FROM THAT SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER.
- ALL OPEN TRENCHES AND HOLES ADJACENT TO ROADWAY OR WALKWAY SHALL BE PROPERLY MARKED AND BARRICADED TO ASSURE THE SAFETY OF BOTH VEHICULAR AND PEDESTRIAN TRAFFIC.
- NO TRENCHES OR HOLES NEAR WALKWAYS, IN ROADWAYS OR THEIR SHOULDERS ARE TO BE LEFT OPEN DURING NIGHTTIME HOURS WITHOUT EXPRESSED PERMISSION FROM THE AGENCY HAVING JURISDICTION OVER THE R/W.
- CONTRACTOR SHALL MAINTAIN ALL WORK WITHIN R/W AND EASEMENT LIMITS UNLESS OTHERWISE NOTED ON DRAWINGS.
- CONTRACTOR SHALL REPLACE ALL PAVEMENT MARKINGS REMOVED DURING CONSTRUCTION. ALL PROPOSED AND REPLACED PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
- EXISTING TRAFFIC SIGNS TO BE RESET PER FDOT STANDARDS.
- CONTRACTOR SHALL ADJUST ALL UTILITY CASTING INCLUDING SANITARY SEWER MANHOLE TOPS, INLETS, VALVE BOXES AND SIMILAR STRUCTURES AS REQUIRED TO MEET FINAL GRADES.
- CONTRACTOR SHALL PERFORM ALL WORK NECESSARY TO LOCATE, EXCAVATE AND PREPARE FOR CONNECTIONS TO THE EXISTING SYSTEMS ALL AS SHOWN ON THE DRAWINGS.
- STATIONS SHOWN ON THE DRAWINGS ARE STATIONS BASED ON THE ESTABLISHED BASELINE AND SHALL NOT BE CONSIDERED AS DISTANCES OR AS A MEASURE OF THE LINEAR FOOTAGE OF PIPE TO BE INSTALLED.
- THE CONTRACTOR SHALL SCHEDULE INSPECTIONS AND TESTS WITH THE DISTRICT, PALM BEACH COUNTY, FDOT, AND TOWN OF JUNO BEACH A MINIMUM OF 48 HOURS IN ADVANCE.
- CONTRACTOR SHALL NOT DISTURB EXISTING TOWN OF JUPITER (TOJ) WATER MAINS OR TOWN OF JUNO BEACH DRAINAGE FACILITIES WITHOUT THE PRESENCE OF A DISTRICT OR TOWN INSPECTOR. TOJ UTILITY SYSTEM VALVES AND APPURTENANCES MAY ONLY BE OPERATED BY TOJ PERSONNEL.
- SITE INFORMATION BASED ON A SURVEY PREPARED BY: BAXTER AND WOODMAN, INC.
- CLEARING AND GRUBBING SHALL INCLUDE REMOVAL OF ALL VEGETATION WITHIN RIGHT-OF-WAY AS REQUIRED TO CONSTRUCT THE REQUIRED IMPROVEMENTS.
- PROJECT SITE SAFETY:
  - THE ENGINEER/DISTRICT OR THEIR EMPLOYEES HAVE NO AUTHORITY TO EXERCISE ANY CONTROL OVER THE CONTRACTOR, ANY SUB-CONTRACTOR OR OTHER ENTITY OR THEIR EMPLOYEES IN CONNECTION WITH THEIR WORK OR ANY JOBSITE HEALTH OR SAFETY PRECAUTIONS.
  - THE CONTRACTOR IS SOLELY RESPONSIBLE FOR JOBSITE SAFETY, AND WARRANTS THAT THIS INTENT IS MADE EVIDENT BY THE AGREEMENT BETWEEN DISTRICT AND CONTRACTOR.
  - ALL EXISTING OVERHEAD AND UNDERGROUND UTILITIES SHOWN ON THESE DRAWINGS OR ENCOUNTERED THROUGH THE PROGRESSION OF WORK AT THIS PROJECT SITE ARE ASSUMED TO BE LIVE. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS WHEN WORKING AROUND EXISTING OVERHEAD OR UNDERGROUND UTILITIES.
- THE CONTRACTOR SHALL COORDINATE AND EMPLOY THE SERVICES OF FPL TO SUPPORT ANY EXISTING POWER POLES WITHIN THE IMMEDIATE VICINITY OF TRENCHES.
- CONTRACTOR SHALL LIMIT THE CONSTRUCTION IMPACTS TO DRIVEWAYS AS SHOWN ON THE PLANS. THE COST OF THE SHEETING, SHORING, ETC. OF THE TRENCH SHALL BE INCLUDED IN THE COSTS OF SEWER PIPING BID ITEM(S) AS NECESSARY TO LIMIT TRENCH WIDTH.

GENERAL INFORMATION

1. AT&T TELEPHONE, FLORIDA POWER AND LIGHT, CABLE TV, GAS, ETC. ARE TAKEN FROM FIELD INSPECTIONS AND SKETCHES PROVIDED BY UTILITIES AND ARE SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. THE CONTRACTOR SHALL CONTACT ALL UTILITY OWNERS AND CONFIRM LOCATIONS OF UTILITIES NO LESS THAN 48 HOURS BEFORE BEGINNING CONSTRUCTION. THE CONTRACTOR SHALL ACCURATELY LOCATE AND UNCOVER ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION WHERE CROSSING OR PARALLELING OF EXISTING UTILITIES OCCUR. ANY DAMAGE RESULTING FROM THE CONTRACTORS OPERATION SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.

2. ALL MATERIALS SHALL CONFORM TO LOXAHATCHEE RIVER DISTRICT CONSTRUCTION STANDARDS & TECHNICAL SPECIFICATIONS.

EROSION CONTROL

- ALL STORM SEWER INLET GRATES TO BE COVERED WITH FILTER FABRIC DURING CONSTRUCTION.
- CUT AND FILL SLOPES TO BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SILT FENCES TO BE USED WHERE NECESSARY.
- CONSTRUCTION VEHICLE ACCESS ROUTES SHALL BE SWEEPED CLEAN OF SEDIMENT, CONCRETE AND OTHER CONSTRUCTION MATERIALS AS NEEDED.
- ALL BERMS, DIKES AND SPOIL PILES SUBJECT TO EROSION MUST BE STABILIZED OR CONTAINED TO PREVENT EROSION AND RUNOFF FROM THE PROJECT.
- THE QUALITY OF THE DISCHARGE WATER FROM DEWATERING AND CONSTRUCTIONS ACTIVITIES SHALL MEET STATE WATER QUALITY STANDARDS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PREPARATION AND PERMITTING OF A STORMWATER POLLUTION PREVENTION PLAN FOR THE PROJECT.

SURVEY NOTES:

- THIS SKETCH OF A TOPOGRAPHIC SURVEY WAS PREPARED IN ACCORDANCE WITH THE STANDARDS OF PRACTICE FOR SURVEYING ESTABLISHED BY THE BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTER 5J-17, FLORIDA ADMINISTRATIVE CODES, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.
- THIS SURVEY IS NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.
- A SEARCH OF THE PUBLIC RECORDS FOR OWNERSHIP, EASEMENTS, RIGHTS-OF-WAY, OR OTHER MATTERS OF RECORD WAS NOT PERFORMED BY BAXTER & WOODMAN, INC. THERE MAY BE ADDITIONAL INFORMATION RECORDED IN THE PUBLIC RECORDS THAT IS NOT SHOWN HEREON. FOR FURTHER INFORMATION, CONTACT A QUALIFIED TITLE COMPANY OR CONSULT THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA
- THE BEARINGS SHOWN HEREON ARE BASED ON A BEARING BETWEEN CONTROL POINTS CP6 AND CP5, BEING, S 82°46'04" E
- THE HORIZONTAL COORDINATES SHOWN HEREON ARE BASED ON THE FLORIDA STATE PLANE COORDINATE SYSTEM (EAST ZONE), NORTH AMERICAN DATUM 1983/1990 ADJUSTMENT (N.A.D. 83/90). THE COORDINATES FOR EACH CONTROL POINT WERE ESTABLISHED BY UTILIZING GPS OBSERVATIONS.
- THE ELEVATIONS SHOWN HEREON ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).  
BENCHMARK :  
PBC BM "APACHE" ELEVATION 4.52  
  
CONVERSION NAVD 88 DATUM TO NGVD 29 DATUM = + 1.51'
- CERTAIN FEATURES ARE REPRESENTED BY THE SYMBOLS REFLECTED IN THIS MAP. THE LEGEND OF FEATURES MAY HAVE BEEN ENLARGED FOR CLARITY AND MAY NOT REPRESENT THE ACTUAL SHAPE OR SIZE OF THE FEATURE. THE SYMBOLS HAVE BEEN PLOTTED AT THE APPROXIMATE CENTER OF THE FEATURE BASED UPON THE FIELD LOCATION.
- THIS SKETCH IS NOT A BOUNDARY SURVEY.
- PLAT, LOT AND RIGHT-OF-WAY LINES SHOWN HEREON ARE FOR GRAPHICAL PURPOSES ONLY AND BASED ON PALM BEACH COUNTY GIS "MYGEONAV" BASE MAP LAYER. PLAT, LOT AND RIGHT-OF-WAY LINES SHOWN HEREON MAY VARY FROM ACTUAL OCCUPATION LIMITS ON THE GROUND.
- THIS SKETCH IS INTENDED TO BE DISPLAYED AT A HORIZONTAL SCALE OF 1 INCH = 20 FEET.
- THE HORIZONTAL ACCURACY FOR WELL DEFINED IMPROVEMENTS DEPICTED ON THIS SKETCH IS ONE-TENTH (0.1' ±) OF A FOOT, PLUS OR MINUS. THE VERTICAL (ELEVATIONS) ACCURACY FOR WELL DEFINED IMPROVEMENTS, FEATURES, AND SURFACES DEPICTED ON THIS SURVEY IS TWO-TENTHS (0.2' ±) OF A FOOT, PLUS OR MINUS.
- TREES, HEDGES, GROUND COVER, AND OTHER LANDSCAPE FEATURES ARE NOT SHOWN HEREON, UNLESS OTHERWISE NOTED.
- IRRIGATION FEATURES, SUCH AS SPRINKLERS, ARE NOT SHOWN HEREON.
- FENCES AND WALL DIMENSIONS ARE APPROXIMATE. THE SURVEYOR DID NOT DETERMINE OWNERSHIP OF FENCES AND WALLS.
- SUBSURFACE FEATURES ARE NOT SHOWN HEREON. THIS SITE COULD HAVE UNDERGROUND INSTALLATIONS THAT ARE NOT SHOWN HEREON. BEFORE DESIGN, CONSTRUCTION, OR EXCAVATION CONTACT 811 AND/OR THE APPROPRIATE UTILITY COMPANIES FOR FIELD VERIFICATION OF UTILITIES.
- THE EXTERIOR BUILDING DIMENSIONS SHOWN HEREON REPRESENT THE OVERALL SIZE OF THE BUILDING (FOOTPRINT). SUBSURFACE BUILDING FOOTINGS AND SUPPORTS WERE NOT LOCATED. CERTAIN ARCHITECTURAL FEATURES MAY NOT BE SHOWN ON THE SURVEY. ROOF OVERHANGS ARE NOT SHOWN UNLESS OTHERWISE NOTED. BUILDING DIMENSIONS AND BUILDING SETBACKS ARE SHOWN ROUNDED TO THE NEAREST ONE-TENTH (0.1 FEET ) OF A FOOT. BEFORE DESIGN OF IMPROVEMENTS CRITICAL DIMENSIONS SHOWN BE CONFIRMED.
- THE DIMENSIONS SHOWN HEREON ARE BASED UPON U.S. SURVEY FEET AND FRACTIONAL PARTS THEREOF.
- AREA COMPUTATIONS, WHEN SHOWN IN ACRES, ARE ROUNDED TO THE NEAREST ONE-HUNDREDTH OF AN ACRE, AND WHEN SHOWN IN SQUARE FEET ARE ROUNDED TO THE NEAREST SQUARE FOOT. THE AREA FIGURES SHOWN HEREON SHOULD NOT BE UTILIZED AS THE BASIS OF PURCHASE PRICE FOR A REAL ESTATE CLOSING, WITHOUT PRIOR VERIFICATION OF THE AREA FIGURES, IN WRITING FROM THE SIGNING SURVEYOR.
- THE SURVEYOR DID NOT INSPECT THIS PROPERTY FOR ENVIRONMENTAL HAZARDS.
- THE INFORMATION DEPICTED ON THIS SKETCH OF SURVEY REPRESENTS THE RESULTS OF A FIELD SURVEY ON THE DATE INDICATED ON THE BORDER OF THE DRAWING AND CAN ONLY BE CONSIDERED VALID FOR THIS DATE AND INDICATES THE GENERAL CONDITIONS EXISTING AT THE TIME OF THE FIELD SURVEY.
- THIS SKETCH OF SURVEY CANNOT BE RELIED UPON BY PERSONS OR ENTITIES OTHER THAN THOSE PERSONS OR ENTITIES CERTIFIED TO HEREON. ADDITIONS OR DELETIONS TO THIS SURVEY AND/OR REPORTS BY PEOPLE OR PERSONS OTHER THAN THE SIGNING PARTIES ARE PROHIBITED WITHOUT PRIOR WRITTEN CONSENT OF THE SIGNING PARTY OR PARTIES.
- THE INFORMATION CONTAINED IN THIS DOCUMENT WAS PREPARED BY BAXTER & WOODMAN, INC. (B&W). B&W HAS TAKEN PRECAUTIONS TO ENSURE THE ACCURACY OF THIS DOCUMENT AND THE DATA REFLECTED HEREIN. B&W CANNOT NOT GUARANTEE THAT ALTERATIONS AND/OR MODIFICATIONS WILL NOT BE MADE TO THE DATA CONTAINED IN THIS DOCUMENT BY OTHERS AFTER IT LEAVES OUR POSSESSION. THIS DOCUMENT MUST BE COMPARED TO THE ORIGINAL HARD COPY (WHICH BEARS THE RAISED SURVEYOR'S CERTIFICATION SEAL) TO ENSURE THE ACCURACY OF THE INFORMATION CONTAINED HEREON AND TO FURTHER ENSURE THAT ALTERATIONS AND/OR MODIFICATIONS HAVE NOT BEEN MADE. B&W MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, CONCERNING THE ACCURACY OF THE INFORMATION CONTAINED IN THIS OR ANY DOCUMENT TRANSMITTED OR REVIEWED BY COMPUTER OR OTHER ELECTRONIC MEANS. CONTACT B&W FOR VERIFICATION OF ACCURACY.

DESCRIPTION:

A PORTION OF SECTION 28, TOWNSHIP 41 SOUTH, RANGE 43 EAST, IN PALM BEACH COUNTY, STATE OF FLORIDA.

