CONTRACT DOCUMENTS & TECHNICAL SPECIFICATIONS

FOR

LOXAHATCHEE RIVER DISTRICT

LOXAHATCHEE RIVER SUBAQUEOUS FORCE MAIN REPLACEMENT

ITB# 23-006-00128

May 2024

Prepared by:

MOCK • ROOS

CONSULTING ENGINEERS

LOXAHATCHEE RIVER SUBAQUEOUS FORCE MAIN REPLACEMENT
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NOTICE TO CONTRACTORS

Bids will be received by the Loxahatchee River Environmental Control District (the "District,") via DemandStar until **2:15 p.m. local time on July 23, 2024**. Any Bids received after **2:15 p.m**. **local time on July 23, 2024**, 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 **July 23, 2024 at 2:15 p.m. local time** in the Governing Board room of the District, 2500 Jupiter Park Drive. The Work to be performed is located in Palm Beach County Florida in the Town of Jupiter, and consistsof furnishing all labor, tools, materials, and equipment necessary for the installation as shown on the Contract Plans and Specifications and as specified herein to include:

ITB # 23-006-00128
LOXAHATCHEE RIVER SUBAQUEOUS FORCE MAIN
REPLACEMENT

The Project consists of the construction of a new subaqueous force main crossing beneath the Loxahatchee River, including 2,150 linear feet of 20-inch HDPE force main installed via HDD and 630 linear feet of 16-inch PVC force main installed via open trench. The new force main replaces an existing abandoned 24-inch subaqueous force main and will supplement an existing aerial force main crossing. The project includes abandonment of the existing 24-inch force main, tie-ins to the existing system, site restoration, and all required pipes, fittings, appurtenances, ARVs, structures, et cetera as may be required to provide a complete and functioning system.

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 July 10, 2024** via Microsoft Teams. A meeting invite will be distributed to all plan holders prior to the scheduled date and time. This meeting will be recorded. If a bidder downloads Bid Documents from the District's website the biddermust send a request to be included in the pre-bid conference meeting invite to 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 from DemandStar. Bid Documents will be available on **July 1, 2024** 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.

This solicitation 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

Steven 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 electronic or hard copy 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 enters into a contract for the Work.

k. "County" shall mean Palm Beach County or Martin 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, orapproval.

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 is not 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**: Bids will be received by the Loxahatchee River Environmental Control District (the “District,”) via DemandStar until **2:15 p.m. local time on July 23, 2024.** Any Bids received after **2:15 p.m. local time on July 23, 2024** 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 **at 2:15 p.m. local time on July 23, 2024** 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 **July 1, 2024, 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 July 10, 2024** 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. 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 to subject discipline, including at a minimum a written reprimand and up to and including rejection of its Bid and/or cancellation of the Contract.

2. **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 Opening 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. Bid Bonds are due not later than 2:15 p.m. local time on July 25, 2024.** 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 ten (10) business 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 five (5) business 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.

3. **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:

CONTRACT AMOUNT	BEST'S RATINGS
$ 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).

4. **Subject of Bids**: All Work for the Project shall be constructed in accordance with the Plans and Specifications prepared by Mock Roos and Associates, 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. Engineerwill 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.

5. **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) business 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.

6. **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.

7. **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.

8. **Execution of the Contract:** When the District issues a Notice of Award to the Successful Bidder, the successful bidder shall return to the District original bonds and insurance certificates within ten (10) business days. Upon receipt the District shall forward to the Contractor a PandaDoc link to the Contract andall other Contract Documents. Within ten (10) business days thereafter, Contractor shall execute the Contract and other Contract Documents using PandaDoc. Thereafter, the District shall return one fully executed electronic PDF of the Contract and all other Contract Documents to the Contractor. 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.

9. **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, rights-of-way 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.

10. **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) business 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.

11. **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.

12. **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 five (5) business 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.

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

14. **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.

15. **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.

16. **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.

17. **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.

18. **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.

19. **License and Permits:** Contractor shall obtain and pay for all permits and licenses required for the Work as defined in Section 01000 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.

20. **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, to resolve all protests.

21. 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.

22. 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 the position of General Contractor on a multi-discipline project that includes structural, mechanical, electrical, plumbing, architectural, and site improvements. 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.

23. **Notice to Proceed:** The Notice to Proceed for this project will be issued within 90 days of the Award of Contract at a time mutually agreed to by the District and lowest responsive bidder.

24. **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 who 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 1.7** (U.S. Bureau of Labor Statistics, Table 1). Incidence rates of nonfatal occupational injuries and illnesses by industry and case types, **2022,**

Three-fourths of the establishments had a rate lower than or equal to: (3rd quartile) for size 50-249, NAICS 237100, Utility system construction. Bidder's DART must be less than or equal to benchmark.

Total Recordable Incident Rate (TRIR) **Benchmark 2.2**
(U.S. Bureau of Labor Statistics, Table 1. Incidence rates of nonfatal occupational injuries and illnesses by industry and case types, **2022, Three-fourths of the establishments had a rate lower than or equal to: (3rd quartile) for size 50-249, NAICS 237100, Utility system 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.

25. **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.

26. **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 horizontal directional drill installations with a minimum diameter of 16" – DR11 and length of 1,000 linear feet across open water. 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, Owner'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
LOXAHATCHEE RIVER SUBAQUEOUS FORCE MAIN 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 ten (10) business 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) business 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 Statues, 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 CMA26)

j. Initial_____. Project Resume's for qualifying experience (see CMA 27).

Contractor: _____

By: _____

Title: _____

Address: _____

Attest: _____

Title: _____

Contractor's License No: _____

BID FORM — BASE BID
LOXAHATCHEE RIVER ENVIRONMENTAL CONTROL DISTRICT
LOXAHATCHEE RIVER SUBAQUEOUS FORCE MAIN REPLACEMENT
UNIT PRICES

ITEM	DESCRIPTION	QTY	UNIT		UNIT PRICE		EXTENDED PRICE
GENERAL CONDITIONS							
1	MOBILIZATION & GENERAL CONDITIONS	1	LS	$		$	
2	BOND & INSURANCE REQUIREMENTS	1	LS	$		$	
3	SITE CLEARING	1	LS	$		$	
4	CONSTRUCTION LAYOUT & SURVEY	1	LS	$		$	
5	NPDES COMPLIANCE	1	LS	$		$	
6	PRE AND POST CONSTRUCTION VIDEO	1	LS	$		$	
7	MAINTENANCE OF TRAFFIC	1	LS	$		$	
8	AS-BUILT RECORD DRAWINGS	1	LS	$		$	
FORCEMAIN REPLACEMENT – LOXAHATCHEE CROSSING							
9	20” DR9 HDPE FORCEMAIN WITH 2” CONDUIT VIA HDD	2150	LF	$		$	
10	HDPE TO PVC TRANSITION (INCL. PIPES/FITTINGS/APPURTENANCES)	2	EA	$		$	
11	16” PVC FORCEMAIN (RESTRAINED)	630	LF	$		$	
12	FITTINGS	1	TN	$		$	
13	16” PLUG VALVE	2	EA	$		$	
14	AIR RELEASE VALVE WITH MANHOLE	2	EA	$		$	
15	CONNECT TO EXIST 16” FORCEMAIN (INCL. PIPES/FITTINGS/APPURTENANCES)	1	EA	$		$	
16	CONNECT TO EXIST 24” FORCEMAIN (INCL. PIPES/FITTINGS/APPURTENANCES)	1	EA	$		$	
SITE DEMOLITION / SURFACE RESTORATION							
17	NORTH ENTRY PIT RESTORATION / SODDING	1	LS	$		$	
18	ISOLATE ABANDONED EXIST. 24" DIP FM	1	LS	$		$	
19	PLUG AND ABANDON IN PLACE EXIST. 24" DIP FM	1	EA	$		$	
20	REMOVE AND DISPOSE EXIST. 24" DIP FM	650	LF	$		$	
21	TRENCH RESTORATION (INCL. 16" BASE/2" SP-9.5 IN PAVEMENT AREA)	600	LF	$		$	
22	1" ASPHALT MILLING (OLD DIXIE HWY)	1	LS	$		$	
23	1" ASPHALTIC CONCRETE (SP-9.5, TRAFFIC LEVEL C) (OLD DIXIE HWY)	1500	SY	$		$	
24	PAVEMENT MARKINGS (OLD DIXIE HWY)	1	LS	$		$	
25	ROADWAY SHOULDER RESTORATION (OLD DIXIE HWY)	1	LS	$		$	
26	SODDING / MISC. RESTORATION	1	LS	$		$	

CONSTRUCTION COST (BASE BID) **$** _____

TOTAL BASE BID, ITEMS 1-26 (in words) _____

Dollars

_____

Cents

THE CONTRACT AWARD SHALL BE EVALUATED BASED ON THE TOTAL BASE BID PRICE FOR ITEMS 1 THROUGH ____ 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
LOXAHATCHEE RIVER SUBAQUEOUS FORCE MAIN 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.

Project Type	Years
General Contractor (primary)	_____
Construction Renovation (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:

Electrical and Control Systems

_____
Name:

_____
Address & Telephone No.

Restoration

_____
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 DISTRICT. 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.

_____ CONTRACTOR

Date

_____ _____

Witness [Signature]

By: _

[Name and Title Printed]

State of _____

County of_____

The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online notarization, this ____ day of _____ 20___ by _____ as _____ of _____ (Company Name) Contractor, who is personally known to me or who produced _____ as identification.

_____

Notary Public, State of Florida

Print Name:_____

Commission No.:_____

My Commission Expires:_____

(Notary Ink Stamp)

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. 23-006-00128 for LOXAHATCHEE RIVER SUBAQUEOUS FORCE MAIN 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 by means of ☐ physical presence this ____ day of _____, 20_____, by _____ as_____ of _____ (Company Name) Contractor, who is personally known to me or who produced _____ as identification.

_____

Notary Public, State of Florida

Print Name:_____

Commission No.:_____

My Commission Expires:_____

(Notary Ink Stamp)

Condensed current financial statement for (Name of Contractor)

LOXAHATCHEE RIVER SUBAQUEOUS FORCE MAIN 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

$_____

5. 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 ten (10) business 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 isas follows:

_____

_____

_____

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 five (5) 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 twenty (120) 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.

6. 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 _____

Contractor: _____

By:_____

Address: _____

Contractor's License No. _____

Attest: _____

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 LOXAHATCHEE RIVER SUBAQUEOUS FORCE MAIN REPLACEMENT and shall doeverything required by or reasonably inferable from the Contract Documents. The Work is generally described as follows:

LOXAHATCHEE RIVER SUBAQUEOUS FORCE MAIN
REPLACEMENT

[DESCRIPTION]

The Project consists of the construction of a new subaqueous force main crossing beneath the Loxahatchee River, including 2,150 linear feet of 20-inch HDPE force main installed via HDD and 630 linear feet of 16-inch PVC force main installed via open trench. The new force main replaces an existing abandoned 24-inch subaqueous force main and will supplement an existing aerial force main crossing. The project includes abandonment of the existing 24-inch force main, tie-ins to the existing system, site restoration, and all required pipes, fittings, appurtenances, ARVs, structures, et cetera as may be required to provide a complete and functioning system.

Applicable reference drawings are entitled **LOXAHATCHEE RIVER SUBAQUEOUS FORCEMAIN CROSSING REPLACEMENT** as prepared by Mock Roos and Associates, Inc.

SECTION 2. Time of Completion: Construction of the Work must begin within ten (10) business days from the date of receipt of official Notice to Proceed. Substantial Completion shall be achieved within **180** 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 thedate of actual Substantial Completion. The rate of progress and the time of completion are essential conditions ofthis 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, **$100** per day for each and every calendar day Substantial Completion is delayed.

b. **Final Completion Delay**. If Final Completion is not reached within **65 days** of actual Substantial Completion, Contractor shall pay to the District as Liquidated Damages, and not as a penalty, **$50** 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. 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.

Contractor agrees and represents to the District that it has registered with the E-Verify System and is now, and shall be for the duration of this Agreement, in full compliance with Sections 448.09 and 448.095, Florida Statutes. Contractor shall ensure that each of its subcontractors is also registered with the E-Verify System, is in compliance with Sections 448.09(1) and 448.095, Florida Statutes, and that each provides the affidavit required by Section 448.095, Florida Statutes.

Contractor agrees that if it violates Section 448.09(1), Florida Statutes or Section 448.095, Florida Statutes, the District must terminate this Agreement and that any such termination shall not be considered a breach by the District. Contractor further understands and agrees that it shall be responsible for any additional costs incurred by the District as a result of the termination of this Agreement, pursuant to Section 448.095, Florida Statutes.

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) business 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) business 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) Business 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) business 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 fifteen (15) business 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 Contractors 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) calendar 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) business 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 twenty (20) business 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) business 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) business 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) business 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) business 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) business 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 fifteen (15) business 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 is 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 bythe 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: _____

_____

STATE OF _____

COUNTY OF _____

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

COUNTY OF _____

The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online notarization, this ____ day of _____, 20____, by _____ as _____ of _____ (Company Name) Contractor, who is personally known to me or who produced _____ as identification, 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 the County and State last aforesaid this ____ day of _____, 20 _____.