SURVEY ABBREVIATIONS:

ASPH = ASPHALT	FF = FINISH FLOOR ELEVATION	R/C = ROD AND CAP
BPP = BLACK PLASTIC PIPE	FND = FOUND	RCP = REINFORCED CONCRETE PIPE
BST = BELL SOUTH TELEPHONE	FOC = FIBER OPTIC	R/W = RIGHT OF WAY
BT = BURIED TELEPHONE	HH = HAND HOLE	RWM = RIGHT OF WAY MAP
B = SURVEY BASELINE	HDPE = HIGH DENSITY POLYETHYLENE PIPE	RLS = REGISTERED LAND SURVEYOR
CATV = CABLE TELEVISION	INV = INVERT	SEC = SECTION
C/L = CENTERLINE	IRC = IRON ROD & CAP	STA = STATION
C = CALCULATED	L = LENGTH	TC = TELE COMMUNICATION
CFT = CALCULATED FROM FIELD TRAVERSE	LSA = LANDSCAPE AREA	TIITF = TRUSTEES OF THE INTERNAL IMPROVEMENTS TRUST FUND
CLF = CHAIN LINK FENCE	LDWD = LAKE WORTH DRAINAGE DISTRICT	TON = TOP OF NUT
CLP = CONCRETE LIGHT POLE	MES = MITERED END SECTION	TOP = TOP OF PIPE
CMP = CORRUGATED METAL PIPE	MP = METAL PIPE	TOW = TOP OF WALL
CONC = CONCRETE	N/A = NOT ACCESSIBLE	UE = UTILITY EASEMENT
CP = CONCRETE PIPE	N/D = NAIL AND DISK	UNK = UNKNOWN
D = CENTRAL ANGLE	OHW = OVERHEAD WIRE	VERT = VERTICAL
DC = DEPRESSED CURB	ORB = OFFICIAL RECORD BOOK	VG = VALLEY GUTTER
DIP = DUCTILE IRON PIPE	P.B. = PLAT BOOK	VCP = VITRIFIED CLAY PIPE
DEP = DEPRESSED (CURB)	P.B.C.R. = PALM BEACH COUNTY RECORDS	
EL = ELEVATION	PG. = PAGE	
EOP = EDGE OF PAVEMENT	PP = PLASTIC PIPE	
EOW = EDGE OF WATER	PK = PARKER-KALON BRAND	
FDOT = FLORIDA DEPARTMENT OF TRANSPORTATION	PRM = PERMANENT REFERENCE MARKER	
FPL = FLORIDA POWER AND LIGHT	PVC = POLYVINYL CHLORIDE	
	R = RADIUS	

SURVEY SYMBOL LEGEND:

	ELECTRIC OUTLET		CATCH BASIN		AIR RELEASE VALVE
	BACK FLOW PREVENTER		= RED FLAG		BELLSOUTH MANHOLE
	WATER METER		= WHITE FLAG		FPL MANHOLE
	RECLAIM WATER METER		= BLUE FLAG		UNKNOWN TYPE MANHOLE
	IRRIGATION VALVE		= YELLOW FLAG		SANITARY MANHOLE
	SEWER VALVE		= ORANGE FLAG		STORM DRAINAGE MANHOLE
	WATER VALVE		= GREEN FLAG		LIMITS OF LANDSCAPING
	RECLAIMED WATER VALVE		—BPM— BLUE PAINT MARKS		LIMITS OF TREE CANOPY
	SPIGOT		—RPM— RED PAINT MARKS		BUSH/HEDGE
	SIGN		—GPM— GREEN PAINT MARKS		CLEAN OUT
	OVERHEAD UTILITY WIRE		—OPM— ORANGE PAINT MARKS		GUY WIRE ANCHOR
	EXISTING ELEVATION		—PPM— PURPLE PAINT MARKS		SITE BENCHMARK
	FIRE HYDRANT		—YPM— YELLOW PAINT MARKS		RIGHT NAIL AND DISC
	WOOD POWER POLE		—WPM— WHITE PAINT MARKS		RIGHT-OF-WAY LINE
	CONCRETE POWER POLE		SPRINKLER HEAD		SWALE
	GROUND LIGHT		MAILBOX		GUARD RAIL
	WOOD POLE STREET LIGHT		CONCRETE UTILITY POLE		DECORATIVE LIGHT POST
	CONCRETE POLE STREET LIGHT		WOOD GUIDE POLE		CONCRETE LIGHT POST
	FIBER OPTIC MARKER		CONCRETE SIGNAL LIGHT POLE		CONCRETE LIGHT POLE
	ELECTRIC METER		TRASH CAN		LIGHT POST
	ELECTRIC HANDHOLE		MONITORING WELL		YARD DRAIN
	UNKNOWN HANDHOLE		ELECTRICAL PANEL		GAS LID
	TELEPHONE HANDHOLE		TRAFFIC HANDHOLE		UNDERGROUND GAS MARKER
	FIBER OPTIC HANDHOLE		CATV CABLE TV RISER BOX		TRAFFIC SIGNAL BOX
	ELECTRIC BOX		UNK UNKNOWN RISER BOX		KEY PAD
	IRRIGATION CONTROL VALVE IN CONC. BOX		FO FIBER OPTIC RISER BOX		TESTHOLE (SUE)
	PARKING METER		ATT AT&T PHONE RISER		

SURVEY TREE LEGEND:

00°  - ACACIA	00°  - UNKNOWN	00°  - CITRUS	00°  - CYPRESS
00°  - PALM SPECIES	00°  - ROYAL POINCIANA	00°  - CACTUS	00°  - BLACK OLIVE
00°  - BANANA	00°  - MAPLE	00°  - MANGO	00°  - GUMBO-LIMBO
00°  - FICUS	00°  - MAHOGANY	- HEDGE	00°  - PINE
00°  - SEAGRAPE	00°  - OAK	00°  - BUSH	

↑ Indicates trunk diameter

NOTE: VERIFICATION OF TREE SPECIES SHOULD BE CONDUCTED BY A PROFESSIONAL ENGAGED IN THE FIELD OF NATURAL SCIENCE.

NO.	DATE	ISSUED FOR	APRV'D BY	DESIGNED: C.K.M.
				DRAWN: D.D.P.
				CHECKED: S.J.P.
				APPROVED: M.R.T.

COURTNEY K. MARSHALL, P.E.  
No. 88881

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VERIFY SCALE  
1"  
BAR IS ONE INCH ON FULL SIZE (22x34) ORIGINAL DRAWING. ADJUST SCALES AS NECESSARY.

ENGINEER NO.: 191515  
CLIENT  
PROJECT NO.:  
CAD REF.:191515G02.DWG

LOXAHATCHEE RIVER  
ENVIRONMENTAL CONTROL DISTRICT  
OLYMPUS DRIVE FORCE MAIN & LOW PRESSURE SEWER REPLACEMENT  
SURVEY LEGEND AND GENERAL NOTES

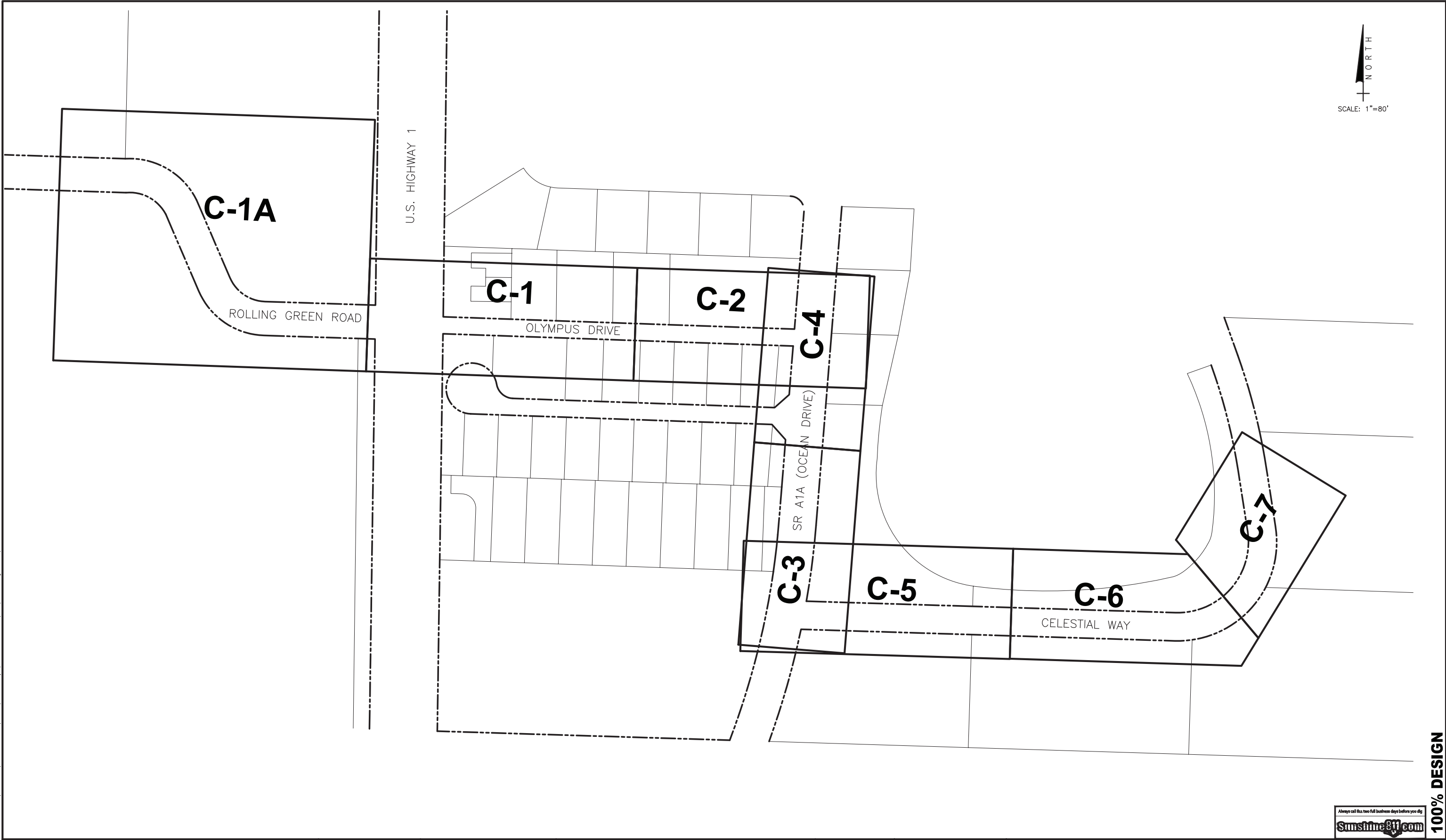
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DATE: SEPTEMBER 2020  
SHEET: 2 of 19  
DRAWING: G-2  
10/7/2020

100% DESIGN



Acad Version : R22.0s (LMS Tech) User Name : 768ddp Date/Time : Tue, 22 Sep 2020 - 3:09pm Current Plotstyle : BColor Path Name : I:\WestPalmBeach\PROJECT\191515-Olympus Drive EM - L\CAD\00\_Working Folder\191515G04.DWG



NO.	DATE	ISSUED FOR	APRV'D BY

DESIGNED:	C.K.M.
DRAWN:	D.D.P.
CHECKED:	S.J.P.
APPROVED:	M.R.T.

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VERIFY SCALE

1"

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ENGINEER NO.: 191515  
CLIENT PROJECT NO.:  
CAD REF.:191515G04.DWG

LOXAHATCHEE RIVER  
ENVIRONMENTAL CONTROL DISTRICT  
OLYMPUS DRIVE FORCE MAIN & LOW PRESSURE SEWER REPLACEMENT  
KEY MAP

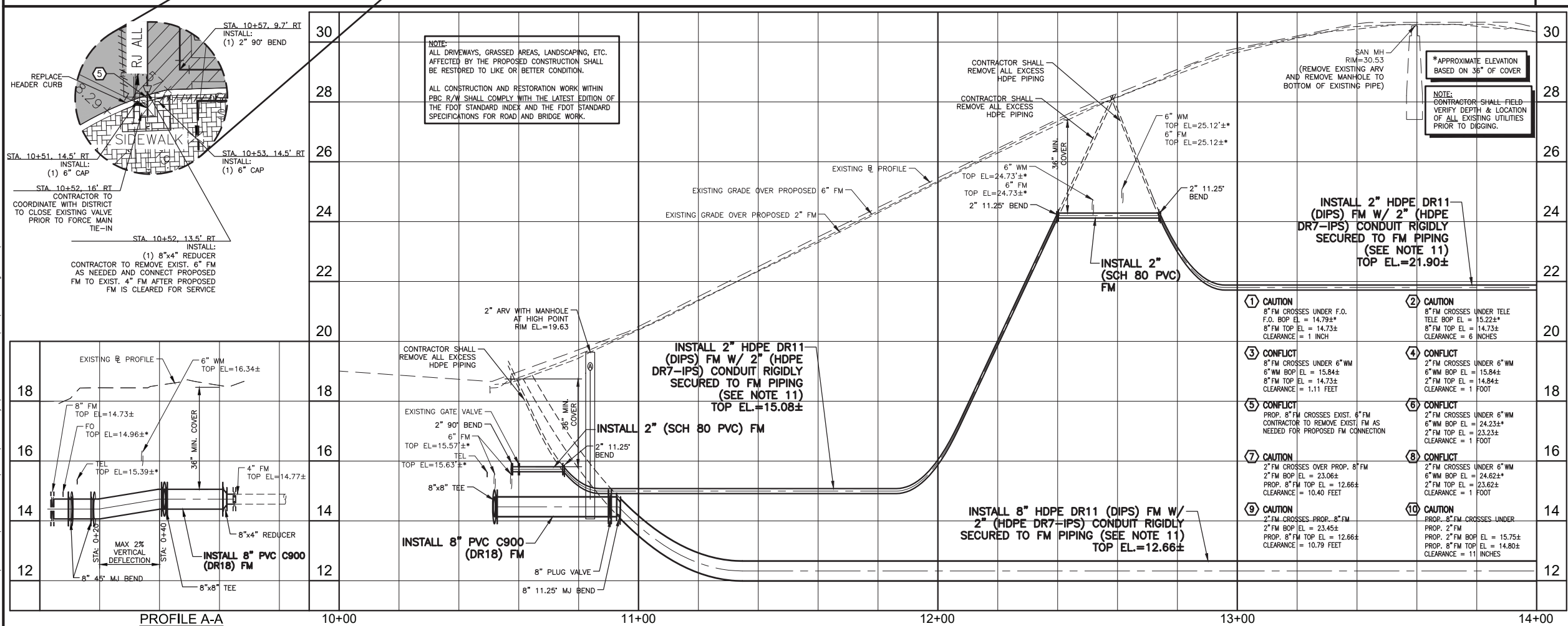
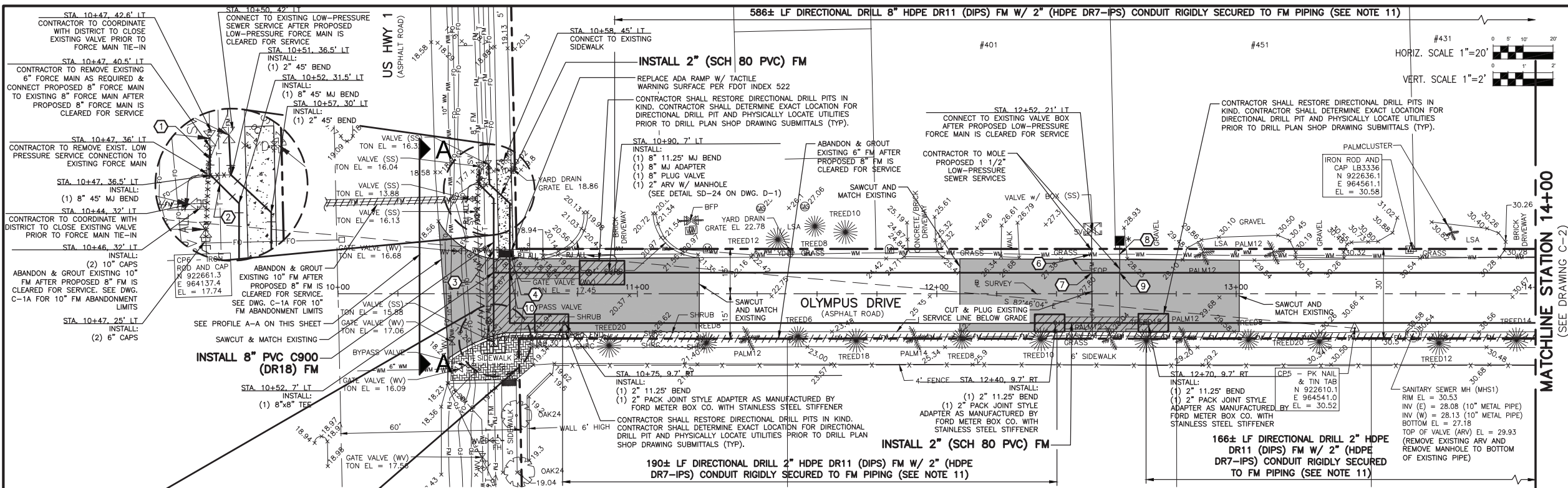


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SHEET: 4 of 19  
DRAWING: G-4

100% DESIGN

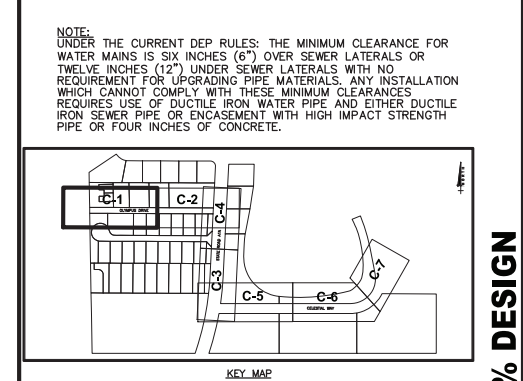
Approved  
2020-11-14 96-00566  
Rosie Evert  
10/7/2020

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Plot Name : I:\WestPalmBeach\PROJECTS\191515P&P\Olympus Drive FM - 11\CAD\00\_Working Folder\191515P&P.DWG  
Layout Tab: C-1



- NOTES:**
- CONTRACTOR SHALL FIELD VERIFY LOCATION OF ALL UTILITY CROSSINGS, INCLUDING PARALLELING OF UTILITIES, PRIOR TO CONSTRUCTION OF PROPOSED SANITARY SEWERS, FORCE MAINS AND ROADWAYS.
  - IRRIGATION SYSTEMS NOT SHOWN, BUT DO EXIST THROUGHOUT PROJECT AREA. CONTRACTOR SHALL REPLACE ALL DAMAGED IRRIGATION PIPING HEADS AND CONTROL LINES IN KIND, SO THAT SYSTEM PROVIDES ORIGINAL COVERAGE. ZONES TO BE CAPPED OFF AT CONSTRUCTION LINE. BALANCE OF IRRIGATION ZONES TO REMAIN ACTIVE AND MAINTAINED.
  - ALL FORCE MAIN FITTINGS SHALL HAVE RESTRAINED JOINTS. SEE STANDARD DETAIL DRAWING D-2 FOR MECHANICAL THRUST RESTRAINT - MINIMUM PIPE LENGTHS DETAIL.
  - CONTRACTOR SHALL REFER TO DETAILS ON DRAWINGS D-1 THROUGH D-5 FOR STANDARD DETAIL CONSTRUCTION INFORMATION.
  - ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE RESTORED IN KIND.
  - IN AREAS OF UNDERGROUND UTILITIES CONTRACTOR SHALL HAND-DIG AS NECESSARY TO AVOID DAMAGING EXISTING UTILITIES. CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY DAMAGED UTILITIES AS A RESULT OF CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL TEMPORARILY SUPPORT ALL UNDERGROUND UTILITIES AS REQUIRED TO COMPLETE THE WORK AS SHOWN.
  - POTABLE WATER SERVICE LINES NOT SHOWN, BUT DO EXIST THROUGHOUT PROJECT AREA. IF SHOWN, THEY ARE APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL LOCATE ALL WATER SERVICE LINES PRIOR TO DIGGING. CONTRACTOR SHALL REPAIR ANY WATER SERVICE LINES DAMAGED DURING CONSTRUCTION IMMEDIATELY (**THIS IS A NON-PAY ITEM**).
  - CONTRACTOR SHALL COORDINATE WITH FPL FOR SERVICES TO TEMPORARILY SECURE/HOLD EXISTING POWER POLES WHICH ARE IN CLOSE PROXIMITY TO THE CONSTRUCTION TRENCH EXCAVATION.
  - CONTRACTOR SHALL SAW-CUT THE PAVEMENT AT EACH DRIVEWAY FOR ROADWAY DEMOLITION. CONTRACTOR SHALL ALSO PROTECT EXISTING DRIVEWAYS (VIA SHEETING OR OTHER METHOD) DURING CONSTRUCTION TO ENSURE THAT THEY ARE NOT DAMAGED. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING IN KIND ALL DAMAGED DRIVEWAYS DURING ROADWAY CONSTRUCTION. DAMAGED DRIVEWAYS SHALL BE REPLACED BEYOND THE DAMAGED SECTION OF EACH DRIVEWAY TO THE NEAREST EXISTING CONTROL JOINT. IF THERE ARE NO EXISTING JOINTS BETWEEN THE EDGE OF PAVEMENT AND THE PROPERTY LINE, THE CONTRACTOR SHALL REPLACE THE FULL APRON FROM THE EDGE OF PAVEMENT TO THE PROPERTY LINE (**THIS IS A NON-PAY ITEM**).
  - CONTRACTOR TO REMOVE AND REINSTALL EXISTING STREET SIGNS AS REQUIRED.
  - CONTRACTOR SHALL SUPPLY AND INSTALL A 2-INCH HDPE (DR7-IPS) "TRACER WIRE" PIPE ALONG THE ENTIRE LENGTH OF THE NEW 6" HDPE FORCE MAIN INSTALLED VIA HDD METHOD. THE "TRACER WIRE" PIPE SHALL BE SECURED TO THE FORCE MAIN PIPING AND SHALL BE CONTINUOUS. THE CONTRACTOR SHALL INSTALL AN APPROPRIATELY SIZED (MIN 14 GAUGE COPPER) TRACER CONDUCTOR AND CONFIRM CONTINUITY IN THE PRESENCE OF THE ENGINEER PRIOR TO COMPLETION.

- LEGEND**
- PROPOSED 1.5" MILL AND OVERLAY (SP 12.5)
  - OPEN CUT PAVEMENT REPAIR
  - PROPOSED CONCRETE SIDEWALK REPLACEMENT (4" THICK)
  - BRICK SIDEWALK REPLACEMENT
  - ABANDON EXISTING FM (GROUT)
  - REMOVE EXISTING FM
  - SOIL BORING LOCATION
  - SOFT DIG LOCATION
  - CONFLICT DATA
  - PROPOSED 1 1/2" LOW PRESSURE SEWER SERVICE LINE AND VALVE BOX
- \* ACTUAL LOCATION SHALL BE FIELD VERIFIED BY CONTRACTOR AND DISTRICT STAFF PRIOR TO CONSTRUCTION



NO.	DATE	ISSUED FOR	APR'D BY	DESIGNED:	DRAWN:	CHECKED:	APPROVED:
				C.K.M.	D.D.P.	S.J.P.	M.R.T.

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BAR IS ONE INCH ON FULL SIZE (22x34) ORIGINAL DRAWING. ADJUST SCALES AS NECESSARY.

ENGINEER NO.: 191515  
CLIENT PROJECT NO.:  
CAD REF.: 191515P&P.DWG

LOXAHATCHEE RIVER  
ENVIRONMENTAL CONTROL DISTRICT

OLYMPUS DRIVE FORCE MAIN & LOW PRESSURE SEWER REPLACEMENT

OLYMPUS DRIVE  
PLAN AND PROFILE  
STA. 10+00 TO STA. 14+00

DATE: SEPTEMBER 2020  
SHEET: 5 of 19  
DRAWING: C-1

100% DESIGN



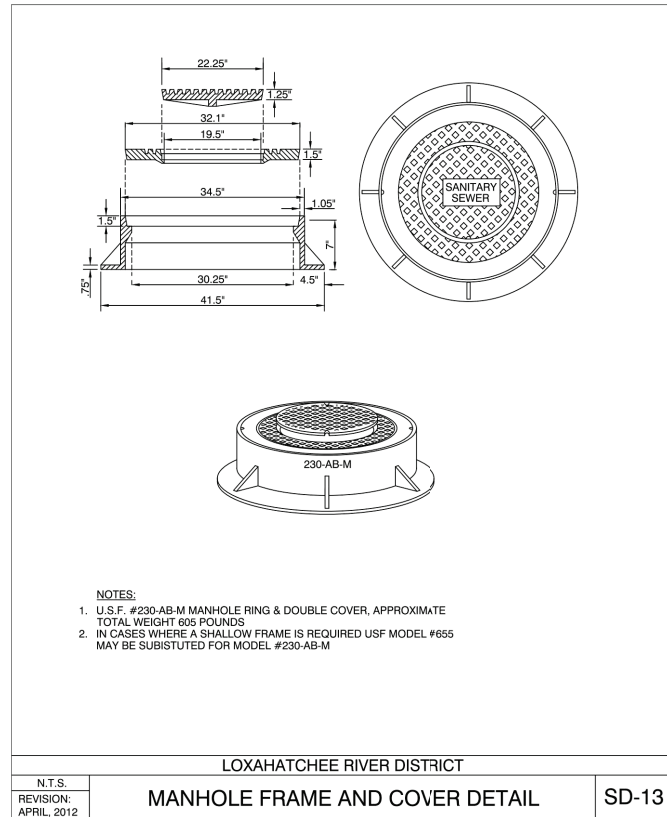
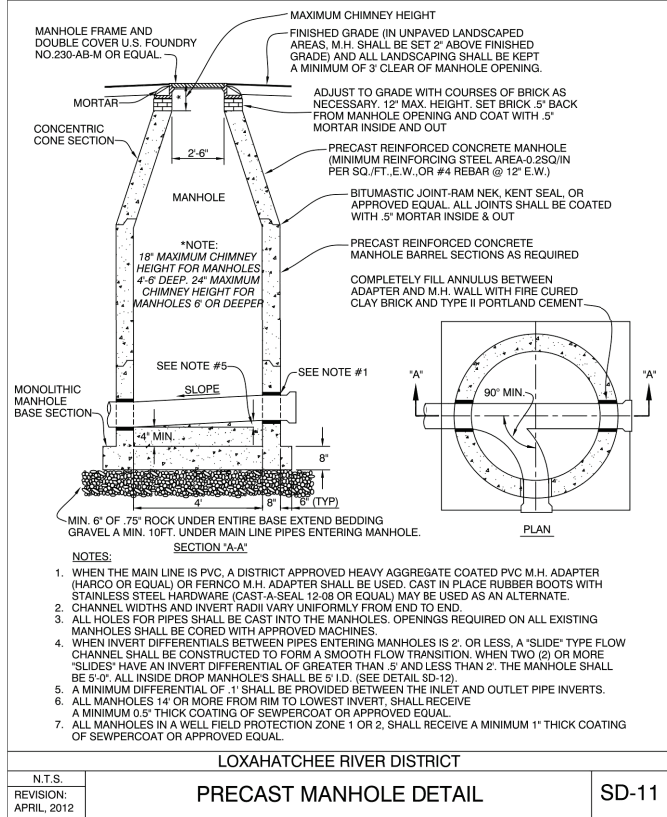
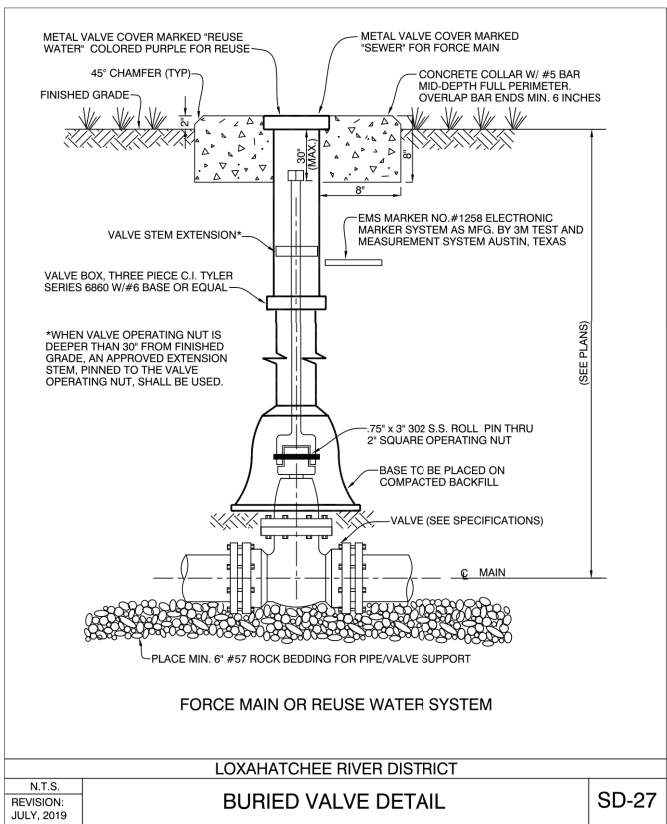
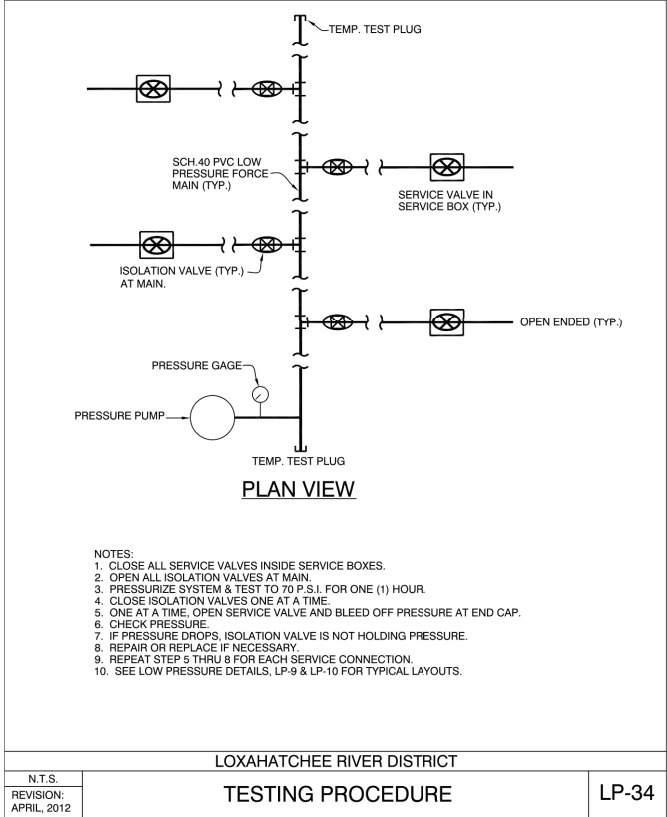
DATE: SEPTEMBER 2020

SHEET: 6 of 19

DRAWING: C-1A



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Layout Tab: D-2

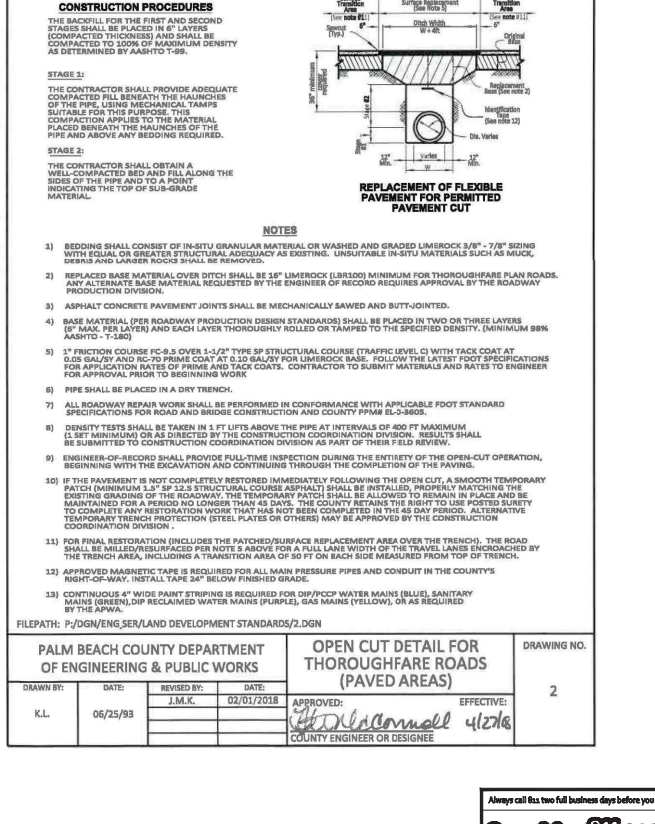
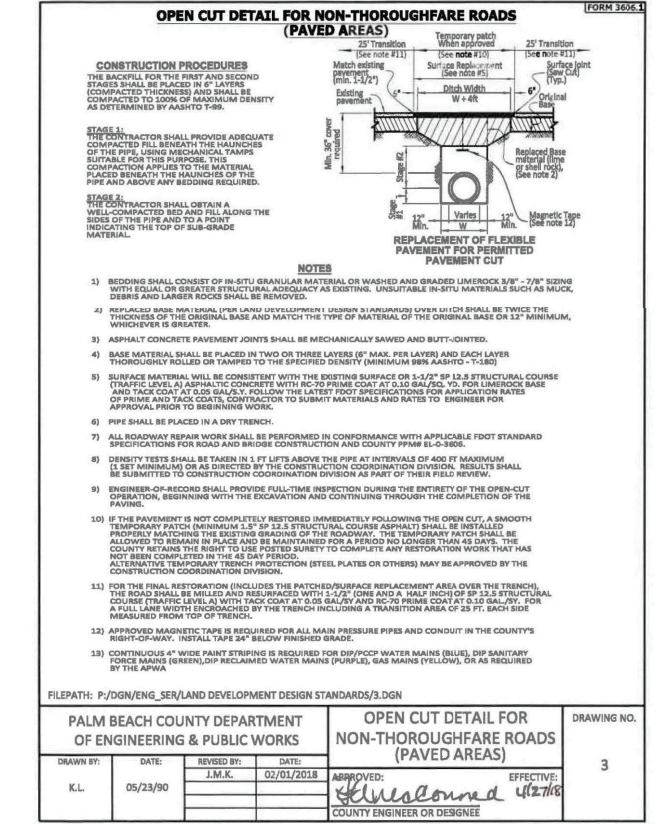
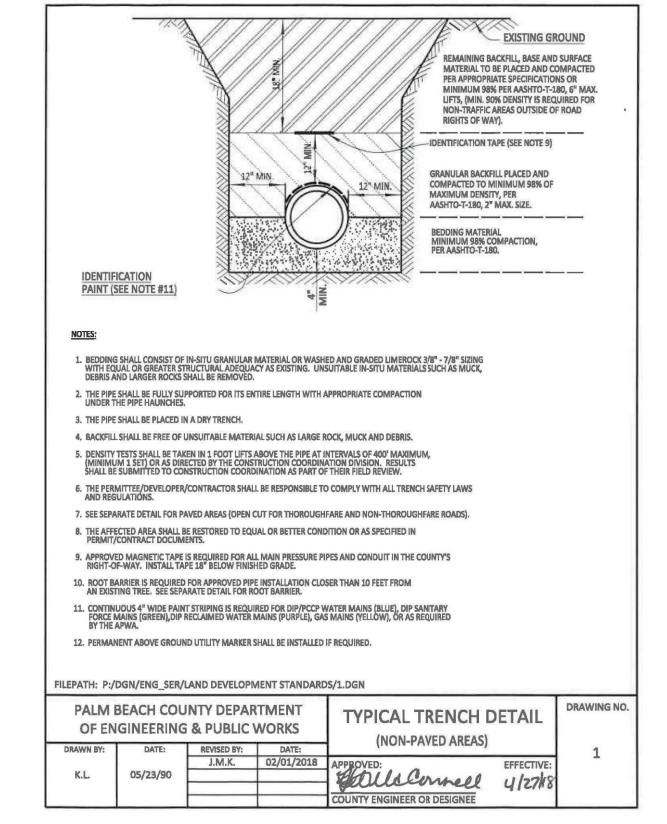