_____

Notary Public, State of Florida

Print Name:_____

Commission No.:_____

(Notary Ink Stamp)

My Commission Expires:_____

BID FORM — BASE BID
LOXAHATCHEE RIVER ENVIRONMENTAL CONTROL DISTRICT
LOXAHATCHEE RIVER SUBAQUEOUS FORCE MAIN REPLACEMENT
UNIT PRICES

ITEM	DESCRIPTION	QTY	UNIT		UNIT PRICE		EXTENDED PRICE
GENERAL CONDITIONS							
1	MOBILIZATION & GENERAL CONDITIONS	1	LS	$		$	
2	BOND & INSURANCE REQUIREMENTS	1	LS	$		$	
3	SITE CLEARING	1	LS	$		$	
4	CONSTRUCTION LAYOUT & SURVEY	1	LS	$		$	
5	NPDES COMPLIANCE	1	LS	$		$	
6	PRE AND POST CONSTRUCTION VIDEO	1	LS	$		$	
7	MAINTENANCE OF TRAFFIC	1	LS	$		$	
8	AS-BUILT RECORD DRAWINGS	1	LS	$		$	
FORCEMAIN REPLACEMENT – LOXAHATCHEE CROSSING							
9	20” DR9 HDPE FORCEMAIN WITH 2” CONDUIT VIA HDD	2150	LF	$		$	
10	HDPE TO PVC TRANSITION (INCL. PIPES/FITTINGS/APPURTENANCES)	2	EA	$		$	
11	16” PVC FORCEMAIN (RESTRAINED)	630	LF	$		$	
12	FITTINGS	1	TN	$		$	
13	16” PLUG VALVE	2	EA	$		$	
14	AIR RELEASE VALVE WITH MANHOLE	2	EA	$		$	
15	CONNECT TO EXIST 16” FORCEMAIN (INCL. PIPES/FITTINGS/APPURTENANCES)	1	EA	$		$	
16	CONNECT TO EXIST 24” FORCEMAIN (INCL. PIPES/FITTINGS/APPURTENANCES)	1	EA	$		$	
SITE DEMOLITION / SURFACE RESTORATION							
17	NORTH ENTRY PIT RESTORATION / SODDING	1	LS	$		$	
18	ISOLATE ABANDONED EXIST. 24" DIP FM	1	LS	$		$	
19	PLUG AND ABANDON IN PLACE EXIST. 24" DIP FM	1	EA	$		$	
20	REMOVE AND DISPOSE EXIST. 24" DIP FM	650	LF	$		$	
21	TRENCH RESTORATION (INCL. 16" BASE/2" SP-9.5 IN PAVEMENT AREA)	600	LF	$		$	
22	1" ASPHALT MILLING (OLD DIXIE HWY)	1	LS	$		$	
23	1" ASPHALTIC CONCRETE (SP-9.5, TRAFFIC LEVEL C) (OLD DIXIE HWY)	1500	SY	$		$	
24	PAVEMENT MARKINGS (OLD DIXIE HWY)	1	LS	$		$	
25	ROADWAY SHOULDER RESTORATION (OLD DIXIE HWY)	1	LS	$		$	
26	SODDING / MISC. RESTORATION	1	LS	$		$	

CONSTRUCTION COST (BASE BID) **$** _____

TOTAL BASE BID, ITEMS 1-26 (in words) _____
Dollars

_____
Cents

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 _____, 20____ in the amount of $ _____ for the LOXAHATCHEE RIVER SUBAQUEOUS FORCE MAIN REPLACEMENT which Contract, is byreference 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 of 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.

1. 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_____, 20_____.

_____	_____
Name of Principal	Name of Surety
By:_____	By:_____
Signature of Principal	As Attorney-in-Fact (Attach Power of Attorney)

STATE OF FLORIDA

COUNTY OF _____

The foregoing instrument was acknowledged before me by means of ☐ physical presence this ____ day of _____,20_____, by _____ as _____ of _____ (Company Name) Contractor, who is personally known to me or who produced _____ as identification.

_____

Notary Public, State of Florida

Print Name:_____

Commission No.:_____

My Commission Expires:_____

(Notary Ink Stamp)

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

6-1

[Date]

via: US Mail & email

[Contractor Name]
[Contractor Address]

SUBJECT: Loxahatchee River Environmental Control District
LOXAHATCHEE RIVER SUBAQUEOUS FORCE MAIN 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:

LOXAHATCHEE RIVER SUBAQUEOUS FORCE MAIN 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.) Electronic executed Contract Document, and
b.) A Public Construction Bond with power of attorney, 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.

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

Regards,

Kris Dean, P.E.
Deputy Executive Director
Enclosures: Contract Document

6-2

[Date]

via: US Mail & email

[Contractor Name]
[Contractor Address]

SUBJECT: **LOXAHATCHEE RIVER SUBAQUEOUS FORCE MAIN 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 collaborating with you toward the successful completion of another project.

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

Sincerely,

Kris Dean, P.E.
Deputy Executive Director

6-3

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:

LOXAHATCHEE RIVER SUBAQUEOUS FORCE MAIN 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.

PROGRESS PAYMENT APPLICATION No. _____
FOR
LOXAHATCHEE RIVER SUBAQUEOUS FORCE MAIN REPLACEMENT

1.	ORIGINAL CONTRACT AMOUNT	$_____
2.	VALUE OF APPROVED CHANGE ORDERS	$_____
3.	ADJUSTED CONTRACT AMOUNT	$_____
4.	ORIGINAL CONTRACT WORK PERFORMED TO DATE	$_____
5.	APPROVED CHANGE ORDERS PERFORMED TO DATE	$_____
6.	TOTAL VALUE OF WORK PERFORMED TO DATE	$_____
7.	LESS AMOUNT RETAINED (0%)	$_____
8.	NET AMOUNT EARNED ON CONTRACT TO DATE	$_____
9.	ADD: MATERIALS STORED AT CLOSE OF PERIOD (LESS 10% RETAINAGE)	$_____
10.	SUBTOTAL	$_____
11.	LESS AMOUNT OF PREVIOUS PAYMENTS	$_____
12.	BALANCE DUE THIS PAYMENT	$_____

Certification by Contractor

I certify that all items and amounts shown on this monthly application are correct and that all Work has been performed and/or material supplied in full accordance with the terms of the Contract between the Loxahatchee River Environmental Control District and _____; the foregoing is a true and correct statement of the contract account up to and including the last day of the period covered by this Progress Payment Application.

_____, 20__ By: _____

Title: _____

(Progress Payment Application Cont'd)

Certification by Engineer

I certify that this account is correct and just and that the terms of Work specified herein have been performed.

_____, 20___ By: _____

For:_____

Approval by the District

_____, 20___ By: _____

For: Loxahatchee River Environmental Control District

6-4

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:

LOXAHATCHEE RIVER SUBAQUEOUS FORCE MAIN 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 PUBLIC, State of _____
Print Name: _____
Commission No.:_____
My Commission Expires: _____

(Notary Ink Stamp)

FINAL PAYMENT APPLICATION No. _____
FOR
LOXAHATCHEE RIVER SUBAQUEOUS FORCE MAIN REPLACEMENT

1.	ORIGINAL CONTRACT AMOUNT	$_____
2.	VALUE OF APPROVED CHANGE ORDERS	$_____
3.	ADJUSTED CONTRACT AMOUNT	$_____
4.	ORIGINAL CONTRACT WORK PERFORMED TO DATE	$_____
5.	APPROVED CHANGE ORDERS PERFORMED TO DATE	$_____
6.	TOTAL VALUE OF WORK PERFORMED TO DATE	$_____
7.	LESS AMOUNT RETAINED (0%)	$_____
8.	NET AMOUNT EARNED ON CONTRACT TO DATE	$_____
9.	ADD: MATERIALS STORED AT CLOSE OF PERIOD (LESS 10% RETAINAGE)	$_____
10.	SUBTOTAL	$_____
11.	LESS AMOUNT OF PREVIOUS PAYMENTS	$_____
12.	BALANCE DUE THIS PAYMENT	$_____

Certification by Contractor

I certify that all items and amounts shown on this monthly application are correct and that all Work has been performed and/or material supplied in full accordance with the terms of the Contract between the Loxahatchee River Environmental Control District and _____; the foregoing is a true and correct statement of the contract account up to and including the last day of the period covered by this Progress Payment Application.

_____, 20____ By: _____

Title: _____

(Progress Payment Application Cont'd)

Certification by Engineer

I certify that this account is correct and just and that the terms of Work specified herein have been performed.

_____, 20___ By: _____

For:_____

Approval by the District

_____, 20___ By: _____

For: Loxahatchee River Environmental Control District

6-5

Certificate of Substantial Completion

[Date]
[NAME]
[ADDRESS]

Loxahatchee River Environmental Control District
LOXAHATCHEE RIVER SUBAQUEOUS FORCE MAIN 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, P.E., LRECD
Courtney Jones, P.E., LRECD
Lenny Giacovelli, LRECD

6-6

Certificate of Final Completion

[DATE]
[NAME]
[ADDRESS]

Loxahatchee River Environmental Control District
LOXAHATCHEE RIVER SUBAQUEOUS FORCE MAIN 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, P.E., LRECD
Courtney Jones, P.E., LRECD
Lenny Giacovelli, LRECD

6-7

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:

LOXAHATCHEE RIVER SUBAQUEOUS FORCE MAIN 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

Print Name: _____

Commission No.:_____

(Notary Ink Stamp) My Commission Expires: _____

6-8

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: LOXAHATCHEE RIVER SUBAQUEOUS FORCE MAIN 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 PUBLIC, State of Florida
Print Name: _____
Commission No.:_____
My Commission Expires: _____

(Notary Ink Stamp)

6-9

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: LOXAHATCHEE RIVER SUBAQUEOUS FORCE MAIN 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 DISTRICT: _____
LOXAHATCHEE RIVER ENVIRONMENTAL CONTROL DISTRICT DATE

ARTICLE 7

CERTIFICATE OF DISTRICT'S ATTORNEY

LOXAHATCHEE RIVER SUBAQUEOUS FORCE MAIN
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

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 held by the District as retainage on entitled Progress Payments shall conform to the following schedule:

a. For contracts of $200,000.00 or less, retainage of 10% of payments claimed.

b. For contracts over $200,000.00, retainage of 5% of payments claimed.

c. 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.

9.05 DELETED AND 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:

CONTRACT AMOUNT	BEST'S RATINGS
$ 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. 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 BLM House 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 date 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.

A. 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.

B. 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 definitestandard 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 nocharge. 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 ratingas 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 performancecontains 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

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 the 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 furnisha 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 pipes, 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:

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.

DISTRICT:

CONTRACTOR:

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TECHNICAL

SPECIFICATIONS

Technical Specifications

Loxahatchee River Subaqueous Forcemain Crossing Replacement

For the
Loxahatchee River Environmental Control District

May 2024

Spencer Schroeder, P.E.
Fla. P.E. No. 65693

Date

Mock•Roos
5720 Corporate Way
WPB, FL 33407
Florida E.B. No. 48

(Reproductions are not valid unless signed, dated and embossed with an Engineer's Seal)

MOCK• ROOS
CONSULTING ENGINEERS

SPECIFICATIONS
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DIVISION 3 - CONCRETE

DIVISION 9 - FINISHES

SECTION 01000

GENERAL REQUIREMENTS

1.0 PROJECT LOCATION

The project is located adjacent to and west of the Alternate A1A and FEC Railroad crossing of the Loxahatchee River, from the intersection of Florida Avenue and Old Dixie Highway to the intersection of E Riverside Drive and S Cypress Drive in Jupiter, Florida as depicted on Mock•Roos Drawings "Loxahatchee River Subaqueous Forcemain Crossing Replacement", dated March 2023.

2.0 SCOPE OF WORK

A. The Work to be performed by the Contractor includes permitting, inspecting, furnishing all materials, labor, tools, equipment, water, light, power, transportation, superintendence, temporary construction of every nature, and all other services and facilities of every nature whatsoever necessary to modify, construct, complete, deliver and place in operation the subject Project as shown on the Drawings and/or as herein described as specified. All Work to be in accordance with the Contract Documents.

3.0 REFERENCE POINTS

A. Horizontal and vertical controls have been provided in the Drawings. All construction staking to be provided by the Contractor.

4.0 GRADES, DIMENSIONS, AND ELEVATIONS

A. Written dimensions have preference over scaled dimensions. All elevations are based on the North American Vertical Datum of 1988 (NAVD88).

5.0 EXISTING STRUCTURES AND UTILITIES

A. All known utilities have been shown on the Drawings according to the best information available. It is the Contractor's responsibility to contact all owners of structures or utilities above ground, on the surface, or below the ground, within the Project area so that said owners may stake or otherwise mark or protect their facilities. The Contractor must provide facilities and be responsible for the protection of all structures, buildings and utilities, underground, on the surface, or above ground against trenching, dewatering, or any other activity connected with the Work throughout the entire Contract Time. If a utility is not shown or shown improperly and a conflict arises with the Work in this Contact, Contractor will be justified an increase in Contract Price and/or Contract Time for any changes required in the Work or for required utility relocation, and Contractor may make a claim therefore as provided for in the General Conditions.

B. When structures and utilities have been properly shown or marked and are disturbed or damaged in the execution of the Work, they must be repaired immediately in conformance with best standard practice and the approval of the owner of the damaged utility or structure. In the case of structures and utilities which have not been properly shown or located as outlined above and are disturbed or damaged in the prosecution of the Work, take

whatever steps are necessary for safety and notify the affected utility owner and avoid any actions which might cause further damage to the structure or utility.

C. Should the Work require repairs, changes or modifications of the Owner's utilities as well as other utilities, it is the responsibility of the Contractor to provide for the maintenance of continuous water, sewage, electric, telephone and other utility services to all present customers of such utilities, unless approval in writing is secured from the applicable utility company or Owner for interruption of such service.

D. Contractor is responsible for verifying all vertical and horizontal locations of all exiting utilities and structures, whether shown on the drawings or not, to verify any potential conflicts prior to ordering any materials.

6.0 QUALITY CONTROL

A. Testing Laboratory Services:

All tests and analyses and inspections, which are required in the Specifications and/or Drawings, are to be performed by a qualified independent testing laboratory and shall be at the Contractor's expense, unless otherwise specified. To qualify for acceptance, the Contractor shall demonstrate to the Engineer, based on evaluation of laboratory-submitted criteria conforming to ASTM E 699, that the independent testing laboratory has the experience and capability to conduct the required tests, analyses and inspections without delaying the progress of the Work. All tests, analyses and inspections performed by the independent testing laboratory shall be conducted under direct charge of a Registered Professional Engineer in the State of Florida. The Contractor shall be responsible for scheduling the independent testing laboratory's visit and for the coordination of the testing with the independent testing laboratory and Engineer.

B. Field Observations:

Provide twenty-four (24) hour notification to the Engineer for all specified field observations, unless otherwise noted.

7.0 MOBILIZATION

A. Consists of the preparatory Work and operations in mobilizing for beginning Work on the Project, including, but not limited to, those operations necessary for the movement of personnel, equipment, supplies and incidentals to the Project site, and for the establishment of temporary offices, buildings, safety equipment and first aid supplies, sanitary and other facilities, as required by these Specifications, and State and local laws and regulations.