TYPE		PIPE SIZE									
		4"	6"	8"	10"	12"	16"	20"	24"	30"	36"
90° BEND		18	24	31	38	43	55	65	75	88	100
45° BEND		8	10	13	15	18	23	26	31	38	43
22-1/2° BEND		4	5	6	8	9	11	13	15	18	20
11-1/4° BEND		2	3	4	5	6	8	9	10	11	13
PLUG OR BRANCH OF TEE		38	50	65	79	90	117	139	163	194	223
VALVE		19	25	32	40	45	59	70	82	98	112
REDUCER		VARIES BY SIZE; TO BE DETERMINED BY THE DESIGN ENGINEER									

NOTES:  
1. FITTINGS SHALL HAVE RESTRAINED JOINTS UNLESS OTHERWISE INDICATED.  
2. INSTALL FULL LENGTH JOINTS WITH TOTAL LENGTH EQUAL TO OR GREATER THAN LENGTH SHOWN IN THE TABLE.  
3. WHERE TWO OR MORE FITTINGS ARE IN SERIES, SELECT FITTING RESTRAINT LENGTH THAT YIELDS THE LONGEST RESTRAINT DISTANCE.  
4. ALL INLINE VALVES SHALL BE RESTRAINED.  
5. WHERE INTERNAL RESTRAINED JOINTS ARE USED, THE ENTIRE BELL SHALL BE PAINTED RED.  
6. LENGTHS SHOWN IN THE TABLE WERE CALCULATED IN ACCORDANCE WITH PROCEDURES OUTLINED IN "THRUST RESTRAINT DESIGN FOR DUCTILE IRON PIPE" GUIDELINES PUBLISHED BY DIPRA, USING THE ASSUMPTIONS SHOWN BELOW:  
  
WORKING PRESSURE: 100 PSI  
SOIL DESIGNATION: SM (SAND SILT)  
LAYING CONDITIONS: 3  
DEPTH OF COVER: 3 FT.  
SAFETY FACTOR: 1.5  
CONVERSION FACTOR FOR PVC PIPE: 1.25

THE DESIGN ENGINEER SHALL INCREASE THE VALUES IN THE TABLE AS WARRANTED BY SITE-SPECIFIC PARAMETERS, SUCH AS SOIL DESIGNATIONS AND LAYING CONDITIONS.

LOXAHATCHEE RIVER DISTRICT  
FORCE MAIN THRUST RESTRAINT CHART  
SD-18



NO.	DATE	ISSUED FOR	APRV'D BY	DESIGNED:	C.K.M.
				DRAWN:	D.D.P.
				CHECKED:	S.J.P.
				APPROVED:	M.R.T.

COURTNEY K. MARSHALL, P.E.  
No. 88881

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VERIFY SCALE  
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BAR IS ONE INCH ON FULL SIZE (22x34) ORIGINAL DRAWING. ADJUST SCALES AS NECESSARY.

ENGINEER NO.: 191515  
CLIENT  
PROJECT NO.:  
CAD REF: 191515D-TLS.DWG

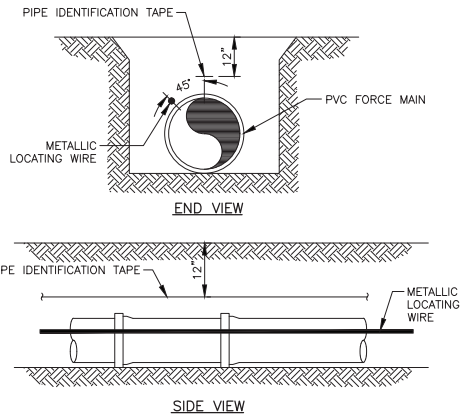
LOXAHATCHEE RIVER  
ENVIRONMENTAL CONTROL DISTRICT  
OLYMPUS DRIVE FORCE MAIN & LOW PRESSURE SEWER REPLACEMENT

STANDARD DETAILS - SHEET 2

DATE: SEPTEMBER 2020  
SHEET: 15 of 19  
DRAWING: D-2

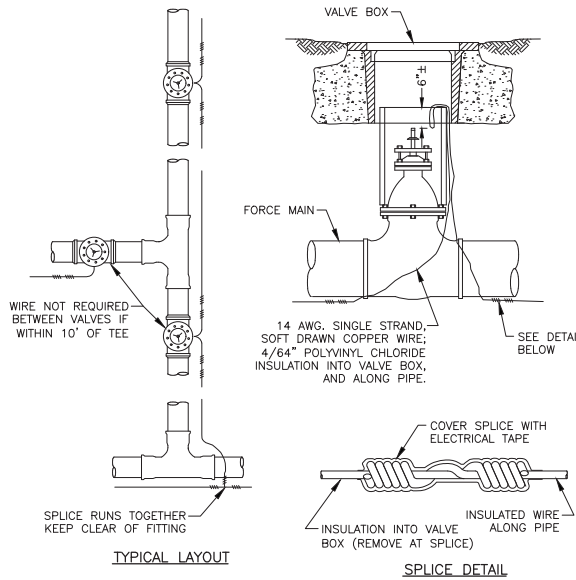
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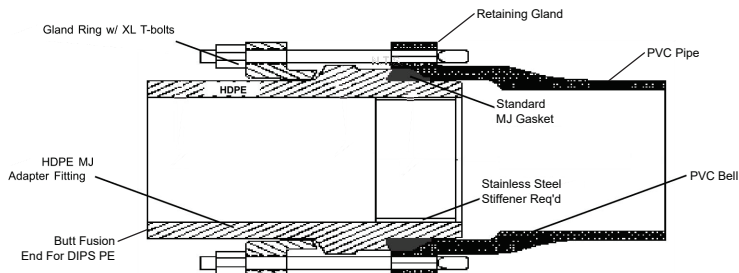


- NOTES:
1. ALL PVC PRESSURE PIPE SHALL REQUIRE INSULATED METALLIC LOCATING WIRE (14 GAUGE COPPER) CAPABLE OF DETECTION BY A CABLE LOCATOR AND SHALL BE BURIED DIRECTLY AGAINST PIPE.
  2. LOCATING WIRE SHALL TERMINATE AT THE TOP OF EACH VALVE BOX AND BE CAPABLE OF EXTENDING 12" ABOVE TOP OF BOX IN SUCH A MANNER SO AS NOT TO INTERFERE WITH VALVE OPERATION.
  3. USE DUCT TAPE AS NECESSARY TO HOLD WIRE DIRECTLY AGAINST THE PIPE.
  4. ALL PVC/DIP PRESSURE PIPE SHALL REQUIRE 3" ALUMINUM FOIL IDENTIFICATION TAPE INDICATING MATERIAL CONTAINED WITHIN PIPE (E.G., FORCE MAIN). TAPE SHALL BE BURIED DIRECTLY ABOVE THE CENTERLINE OF PIPE, AND UNBROKEN THE ENTIRE RUN OF PIPE.

FM PVC PIPE LOCATING WIRE DETAIL  
N.T.S.

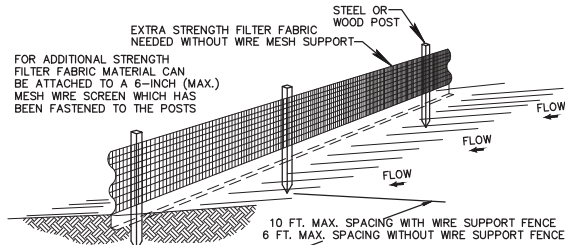


FM PVC PIPE LOCATING WIRE DETAIL  
N.T.S.



NOTE:  
ALL FERROUS METAL COMPONENTS AND HARDWARE SHALL BE FABRICATED OF 316 SS.

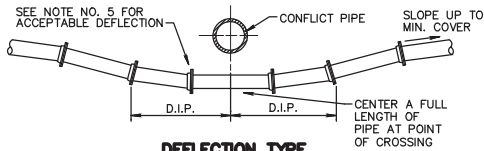
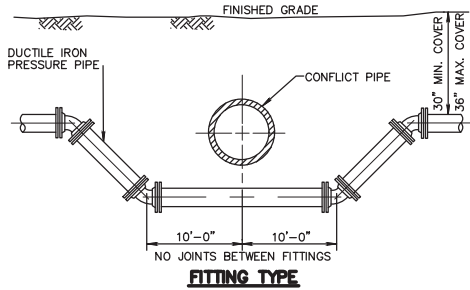
HDPE - PVC CONNECTION DETAIL  
N.T.S.



NOTES:

1. THE HEIGHT OF A SILT FENCE SHALL NOT EXCEED 36 INCHES (90 CM).
2. THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID THE USE OF JOINTS.
3. POSTS SHALL BE SPACED A MAXIMUM OF 10 FEET (3 M) APART AT THE BARRIER LOCATION AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 12 INCHES (30 CM). WHEN EXTRA STRENGTH FABRIC IS USED WITHOUT THE WIRE SUPPORT FENCE, POST SPACING SHALL NOT EXCEED 6 FEET (1.8 M).
4. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 4 INCHES (10 CM) WIDE AND 4 INCHES (10 CM) DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
5. WHEN STANDARD STRENGTH FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY WIRE STAPLES AT LEAST 1 INCH (25 MM) LONG, THE WIRES, OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 2 INCHES (5 CM) AND SHALL NOT EXTEND MORE THAN 36 INCHES (90 CM) ABOVE THE ORIGINAL GROUND SURFACE.
6. THE STANDARD STRENGTH FILTER FABRIC SHALL BE STAPLED OR WIRED TO THE FENCE, AND 8 INCHES (20 CM) OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES (90 CM) ABOVE THE ORIGINAL GROUND SURFACE.
7. THE TRENCH SHALL BE BACKFILLED AND THE SOIL COMPACTED OVER THE FILTER FABRIC.
8. ALL PROJECTS REQUIRE SUBMITTAL OF POLLUTION PREVENTION PLAN (PPP).
9. ALL PROJECTS 1 AC. OR MORE MUST SUBMIT NOTICE OF INTENT (NOI) TO FDEP.

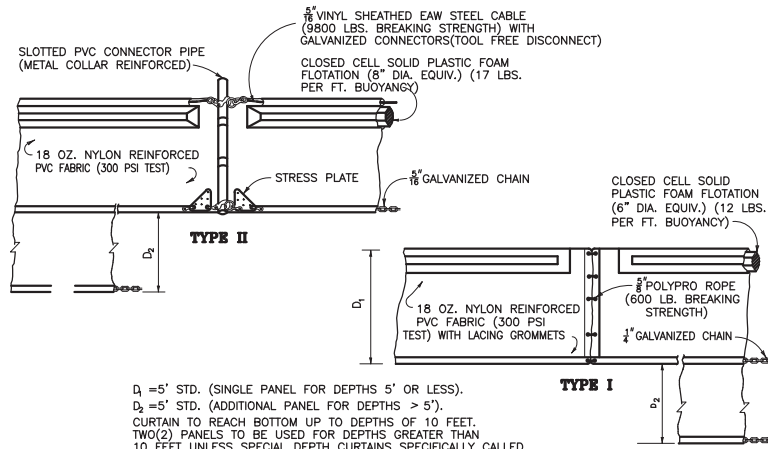
SILT FENCE DETAIL  
NTS



NOTES:

1. THERE SHALL BE IN ALL CASES A MINIMUM OF 18" VERTICAL SEPARATION BETWEEN WATER MAINS AND FORCE MAINS.
2. WHEREVER POSSIBLE WATER MAINS SHALL PASS OVER FORCE MAINS OR STORM SEWERS.
3. FITTINGS SHALL BE RESTRAINED WITH MECHANICAL JOINT RESTRAINTS.
4. THE DEFLECTION TYPE CROSSING IS PREFERRED.
5. DO NOT EXCEED 75% OF MANUFACTURERS RECOMMENDED MAXIMUM JOINT DEFLECTION.
6. REFER TO TYPICAL RESTRAINING DETAIL PP 2.1

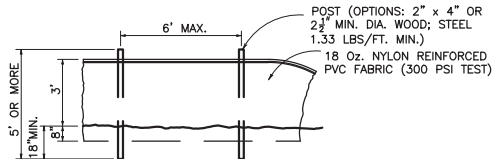
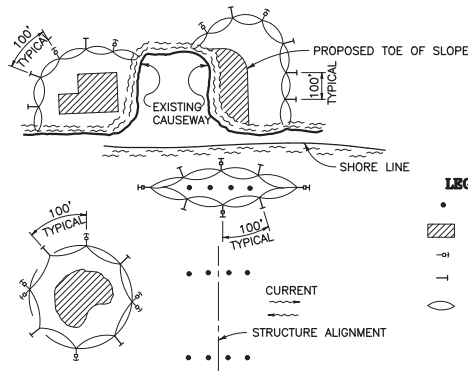
PRESSURE PIPE CONFLICT DETAIL  
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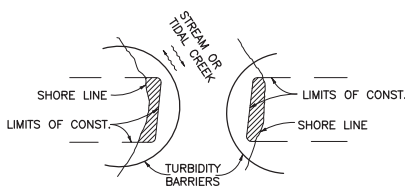
D<sub>1</sub> = 5' STD. (SINGLE PANEL FOR DEPTHS 5' OR LESS).  
D<sub>2</sub> = 5' STD. (ADDITIONAL PANEL FOR DEPTHS > 5').

CURTAIN TO REACH BOTTOM UP TO DEPTHS OF 10 FEET. TWO(2) PANELS TO BE USED FOR DEPTHS GREATER THAN 10 FEET UNLESS SPECIAL DEPTH CURTAINS SPECIFICALLY CALLED FOR IN THE PLANS OR AS DETERMINED BY THE ENGINEER.

NOTE: COMPONENTS OF TYPES I AND II MAY BE SIMILAR OR IDENTICAL TO PROPRIETARY DESIGNS. ANY INFRINGEMENT ON THE PROPRIETARY RIGHTS OF THE DESIGNER SHALL BE THE SOLE RESPONSIBILITY OF THE USER. SUBSTITUTIONS FOR TYPES I AND II SHALL BE AS APPROVED BY THE ENGINEER.