The costs of bonds, insurance and any other pre-construction expenses necessary for the start of the Work, excluding the cost of construction materials, is to be included in Mobilization.

B. When the Bid Form includes a separate pay item for Mobilization, partial payments will be made in accordance with the following:

Percent of Contract Price Less Mobilization Earned	Allowable Percent of the Lump Sum Price Mobilization
5	25
10	50
25	75
50	100

The standard retainage will be applied to these payments. Previous payments for Mobilization and unpaid amounts on Allowances will not be considered in calculating the percent of the Contract Price earned. Payments will be made in stepped increments as shown and will not be interpolated between steps.

C. When the Bid Form does not include a separate item for Mobilization, all Work and incidental costs specified as being covered under Mobilization is to be included for payment under the several scheduled items on the Bid Form, and no separate payment will be made therefore.

8.0 MAINTENANCE OF TRAFFIC

A. In the Contractor's use of streets and highways for the Work to be done under these Specifications, conform to all Municipal, County, State and Federal laws and regulations as applicable. Provide, erect and maintain effective barricades, warning lights, and signs on all intercepted streets or highways for protection of the Work and safety of the public. All barricades or obstructions which encroach on or are adjacent to the public rights of way should be provided with lights which are illuminated at all times between sunset and sunrise.

B. Contractor shall schedule Work to cause minimum disturbance of normal pedestrian and vehicular traffic and be responsible for providing suitable means of access to all public and private properties during all stages of the construction. Other than for an emergency safety condition, the Contractor must contact the Owner and Engineer for approval prior to completely blocking off any street to vehicular traffic during construction. Contractor shall provide written notification to emergency, police fire and other appropriate agencies at least 24 hours in advance of new work or changed work.

C. Maintain traffic in accordance with Section 102 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest Edition, except as follows:

1. Contractor is responsible for preparing a Maintenance of Traffic plan. Submit plan for Owner or roadway authority (Village, County, D.O.T.) review.

   The Maintenance of Traffic plan must be prepared by a person who is certified by an FDOT certified school or an engineer licensed in the State of Florida.

2. When the Bid Form does not include a separate item for Maintenance of Traffic, the costs are to be included for payment under the several scheduled items on the Bid Form, and no separate payment will be made.

9.0 PLACING EQUIPMENT INTO SERVICE

A. Do not operate or place into service or energize electrical and mechanical equipment until approved by the Owner and Engineer. Such approval may be granted only after all interested parties have been duly notified, have given approval for placing the equipment into service, and all interested parties are present or waived their right to be present. Contractor shall provide, in writing, seventy-two (72) hour notification for all item and equipment start-ups.

10.0 SALVAGEABLE MATERIAL

A. All salvageable material and/or equipment removed as a part of the work for which specific use, relocation or other disposal is not specifically noted on the Drawings or otherwise specified, must be disposed of by the Contractor. All material and/or equipment not in salvageable condition as determined by the Engineer, must be disposed of by the Contractor. The actual storage site for salvageable material will be designated by the Owner.

11.0 BORING LOGS, OTHER REPORTS, REFERENCES, AND DRAWINGS UTILIZED BY ENGINEER

A. Boring Logs, other reports and Drawings utilized by Engineer, if attached at the end of these Specifications, are provided for Contractor's information in accordance with the Instructions to Bidders and are not a part of the Contract Documents. There is no technical data in the Boring Logs, other reports or Drawings that should be relied on by the Contractor. There also were no other reports or drawings utilized by Engineer in preparation of the Contract Documents that contained data that could be relied on by the Contractor.

12.0 DISPOSAL OF EXCAVATED MATERIALS AND DEBRIS

A. All excess excavated material and debris not required for backfill (unless otherwise noted), broken pipe, sidewalks, curbs and other concrete items, together with all roots, boards and other debris are to be disposed of by the Contractor at an appropriate legal site.

13.0 TEMPORARY CONTROLS AND FACILITIES

A. The Contractor is responsible for compliance with all NPDES regulations including submitting a Pollution Prevention Plan, submitting a Notice of Intent, conducting maintenance and inspection of controls, erosion and sediment controls and submitting a Notice of Termination.

B. As part of the Work, the Contractor shall be responsible for applying for, obtaining and complying with all required dewatering permits. Contractor shall notify South Florida Water Management District (SFWMD) prior to all dewatering activities. All dewatering shall meet SFWMD requirements.

C. Contractor shall install all turbidity control devices required by SFWMD, if necessary. Contractor shall notify SFWMD for inspection of turbidity control devices prior to any construction activities.

14.0 CONSTRUCTION SCHEDULE MEETINGS

A. Contractor shall submit a construction schedule in accordance with the General Conditions. Contractor's Project Manager and a representative of subcontractors performing work at the time of the meeting shall attend a coordination/progress meeting a minimum of once a month, as designated by the Owner, at the Owner's office during the progress of the Work. Contractor shall submit an updated construction schedule to the Engineer at each coordination/progress meeting.

15.0 MISCELLANEOUS

A. Prior to final payment, Contractor shall ensure that all fuel tanks, etc. are full.

B. All bolts, nuts, washers, etc. and miscellaneous hardware shall be 316 stainless steel, unless otherwise indicated.

16.0 CONTRACTOR'S SUBMITTALS

A. Contractor shall be required to submit, with a letter of transmittal to the Engineer, all checked and approved shop drawing, mix report, laboratory results, etc., where required in the Specifications, Drawings or as appropriate, in electronic format, compatible with Adobe Professional, Version 8 (or higher), and submitted as a single file, using PDF bookmarks and/or chapters to identify divisions within the Submittal package ("PDF File Format"). Allow a minimum of two weeks from date of receipt for review by the Engineer. Review of shop drawings will be general and will not relieve the contractor from any responsibility.

B. Contractor shall be required to submit, with a letter of transmittal to the Engineer, for review and approval, eight (8) hard copies and eight (8) copies in CD format of each Operation and Maintenance Manual for all equipment, regardless of the number of submittals specified elsewhere in these specifications.

17.0 CONSTRUCTION SEQUENCE

A. In addition to requirements of the Specifications and Drawings, the Contractor shall submit Construction Schedule and Project Phasing and Temporary Facilities Plan to Engineer which will include coordination of the various elements of the Work.

18.0 PROTECTION AND RESTORATION OF SURVEY MONUMENTS

A. The Contractor shall be responsible for protecting and restoring all land and property corners, such as section corners, ¼ section corners, property corners or block control points, and for maintaining all horizontal and vertical control points. All surveying work shall be the responsibility of the contractor and shall be performed under the supervision of a Florida Professional Surveyor and Mapper. Survey points that will be destroyed during construction shall be properly referenced and replaced at the Contractor's expense with permanence monuments approved by the ENGINEER.

19.0 INDEMNIFICATION:

A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.

B. In any and all claims against Owner or Engineer or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of Contractor under Paragraph A shall not extend to the liability of Engineer and Engineer's officers, directors`, partners, employees, agents, consultants and subcontractors arising out of:

1. The preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or

2. Giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

20.0 Contractors Liability Insurance:

A. Contractor shall meet all contract insurance requirements providing coverage for not less than the amount specified in the contract or greater where required by Laws and Regulations including but not limited to providing Comprehensive General Liability Insurance, Umbrella or Excess Liability Insurance, and Contractual Liability Insurance.

B. Prior to beginning work, Contractor shall provide Owner and Engineer with its certificates of Insurance and endorsements naming Owner and Engineer as additional insureds.

END OF SECTION

SECTION 01010

SUMMARY OF WORK

1.01 LOCATION OF WORK

A. All of the work is located in the Town of Jupiter, Palm Beach County, Florida as shown on the Project Drawings.

1.02 PROJECT DESCRIPTION

A. This project consists of the construction of a new subaqueous forcemain crossing of the Loxahatchee River to replace the existing, abandoned subaqueous forcemain and supplement the aerial forcemain crossing, including the installation of the subaqueous crossing via HDD and all tie-ins to the existing systems via open trench. The system tie-ins shall include furnishing and installing all required pipe, fittings, appurtenances, ARVs, structures, etc. as may be required to provide a complete and functioning system.

B. The Contractor shall perform the work complete, in place, perform tests where applicable, and ready for continuous service, and shall include repairs, replacements, and restoration required as a result of damages caused during this construction.

C. The Contractor shall furnish and install all materials, equipment, and labor, which is reasonably and properly inferable and necessary, for the proper completion of the Work, whether specifically indicated in the Contract Documents or not.

1.03 REFERENCES

A. All work shall be in accordance with the Manual of Minimum Construction Standards and Technical Specifications for Loxahatchee River District and the publication is hereby made a part of the Contract, the same as if herein repeated in full. These technical specifications are intended as a minimum standard for the work. In the event of any conflict between these technical specifications and the Manual of Minimum Construction Standards and Technical Specifications for Loxahatchee River District, the more stringent requirement shall govern.

B. Whenever reference is made to the furnishing of materials or testing thereof to conform to the standards of any technical society, organization or body, it shall be construed to mean the latest standard, code, specifications or tentative specifications adopted and published at the date of advertisement for bids, even though reference has been made to an earlier standard. The following list of specifications is hereby made a part of the Contract, the same as if herein repeated in full. In the event of any conflict between any of these specifications, standards, codes or tentative specifications, and the specifications, the latter shall govern. In the event that one of the following conflict with another, the decision as to which shall govern will be decided by the Engineer-of-Record, whose judgment will be final.

C. When no reference is made to a code, standard, or specification, the standard specifications of ASTM (American Society of Testing Materials), ANSI (American National Standard Institute), ASME (American Society of Mechanical Engineers), IEEE (Institute of Electrical and Electronics Engineers, Inc.) NEWA (National Electrical Manufacturers Association) shall govern.

END OF SECTION

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SECTION 01012

CONSTRUCTION SEQUENCING AND CONSTRAINTS

PART 1 – GENERAL

1.01 RELATED SECTIONS

A. General Conditions of the Contract Documents.

B. Section 01001: General Requirements

1.02 OVERALL SUGGESTED SEQUENCE OF CONSTRUCTION

A. Work under this Contract shall be scheduled and performed in such a manner as to result in the least possible disruption to the operation of the existing system. Service interruptions or changes to system operation shall not be made without first obtaining written permission from the Owner and Engineer

1.03 DETAILED SUGGESTED SEQUENCE OF CONSTRUCTION AND CONSTRAINTS

A. The Contractor shall schedule and perform the work so that the system and each of its components are maintained in continuous operation during the construction period except during approved interruptions. All short-term system or partial system shutdowns or diversions required for construction shall be submitted to the Owner/Engineer in writing. No shutdowns or diversions shall be allowed without written approval from the Owner/Engineer

B. The Contractor shall submit a detailed written plan of operation for each work item related to the proposed shutdowns to the Owner/Engineer for review and approval. The plan of operation shall be submitted at least 14 days prior to the scheduled commencement date for the work. The Owner/Engineer will review and return the plan with comments within 7 days. A final (revised) written plan of operation shall then be submitted to the Owner/Engineer at least 3 days prior to the scheduled commencement date of the work. All work shall then be conducted in accordance with this final written plan of operation, unless agreed to in writing between the Contractor, Owner and Engineer. A suggested sequence for the written plan at a minimum will include the following items:

1. Step-by step detailed sequence for performing the work.

2. Anticipated duration of each activity.

3. If necessary, a plan and/or schematic drawings to clearly identify work to be performed. Sequence steps shall be identified on drawings using a keynote legend or similar means.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

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SECTION 01025

MEASUREMENTS AND PAYMENT

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Measurement and payment criteria applicable to the Work performed under a Unit Price payment method.

1.02 AUTHORITY

A. Measurement methods delineated in the individual Specification sections are intended to complement the criteria of this Section. In the event of conflict, the requirements of the individual Specification section will govern.

B. The Engineer will take all measurements and compute quantities unless noted otherwise herein.

C. Contractor to assist Engineer by providing necessary equipment, workers, and survey personnel as required.

1.03 UNIT QUANTITIES SPECIFIED

A. Quantities and measurements indicted in the Bid Form are for bidding and Contract purposes only. Quantities and measurements supplied or placed in the Work and verified by the Engineer will determine payment. Waste will not be included in the measurements or quantities.

B. If the actual Work requires more or fewer quantities than those quantities indicated, provide the required quantities at the Contract Unit Price.

1.04 VOLUME MEASUREMENT

A. Measured by cubic dimension using mean length, width, and height or thickness.

B. For excavation of lakes, canals, ditches, etc., material will be measured in its original position by a Professional Land Surveyor who is licensed in the State of Florida. The Surveyor will be retained by the Contractor. Quantities will be based on before and after cross sections determined by the Surveyor. Payment will not be made for excavation beyond the lines shown on the Drawings.

1.05 AREA MEASUREMENT

A. Measured by square dimension using mean length and width or radius.

1.06 LINEAR MEASUREMENT

A. Measured by linear dimension, at the item centerline or mean chord.

B. For pipelines, the length will be measured from center of structure on fitting to center of structure or fitting.

1.07 PAYMENT

A. Payment includes: Full compensation for all required labor, products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.

B. Final payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities accepted by the Engineer multiplied by the unit price for Work which is incorporated in or made necessary by the Work.

C. Payment for lump sum items will be made on the basis of percentage complete as approved by the Engineer.

1.08 GENERAL CONDITIONS ITEMS

A. *Bid Item 1 – Mobilization & General Conditions*: This lump sum pay item shall include all costs associated with the items described in Section 01000-7.0 and partial payments for this lump sum pay item shall be made on the schedule described in 01000-7.0

B. *Bid Item 2 – Bond & Insurance requirements:* This lump sum pay item shall include all costs associated with obtaining and maintaining performance and payment bonds, insurance and other surety as required under the General and Supplemental Conditions. Payment shall be made on the true basis of actual receipts for said bonds and insurance.

C. *Bid Item 3 – Site Clearing*: This lump sum pay item shall include all costs associated with the items described in Section 02110, including any required clearing and grubbing and removal of any pavement or structures required to perform the work.

D. *Bid Item 4 – Construction Layout & Survey*: This lump sum pay item shall include all costs associated with establishing layout and elevation control, construction staking, and maintaining benchmarks and construction references.