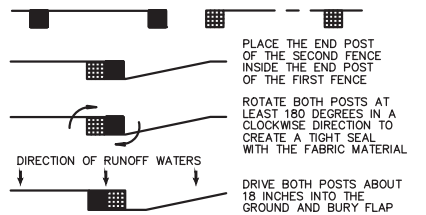
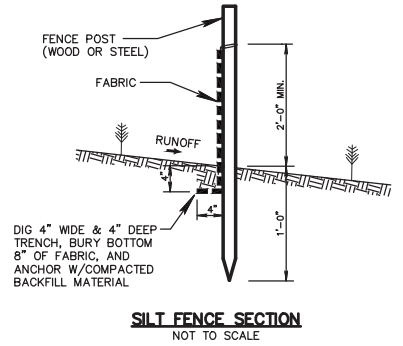
STAKED TURBIDITY BARRIER



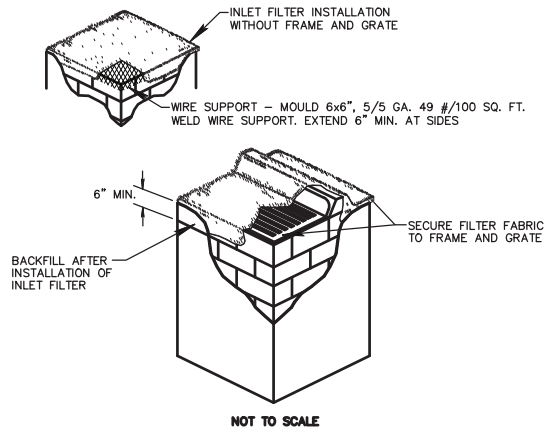
NOTES:

1. TURBIDITY BARRIERS FOR FLOWING STREAMS AND TIDAL CREEKS MAY BE EITHER FLOATING, OR STAKED TYPES OR ANY COMBINATION OF TYPES THAT WILL SUIT SITE CONDITIONS AND MEET EROSION CONTROL AND WATER QUALITY REQUIREMENTS. THE BARRIER TYPE(S) WILL BE AT THE CONTRACTOR'S OPTION UNLESS OTHERWISE SPECIFIED IN THE PLANS. POSTS IN STAKED TURBIDITY BARRIERS TO BE INSTALLED IN VERTICAL POSITION UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
2. TURBIDITY BARRIERS ARE TO BE USED IN ALL PERMANENT BODIES OF WATER REGARDLESS OF WATER DEPTH.
3. NUMBER AND SPACING OF ANCHORS DEPENDENT ON CURRENT VELOCITIES.
4. DEPLOYMENT OF BARRIER AROUND PILE LOCATIONS MAY VARY TO ACCOMMODATE CONSTRUCTION OPERATIONS.
5. NAVIGATION MAY REQUIRE SEGMENTING BARRIER DURING CONSTRUCTION OPERATIONS.
6. FOR ADDITIONAL INFORMATION SEE SECTION 104 OF THE STANDARD SPECIFICATIONS.

FLOATING TURBIDITY BARRIERS



ATTACHING TWO SILT FENCES  
NTS



NOTES:

1. CONTRACTOR IS TO CLEAN INLET FILTER AFTER EVERY STORM.
2. CONTRACTOR TO REMOVE FABRIC JUST PRIOR TO PAVING.

A SEDIMENT TRAP WILL BE EXCAVATED BEHIND THE CURB AT THE INLET. THE BASIN SHALL BE AT LEAST 12 TO 14 INCHES IN DEPTH, APPROXIMATELY 36 INCHES IN WIDTH, AND APPROXIMATELY 7 TO 10 FEET IN LENGTH PARALLEL TO THE CURB.

STORM WATER WILL REACH THE SEDIMENT TRAP VIA CURB CUTS ADJACENT TO EACH SIDE OF THE INLET STRUCTURE. THESE OPENINGS SHALL BE AT LEAST 12 INCHES IN LENGTH. STORM WATER MAY ALSO REACH THE BASIN VIA OVERLAND FLOW LAND AREA BEHIND THE CURB. THE CURB CUTS SHALL BE REPAIRED WHEN THE SEDIMENT TRAP IS REMOVED.

INLET FILTER DETAIL  
NTS

NO.	DATE	ISSUED FOR	APR'D BY	DESIGNED:	DRAWN:	CHECKED:	APPROVED:
				C.K.M.	D.D.P.	S.J.P.	M.R.T.

COURTNEY K. MARSHALL, P.E.  
No. 88881

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VERIFY SCALE

1"

BAR IS ONE INCH ON FULL SIZE (22x34) ORIGINAL DRAWING. ADJUST SCALES AS NECESSARY.

ENGINEER NO.: 191515

CLIENT PROJECT NO.: \_\_\_\_\_

CAD REF: 191515D.TLS.DWG

LOXAHATCHEE RIVER  
ENVIRONMENTAL CONTROL DISTRICT  
OLYMPUS DRIVE FORCE MAIN & LOW PRESSURE SEWER REPLACEMENT

STANDARD DETAILS - SHEET 3

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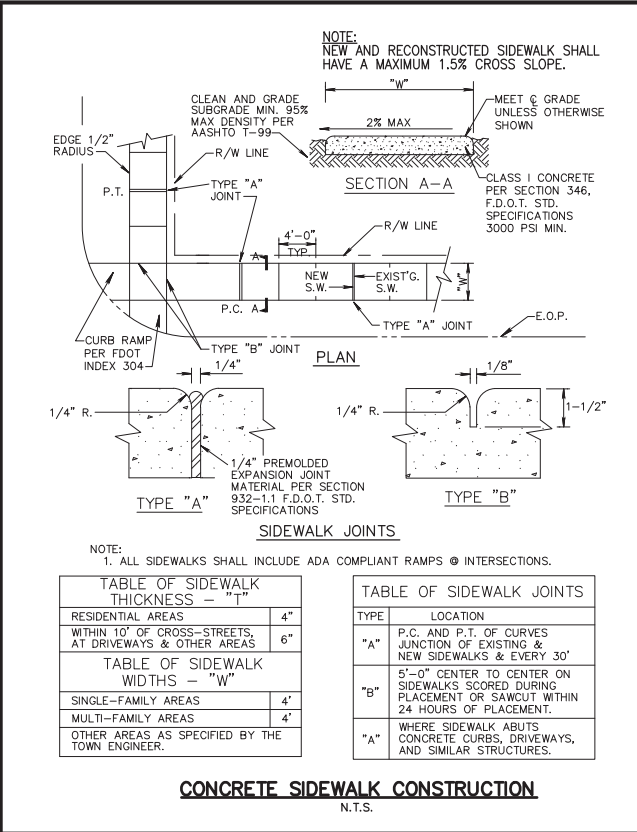
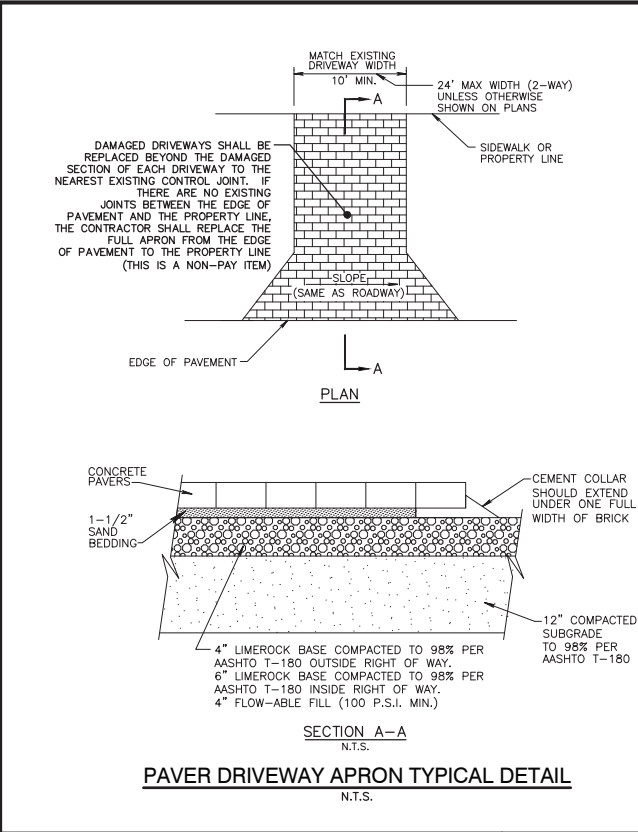
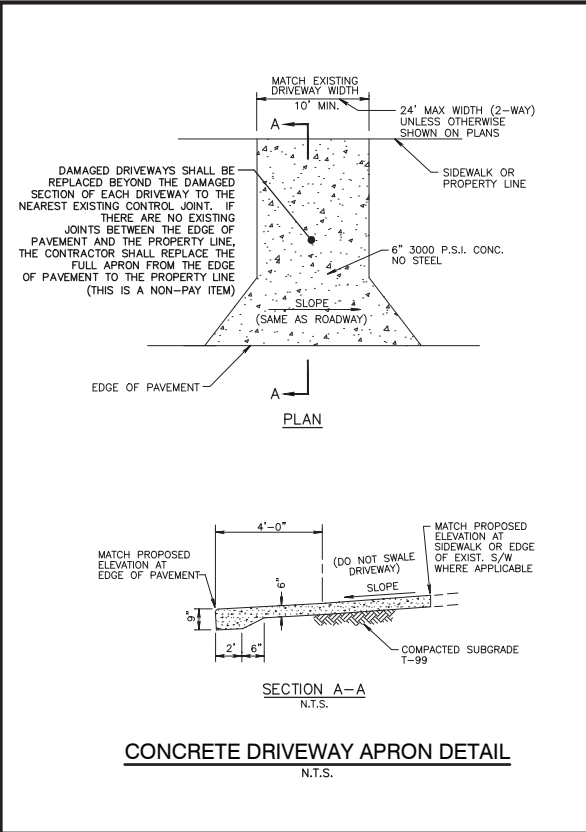
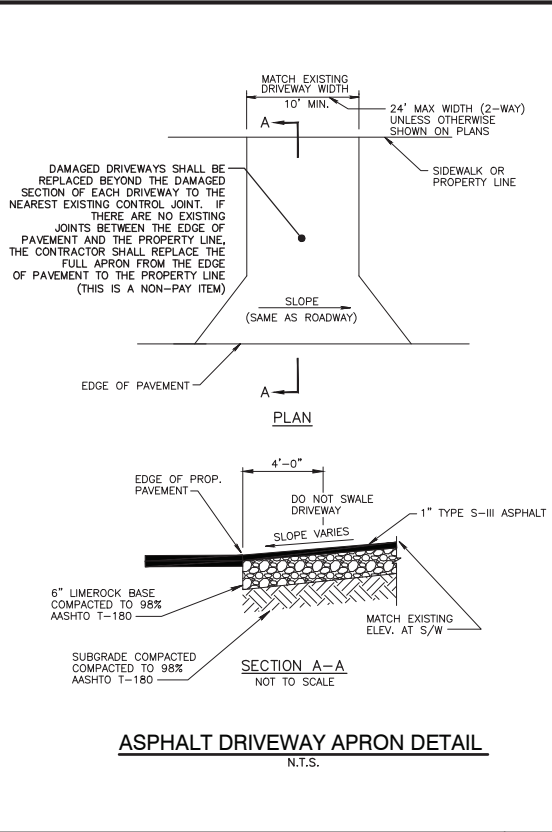
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DATE: SEPTEMBER 2020

SHEET: 16 of 19

DRAWING: D-3

100% DESIGN



**PAVEMENT MARKING SPECIFICATIONS**

All Pavement markings to be installed per these typicals, plans and specifications, and as directed by the Engineer and shall conform to the requirements of F.D.O.T. and the manual on uniform traffic control devices. (MUTCD).

**PERMANENT MARKINGS**

Installation:

- All markings shall be installed by the extruded method.
- Markings shall be free of weaves, bows, drips, drags, and other degrading items.
- Chalk shall be used for all layout markings

Materials:

- All materials shall be alkyl thermoplastic meeting all State specifications.

Thickness:

- All markings shall be installed to yield 90 mils of material measured above the pavement surface.

Beads:

- Reflective beads are to be installed per FDOT specifications on all markings.

Alternate Material:

- STAYMARK marking tape, or equivalent may be used, as approved or directed by the City Engineer.

Layout:

- Layout shall be made using marking chalk.
- It is recommended that marking layout be inspected by the City Engineer prior to the placement of final markings.

**TEMPORARY MARKINGS**

Temporary markings may be used only as specified in this section, or as approved or directed by the Respective Roadway Owner.

Final Pavement Surface:

- Only foil backed marking tape is allowed.
- All tape shall be totally removed concurrent with permanent marking placement.

Other Pavement Surfaces:

- Intermediate pavement surfaces may be marked with FDOT approved materials, designs, and specifications.

**ALL PAVEMENT MARKINGS**

All paved surfaces shall be properly marked prior to the hours of darkness.

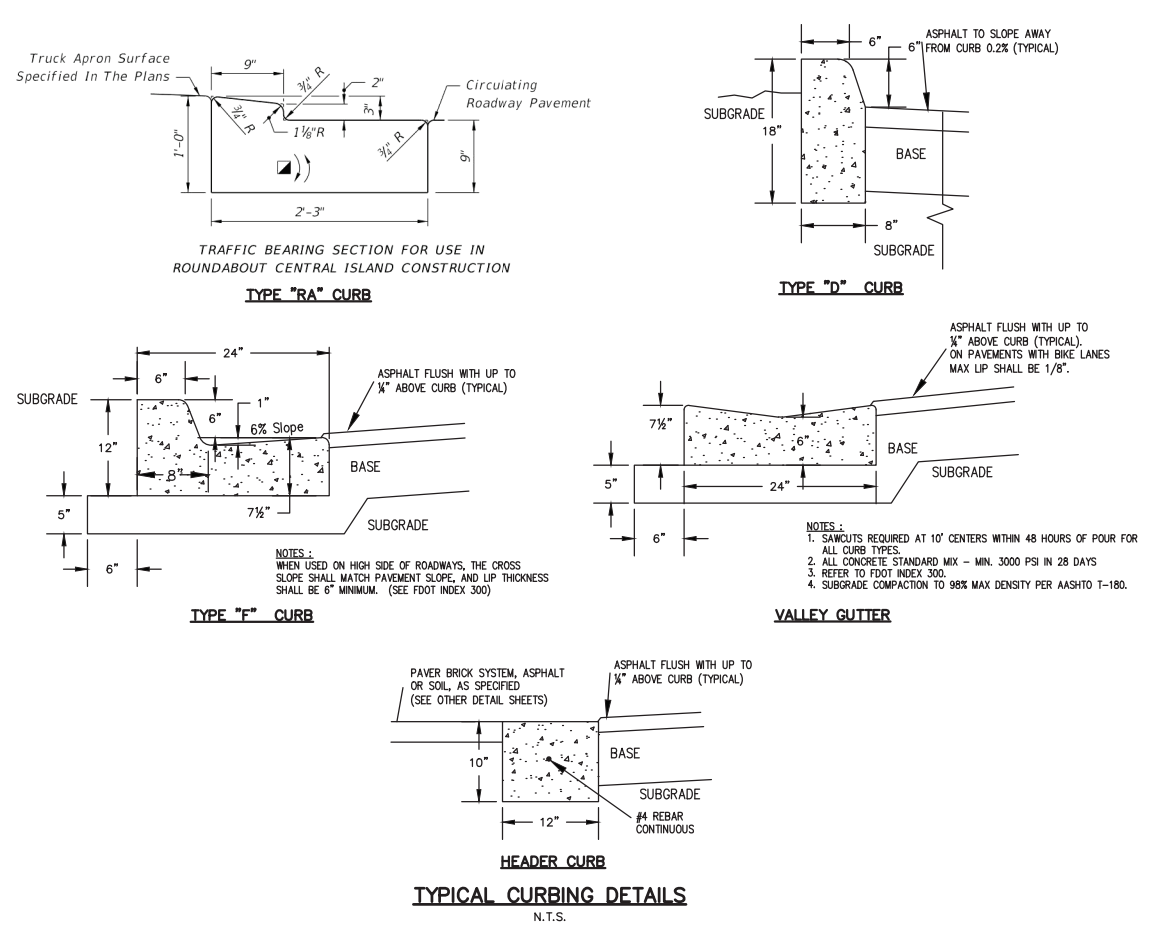
**RAISED PAVEMENT MARKERS**

- R.P.M.s shall be installed on all lane lines and centerlines, spaced at 20' or 40'.
- R.P.M.s shall be a 4 x 4 type class "B" marker meeting FDOT specifications and shall be approved by the Engineer prior to use.
- R.P.M.s shall be installed using alkyl thermoplastic on asphalt and epoxy on concrete.

**OTHER NOTES**

- All materials within right-of-way shall be thermoplastic and per F.D.O.T. specifications
- Pavement markings within private parking lots may be painted according to F.D.O.T. specifications.

**PAVEMENT MARKING SPECIFICATIONS DETAIL**



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VERIFY SCALE

1"

BAR IS ONE INCH ON FULL SIZE (22x34) ORIGINAL DRAWING. ADJUST SCALES AS NECESSARY.