E. *Bid Item 5 – NPDES Compliance*: This lump sum pay item shall include all costs associated with the installation, maintenance, monitoring, etc. of any and all pollution prevention measures required to meet the requirements of NPDES or other applicable discharge permit; including but not limited to turbidity curtains, silt fences, gutter barriers, dust control, erosion prevention, silt removal, etc.

F. *Bid Item 6 – Pre and Post Construction Video:* This lump sum pay item shall include all costs associated with the items described in Section 02108. Video recording shall be done to document both pre-construction and post-construction conditions.

G. *Bid Item 7 – Maintenance of Traffic:* This lump sum pay item shall include all costs associated with Maintenance of Traffic described in the Contract Documents as well as all applicable requirements of authorities with jurisdiction, whether or not specifically referenced in the Contract Documents.

H. *Bid Item 8 – As-Built Record Drawings:* This lump sum pay item shall include all costs associated with the items described in Section 01720.

1.09 FORCEMAIN REPLACEMENT ITEMS

A. *Bid Item 9 – 20" DR9 HDPE Forcemain with 2" Conduit via HDD:* This unit price pay item shall include all costs associated with furnishing and installing via Horizontal Directional Drill the 20" DR9 HDPE forcemain subaqueous crossing of the Loxahatchee River as shown in the Drawings and per the requirements of Section 02156 and the LRECD Minimum Standards and

Specifications. The HDD installation shall also include a 2" conduit pulled with the 20" DR9 HDPE.

B. *Bid Item 10 –HDPE to PVC Transition:* This unit price pay item shall include all costs associated with furnishing and installing all components of the pipe material transitions on either end the directionally drilled HDPE through the 20"x16" Reducers as shown in the Drawings, including the butt welded mechanical joint transition, 20" 11.25 degree bend, 20"x16" Reducer and all joint restraints, piping, spool pieces, appurtenances, and specials as may be required.

C. *Bid Item 11 – 16" PVC Forcemain (Restrained):* This unit price pay item shall include all costs associated with furnishing and installing restrained joint C900 PVC pipe as shown in the drawings and per the requirements of these specifications.

D. *Bid Item 12 – Fittings:* This unit price pay item shall include all costs associated with furnishing and installing all pipe fittings and appurtenances required to complete the work except those fittings specifically listed in bid items 10 and 16.

E. *Bid Item 13 – 16" Plug Valve:* This unit price pay item shall include all costs associated with furnishing and installing plug valves as shown in the drawings and per the requirements of these specifications, including all joint restraints for connection to the pipeline.

F. *Bid Item 14 – Air Release Valve with Manhole:* This unit price pay item shall include all costs associated with furnishing and installing Air Release Valves and Manholes as shown in the drawings and per the requirements of these specifications, including all tapping saddles, corporations stops, valves, piping, structures, coatings, spools, specials, and appurtenances that may be required to provide complete and functioning systems.

G. *Bid Item 15 – Connect to Existing 16" Forcemain:* This unit price pay item shall include all costs associated with furnishing and installing all components of the connection to the existing forcemain on the north end, from the 16" Tee through the 16" Sleeve as shown in the Drawings, including removal of the existing 16" bend, installation of the tee and sleeve, and all joint restraints, piping, spool pieces, appurtenances, and specials as may be required.

H. *Bid Item 16 – Connect to Existing 24" Forcemain:* This unit price pay item shall include all costs associated with furnishing and installing all components of the connection to the existing forcemain on the south end, from the 16"x 24" Reducer through the existing 24" plug valve as shown in the Drawings, including the reducer and all joint restraints, piping, spool pieces, appurtenances, and specials as may be required.

1.10 SITE DEMOLITION / SURFACE RESTORATION ITEMS

A. *Bid Item 17 – North Entry Pit Restoration/Sodding:* This lump sum pay item shall include all restoration costs within the limits of construction - including excavation backfill, debris removal, sodding, minor landscaping, minor concrete repairs, etc. – for the HDD entry pit location and all HDD operation areas near E Riverside Drive and N Cypress Drive.

B. *Bid Item 18 – Isolate Abandoned Exist. 24" DIP Forcemain:* This lump sum pay item shall include all costs associated with preparing the pipe ends, furnishing and installing restrained mechanical joint caps on the section of the existing 24" DIP forcemain to be abandoned in place and the existing 24" DIP forcemain to remain, and furnishing and placing non-excavatable flowable fill between the caps at the full cap diameter.

C. *Bid Item 19 – Plug and Abandon in Place Exist. 24" DIP FM:* This unit price pay item shall include all costs associated with preparing the pipe ends and installing restrained mechanical joint caps on the section of existing 24" DIP forcemain to be abandoned in place.

D. *Bid Item 20 – Remove and Dispose Exist. 24" DIP FM:* This unit price pay item shall include all costs associated with removal, transportation, and disposal of the existing 24" DIP forcemain, where indicated for removal in the drawings, and to the extent necessary to perform the installation work for the proposed replacement forcemain.

E. *Bid Item 21 – Trench Restoration (Incl. 16" Base/2" SP-9.5 In Pavement Area):* This unit price pay item shall include all costs associated with the asphalt replacement within the limits of trench restoration.

F. *Bid Item 22 – 1" Asphalt Milling (Old Dixie Hwy):* This lump sum pay item shall include all costs associated with milling the existing asphalt on Old Dixie Hwy to the extents required by the agency with permitting jurisdiction.

G. *Bid Item 23 – 1" Asphaltic Concrete (SP-9.5, Traffic Level C) (Old Dixie Hwy):* This unit price pay item shall include all costs associated with furnishing and installing asphalt on the restored Old Dixie Hwy as shown in the Drawings and/or required by the agency with permitting jurisdiction.

H. *Bid Item 24 – Pavement Markings (Old Dixie Hwy):* This lump sum pay item shall include all costs associated with furnishing and installing pavement markings on the restored Old Dixie Hwy as shown in the Drawings and/or required by the agency with permitting jurisdiction.

I. *Bid Item 25 – Roadway Shoulder Restoration (Old Dixie Hwy):* This lump sum pay item shall include all costs associated with restoration within the limits of construction - including excavation backfill, debris removal, sodding, minor landscaping, minor concrete repairs, etc. – for the portion of the project along Old Dixie Hwy.

J. *Bid Item 26 – Sodding/Misc. Restoration:* This lump sum pay item shall include all restoration costs within the limits of construction - including debris removal, sodding, minor landscaping, minor concrete repairs, etc. – except those areas covered under bid items 17 and 25.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION

SECTION 01060

PERMITS AND NOTIFICATIONS

PART 1 GENERAL

1.01 GENERAL REQUIREMENTS

A. The Contractor shall obtain and pay for all permits and licenses as required for construction of the project and shall comply with all conditions specified in each of the permits and licenses, including agency required notifications.

B. The Contractor shall comply with all conditions specified in all Owner obtained permits. If the Contractor anticipates deviation from any proposed methodologies included as part of any Owner-obtained permit, the Contractor must obtain permit modification from applicable agency prior to construction.

C. The Contractor shall keep a copy of all permits and easements complete with conditions, attachments, exhibits, and modifications at the work site and provide copies of the permits to the appropriate subcontractors. The Contractor is responsible for ensuring that the permit conditions are explained to the appropriate construction personnel.

1.02 PERMITS

A. The Contractor shall conform to the conditions of the following permits secured by the Owner.

1. Palm Beach County Health Department:
    a. Notification/Application for Constructing a Domestic Wastewater Collection/Transmission System
2. Town of Jupiter:
    a. Engineering/Utilities Permit
3. Florida Department of Environmental Protection:
    a. Environmental Resource Permit
4. United States Army Corps of Engineers:
    a. Department of the Army General Permit

B. Contractor shall secure and/or comply with the following permits.

1. Contractor shall activate and call for required inspections and meetings under the Engineering/Utilities Permit(s) from the Town of Jupiter. The Contractor shall conform to the conditions of these permits as part of this contract.
2. If applicable, the Contractor shall submit a Notice of Intent (NOI, DEP Form 62-621.300(4)(b)) to obtain coverage under the Construction Generic Permit (GCP) for Stormwater Discharge from Large and Small Construction Activities. Contractor shall use construction methods and devices such as turbidity curtains, silt fences and floating silt barriers where necessary in order to comply with the State and Local water quality standards and National Pollution Discharge Elimination System (NPDES) requirements. Any devices depicted on the Drawings are a minimum.

1.03 NOTIFICATIONS

A. Utility Companies. Contractor shall notify the Sunshine State One Call of Florida (SSOCF) service at 811, 48 hours prior to digging for direct bury and 10 days prior to digging or initiating construction of underwater construction activities, as required by Florida Statutes Chapter 556 throughout the duration of the construction project.

B. The Contractor shall give the Engineer and Owner not less than seven (7) calendar days notice of the time and place (or places) where the Contractor will start the Work.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

SECTION 01200

PROJECT MEETINGS AND REPORTS

PART 1 GENERAL

1.01 SCOPE

A. Summary of Work: This Section includes the following administrative and procedural requirements.

1. Project Meetings.

a. Pre-construction Conference.

b. Progress Meetings.

2. Schedules and Reports.

a. Initial Coordination Submittals.

b. Construction Schedules.

c. Special Reports.

1.02 PROJECT MEETINGS

A. Pre-Construction Conference.

1. The Engineer and Owner will administer a Pre-construction Conference following the Effective Date of the Agreement, to review items stated in the following agenda and to establish a working understanding between the parties as to their relationships during conduct of the Work.

2. The Pre-construction Conference shall be attended by:

a. The Contractor and his Project Superintendent.

b. Representatives of Principal Subcontractors and Suppliers.

c. Engineer and his Resident Project Representative, if any.

d. The Owner or its Representative.

e. Other Affected Parties Determined by the Owner.

3. Agenda.

a. Projected Construction Schedules.

b. Critical Work Sequencing.

c. Designation of Responsible Personnel.

d. Project Coordination.

e. Procedures and Processing Of:
i. Field Decisions.
ii. Substitutions.
iii. Submittals.
iv. Change Orders.

v. Applications for Payment.

f. Procedures for Testing.

g. Procedures for Maintaining Record Documents.

h. Use of Premises.
   i. Office, Work, and Storage Areas.
   ii. The Owner's Requirements.

i. Construction Facilities, Controls, and Construction Aids.

j. Temporary Utilities.

k. Safety and First Aid.

l. Security.

m. Requirements of any Permits Obtained by the Owner and/or the Contractor.

4. Location of Meeting. To be Determined by Owner Prior to the Scheduled Meeting.

5. Reporting: After each meeting, minutes of the meeting will be prepared and distributed by the Engineer to each party present and to parties who should have been present.

B. Progress Meeting.

1. The Engineer will administer a progress meeting a minimum of twice each month (every two (2) weeks) and at other times required by the Owner. The Contractor, Engineer, and all Subcontractors active on the Site shall be represented at each meeting. The Contractor may request attendance by representatives of his Suppliers and other Subcontractors, or other entities concerned with the Project or involved with the planning, coordination, or performance of future Project activities. All participants in the meeting shall be familiar with the Project and authorized to conclude matters relating to the Work.

2. The Contractor and each Subcontractor shall be prepared to report on and discuss the current construction progress, any anticipated future changes to the Construction Schedule, and advise if their current progress, and anticipated future schedules are compatible with the Work. The Contractor shall provide a "2-week" look ahead of major activities anticipated.

3. If one Subcontractor is delaying another, the Contractor shall direct such changes as are necessary for those involved to mutually agree on the Construction Schedule changes in the best interest of construction progress.

4. Agenda.

   a. Review of construction progress since previous meeting.

   b. Field observations, interface requirements, conflicts.

   c. Issues which may impede the Construction Schedule.

   d. Off-Site Fabrication.

   e. Delivery Schedules.

   f. Submittal Schedules and Status.

g. Site Utilization.

h. Temporary Facilities and Services.

i. Hours of Work.

j. Hazards and Risks.

k. Housekeeping.

l. Quality and Work Standards.

m. Change Orders.

n. Documentation of Information for Payment Request.

o. Corrective Measures and Procedures to Regain Projected Schedule, if necessary.

p. Revisions to the Construction Schedule.

q. Progress and schedule during the succeeding Work period.

r. Review proposed changes for:
   i. Effect on the Construction Schedule and on the Completion Date.
   ii. Effect on the other contracts of the project.

5. Location of Meetings: To be determined by Owner prior to the scheduled meeting.

6. Reporting: After each meeting, minutes of the meeting will be prepared and distributed by the Engineer to each party present and to parties who should have been present.

C. Special Reports.

1. When an event of an unusual and/or significant nature occurs at the Site, a special report shall be prepared and submitted by the Contractor to the Owner. List the chain of events, persons participating, the response by Contractor's personnel, an evaluation of the results or effects, and similar pertinent information.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

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SECTION 01300

SUBMITTALS

PART 1 GENERAL

1.01 SCOPE

A. Summary of Work. This Section includes definitions, descriptions, transmittal, and review of "Compliance" and "Miscellaneous" Submittals.

1.02 GENERAL INFORMATION

A. Definitions.

1. Compliance Submittals include Shop Drawings, product data, and samples which are prepared by the Contractor, Subcontractor, Manufacturer, or Supplier and submitted by the Contractor to the Owner as a basis for approval of the use of Equipment and Materials proposed for incorporation in the Work or needed to describe installation, operation, maintenance, or technical properties.

    a. Shop Drawings include custom-prepared data of all types including drawings, diagrams, performance curves, material schedules, templates, instructions, and similar information not in standard printed form applicable to other projects.

    b. Product data includes standard printed information on materials, products, and systems not custom-prepared for this Project, or other than the designation of selections from available choices.

    c. Samples include both fabricated and unfabricated physical examples of materials, products, and Work; both as complete units and as small portions of units of Work; either for limited visual inspection or (where indicated) for more detailed testing and analysis. Mock-ups are a special form of samples which are too large to be handled in the specified manner for transmittal of sample Submittals.

2. Miscellaneous Submittals include, but are not limited to, Requests for Information, Change Orders, Work Change Directives, Field Orders, Daily Reports, Applications for Payment and other schedule related submittals, Technical Reports, Administrative Submittals, Certificates and Warranties not defined as Shop Drawings, Product Data, or samples.

    a. Request for Information, Change Orders, Work Change Directives, Field Orders, as defined in the Contract General Terms and Conditions.

    b. Application for Payment as per the Contract Documents.

    c. Technical Reports include laboratory reports, test, technical procedures, technical records, Contractor's design analysis and Contractor's survey field notes for construction staking, before cross-sections and after cross-sections, and similar type submittals.

    d. Administrative Submittals are those submittals required by the Contract Documents or deemed necessary for administrative records. These submittals include, but are not limited to, maintenance agreements, workmanship bonds, Project photographs, physical work records, statements of applicability, copies of

industrial standards, as-constructed data, security/protection/safety data, and similar type submittals listed in the Contract Documents.

e. Certificates and warranties are those Submittals on Equipment and Materials where a written certificate or guarantee from the Manufacturer or Supplier is called for in the Specifications.

f. Reports as required by Contract describing Contractor's means and methods for items such as dewatering, temporary sheeting, earth and water retaining, erosion/turbidity control, safety plans, and similar type Submittals.

3. Refer to ARTICLE 1.03 and 1.04 of this Part for detailed lists of documents and specific requirements.

B. Quality Requirements. Submittals such as Shop Drawings and product data shall be of high enough digital quality so that they are legible and reproducible. Every line, character, and letter shall be clearly legible. Documents submittal to the Engineer that do not conform to these requirements shall be subject to rejection by the Engineer, and upon request by the Engineer or Owner, the Contractor shall resubmit conforming documents. If conforming submittals cannot be obtained, such document shall be retraced, redrawn, or photographically restored as necessary to meet such requirements. The Contractor's (or its Subcontractor's) failure to initially satisfy the legibility quality requirements will not relieve the Contractor (or it Subcontractors) from meeting the required schedule for submittal of Shop Drawings and product data.

C. Language and Dimensions.

1. All words and dimensional units shall be written in the English language.

2. United States customary units shall be used.

D. Submittal Completeness.

1. Submittals shall be complete with respect to dimensions, design criteria, materials of construction, and other information specified to enable the Engineer and Owner to review the information effectively.

2. Where standard drawings are furnished which cover variations of the general class of equipment, each such drawing shall be individually annotated to describe exactly which parts of the drawing apply to the equipment being furnished. Use hatch marks to indicate variations that do not apply to the Submittal. The use of "highlighting" is not an acceptable means of annotating Submittals. Such annotation shall also include proper identification of the Submittal permanently attached to the drawing.

3. Reproduction or copies of Drawings or portions thereof will not be accepted as complete fabrication or erection drawings. The Contractor may use a reproduction of the Engineer-prepared Drawings for erection drawings such as to indicate information on erection or to identify detail drawing references. Where the Drawings are revised to show this additional Contractor information, the Engineer's title block shall be replaced with a Contractor's title block and the Engineer's professional seal shall be removed from the Drawing. The Contractor shall revise these erection drawings for subsequent Engineer and/or Owner revisions to the Drawings.

1.03 COMPLIANCE SUBMITTALS

A. Items shall include, but not be limited to, the following:

1. Manufacturer's specifications.
2. Catalogs, or parts thereof, or manufactured equipment.
3. Shop fabrication and erection drawings.
4. General outline drawings of equipment showing overall dimensions, location of major components, weights, and location of required building openings and floor plates.
5. Details equipment installation drawings, showing foundation details, anchor bolt sizes and locations, baseplate sizes, location of Owner's connections, and all clearances required for erection, operation, and disassembly for maintenance.
6. Schematic diagrams for electrical items, showing external connections, terminal block numbers, internal wiring diagrams, and one-line diagrams.
7. Bills of material and spare parts list.
8. Instruction books and operating manuals.
9. Material lists or schedules.
10. Performance tests on equipment by manufacturers.
11. Concrete mix design information.
12. Samples and color charts.
13. All drawings, calculations, catalogs, or parts thereof, Manufacturer's specifications and data, samples, instructions, and other information specified or necessary.
    a. For the Engineer and Owner to determine the Equipment and Materials conform with the design concept and comply with the intent of the Contract Documents.
    b. For the proper erection, installation, operation and maintenance of the Equipment and Materials which the Engineer and Owner will review for general content but not for substance.

B. Compliance Submittal Action Stamps or Designation. The Engineer's review action stamp or designation, appropriately completed, will appear on all Compliance Submittals of the Contractor when returned by the Engineer. Review status designations listed on the Engineer's action designation are defined as follows.

1. "NO EXCEPTIONS TAKEN": Signifies Equipment or Material represented by the Submittal conforms with the design concept and complies with the intent of the Contract Documents and is acceptable for incorporation in the Work. The Contractor is to proceed with fabrication or procurement of the items and with related Work.
2. "EXCEPTIONS AS NOTED": Signifies Equipment and Material represented by the Submittal conforms with the design concept and complies with the intent of the Contract Documents and is acceptable for incorporation in the Work subject to the condition that as constructed it shall be in accordance with all notations and/or corrections indicated. The Contractor is to proceed with fabrication or procurement of the items and with related Work in accordance with the Engineer's notations.

3. "REVISE AND RESUBMIT": Means that deviations from the requirements of the Contract Documents exist in the Submittal. The Contractor is to resubmit revised information responsive to the Engineer's annotations on the returned Submittal or written in the letter of transmittal.

4. "REJECTED" (SUBMIT ANEW): Signifies Equipment and Material represented by the Submittal does not conform with the design concept or comply with the intent of the Contract Documents and is disapproved for use in the Work. The Contractor is to resubmit Compliance Submittals responsive to the Contract Documents.

5. "RETURNED WITHOUT REVIEW FOR REFERENCE ONLY": Signifies Submittals which are for supplementary information only; pamphlets, general information sheets, catalog cuts, standard sheets, bulletins and similar data, all of which are useful to the Engineer and Owner in design, operation, or maintenance, but which by their nature do not constitute a basis for determining that items represented thereby conform with the design concept or comply with the intent of the Contract Documents. The Engineer and Owner reviews such Submittals for general content but not for substance.

C. Schedule and Log of Compliance Submittals.

1. The Contractor shall prepare a schedule and log for submission of all Compliance Submittals specified or necessary for the Engineer and Owner's review of the use of Equipment and Materials proposed for incorporation in the Work or needed for proper installation, operation or maintenance. Submit the schedule and log with the procurement schedule and Work progress schedule. Schedule submission of all Compliance Submittals to permit review, fabrication, and delivery in time to not cause a delay in the Work of the Engineer and Owner or their Subcontractors or any other contractors as described herein.

2. In establishing schedule for Compliance Submittals, allow a minimum of fifteen (15) working days in the Engineer's office for reviewing original Submittals that have been deemed complete and a minimum of ten (10) working days for reviewing resubmittals of previously reviewed submittals.

3. The schedule shall indicate the anticipated dates of original submission, and shall be prepared to reflect the Contractor's plans, means and methods, techniques and sequencing for performing the Work and submitted in accordance with this Section.

4. Schedule as required to achieve full compliance of all Compliance Submittals required prior to fabrication or manufacture for submission. Schedule Compliance Submittals pertaining to storage, installation and operation at the Site for the Engineer and Owner's acceptance prior to delivery of the Equipment and Materials.

D. Transmittal of Compliance Submittals.

1. All Compliance Submittals of Equipment and Materials furnished by Subcontractors, Manufacturers, and Suppliers shall be submitted to the Engineer by the Contractor in electronic PDF format. After checking and verifying all field measurements, transmit all compliance Submittals to the Engineer and Owner for acceptance as follows:

a. Check and certify Compliance Submittals of Subcontractors, Suppliers, and Manufacturers with Contractor's approval prior to transmitting them to the Engineer. The Contractor's certification of approval shall constitute a representation to the

Engineer and Owner that the Contractor has either determined and verified all quantities, dimensions, field construction criteria, materials, catalog numbers, and similar data, or they assume full responsibility for doing so, and that they have coordinated each Compliance Submittal with the requirements of the Work and the Contract Documents.

b. At the time of each submission, call to the attention of the Engineer in the Contractor's Letter of Transmittal any deviations from the requirements of the Contract Documents.

c. Provide all Submittals in electronic format, compatible with Adobe Professional, Version 8 (or higher), and submitted as a single file, using PDF bookmarks and/or chapters to identify divisions within the Submittal package ("PDF File Format"). At the Owner's request, and/or with the Owner's prior approval, the Contractor shall submit native format files when, in the opinion of the Owner, doing so will facilitate the Engineer's review of the Submittal information.

d. Make all modifications noted or indicated by the Engineer and return revised copies, or samples until accepted. Revised Submittals must be complete and conformed, including all pages/sheets with the required revisions and any additional or replacement pages/sheets. Direct specific attention in writing, or on revised Submittals, to changes other than the modifications called for by the Engineer on previous Submittals. Subsequent review cycles for returned or revised Submittals shall replicate the process described in items c. above.

e. If the Engineer's review action is "EXCEPTIONS AS NOTED", the Submittal will be designated such, and electronically transmitted back to the Contractor. Upon receipt of this notification from the Engineer, the Contractor shall resubmit one (1) conformed electronic copy in PDF File Format to the Engineer for final distribution. The Engineer may reject, without review, conformed copy Submittals for which the Contractor does not provide a narrative including, in numbered list format, (a) the Engineer's comment/note, (b) the Contractor's resolution of each comment/note and the location of the resolution (i.e.: page number(s), drawing number(s)) that addresses the respective comment/note, and (c) the statement: "Other than revisions listed on herein, this conformed copy is the identical information as was provided in the Engineer's response dated [enter date]." In addition, if the Submittal is required to be signed and sealed by a Professional Engineer registered in the State of Florida, this version of the submittal shall be signed and sealed. Submittal will not be considered final until all copies have been received by the Engineer and Owner. Submittal will be designated "DISTRIBUTION COPY (PREVIOUSLY ACCEPTED)" by the Engineer and Owner. Accepted Submittals transmitted for final distribution will not be further reviewed and are not to be revised. If errors are discovered during manufacture or fabrication, correct the Submittal, and resubmit for review.

f. Work requiring a Compliance Submittal shall not be commenced or shipped until the Submittal has been designated "NO EXCEPTIONS TAKEN," "EXCEPTIONS AS NOTED," or "RETURNED WITHOUT REVIEW FOR REFERENCE ONLY" by the Engineer.

2. Copies of the equipment Contractor's erection drawings and other Compliance Submittals required for the installation of equipment furnished by others under separate

Contract for installation under this Contract will be transmitted to the Contractor by the Engineer in the final distribution of such Submittals.

E. The Engineer and Owner's Review.

1. The Engineer will review and return Compliance Submittals to the Contractor with appropriate notations. The Owner may also review and provide Engineer with comments to be included in the returned Compliance Submittals to Contractor. Instruction books and similar Submittals will be reviewed by the Engineer and Owner for general content but not for substance.

2. The Engineer's acceptance of Compliance Submittals will not relieve the Contractor from his responsibility as stated in General Terms and Conditions on the Contract Documents.

F. Instruction Books / Operation & Maintenance Manuals.

1. Equipment instruction books and manuals shall be prepared by the Manufacturer and shall include the following.

   a. Index and tabs.

   b. Instructions for installation, start-up, operation, inspection, maintenance, parts lists and recommended spare parts, and data sheets showing model numbers.

   c. Applicable drawings.

   d. Name of contact person, phone number, and address of the nearest authorized service facility.

   e. Attached to the above shall be a notice of the exact warranty effective dates, beginning and ending.

   f. All additional data specified.

2. Information listed above shall be submitted electronically in a pdf File Format.

   a. Instruction Books/Operation & Maintenance Manuals shall contain the following.
      i. Equipment Name.
      ii. Manufacturer's Name.
      iii. Project Name.
      iv. Contract Number.
      v. Reference to Applicable Drawing No. & Technical Specifications Section.

   b. Format: The overall manual should be constructed around certain types of structures or equipment in the Project, and not merely assembled by technical specification section, so that all pertinent data needed by personnel to operate or maintain the equipment or structure is in one (1) manual (as far as is practical). The Contractor shall coordinate with the Engineer and Owner as to how the manuals are to be assembled (Bookmarked).

3. For every piece of installed equipment (electrical and mechanical) provide a written Lockout/Tagout (LOTO) procedure and checklist to follow to place the equipment in a zero-energy state per 29CFR 1910.147, The Control of Hazardous Energy (Lockout/Tagout). Electrical equipment that is either cord and plug connected or hard wired with a single energy isolating device installed for which the exposure to hazardous energy is controlled by the unplugging of the equipment from a single energy source or

the opening of the energy isolating device need not be included. The written Lockout/Tagout (LOTO) procedure and checklist shall be included in the Instruction Books/Operation & Maintenance Manuals.

G. Samples: Office samples shall be of sufficient size and quantity to clearly illustrate the following.

1. Functional characteristics of the product, with integrally related parts and attachment devices.

2. Full range of color, texture, and pattern.

1.04 MISCELLANEOUS SUBMITTALS

A. Miscellaneous Submittals are comprised of Daily Reports, technical reports, administrative Submittals, and warranties which relate to the Work, but do not require the Engineer or Owner's approval prior to proceeding with the Work.

B. Transmittal of Miscellaneous Submittals.

1. All Miscellaneous Submittals furnished by Subcontractors, Manufacturers, and Suppliers shall be submitted to the Engineer by the Contractor in an electronic PDF File Format, unless otherwise specified.

a. Check and certify Miscellaneous Submittals of Subcontractors, Suppliers, and Manufacturer with the Contractor's approval prior to transmitting them to the Engineer. The Contractor's certification of approval shall constitute a representation to the Engineer and Owner that the Contractor has either determined and verified all information, or they assume full responsibility for doing so, and that they haves coordinated Miscellaneous Submittals with the requirements of the Work and the Contract Documents.

b. At the time of each submission, call to the attention of the Engineer and Owner in the Contractor's Letter of Transmittal any deviations from the requirements of the Contract Documents.

c. Make all modifications noted or indicated by the Engineer and return revised copies until accepted. Direct specific attention in writing, or on revised Submittals, to changes other than the modifications called for by the Engineer on previous Submittals.

2. Test Reports: Responsibilities of the Contractor and the Engineer and Owner regarding tests and inspections of Equipment and Materials and completed Work are set forth elsewhere in these Contract Documents.