ENGINEER NO.: 191515

CLIENT PROJECT NO.:

CAD REF.191515D.TLS.DWG

LOXAHATCHEE RIVER  
ENVIRONMENTAL CONTROL DISTRICT  
OLYMPUS DRIVE FORCE MAIN & LOW PRESSURE SEWER REPLACEMENT

DATE: SEPTEMBER 2020

SHEET: 17 of 19

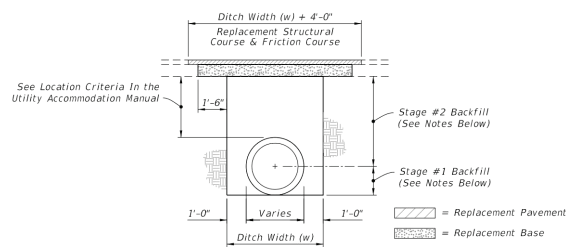
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STANDARD DETAILS - SHEET 4

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**NOTES:**  
PAVEMENT REMOVAL AND REPLACEMENT

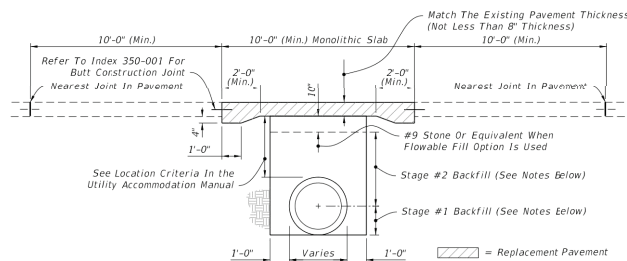
1. Pavement shall be mechanically sawed.
2. The replacement asphalt shall match the existing structural and friction courses for type and thickness in accordance with current FDOT asphalt mix specifications.
3. The new base materials shall be either of the same type and composition as the materials removed or of equal or greater structural adequacy.

### BACKFILL OPTION

### 1. COMPACTED AND STABILIZED FILL

- A. Place backfill material in accordance with Specification 125.
  - B. In Stage #1, construct compacted fill beneath the haunches of the pipe, using mechanical tamps suitable for this purpose. This compaction applies to the material placed beneath the haunches of the pipe and above any bedding.
  - C. In Stage #2, construct compacted fill along the sides of the pipe and up to the bottom of the base, with the upper 12" receiving Type B Stabilization. In lieu of Type B Stabilization, the Contractor may construct using Optional Base Group 3.
- 2. FLOWABLE FILL**
- A. If compaction can not be achieved through normal mechanical methods then flowable fill may be used.
  - B. Flowable fill is to be placed in accordance with Specification 121, as approved by the Engineer.
  - C. Do not allow the utility being installed to float. If a method is provided to prevent flotation from occurring, Stages #1 and #2 car be combined, if approved by the Engineer.
  - D. In Stage #1, place flowable fill midway up on both sides of the utility. Allow to harden before placing Stage #2.
  - E. In Stage #2, place flowable fill to the bottom of the existing base course.

==FLEXIBLE PAVEMENT CUT



**NOTES:**  
PAVEMENT REMOVAL AND REPLACEMENT

1. High early strength cement concrete (3000 psi) meeting the requirements of Specification 346 shall be used for rigid pavement replacement.
2. Pavement shall be mechanically sawed and restored to conform with existing pavement joints within 12 hours. (See Index 350-001)

### BACKFILL OPTION

### 1. GRANULAR BACKFILL


- A. Any edgedrain system that is removed shall be replaced with the same type materials. Any edgedrain system that is damaged shall be repaired with methods approved by the Engineer.
  - B. Fill material shall be placed in accordance with the Standard Specifications. Fill material shall be special select soil in accordance with Index 350-001.
  - C. In Stage #1, construct compacted fill beneath the haunches of the pipe, using mechanical tamps suitable for this purpose. This compaction applies to the material placed beneath the haunches of the pipe and above any bedding.
  - D. In Stage #2, construct fill along the sides of the pipe and up to the bottom of replacement pavement.
- 2. FLOWABLE FILL**
- A. If mechanical compaction can not be achieved through normal mechanical methods then flowable fill may be used.
  - B. Flowable fill is to be placed in accordance with Specification 121, as approved by the Engineer.
  - C. Do not allow the utility being installed to float. If a method is provided to prevent flotation from occurring, Stages #1 and #2 can be combined, if approved by the Engineer.
  - D. In Stage #1, place flowable fill midway up on both sides of the utility. Allow to harden before placing Stage #2.
  - E. In Stage #2, place flowable fill to the bottom of the stone layer.

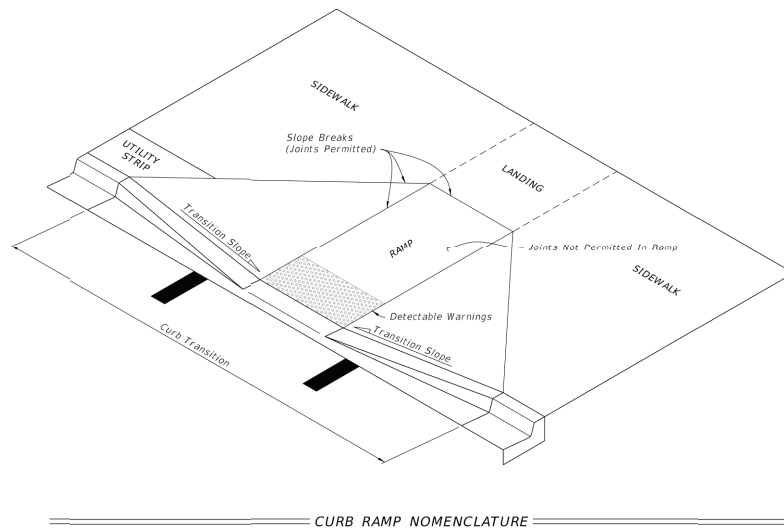
## = RIGID PAVEMENT CUT

GENERAL NOTES

- |  |  |
|--|--|
| 1. The details provided in this Index apply to cases in which jack and bore or directional boring methods are not required by the Engineer.  | 6. Where asphalt concrete overlays exist over full slab concrete pavement, the replacement pavement shall have an overlay constructed over the replacement concrete slab. Where highly compressible material is present, the replacement friction course shall match the existing friction course, except structural course may be used in lieu of dense graded friction course.   |
| 2. Flowable fill shall not be placed directly over loose, or high plastic, or muck material (see Index 120-001) which will cause settlement due to the weight of the fill. Where highly compressible material exists the amount, shape and depth of flowable fill must be engineered to prevent pavement settlement. | 7. All shoulder pavement, curb, curb and gutter, and their substructure disturbed by utility trench cut construction shall be restored in kind.  |
| 3. These details do not apply to utility cuts longitudinal to the centerline of the roadway which may require the additional use of geotextiles, special bedding and backfill, or other special requirements.  | 8. The use of flowable fill to reduce the time traffic is taken off a facility is acceptable but must have prior approval by the Engineer. Flowable fill is allowed only when properly engineered for pavement crossings, whether straight or diagonal, and shall not be used for significant depths or lengths. The maximum depth of flowable fill shall be as determined by the Engineer and supported by an engineering document prepared by a registered professional engineer that specializes in soils engineering. The engineering document shall address the evaluation of local groundwater flow interruption and settlement potential. |
| 4. Method of construction must be approved by the Engineer.  | 9. Excavatable flowable fill is to be used when the flowable fill option is selected.  |
| 5. Some pipe may require special granular backfill up to 6" above top of pipe. Geotextiles may be required to encapsulate the special granular material.   |  |

## TRENCH CUTS AND RESTORATIONS ACROSS ROADWAYS

LAST REVISION 11/01/17	DESCRIPTION:	 FY 2020-21 STANDARD PLANS	UTILITY ADJUSTMENTS THRU EXISTING PAVEMENT	INDEX 125-001	SHEET 1 of 2
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### CURB RAMP NOMENCLATURE

GENERAL NOTES:

### 1. Cross Slopes and Grades:

- A. Sidewalk, ramp, and landing slopes (i.e. 0.02, 0.05, and 1:12) shown in this Index are maximums. With approval of the Engineer, provide the minimum feasible slope where the requirements cannot be met.
- B. Landings must have cross-slopes less than or equal to 0.02 in any direction.
- C. Maintain a single longitudinal slope along each side of the curb ramp. Ramp slopes are not required to exceed 15 feet in length.
- D. Joints permitted at the location of Slope Breaks. Otherwise locate joints in accordance with Index S22-001. No joints are permitted within the ramp portion of the Curb Ramp.

2. Grade Breaks:

Grade breaks at the top and bottom of ramps must be parallel to each other and perpendicular to the direction of the ramp slope.

3. Curb, Curb and Gutter and/or Sidewalks:

- B. Remove any existing curb, curb and gutter, or sidewalk to the nearest joint beyond the curb transition or to the extent that no remaining section is less than 5 feet long.

#### 4. Curb Ramp Alpha-Identification:

- A. Sidewalk curb ramp alpha-identifications (e.g. CR-A) are provided for reference purposes in the Plans.


### B. Alpha-identificati

5. **Detectable Warnings**
- A. Install detectable warnings in accordance with Specification 527.
  - B. Place detectable warnings across the full width of the ramp or landing, to a minimum depth of 2 feet measured perpendicular to the curb line and no greater than 5 feet from the back of the curb or edge of pavement.
  - C. If detectable warnings are shown in the Plans on slopes greater than 5%, align the truncated domes with the centerline of the ramp; otherwise, the truncated domes are not required to be aligned.

#### 6. Detectable Warnings - Acceptance Criteria:

- A. Color and texture shall be complete and uniform.
- B. 90% of individual truncated domes shall be in accordance with the Americans with Disabilities Act Standards for Transportation Facilities, Section 705.
- C. There shall be no more than 4 non-compliant domes in any one square foot.
- D. Non-compliant domes shall not be adjacent to other non-compliant domes.
- E. Surfaces shall not deviate more than 0.10" from a true plane.


## DESCRIPTION:

LAST REVISION 11/01/18	REVISION	DESCRIPTION:	 FY 2019-20 STANDARD PLANS	DETECTABLE WARNINGS AND SIDEWALK CURB RAMPS	INDEX 522-002	SHEET 1 of 8
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NO.	DATE	ISSUED FOR	APRVD BY	DESIGNED: <u>C.K.M.</u>	COURTNEY K. MARSHALL, P.E. No. 88881
				DRAWN: <u>D.D.P.</u>	
				CHECKED: <u>S.J.P.</u>	
				APPROVED: <u>M.R.T.</u>	

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<p>VERIFY SCALE</p>  <p>BAR IS ONE INCH ON FULL SIZE (22x34) ORIGINAL DRAWING. ADJUST SCALES AS NECESSARY.</p>	<p>ENGINEER NO.: 191515</p> <p>CLIENT _____</p> <p>PROJECT NO.: _____</p> <p>CAD REF.:191515DTLS.DWG</p>
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STANDARD DETAILS - SHEET 5	

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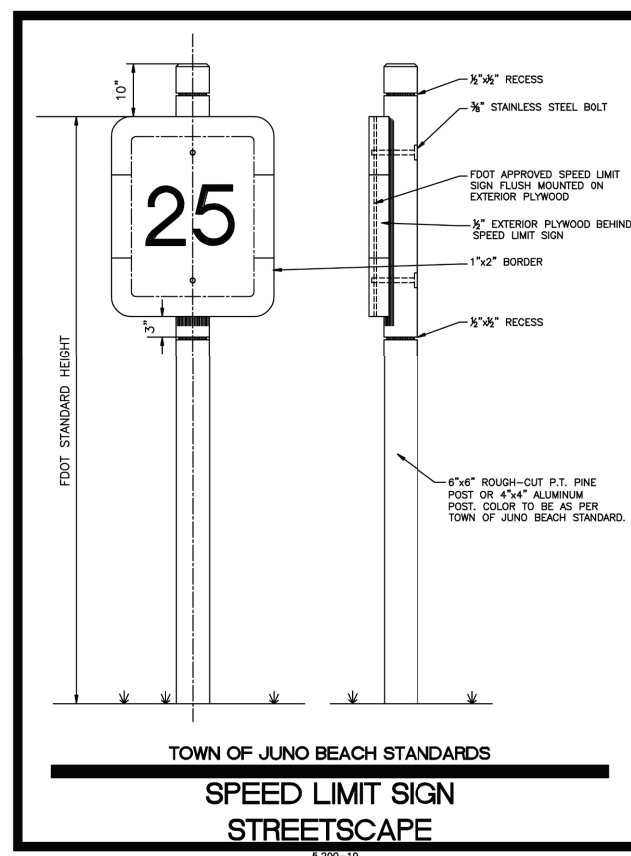
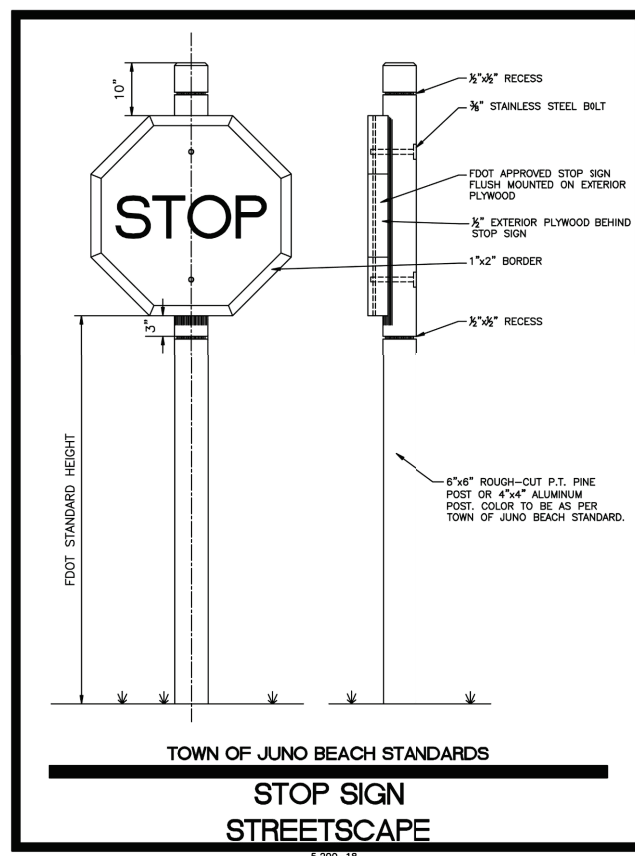
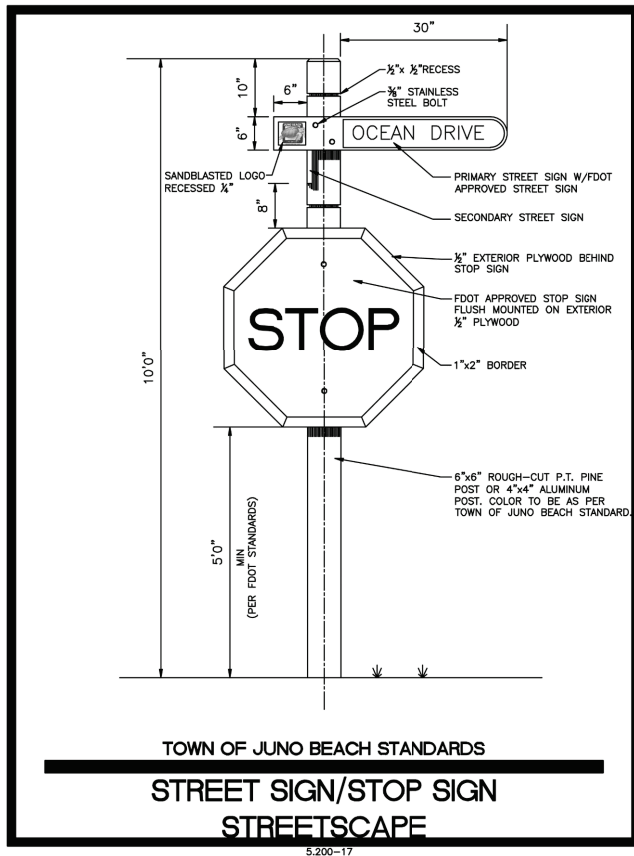
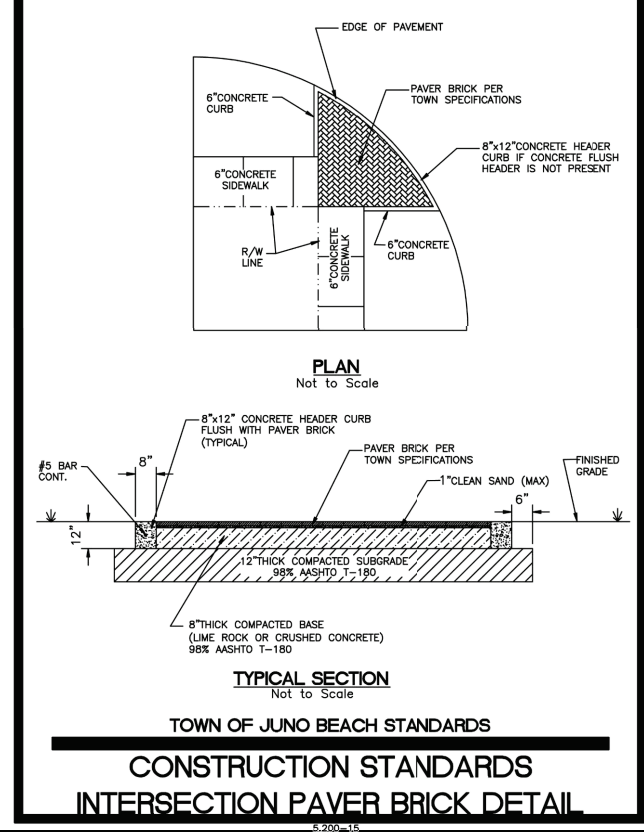
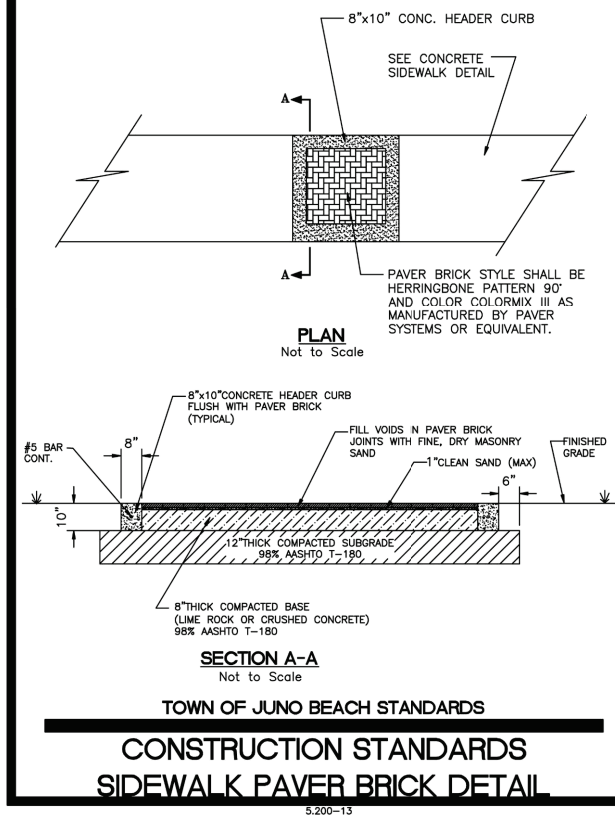
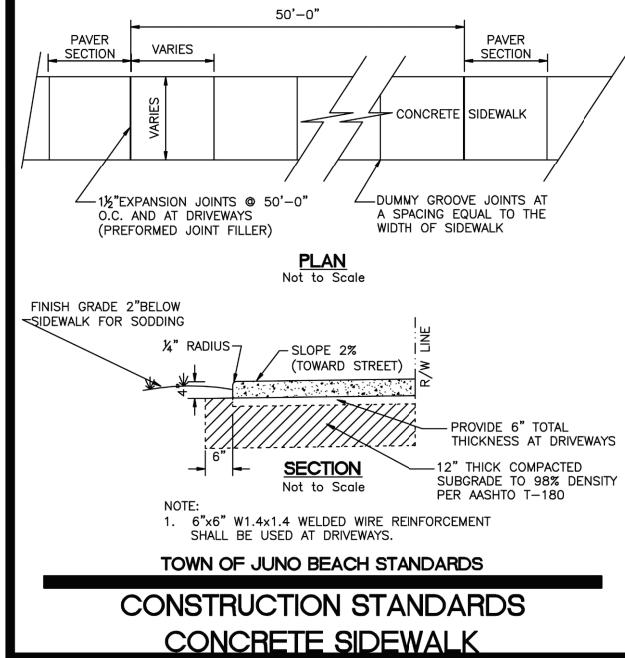
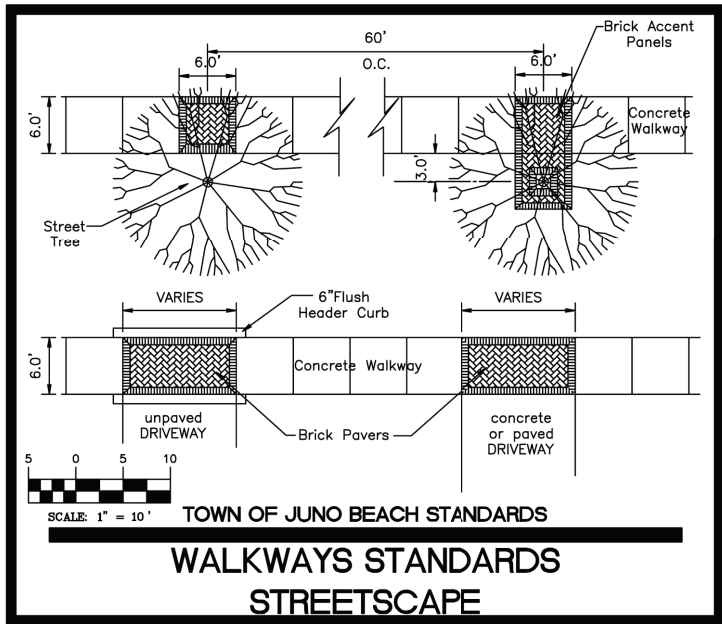
SHEET. 18 of 19