C. The Engineer and Owner's Review.

1. The Engineer and Owner will review Miscellaneous Submittals for indications of Work or material deficiencies within a minimum of fifteen (15) working days in the Engineer's office for original Submittals and a minimum of ten (10) working days for reviewing resubmittals.

2. The Engineer will respond to the Contractor on those Miscellaneous Submittals which indicate Work or material deficiency.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.01 SUBMITTAL LOG.

A. The Contractor shall maintain an accurate Submittal Log and a Distribution List for the duration of the Work, showing current status of all Submittals required for the complete Project and Distributes at all times in a form acceptable to the Engineer and Owner. The Contractor shall make the Submittal Log available to the Engineer and Owner for review on request and shall bring a copy of the Submittal Log to all Progress Meetings.

END OF SECTION

SECTION 01410

TESTING LABORATORY SERVICES

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. All tests and analyses and inspections, which are required in the Specifications and/or Drawings and required in connection with the performance of the Work, are to be performed by a qualified independent testing laboratory and shall be at the Contractor's expense, unless otherwise specified.

B. Inspection, Sampling, Testing and Reporting is required, at a minimum for:

1. Densities and Proctors (for soil compaction).
2. Bacteriological Clearance.
3. Concrete Strength.
4. Any water quality monitoring as required by the project permits.
5. Other operations specified in these specifications or as required by the Engineer or Owner.

C. Owner may employ and pay for the services of a separate third-party independent testing laboratory to perform certain specified testing in addition to what is called for in the Contract Documents.

1. Contractor shall cooperate with the laboratory to facilitate the execution of its required services.
2. Employment of a laboratory by the Owner shall in no way relieve Contractor's obligations to perform the work of the Contract.

1.02 RELATED REQUIREMENTS

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

B. General Conditions of the Contract. Inspections and testing required by laws, ordinances, rules, regulations, orders, or approvals of public authorities. See the General Conditions and Terms.

1.03 QUALIFICATIONS OF LABORATORY

A. All tests which require the services of a laboratory to determine compliance with the Contract Documents shall be performed by an independent commercial testing laboratory acceptable to the Owner. The laboratory shall be staffed with experienced technicians, and shall be properly equipped, ACI certified, and fully qualified to perform the tests in accordance with the specified standards.

B. All tests, analyses and inspections performed by the independent testing laboratory shall be conducted under direct charge of a Registered Professional Engineer in the State of Florida.

1.04 LABORATORY DUTIES

A. Cooperate with Engineer and Contractor, provide qualified personnel after due notice.

B. Perform specified inspections, sampling, and testing of materials and methods of construction.

1. Comply with specified standards.

2. Ascertain compliance of materials with requirements of Contract Documents.

C. Promptly notify Engineer and Contractor of observed irregularities or deficiencies of work or products.

D. Promptly submit written report of each test and inspection. One copy each to Engineer, Owner, and Contractor. Each report shall include:

1. Date issued.

2. Project title and number.

3. Testing laboratory name, address, and telephone number.

4. Name and signature of laboratory inspector.

5. Date and time of sampling or inspection.

6. Record of temperature and weather conditions.

7. Date of test.

8. Identification of product and specification section.

9. Location of sample or test in the Project.

10. Type of inspection or test.

11. Results of test and compliance with Contract documents.

12. Interpretation of test results, when requested by Engineer.

E. Perform additional tests as required by Engineer or the Owner.

1.05 CONTRACTOR'S RESPONSIBILITIES

A. The Contractor shall be responsible for scheduling the independent testing laboratory's visit and for the coordination of the testing with the independent testing laboratory and Engineer, as required.

B. Secure and deliver to the laboratory adequate quantities of representative 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. Provide to the laboratory a representative proctor samples of the materials to be used for backfilling through the project.

E. Furnish copies of product test reports as required.

F. Furnish incidental labor and facilities.

G. Pay for services of the independent testing laboratory to perform additional inspections, sampling and testing required.

1. For Contractor's Convenience.
2. When initial tests indicate Work does not comply with Contract Documents.

Such Payment shall be made directly by the Contractor.

H. Contractor will be responsible for payment for all failing tests.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

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SECTION 01720

RECORD DOCUMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Onsite maintenance of Record Documents

B. Required record information.

1.02 MAINTENANCE

A. Maintain on site, one set of the following Record Documents; record actual revisions to the Work:

1. Drawings.

2. Specifications.

3. Addenda.

4. Change Orders and other modifications to the Contract.

5. Shop Drawings, product data, and samples.

B. Store Record Documents separate from documents used for construction.

C. Record information concurrent with construction progress.

D. In the interest of timely detection of non-conforming Work, all Record Drawing information must be furnished to the Engineer prior to submitting for payment of that particular item. No progress payment application requests will be approved by the Engineer without satisfactory record drawings for that particular item(s).

E. Under no circumstances will roadway paving Work be allowed to start until the Engineer has reviewed the Record Drawing information for Work constructed within the roadway area that will be paved.

F. All Record Drawing information such as elevations, distances, location of underground utilities, lake cross-sections, and road cross-sections must be obtained by a Professional Surveyor and Mapper, who is licensed in the State of Florida. The Surveyor will be retained by the Contractor. Information must be signed and sealed.

G. Record Documents must be available to Engineer for examination at any time during the progress of the Work.

H. Submit completed Record Documents upon completion of the Work and prior to application for final payment.

I. Show record information in bold or boxed out to stand out from rest of Drawing.

J. Record actual revision dates of the Work.

1.03 REQUIRED RECORD DRAWING INFORMATION

A. All elevations and horizontal locations shown on the Drawings must be verified. Verification or deviation must be clearly indicated on the Drawings.

B. Drainage

1. Flow line elevation of pipe at headwalls, outfalls and structures.
2. Top elevation of headwalls, structures, and concrete caps.
3. Drainage Control Structures, Baffles, and Weirs. Obtain horizontal dimensions and vertical elevations.
4. Horizontal locations of headwalls, structures, and concrete caps.
5. Location of utilities and miscellaneous structures encountered which are different from or not shown on the Drawings.

C. Lakes, Canals, and Pump Station Intake Channels

1. Cross section at each design cross section shown on the Drawings and at a minimum 100 foot intervals. Obtain elevations at all grade breaks and across bottom from 20 foot beyond top of bank (each side).
2. Determine side slopes.
3. Locate top of bank and the edge of water at the control elevation and plot location on a drawing at the same scale as the construction drawings.

D. Roadways

1. Cross-section elevations at the profile grade line)centerline or edge of median) and at the edge of pavement at the following frequencies:
    a. Major Roads (collector or higher): At high and low points of the profile grade and at even 100 foot stations in-between.
    b. Local Roads: At high and low points of the profile grade.
2. Location of utilities and miscellaneous structures encountered which are different from or not shown on the Drawings.
3. Spot elevations in parking lots and access roads.

E. Wastewater/Reclaimed Water

1. Invert elevations in manholes and at end of stubouts.
2. Distance between manholes.
3. Top of manhole elevations.
4. Location of manholes, based on stationing system on Drawings.
5. Calculate slope of gravity mains.
6. Locate end of stubouts and services by stationing and offsetting from the gravity main and downstream manholes
7. Length of stubouts.
8. Elevations of the top slab, wet well invert, influent pipe inverts, and driveway for lift stations.
9. Details of any design changes.

10. Location of utilities and miscellaneous structures encountered which are different from or not shown on the Drawings.
11. Top of force main elevations and finished grade at 100 foot intervals and at h high and low points.
12. Locate force main fittings, valves, air release structures, etc. by stationing and offsetting from gravity wastewater manholes. If manholes are not located nearby, use reference points shown on the Drawings.
13. Elevation and clearances when wastewater mains cross either water mains or drainage pipe,
14. Changes in pipe material.
15. Bottom of wastewater service pipe elevation and top of drainage pipe elevation at all crossings.
16. Top of wastewater service pipe elevation and bottom of watermain elevation at all crossings.
17. Lift station electrical controls and FPL service to control panel.

F. Water

1. Top of pipe elevations at 100 foot intervals.
2. Distance from the reference points shown on the Drawings.
3. Horizontal location at 100 foot intervals.
4. Location of water services valves, fittings, hydrants, blowoff points, etc. by stationing and offsetting from wastewater manholes. If wastewater manholes are not located nearby, use reference points shown on the Drawings.
5. Details of any design changes.
6. Location of utilities and miscellaneous structures encountered which are different from or not shown on the Drawings.
7. Elevations and clearances when water mains cross either wastewater or drainage pipe.
8. Changes in pipe material.

G. Conduit Sleeves

1. Horizontal location and size of conduit.

H. Structural

1. Obtain horizontal and vertical locations and elevations for all structural components, including but not limited to, intake structure including piles and cap, slabs, building, and building features, grating, trash rack, etc.

I. General Site

1. Spot elevations shall be taken at a reasonable grid interval for finished grade verification. Obtain spot elevations at all grade or contours (as shown on the Drawings), grade breaks, property lines, and limits of construction.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.01 CONTRACTOR'S SURVEYOR RESPONSIBILITIES

A. Engineer will provide the Contractor with electronic files of the construction drawings at the pre-construction conference. One copy of the electronic files will be provided on CD/DVD media in AutoDesk Civil 3D 2023 format. No warranty of the usability of the electronic files provided is expressed or implied. The cost of any required conversion or duplication of the electronic files from the format specified herein shall be the responsibility of the Contractor.

B. The Owner and Engineer will advise the Contractor at the pre-construction conference of the acceptable method and file format by which the interim and final Record Drawing information will be provided to the Owner and/or Engineer.

C. Record Drawing information shall be prepared electronically. The Record Drawing information shall be placed on a separate layer so that it is isolated from all other layers in the drawing file. This layer must be prepared in such a manner that it can be exported as a separate AutoCAD file and subsequently inserted into an AutoCAD drawing containing the approved design information. The AutoCAD file shall be accompanied by an Adobe Acrobat portable document format (.pdf) file of the Record Drawings.

D. Place information in the Drawings 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 procedures 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.

E. Each Record Drawing sheet must include the surveyor's name, company, address, license number, and date of field survey.

F. Signed and sealed Record Drawings shall be submitted with all pay applications and at the conclusion of the Project.

3.02 CONTRACTOR RESPONSIBILITIES

A. Record document information not required to be obtained by a Professional Surveyor and Mapper must be obtained by the Contractor.

B. Mark Record information on one clean set of prints of the Contract Documents.

C. Each Drawing must be stamped indicating that the information has been reviewed by the Contractor.

D. Contractor's Surveyor will transfer Contractor supplied information to the record drawing.

E. For pipes and conduits installed by Horizontal Directional Drilling (Section 02156), the Contractor shall furnish certified drilling logs and drilling profiles to the Engineer and to his Professional Surveyor and Mapper. The Record Information shall be added to the original drawings in AutoDesk Civil 3D 2023 format.

END OF SECTION

SECTION 02016

EXISTING UTILITIES AND UNDERGROUND STRUCTURES

PART 1 GENERAL

1.01 GENERAL

A. All known utilities have been shown on the Construction Drawings according to the best information available. The locations of those facilities (horizontal and/or vertical) may be based on survey information, Utility Atlas and Record Drawings provided by the applicable Utility Owners, and, if provided in the Appendix, a limited amount of utility soft dig information.

B. Guarantee is not made that all existing underground utilities are shown or that the location of those shown are entirely accurate. Finding the actual location of any existing utilities is the Contractor's responsibility and shall be done before commencing any Work in the vicinity. Furthermore, the Contractor shall be fully responsible for any and all damages due to the Contractor's failure to exactly locate and preserve any and all underground utilities.

1.02 CONTRACTOR'S RESPONSIBILITIES

A. Contractor shall notify the Sunshine State One Call of Florida (SSOCF) service at 811, 48 hours prior to digging for direct bury, as required by Florida Statues Chapter 556 throughout the duration of the construction project.

B. Contractor is responsible to identify and locate all underground and overhead utility lines or equipment affecting or affected by the Project. Engineer and Owner shall not be responsible for the accuracy or completeness of any information or data provided regarding underground utilities or facilities, whether shown on the drawings or not. No additional payment will be made to the Contractor because of discrepancies in actual and plan location of utilities, and additional costs suffered as a result thereof.

C. It is the Contractor's responsibility to contact all owners of structures or utilities above ground, on the surface, or below the ground, within the Project area so that said owners may stake or otherwise mark or protect their facilities. The Contractor must provide facilities and be responsible for the protection of all structures, buildings and utilities, underground, on the surface, or above ground against trenching, dewatering, or any other activity connected with the Work throughout the entire Contract Time.

D. Contractor shall schedule the work in such a manner that the work is not delayed by the relocating or supporting of utilities. No compensation will be paid to the Contractor for any loss of time or delay.

E. The Contractor shall notify Engineer of any substantial changes and/or conflicts that would require a deviation in the plans. The Contractor shall provide as-built information and written notification of all conflicts with the Work to the Engineer. The Contractor shall not proceed with any Work until all conflicts have been resolved. Late discovery of existing underground utilities does not constitute "required" deviations should early discovery prevent them.

F. All overhead, surface or underground structures and utilities encountered are to be carefully protected from injury or displacement. All damage to such structures is to be completely repaired within a reasonable time; needless delay will not be tolerated. Owner reserves the

right to remedy such damage by ordering outside parties to make such repairs at the expense of the Contractor. All such repairs made by the Contractor are to be made to the satisfaction of the utility owner. All damaged utilities must be replaced or fully repaired. All repairs are to be inspected by the utility owner prior to backfilling.

G. Should the Work require repairs, changes or modifications of the Owner's utilities as well as other utilities, it is the responsibility of the Contractor to provide for the maintenance of continuous water, sewage, electric, telephone and other utility services to all present customers of such utilities, unless approval in writing is secured from the applicable utility company or Owner for interruption of such service.

H. All Asbestos cement pipe that is not abandoned in place shall be removed and properly disposed of off-site in a legal manner.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

SECTION 02073

GENERAL DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Removal and abandonment in place of the existing roadways, buildings, equipment, piping, concrete structures, miscellaneous fixtures, fencing, landscaping, debris, etc. as designated on the drawings.

B. Abandoning pipe.

C. Capping and identifying utilities to remain.

D. Blast cleaning concrete.

1.02 This space left intentionally blank.

1.03 EXISTING CONDITIONS

A. Protect all facilities during demolition Work. Any damage shall be repaired to existing or better conditions at the Contractor's expense. Latent defects observed by the Contractor before or during demolition shall immediately be brought to the attention of the Engineer.

1.04 INTERRUPTION OF SERVICE

A. The existing sanitary sewage collection and transmission system cannot be taken out of service except for short periods as pre-arranged with the Owner and Engineer.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

3.01 PREPARATION

A. Disconnect, remove, cap, and identify utility services to be reused.

B. Provide suitable protection to existing improvements.

C. Empty liquids from wetwells, tanks, piping, etc., prior to removal or abandonment.

D. Remove tanks, fuel piping, piping, structures, conduit, anchors, buildings, fencing, landscaping, etc., as designated on the Drawings.

3.02 UTILITY ABANDONMENT

A. Buried piping to be abandoned in place shall be filled with grout and plugged with brick and mortar or a mechanical joint cap at both ends to produce a watertight seal.

B. Field measure location of utility abandonment prior to backfilling. Location is to be recorded on Record Drawings and on a written log, both to be turned over to the Owner at the completion of the Project.

3.03 EQUIPMENT REMOVAL

A. Use suitable tools such as cutting torches and power wrenches to remove equipment indicated on the Drawings. Impact tools will not be permitted for demolition Work at concrete or masonry structures.

B. Care shall be taken not to break off anchor bolts intended for reuse. Those bolts not to be reused shall be cut off flush with the structure surface.

C. Except where noted otherwise, immediately remove demolished materials from site.

D. Remove and store materials to be re-installed or retained in a manner to prevent damage.

3.04 CONCRETE REMOVAL

A. Concrete coring shall be accomplished by use of a rotary power tool with a coring bit of adequate size. Cores shall be made perpendicular to the face of the concrete being cored. Alternative techniques employing impact tools will not be allowed.

B. Saw cutting shall be accomplished by use of a circular type saw with either diamond tipped blade or abrasive disc. Chiseling, breaking or hammering of concrete will not be allowed except where the Drawings denote the concrete surface to be roughened.

C. The use of any type of impact tool for concrete removal where a portion of the concrete is to remain is strictly forbidden.

D. Dust control shall be accomplished during concrete removal operations by a constant application of water.

3.05 BACKFILL AND COMPACTING

A. Backfill material shall be as specified in Section 02220, “Excavating, Backfilling and Compacting”.

B. Backfill existing structures to be removed, such as existing pump station wetwell/drywell or any manholes, in horizontal lifts not exceeding eight inches in depth (compacted thickness), and compact to a density of not less than 98 percent of the maximum density determined by AASHTO T-180.

END OF SECTION

SECTION 02101

SUBSURFACE INVESTIGATION

PART 1 GENERAL

1.01 RESPONSIBILITY

A. Subsurface explorations utilized by Engineer for their design, if attached at the end of these Specifications or included in the Construction Drawings, are provided solely for the Contractor's 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 Owner and Engineer will not be responsible for interpretations or conclusions drawn by Contractor from any 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. Soft-dig data and reports, if attached at the end of these Specifications or included in the Construction Drawings, are provided solely for the Contractor's information only. Conditions are not intended as representations or warranties of accuracy or continuity of pot-hole locations. The Owner and Engineer will not be responsible for interpretations or conclusions drawn from this data by Contractor. The Contractor is required to provide pot-holding in order to field verify vertical and horizontal locations of all utilities prior to construction of the proposed work.

PART 2 PRODUCTS

2.02 SOIL BORNINGS

A. Copies of the following are included herein.

1. "Geotechnical Engineering Services Report for the Loxahatchee River Environmental Control District Redundant Subaqueous Forcemain Route Study," by RADISE International, dated March 14, 2022.

2.03 SOFT DIG REPORTS

A. Copies of the following are included herein.

1. Not Applicable

PART 3 EXECUTION

Not Used

END OF SECTION

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SECTION 02108

VIDEO RECORDING OF EXISTING CONDITIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Video-recording the pre-construction conditions of the surface features within the construction area.

1.02 SUBMITTALS

A. Submit two completed video-recordings to Engineer prior to commencing construction.

1.03 QUALITY ASSURANCE

A. Video-recording must be done by a responsible commercial firm known to be skilled and regularly engaged in the business of pre-construction video documentation.

PART 2 PRODUCTS

2.01 MATERIALS

A. Video-records: Standard DVD Disk. New, previously unused.

PART 3 EXECUTION

3.01 VIDEO-RECORDING

A. Perform recording a minimum of one week prior to deliver of materials.

B. Record all areas where construction is to take place including staging areas and access routes.

C. This work will serve as a record of the pre-construction conditions for disputes arising from restoration, and should, therefore, be taken along the line of construction in sufficient detail as necessary to clearly depict pre-construction conditions.

D. Indicate the date and time (hour, minutes & seconds) on which the photograph was made.

E. Record any unusual conditions encountered during construction that are not already a matter of photographic record.

F. Accompany video-recording with simultaneous audio. Assist viewer orientation and any needed identification, differentiation, clarification, or objective description of the features being shown with audio recording of commentary by the camera operator. The audio recording should be free of any conversations between the camera operator and other production technicians.

G. Camera Height and Stability: Do not exceed 10 feet vertical distance between camera lens and the ground when conventional wheeled vehicles are used as conveyances for the recording system.

H. Camera Control: Control camera pan, tilt, zoom-in and zoom-out rates such that recorded objects will be clearly viewed during video tape playback. Control or adjust camera and

recording system controls such as lens focus, aperture, light, and white balance to maximize picture quality.

I. Viewer Orientation Techniques: In order to maintain viewer orientation, utilize overall establishing views and visual displays of all visible house and business addresses. In areas where viewer orienting landmarks are not readily available, video-record construction baseline markings with a simultaneous audio identification of 100 foot stations as they are being viewed.

J. Video Record Log: Provide a written log of each video recording contents. Describe the various segments of coverage contained on the video in terms of the names of the streets or easements, coverage beginning and end, directions of coverage, video unit counter numbers, engineering stationing numbers, and the date upon which the recording was made.

K. All video recording become the property of the Owner.

END OF SECTION

SECTION 02110

SITE CLEARING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Clearing and grubbing.

B. Removal of pavement and structures.

1.02 REGULATORY REQUIREMENTS

A. Comply with all applicable federal, state, and local laws and regulations for the prevention, control, and abatement of all forms of pollution and the protection of soil, vegetation, wildlife, fish, and water courses.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

3.01 PREPARATION

A. Verify that existing plant life designated to remain is tagged or identified.

B. Protect utilities that are to remain, from damage.

C. Protect trees, plant growth, and features to remain as final landscaping.

D. Protect benchmarks, survey control points, and existing structures from damage or displacement.

3.02 CLEARING AND GRUBBING

A. Remove and dispose of timber, brush, stumps, roots, rubbish and debris, and all other obstructions resting on or protruding through the surface of the existing ground and the surface of areas to be excavated.

B. Unless otherwise shown on the Drawings, clearing and grubbing is to be done in the following areas:

1. All areas where excavation and/or grading is to be done.

2. All areas where structures will be constructed, including pipe culverts and other pipelines.

3. In pavement areas and within roadway right of way.

4. Any other areas requiring clearing and grubbing to complete the Work.

C. In pavement areas, remove roots and other debris to a depth of at least one foot below the ground surface. The surface must then be plowed to a depth of at least six inches and all roots thereby exposed are to be removed to a depth of at least one foot.

D. All stumps within pavement areas and road right of way are to be completely removed and disposed of.

E. Where excavation is done, all roots protruding through or appearing on the surface of the completed excavation must be removed to a depth of at least one foot below the excavation surface.

3.03 REMOVAL OF PAVEMENT

A. Remove and dispose of existing concrete pavement, concrete sidewalk, slope pavement, ditch pavement, asphalt pavement, rock pavement base, curb, and curb and gutter, where designated on the Drawings or where required to be removed because of the construction operations.

3.04 REMOVAL OF STRUCTURES

A. Remove and dispose of those structures, or portions of structures specified on the Drawings or those structures or portions of structures which need to be removed in order to construct new structures, and other appurtenances or obstructions which are designated on the Drawings.

3.05 DISPOSAL

A. All removed items, including but not limited to, those indicated in Sections 3.02, 3.03, and 3.04 of this Specification are to be disposed of at an appropriate legal site.

END OF SECTION

SECTION 02156

HORIZONTAL DIRECTIONAL DRILLING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. The work specified in this section consists of furnishing and installing underground utilities using the horizontal directional drilling (HDD) method of installation. This work shall include all services, equipment, materials, and labor for the complete and proper installation, testing, restoration of underground utilities and environmental protection and restoration.

1.02 RELATED SECTIONS

A. Section 02624 – High Density Polyethylene (HDPE) Pipe.

B. ~~Section 02626 – PVC Pressure Pipe~~.

1.03 SUBMITTALS

A. Prior to beginning work, the Contractor must submit to the Engineer a general work plan outlining the procedure (including a frac-out plan) and schedule to be used to execute the project.

B. Contractor will submit specifications on directional drilling equipment.

C. Contractor will submit shop drawings on material to be used including, but not limited to, the pipe, fittings, and any other item which is to be an installed component of the project.

1.04 QUALITY ASSURANCE

A. Contractor performing the work under this section must be regularly engaged in HDD with similar experience within the last three years.

B. All personnel shall be fully trained in their respective duties as part of the directional drilling crew and in safety.

C. Contractor must supply reference of previous work.

D. All work shall be in accordance with Section 107 of the Loxahatchee River Environmental Control District (LRECD) Manual of Minimum Construction Standards and Technical Specifications.

PART 2 PRODUCTS

2.01 MATERIALS

A. Pipe: HDPE See Section 02624.

~~Fusible PVC See Section 02626~~.

Pipe material used must have a minimum pressure rating of 250 psi (DR 9) and a nominal inside diameter at least equivalent to 16” DIP.

B. Drilling Fluid: Drilling fluid shall be composed of clean water and an appropriate additive. Water shall be from a clean source with a pH of 8.5 – 10 and/or as per mixing requirements of the Manufacturer. Water of a lower pH or with excessive calcium shall be treated with the appropriate amount of sodium carbonate or equal. The water and additives shall be mixed thoroughly and be absent of any clumps or clods. No hazardous additives may be used. Drilling fluid shall be maintained at a viscosity sufficient to suspend cuttings and maintain the integrity of bore wall.

C. Detection Wire: TW, THW, THWN, or HMWPE insulated copper, 10 gauge or thicker wire by Copperhead Industries Reinforced #1245 Extra-High Strength Tracer Wire or equal.

2.02 EQUIPMENT

A. The directional drilling equipment shall consist of a directional drilling rig of sufficient capacity to perform the bore and pullback of the pipe, a drilling fluid mixing and delivery system of sufficient capacity to successfully complete the installation, a guidance system to accurately guide boring operations and trained and competent personnel to operate the system. All equipment shall be in good, safe operating condition with sufficient supplies, materials, and spare parts on hand to maintain the system in good working order for the duration of the project.

B. A self-contained, closed, drilling fluid mixing system shall be of sufficient size to mix and deliver drilling fluid composed of bentonite clay, potable water, and appropriate additives. Mixing system shall be able to molecularly shear individual bentonite particles from the dry powder to avoid clumping and ensure thorough mixing. The drilling fluid reservoir tank shall be sized for adequate storage of the mud. The mixing system shall continually agitate the drilling fluid during drilling operations.

C. Tracking/Steering equipment shall require a walk-over tracking system. The tracking/steering equipment shall place the pilot bore with a maximum horizontal tolerance of +/- 5% of directional bore pipe depth below grade.

D. Pipe rollers, if required, shall be of sufficient size and number to fully support the weight of the pipe during pull-back operations.

E. Hydraulic or pneumatic pipe rammers may only be used if necessary and with the authorization of Engineer.

PART 3 EXECUTION

3.01 GENERAL

A. The Owner/Engineer must be notified 48 hours in advance of starting work. The Directional Bore shall not begin until the Engineer is present at the job site and agrees that proper preparations for the operations have been made. The Engineer's approval for beginning the installation shall in no way relieve the Contractor of the ultimate responsibility for the satisfactory completion of the work as authorized under the Contract. The Engineer shall

provide his observation at such times as appropriate without causing undue hardship by reason of delay to the Contractor.

3.02 PREPARATION

A. Site Preparation

1. Prior to any alterations being started at the work site, Contractor shall photograph or video tape entire work area, including entry and exit points. Two copies shall be given to Engineer and one copy to remain with Contractor for a period of one year following the completion of the project.

2. The work site as shown on the located drawings, within the public right-of-way, shall be graded or filled to provide a level working area. No alterations beyond what is required for operations are to be made. Contractor shall confine all activities to within limits of construction. Contractor shall restore working area to preconstruction or better conditions.

B. Drill Path Survey: Entire drill path shall be accurately surveyed with entry and exit stakes placed in the appropriate locations within the areas indicated on drawings. If contractor is using a magnetic guidance system, drill path shall be surveyed by Contractor for any surface geo-magnetic variations or anomalies.

C. Environmental Protection: Contractor shall place a silt fence or other barriers between all drilling operations and any drainage, wetland or waterway or other area designated for such protection by contract documents or state, federal, or local regulations. Additional environmental protection necessary to contain any hydraulic or drilling fluid spills shall be put in place, including berms, liners, turbidity curtains, and other measures. Contractor shall adhere to all applicable environmental regulations. Fuel or oil may not be stored in bulk containers within 200 feet of any waterbody or wetland.

D. Safety: Contractor shall adhere to all applicable state, federal, and local safety regulations and all operations shall be conducted in a safe manner.

3.03 OPERATION

A. General

1. Determine drilling length and equipment pull strength for type of soil encountered.

2. Entry angle shall be between 10º and 14º. Exit angle shall be between 5º and 12º.

3. Provide method to control line and grade.

a. Provide and maintain instrumentation that accurately locates pilot hole.

b. Drill pilot hole along path following drawings to these tolerances:

1) Vertical alignment plus or minus 0.5 foot. Vertical path of the pilot hole must not establish new high points not shown on drawings.