DRAWING: D-5

## 100% DESIGN

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Acad Version : R22.0s (LMS Tech)  
User Name : 768ddp



NO.	DATE	ISSUED FOR	APR'D BY

DESIGNED:	C.K.M.
DRAWN:	D.D.P.
CHECKED:	S.J.P.
APPROVED:	M.R.T.

COURTNEY K. MARSHALL, P.E.  
No. 88881

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VERIFY SCALE  
1" = 1"  
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ENGINEER NO.: 191515  
CLIENT PROJECT NO.:  
CAD REF: 191515D.TLS.DWG

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SHEET: 19 of 19  
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10/7/2020

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## **SECTION 555**

### **DIRECTIONAL BORE**

#### **555-1 Description.**

**555-1.1 Scope of Work:** The work specified in this Section documents the approved construction methods, procedures and materials for Directional Boring; also commonly called Horizontal Directional Drilling (HDD).

**555-1.2 General:** HDD is a trenchless method for installing a product that serves as a conduit for liquids, gasses, or as a duct for pipe, cable, or wire line products. It is a multi-stage process consisting of site preparation and restoration, equipment setup, and drilling a pilot bore along a predetermined path and then pulling the product back through the drilled space. When necessary, enlargement of the pilot bore hole may be necessary to accommodate a product larger than the pilot bore hole size. This process is referred to as back reaming and is done at the same time the product is being pulled back through the pilot bore hole.

Accomplish alignment of the bore by proper orientation of the drill bit head as it is being pushed into the ground by a hydraulic jack. Determine orientation and tracking of the drill bit by an above ground radio detection device which picks up a radio signal generated from a transmitter located within the drill bit head. Then electronically translate the radio signal into depth and alignment. In order to minimize friction and prevent collapse of the bore hole, introduce a soil stabilizing agent (drilling fluid) into the annular bore space from the trailing end of the drill bit. The rotation of the bit in the soil wetted by the drilling fluid creates a slurry. The slurry acts to stabilize the surrounding soil and prevent collapse of the bore hole as well as provides lubrication. Select or design drilling fluids for the site specific soil and ground water conditions. Confine free flowing (escaping) slurry or drilling fluids at the ground surface during pull back or drilling. Accomplish this by creating sump areas or vacuum operations to prevent damage or hazardous conditions in surrounding areas. Remove all residual slurry from the surface and restore the site to preconstruction conditions.....

#### **555-6 Documentation Requirements.**

**555-6.1 Boring Path Report:** Furnish a Bore Path Report to the Engineer within seven days of the completion of each bore path. Include the following in the report:

- (a) Location of project and financial project number including the Permit Number when assigned
- (b) Name of person collecting data, including title, position and company name
- (c) Investigation site location (Contract plans station number or reference to a permanent structure within the project right-of-way)
- (d) Identification of the detection method used
- (e) Elevations and offset dimensions as required in 555-4.2

**555-6.2 As-Built Plans:** Provide the Engineer a complete set of As-Built Plans showing all bores (successful and failed) within 30 calendar days of completing the work. Ensure that the plans are dimensionally correct copies of the Contract plans and include roadway plan and profile, cross-section, boring location and subsurface conditions as

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directed by the Engineer. The plans must show appropriate elevations and be referenced to a Department Bench Mark when associated with a Department project, otherwise to a USGS grid system and datum, or a specific location on top of an existing Department head wall. Plans must be same scale in black ink on white paper, of the same size and weight as the Contract plans. Submittal of electronic plans data in lieu of hard copy plans is preferred and may be approved by the Engineer if compatible with the Department software. Specific plans content requirements include but may not be limited to the following:

- (a) The Contract plan view shows the center line location of each facility installed, or installed and placed out of service, to an accuracy of 1 inch at the ends and other points physically observed in accordance with the bore path report.
- (b) As directed by the Engineer, provide either a profile plan for each bore path, or a cross-section of the roadway at a station specified by the Engineer, or a roadway centerline profile. Show the ground or pavement surface and crown elevation of each facility installed, or installed and placed out of service, to an accuracy within 1 inch at the ends and other exposed locations. On profile plans for bore paths crossing the roadway show stationing of the crossing on the Contract plans. On the profile plans for the bore paths paralleling the roadway, show the Contract plans stationing. If the profile plan for the bore path is not made on a copy of one of the Contract profile or crosssection sheets, use a 10 to 1 vertical exaggeration.
- (c) If, during boring, an obstruction is encountered which prevents completion of the installation in accordance with the design location and specification, and the product is left in place and taken out of service, show the failed bore path along with the final bore path on the plans. Note the failed bore path as "Failed Bore Path - Taken Out of Service". Also show the name of the Utility owner, location and length of the drill head and any drill stems not removed from the bore path.
- (d) Show the top elevation, diameter and material type of all utilities encountered and physically observed during the subsoil investigation. For all other obstructions encountered during a subsoil investigation or the installation, show the type of material, horizontal and vertical location, top and lowest elevation observed, and note if the obstruction continues below the lowest point observed.
- (e) Include bore notes on each plan stating the final bore path diameter, product diameter, drilling fluid composition, composition of any other materials used to fill the annular void between the bore path and the product, or facility placed out of service. Note if the product is a casing as well as the size and type of carrier pipe placed within the casing as part of the Contract work.

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# UTILITY WORK PERMITS

## (a) DOCUMENTS REQUIRED PRIOR TO A PRE-CON MEETING:

**\*\*UPLOAD INTO OSP - Pdf Format; 1 pdf file combine All please**

- All Contractor's / Sub Contractor's Licenses
- All Contractor's / Sub Contractor's Local Business Tax Receipt
- Contractor's Work Site Safety Supervisor's Advanced MOT Certificate - with his/her email address and a 24/7 contact number attached to the certificate.

## (b) DOCUMENTS REQUIRED PRIOR TO FINAL INSPECTION:

**\*\*UPLOAD INTO OSP - Pdf Format; 1 pdf file combined for all docs, except the As Built & Certification Letter please submit these two docs separately.**

**(\*As Applicable to Your Permit \*)**

- Permit Final Inspection Certification Letter
- Request for Final Inspection Letter
- Directional Bore Logs
- Density Reports
- As Built Plans (w/Plan & Section Views for ALL Bores)
- Producers Certification for Concrete CL I NS 2500 psi (sidewalk, curb & gutter, ditch pavement & traffic separator)
- Asphalt Tickets
  - \*Include SP & FC types/thickness used on Excavation Restoration and Milled & Resurfaced area.

**\*\*\*OSP WEB URL: <https://osp.fdot.gov>\*\*\***

**\*NOTE:** As mandated by our Legal Department; All Contractors/Sub Contractors working within or adjacent to the Department's Right of Way must furnish their License & Local Business Tax Receipt and their MOT Cert unless MOT is being done by the Prime Contractor.

If you have any further concerns, please do not hesitate to contact us at your earliest convenience.  
**Brett T. Drouin – Permits Manager**

Approved  
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Rosie Evert  
10/7/2020

***SPECIAL PROVISIONS/CONDITIONS  
FOR UTILITY PERMITS, INCLUDING  
DIRECTIONAL AND JACK & BORES  
ATTACHMENT "A"***

All new or replaced underground facilities within the Right of Way shall be made electronically detectable using techniques available in the industry.

It is the Permittee's responsibility to obtain final acceptance of permitted work (completed) and the restoration of the Right of Way from the Department prior to usage.

Permittee will restore the Right of Way as a minimum, to its original condition or better in accordance w/FDOT's Standard Specifications for Road & Bridge Construction or as directed by the Resident Operations Engineer.

Permittee will ensure that all locates have been performed prior to scheduling of any boring activities. This shall include soft digs to verify vertical & horizontal alignment.

Permittee's representative & an FDOT Inspector must be on site during all boring activities. Upon completion of the boring activities, Permittee shall provide all documentation to be in accordance with FDOT Standard Specifications, Section 555 or 556, whichever is applicable.

All maintenance of traffic (MOT) will be in accordance with the Department's current edition of the Standard Plans (102-600) series). The Operations Engineer or his designee reserves the right to direct the removal/relocation/Modification of any traffic device(s) at the Permittee's sole expense.

Restricted hours of operation will be from 9:00 am to 3:30 pm, (Monday thru Friday), Unless otherwise approved by the Operations Engineer, or designee.

Permittee shall use the current editions of the Department's Standard Plans/, Specifications for Road and Bridge Construction and applicable manuals, policies and procedures.

**PERMITTEE: PLEASE NOTE:**  
Permittee's contractors that are performing directional drilling and/or jack and bore activities shall provide the Department (Permits Office) proof of a proper state contractor's license prior to any commencement of permitted work.

*All HDPE conduit used for traffic signals or other electrically powered or operated traffic control devices, shall use a Standard Dimension Ratio of 11 (SDR 11).*

**Note:**

A staff member of the Permittee/UAO shall attend all required FDOT field meetings and/or inspections.

Permittee shall coordinate all work with Louis Berger @ 1-888-238-6215, Extension 701 or email: [US1-A1A-Permits@louisberger.com](mailto:US1-A1A-Permits@louisberger.com)  
Coordination will include a Pre-construction meeting.

All references made to "abandoned in place" shall actually mean "deactivated in place"/"placed out of service."

Removal/installation of sidewalk will be in accordance with the Department's current edition of the Standard Plans, Index 522-001.

Permittee shall grout all pipe that will be deactivated in place or directed by the Local Resident Operations Engineer.

**SEE ATTACHMENT B**

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Rosie Evert  
10/7/2020

***SPECIAL PROVISIONS/CONDITIONS  
UTILITY PERMITS  
ATTACHMENT "B"***

**PURSUANT TO THE UAM, SECTION 2.7(1), PERMITTEE SHALL EXPEDITOUSLY COMPLETE THE PERMITTED WORK, RESTORE THE RIGHT OF WAY AND OBTAIN FINAL ACCEPTANCE OF SAID WORK (PER UAM 2.11) FROM THE DEPARTMENT WITHIN SIX (6) MONTHS OF THE ISSUANCE DATE, UNLESS OTHERWISE APPROVED BY THE LOCAL OPERATIONS ENGINEER, OR DESIGNEE.**

**FAILURE TO OBTAIN FINAL ACCEPTANCE WILL RESULT IN NON-COMPLIANCE AND VOIDING OF SAID PERMIT.  
FURTHERMORE, THE UTILITY FACILITY SHALL BE BROUGHT INTO COMPLIANCE OR REMOVED FROM THE RIGHT OF WAY (ROW) AT THE PERMITTEE'S SOLE EXPENSE (EXCEPT FOR REIMBURSEMENT RIGHTS, AS APPLICABLE)**

**PERMITTEE SHALL PROVIDE A UTILITY WORK SCHEDULE (UWS) AND COORDINATE WITH CONTRACTOR PRIOR TO START OF WORK WITHIN A CONSTRUCTION ZONE.**

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Rosie Evert  
10/7/2020

## **APPENDIX D**

### **TOWN OF JUNO BEACH UTILITY ROW PERMIT**



**TOWN OF JUNO BEACH**  
340 OCEAN DRIVE  
JUNO BEACH, FL 33408  
PHONE: 561.626.1122 FAX: 561.775.0812

## Release For Demolition

Date: 9/23/2020  
Company Name: Loxahatchee River District  
Attention: [Linda.lunsford@lrecd.org](mailto:Linda.lunsford@lrecd.org)  
Address: 2500 Jupiter Park Drive  
City, State, Zip: Jupiter, FL 33458  
Phone: (561)747-5700  
Fax: (561)747-9929

An application for a permit is being made by the undersigned for the demolition and removal of:

Abandon and grout existing 6" FM & 10" FM

*(Type of Structure – Description of)*

Abandon & Grout Existing 6" FM= Olympus Drive from U.S. Hwy. 1 to Ocean Drive & Celestial Way from Ocean Dr. to LS No. 133 *(Physical Address)*

Abandon & Grout Existing 10" FM = Rolling Green Road from LS No. 130 to U.S. Hwy. 1

*(Legal Description/Property Control)*

Estimated Demolition/Construction Time-frame: January 2021 - April 2021

*(Scheduled date of demolition)*

Please see that proper disconnects are made. If your company does/does not have a disconnect, please sign and date the form accordingly and fax to the Town of Juno Beach as soon as possible.