2) Horizontal alignment plus or minus 1.0 foot.

c. Include electronic monitoring of the horizontal and vertical drilling head location. Obtain an accuracy range within 1 inch of actual position of the pipeline. Record position readings at a maximum of 10-foot intervals.

d. At completion of pilot hole drilling, furnish Engineer tabulations of horizontal and vertical alignment.

e. The horizontal and vertical alignment shall be as-built and certified by the steering contractor as complying with the locating/tracking/steering equipment manufacturer's recommended procedures.

4. When water is encountered.

a. Provide and maintain a dewatering system of sufficient capacity to remove water.

b. Keep excavation free of water until backfill operation is in progress.

c. Perform dewatering in such a manner that removal of soils particles is held to a minimum.

5. Maintain close observation to detect settlement or displacement of surface and adjacent facilities.

a. Notify Engineer and applicable agency immediately if settlement or displacement is detected.

b. Act to maintain safe conditions and prevent damage.

B. Drilling Operation

1. Drilling fluids.

a. Maintain drilling fluid in bore hole to increase stability of the surrounding soil and reduce drag on pulled pipe.

b. Dispose of drilling fluid and other spoils at locations following laws, ordinances, rules, and regulations of local jurisdiction.

c. Transport excess fluids and other spoils to the disposal site.

d. Minimize drilling fluid at locations other than entry and exit points. Immediately clean up any drilling fluids that inadvertently surface.

e. Provide clean water for drilling.

2. Pilot Hole Drilling

a. Angle entry hole so that curvature of pilot hole does not exceed allowable bending radius for pipe material selected (DR 9 HDPE).

b. Be able to make a turn of up to 90 degrees and maintain a curvature not to exceed allowable bending radius of pipe material selected.

c. Alignment Adjustment and Restarts.

1) Follow pipeline alignment on Drawings within tolerances specified herein. Before adjustments, notify Engineer for approval.

2) Notify Engineer when forward motion of operation is stopped by an obstruction.

a) Abandon in place with drilling fluid.

b) Attempt a second installation at approved location.

3) Exercise caution including, but not limited to, locating utilities, drilling downholes (test pits) to observe drill stems or reamer assembly to clear other existing utilities at locations following drawings.

4) Keep the number of boring pits to a minimum, no closer than following distances.

a) Equipment must be capable of the proposed lengths as shown on the drawings in a single bore.

3.04 INSTALLATION

A. Installing HDPE Pipe.

1. Provide a swivel to reaming assembly and pull section of pipe to minimize torsional stress on pull section after drilling pilot hole.

2. Hold reaming diameter to 1.5 times the outside diameter of pipe being installed.

3. Protect pull section as it proceeds during pull back so that it moves freely and is not damaged.

4. Each pipeline shall be installed with a minimum 2" HDPE conduit and two minimum 10-gauge tracer wires installed for the full length of the bore. The conduit shall be terminated in a CDR box installed at each end of the bore. The 10-gauge tracer wires shall be terminated in the valve box for the isolation valves on each end. The conduit diameter and wall thickness shall be sized to withstand anticipated pull back forces of the installation.

5. Pull detection wire along with HDPE pipe. Extend wire into location station at each end of pipe.

6. When connecting to adjacent pulled or non-pulled section of pipe, allow pull section of pipe to extend past termination point. Make tie-ins the next day after pullback of HDPE pipe.

~~7. Test pit pipe installation to verify horizontal and vertical alignment.~~

~~a. One test pit for every 500 feet along length of pipeline.~~

b. ~~Engineer may order additional test pits for each test pit that reveals pipeline installation is not in compliance with the Contract Documents~~.

8. Replace portions of the pipeline not in compliance with the Contract Documents, at no additional cost to the Owner.

B. Installing Locator Station.

1. Locator Stations.

a. Provide locator stations at each end of the HDPE pipe.

b. Flush mount underground locator.

c. When HDPE pipe is connected to another type of pipe material, continue detector wire over the connecting pipe, so locator station is installed out of paved area.

d. In areas schedule to be improved identify and protect station locations immediately after installation.

1) Space 3 stakes equally around the station.

2) Extend at least 4 feet above existing grade.

3) Flag with orange, fluorescent wrap within 6 inches from top of stakes.

e. Manhole mounted locator station.

2. Detection Wire.

a. Install detection wire without splices.

b. Terminate detection wire inside locator box using proper sized crimp type connectors on wire ends.

c. Connect each wire to a terminal maintaining at least 18 inches slack in each wire for underground flush mounted locator station.

d. Neatly coil slack wire in test station below terminal board.

e. Locate wires on top and along HDPE pipe not installed via the HDD. Wires pulled with the HDD shall be located inside the accompanying 2” conduit.

f. Allow adequate slack and support to protect wires from damage during backfilling operations.

g. Test each detection wire for continuity after backfilling is completed.

1) If test for continuity is negative, repair or replace.

2) After continuity is verified, connect each detection wire to terminal block in locator station.

C. As-Built Location.

1. After placement the contractor shall utilize a magnetic locating system utilizing a DC or AC current and a surveyed surface loop coil to as-built the final directional bore installation

location in place. The surface loop shall be surveyed in by a Florida Licensed Professional Land Surveyor and georeferenced to State Plane Coordinates in NAD83, Florida East Zone and vertical datum NGVD29.

2. Submit horizontal and vertical alignment of the pilot bore based on location information from the locating/tracking/steering equipment outlined in paragraph 107.02 of the LRECD Manual of Minimum Construction Standards and surveyed points on the DC surface looped coil. The horizontal and vertical alignment shall be referenced to horizontal and vertical datum requirements as specified in the LRECD Record Drawing Submittal Guide, Standard Detail SD-29. The horizontal and vertical alignment shall be as-built and certified by the steering contractor as complying with the locating/tracking/steering equipment manufacturers recommended procedures.

3. Submit a log of directional drilling machine pressures during pulling operations converted to tensile stress seen in the pipe. Hydraulic pressure produced by the machine alone is not acceptable.

3.05 FIELD OBSERVATIONS

A. All directional drillings are to be observed at the option of the Owner/Engineer.

END OF SECTION

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SECTION 02210

GRADING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Cutting, filling, grading, and rough contouring site.

B. Compaction requirements.

C. Finish grading.

1.02 REFERENCES

A. AASHTO T-180/ASTM D1557-78 – Moisture Density Relations of Soils and Soil Aggregate Mixtures, Using 10 lb. Rammer and an 18 inch Drop.

B. ASTM D422-63 – Particle-Size Analysis of Soils.

C. ASTM D2922-81 – Density of Soil-Aggregate in Place by Nuclear Methods.

PART 2 PRODUCTS

2.01 MATERIALS

A. Fill: Free from large clods, muck, rocks larger than 6 inches, organics or other extraneous material. The maximum size rock allowed in the top 12 inches of the rough and finished grade to be 1 inch, suitable for pavement subgrade.

2.02 SOURCE QUALITY CONTROL

A. Engineer to review and approve fill material at the source prior to hauling material onsite.

PART 3 EXECUTION

3.01 PREPARATION

A. Identify required lines, levels, contours, and datum.

B. Identify known below and above grade utilities. Stake and flag locations.

3.02 GRADING

A. Fill/cut and grade Project site in a neat and uniform manner to conform to the grades detailed on the Drawings. If grades are not specified, grade in a neat and uniform manner to the grades which were existing prior to construction.

3.03 COMPACTION

A. Spread fill material and level in layers not to exceed 18 inches in thickness, measured loose. Compact each layer using a vibratory roller.

B. In fill sections that are to be paved, compact to a density not less than 100 percent of the maximum density determined by AASHTO T-99 Method C.

C. In cut sections and existing sections, the upper one (1) foot of the undisturbed subgrade or foundation grade must be compared to a density not less than 100 percent of the maximum density determined by AASHTO T-99 Method C.

D. All subgrade or foundation grades disturbed during construction must be compacted to a density not less than 95 percent of the maximum density determined by AASHTO T-180.

E. In non-paved areas, compact to 95 percent of the maximum density determined by AASHTO T-180.

3.04 PROTECTION

A. Protect trees, shrubs, lawns, and other features remaining as a part of the final landscaping.

B. Protect benchmarks.

C. Protect existing structures, fences, roads, sidewalks, paving and curbs.

D. Protect above and below grade utilities which pass through Work area.

3.05 TESTING

A. Density tests for verifying compaction will be performed by an independent testing laboratory in accordance with Division 1: General Requirements. Contractor is responsible for scheduling density tests and for the coordination of the testing with the testing laboratory and Engineer. Tests are to be paid for as specified in the Division 1: General Requirements.

3.06 FIELD OBSERVATIONS

A. Owner's representative to review finished grades prior to seeding or placement of sod.

END OF SECTION

SECTION 02220

EXCAVATING, BACKFILLING, AND COMPACTING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Excavation for structures, pipelines, lakes, canals, ditches, etc.

B. Backfilling of structures and pipelines.

C. Dewatering.

D. Compacting.

E. Abandonment using Flowable Fill.

1.02 REFERENCES

A. ASTM C136-84 – Sieve Analysis of Fine and coarse Aggregates.

B. ASTM D2922-81 – Density of Soil-Aggregate in Place by Nuclear Methods.

C. AASHTO T-180/ASTM D1557-78 – Moisture Density Relations of Soils and Soil Aggregate Mixtures, Using 10 lb. Hammer and an 18 inch Drop.

D. AASHTO T-99/ASTM D2168,5.5-5.7 – Moisture Density Relations of Soils using a 5.5 lb. Hammer and 12-inch drop, Method C Modified.

1.03 REGULATORY REQUIREMENTS

A. Contractor is responsible for the provisions of the Occupational Safety and Health Administration's excavation safety standards, 29 C.F.R.s. 1926.650 Subpart P, which requires excavations exceeding five (5) feet in depth to be shored or sloped to the angle of repose.

1.04 PREVENTION, CONTROL AND ABATEMENT OF EROSION AND WATER POLLUTION

A. Contractor shall provide for and be responsible for the prevention, control, and abatement of erosion and water pollution until completion of the Project.

B. Contractor shall provide all temporary erosion control features necessary to prevent, control, and abate erosion and water pollution.

C. Contractor shall comply with the water quality standards of the State of Florida. The Contractor is cautioned that during the execution of the Work, creation of turbidity in excess of 29 Nephelometric Turbidity Units (NTU's) above the natural background level and/or directly or indirectly affecting the water quality in the waters of the State in such a manner as to exceed the limitations on the concentration of various constituents for such water as prescribed in Chapter 62-302 of the Florida Administrative Code, is a violation of the water quality standards of the State of Florida.

PART 2 PRODUCTS

2.01 BACKFILL MATERIAL

A. Backfill with an approved material, free from large clods, rocks larger than 1 inch, organic material or other extraneous material.

PART 3 EXECUTION

3.01 PREPARATION

A. Identify required lines, levels, contours, and datum.

B. Identify known below and above grade utilities. Stake and flag locations.

C. Maintain and protect existing utilities remaining which pass through the Work area.

D. Verify stockpiled fill is approved.

3.02 EXCAVATION

A. Perform the excavation of all substances(s) encountered for construction as shown on the Drawings and/or as specified herein, or as approved by the Engineer by hand dredge methods only. Contractor shall dispose of all substances encountered at an appropriate legal site.

B. When a masonry or concrete structure rests on an excavated surface other than rock, special care must be taken to avoid disturbing the bottom of the excavation. Final removal of the existing material to foundation grade is not to be started until just before the masonry or concrete foundation is to be placed.

C. Excavate pipe trenches to a depth as shown on the Drawings. If over-excavation occurs, place a layer of fine crushed rock or compacted coarse sand to secure a firm foundation for the lower one-third of the pipe.

D. The maximum width of the trench at the top of the pipe must not be greater than 2 feet more than the nominal diameter of the pipe, unless otherwise specified. If this maximum is exceeded, it will be the Contractor's responsibility to provide adequate support (concrete cradle or crushed rock and compacted coarse sand) at the location of the trench width over excavated.

E. Keep pipe laying operations as close to the excavation as practical during the execution of the Work.

F. If rock is encountered at the foundation grade of a masonry or concrete structure, excavate the rock in such a manner as to allow the solid rock to be exposed. Prepare in horizontal beds for receiving the masonry or concrete. Remove all loose and disintegrated rock or thin strata. Cut back roots to 12 inches below the foundation grade.

G. If rock is encountered at the grade line of a pipeline, remove the rock so that at no place will it be closer than 6 inches to the finished pipeline. After the excavation is completed, place and tamp a bed of selected backfill (coarse sand and fine crushed rock) to at least 6 inches deep. Cut back roots to 12 inches below pipe grade.

H. Remove any water accumulated in the pipe trench and/or structure excavation and keep the excavation de-watered until the bedding is complete. Accomplish in a manner so as to not create any nuisance to adjacent property or public thoroughfare. Do not use the

pipeline being installed as a drain for such water. Meet all laws, codes, ordinances, and government regulations when dewatering.

I. Provide all bracing, sheeting, and shoring necessary to perform and protect all excavations, as required for safety, or in accordance with governing laws. Remove all sheeting during backfilling operations except as otherwise noted herein or approved by the Engineer. Remove bracing, sheeting, and shoring in such a manner as not to disturb the completed work.

Whenever bracing or shoring is driven to a depth below the top of pipe elevation, that portion of the sheeting below the top of the pipe must not be disturbed or removed. Whenever bracing or sheeting is driven for protection of trench walls in a water-bearing soil, no portion of such sheeting is to be removed below existing ground water table level unless otherwise approved by the Engineer.

J. Unsuitable Foundation – In case the soil conditions encountered at the grade line of the pipe trench or structure excavation are found to be unsuitable, the Engineer must be notified to review the character of the foundations prior to continuing the Work.

3.03 BACKFILLING

A. Backfilling o structure (manholes, pump stations, sidewalks, etc.) excavations and required fill under structure slabs are to be done in horizontal lifts not exceeding eight inches in depth (compacted thickness), and compacted to a density of not less than 98 percent of the maximum density determined by AASJTO T-180.

B Place backfill material for pipe excavation evenly and carefully around and over pipe and under lower sections of pipe in 6-inch maximum lifts. Hand-tamp backfill around the pipe. Each lift is to be thoroughly and carefully rammed until one foot of cover exists over the pipe. The remainder of the backfill is to be placed in 8-inch lifts (compacted thickness), moistened, and mechanically compacted to a density