*(Applicant - Signature)*

D. Albrey Arrington, Ph.D., Executive Director, Loxahatchee River Environmental Control Distri

*(Applicant - Printed)*

2500 Jupiter Park Drive, Jupiter, FL 33458

*(Address)*

- ( ) Facilities of this company are not involved in the above-referenced premises: \_\_\_\_\_  
( ) Facilities of record were removed from the above-referenced premises on: \_\_\_\_\_

\_\_\_\_\_  
*Signature*

\_\_\_\_\_  
*(Type/Print Name and Title)*

\_\_\_\_\_  
*(Date)*

June 26, 2018



**TOWN OF JUNO BEACH**  
340 OCEAN DRIVE  
JUNO BEACH, FL 33408  
PHONE: 561.626.1122 FAX: 561.775.0812

## Utilities/Drainage Easement Agreement

Date: 9/23/2020  
Company Name: Loxahatchee River District  
Attention: Linda.lunsford@lrecd.org  
Address: 2500 Jupiter Park Drive  
City, State, Zip: Jupiter, FL 33458  
Phone: 561-747-5700 Fax: 561-747-9929

I propose to apply for town building permit to erect a:

Install 8" PVC & HDPE force main & 2" PVC & HDPE low-pressure force main; abandon existing 6" FM & 10" FM

*(Type of Structure – Description of)*

Proposed FM & Abandon Existing 6" FM= Olympus Drive from U.S. Hwy. 1 to Ocean Drive & Celestial  
Way from Ocean Dr. to LS No. 133 *(Physical Address)*

Abandon Existing 10" FM = Rolling Green Road from LS No. 130 to U.S. Hwy. 1

*(Legal Description/Property Control)*

I understand that your company will not be responsible in any way for repairs or replacement of any portion of this 8" PVC & HDPE force main & 2" PVC & HDPE low-pressure force main and that any removal or replacement of this construction necessary for your use of this easement will be done at my expense.

*(Applicant – Signature)*

D. Albrey Arrington, Ph.D., Executive Director, Loxahatchee River Environmental Control District

*(Applicant – Printed)*

2500 Jupiter Park Drive, Jupiter, FL 33458

*(Address)*

STATE OF FLORIDA  
COUNTY OF PALM BEACH

Sworn and subscribed before me on Sept. 25, 20 20, by D. Albrey Arrington, in person who is/are personally known to me or who produced personally known as identification who did/did not take an oath.

Notary Signature:

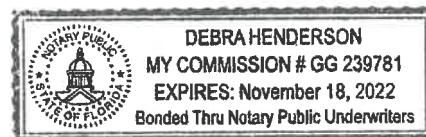
Commission #:

Commission Expiration Date:

Utility Company Signature and Title

Type/Print Name and Title

Date



January 22, 2016



## TOWN OF JUNO BEACH

340 Ocean Drive  
Juno Beach, FL 33408  
Phone: (561) 656-0302 Fax: (561) 775-0812

### OFFICE USE ONLY:

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

Permit #: \_\_\_\_\_

Tracking #: \_\_\_\_\_

### Application for Building Permit & Certificate of Occupancy

<p>Job Address: <small>Olympus Drive from U.S. Hwy. 1 to Ocean Drive &amp; Celestial Way from Ocean Dr. to LS No. 133; Rolling Green Road from LS No. 130 to U.S. Hwy. 1. All work within Town R/W</small> (Physical Address)</p> <p>Property Control #: _____</p> <p>Legal Description: _____</p> <p>Owner: <u>Town of Juno Beach Rights-of-Way</u></p> <p>Owner's Address: _____</p> <p>City: _____ State: _____ Zip: _____</p> <p>Phone: (_____) _____</p> <p>Email: _____</p>	<p>Contracting Co.: _____</p> <p>Qualifier: _____</p> <p>State / PBC License No.: _____</p> <p>Address: _____</p> <p>City: _____ State: _____ Zip: _____</p> <p>Cell Phone No.: (_____) _____</p> <p>Business Phone No.: (_____) _____</p> <p>Fax No.: (_____) _____</p> <p>Email: _____</p>
---	--

Work Description: Install 8" PVC & HDPE force main & 2" PVC & HDPE low-pressure force main; abandon existing 6" FM & 10" FM

Proposed FM & Abandon Existing 6" FM= Olympus Drive from U.S. Hwy. 1 to Ocean Drive & Celestial Way from Ocean Dr. to LS No. 133;

Abandon Existing 10" FM = Rolling Green Road from LS No. 130 to U.S. Hwy. 1  
(Physical Address)

Square/linear Ft.: Total LF within Town R/W only for proposed FM installation = 1460 LF

Estimated Job Cost: Total Estimated Project Cost (inclusive of work within PBC and FDOT R/W) = \$662,464.00

Circle ONE Permit Type: BUILDING ELECTRICAL PLUMBING MECHANICAL ROOFING

Circle ONE Occupancy Type: COMMERCIAL RESIDENTIAL

**WARNING TO OWNER: YOU MUST RECORD A NOTICE OF COMMENCEMENT AND YOUR FAILURE TO DO SO MAY RESULT IN YOUR PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY. IF YOU INTEND TO OBTAIN FINANCING CONSULT WITH YOUR LENDER OR AN ATTORNEY BEFORE RECORDING THIS NOTICE.**

**NOTICE:** In addition to the requirements of this permit, there may be additional restrictions applicable to this property that may be found in the public records of this county, and there may be additional permits required from other governmental entities such as water management districts, state agencies, or federal agencies.

**OWNER'S AFFIDAVIT:** I certify that all the foregoing information is accurate, and that all work will be done in compliance with all applicable laws regulating construction and zoning. Furthermore, I authorize the above-named contractor to do the work stated.

\_\_\_\_\_  
Signature of Property Owner

Print Name: \_\_\_\_\_

ADMINISTERED OATH  
SWORN TO & SUBSCRIBED BEFORE ME THIS

\_\_\_\_\_  
DAY OF \_\_\_\_\_, 20\_\_\_\_

\_\_\_\_\_  
Signature of Notary

Personally Known: \_\_\_\_\_ OR I.D.: \_\_\_\_\_

\_\_\_\_\_  
Signature of Qualifier

Print Name: \_\_\_\_\_

ADMINISTERED OATH  
SWORN TO & SUBSCRIBED BEFORE ME THIS

\_\_\_\_\_  
DAY OF \_\_\_\_\_, 20\_\_\_\_

\_\_\_\_\_  
Signature of Notary

Personally Known: \_\_\_\_\_ OR I.D.: \_\_\_\_\_

## **APPENDIX E**

### **CONTRACTOR EVALUATION REPORT**

# CONTRACTOR EVALUATION REPORT


	Loxahatchee River Environmental Control District	CONTRACT NO.		
ADDRESS	2500 Jupiter Park Drive	CONTRACTOR		
CITY / STATE / ZIP	Jupiter, FL 33458	PERIOD OF PERFORMANCE	FROM	TO
CONTRACT PROJECT MANAGER		LOCATION OF PERFORMANCE		

**INSTRUCTIONS:** This form can be completed on the computer or printed and completed by hand. Use the mouse to navigate. To check or uncheck a box, **'double click' the box**. If further direction is required on how to complete this evaluation or where to submit it, please contact your Contracting Officer. Comment boxes are formatted to automatically wrap the entered text. Check the box that best describes the level in which the Contractor supported the area described. Comments are essential and must substantiate your rating selection. N/A = not applicable. If additional space is required, use page 2 of the form or attach additional page(s).

**SEE PAGE 3 FOR EVALUATION RATINGS DEFINITIONS**


**1. Quality. Contractor conformed to contract requirements. Was capable, efficient and effective in supporting the programs of this contract. Provided well maintained equipment and highly qualified personnel. Finished product meets the quality requirements set forth in the contract.**

☐ N/A
 ☐ Satisfactory
 ☐ Unsatisfactory

COMMENTS: 


**2. Schedule. Contractor was prepared and available to begin work on contract start date and provided daily coverage during the contract period with little to no disruption or unavailability. Contractor completed the work within the dates specified in the contract and any approved extensions of time.**

☐ N/A
 ☐ Satisfactory
 ☐ Unsatisfactory

COMMENTS: 

**3. Change Orders. Contractor conformed to contract requirements, providing complete documentation and was reasonable in the negotiations for time and costs. Contractor did not engage with frivolous our unsupported change order requests. Contractor met time requirements in the contract for identification and quantification of additional or deleted work.**

☐ N/A
 ☐ Satisfactory
 ☐ Unsatisfactory

COMMENTS: 

**4. Management.** Contractor and on-site representatives were professional, well qualified, and committed to customer satisfaction and safety of operations. Contractor provided necessary support for key personnel and if applicable, took necessary action to correct or replace any personnel. Contractor was timely and complete with shop drawings, pay applications, releases, schedules and other required submittals.

☐ N/A      ☐ Satisfactory      ☐ Unsatisfactory

COMMENTS: 

**6. Regulatory Compliance.** How well does the contractor comply with governing regulations such as the FDEP, FDOH, SFWMD or others.

☐ N/A      ☐ Satisfactory      ☐ Unsatisfactory

COMMENTS: 

**7. Safety.** Contractor and on-site representatives attitude and efforts, as well as actual application, towards general safety of operations?

☐ N/A      ☐ Satisfactory      ☐ Unsatisfactory

COMMENTS: 

**9. Other Areas:**

☐ N/A      ☐ Satisfactory      ☐ Unsatisfactory

**10. Other Areas:**

☐ N/A      ☐ Satisfactory      ☐ Unsatisfactory

**11. Other Areas:**

☐ N/A      ☐ Satisfactory      ☐ Unsatisfactory

**12. Other Areas:**

☐ N/A      ☐ Satisfactory      ☐ Unsatisfactory

**12. Overall Contractor Rating:**

☐ N/A                      ☐ Satisfactory                      ☐ Unsatisfactory

Additional comments to support your response to any item above or other items.

Name, Title of Individual Completing this Form ( include agency, phone and electronic address )

Signature

**RATING****DEFINITION****NOTE**

Satisfactory

Performance meets contractual requirements. The contractual performance of the element being assessed may contain some minor problems for which corrective actions taken by the Contractor were satisfactory.

To justify a Satisfactory rating, there should have been only minor problems, or major problems the contractor recovered from without impact to the contract. There should have been NO significant weaknesses identified.

Unsatisfactory

Performance does not meet most contractual requirements and recovery is not likely in a timely manner. The contractual performance of the element contains a serious problem(s) for which the contractor's corrective actions appear or were ineffective.

To justify an Unsatisfactory rating, identify multiple significant events in each category that the Contractor had trouble overcoming and state how it impacted the Government. A singular problem, however, could be of such serious magnitude that it alone constitutes an unsatisfactory rating. An Unsatisfactory rating should be supported by referencing the management tools used to notify the contractor of the contractual deficiencies (e.g. management, quality, safety, etc.)

## **APPENDIX F**

### **STANDARD OPERATING PROCEDURE: SYSTEM SHUTDOWNS AND BYPASS**



Standard Operating Procedure: **System Shutdowns and Bypass**

Project Name: **Olympus Drive Force Main & Low-Pressure Sewer Replacement**

Work Order #: \_\_\_\_\_

Shutdown Schedule Date: \_\_\_\_\_

Time Start: \_\_\_\_\_

Time Complete: \_\_\_\_\_

1. All work for the system shutdown shall be done under one work order specific to the system shutdown, not the work requiring the system shutdown. System Shutdown Work Order # to be noted above.
2. Scope: Develop a scope fully encompassing the work to be performed. The scope shall be attached as **Exhibit A**.
3. Map: Develop a system map overlaid on an aerial clearly showing the location of the work, relation of the work to other infrastructure, primary and secondary isolation points for the work. All infrastructure shown on the map shall be field located and GPS'd. The map shall be attached as **Exhibit B**.
4. Isolation Point Verification: All isolation points, primary and secondary, shall be field verified, if possible, prior to scheduling the work. Verification shall confirm isolation points are operable and substantially isolate the work area from the remainder of the collection/transmission system. Substantially isolate, at a minimum, shall mean all flows except those that can reasonably be managed with a vacuum truck are isolated from the work. Upstream System Capacity: Upstream system capacity (holding time) shall be determined. Prior to scheduling the work adequate values for the following shall be agreed upon. The scheduled shutdown duration, staff, equipment and materials shall be planned around the Low Risk Holding Time.
  - a. Low Risk Holding Time: \_\_\_\_\_
  - b. Unacceptable Risk Holding Time: \_\_\_\_\_
5. Wastewater Management/Spill Response Plan: Prior to scheduling the work:
  - a. The Contractor shall have an approved wastewater management plan to address capture and disposal of wastewater. The Contractor's Wastewater Management/Spill Response Plan shall be attached as **Exhibit C**.
  - b. The District shall have an approved Wastewater Management Plan to address management of wastewater in the collection/transmission system. The Wastewater Management Plan shall include Emergency Operation Measures in the event the shutdown exceeds the Unacceptable Risk Holding Time. The District's Wastewater Management Plan shall be attached as **Exhibit D**.

6. Personnel: The Contractor and the District shall have adequate staff to manage the shutdown and work. The Contractor shall have one designated person in-charge of his employees and work. The District shall have one designated person in-charge of his employees and work.
- i. Contractor Representative In-Charge: \_\_\_\_\_ cell #: \_\_\_\_\_  
# of Contractor's supporting staff: \_\_\_\_\_
  - b. District Representative In-Charge: \_\_\_\_\_ cell #: \_\_\_\_\_
    - i. # of District supporting staff: \_\_\_\_\_
7. Schedule: Prior to scheduling the work predetermined times to implement various steps, back-up plans, cancel the tie-in or failure response shall be agreed upon.
- a. Primary Isolation: \_\_\_\_\_
  - b. Secondary Isolation: \_\_\_\_\_
  - c. System Evacuation Deadline: \_\_\_\_\_
  - d. Low Risk Work Completion Deadline: \_\_\_\_\_
  - e. Unacceptable Risk Deadline: \_\_\_\_\_

If the system is not adequately isolated and evacuated by the System Evacuation Deadline. Work is CANCELLED, the force main secured and placed back in service.

Once the Work has commenced progress shall be monitored with direct communication between the Contractor Representative In-Charge and the District Representative In-Charge. At any time during the performance of the Work the projected completion time exceeds the Unacceptable Risk Deadline Emergency Operation Measures shall be implemented. See **Exhibit D**.

8. Equipment:
- a. The Contractor shall have adequate equipment on site by Close of Business preceding the scheduled shutdown. All equipment shall be on site by: \_\_\_\_\_. The list of equipment shall be attached as **Exhibit E**.
  - b. The District shall have adequate equipment on site by Close of Business preceding the scheduled shutdown. All equipment shall be on site by: \_\_\_\_\_. The list of equipment shall be attached as **Exhibit F**.
9. Materials: All materials required for the work shall be on site by Close of Business preceding the scheduled shutdown. All materials shall be on site by: \_\_\_\_\_. The approved Material List shall be attached as **Exhibit G**.
10. Vendors: All vendors required for the work shall be issued Purchase Orders by Close of Business preceding the scheduled shutdown. All vendor Purchase Orders shall be confirmed by \_\_\_\_\_. The Vendor list shall be attached as **Exhibit H**.

## System Shutdown Checklist

Description	Approved By	Scheduled Time	Scheduled Date
Work Order			
Exhibit A			
Exhibit B			
Exhibit C			
Exhibit D			
Exhibit E			
Exhibit F			
Exhibit G			
Exhibit H			
Low Risk Holding Time			
Unacceptable Risk Holding Time			
Primary Isolation Time			
Secondary Isolation Time			
System Evacuation Deadline			
Low Risk Work Completion Deadline			
Unacceptable Risk Deadline			
Contractor Equipment Onsite			
District Equipment Onsite			
Materials Onsite			
Vendor's Confirmed			

Contractor's Representative Name:

Cell:

District's Representative Name:

Cell:

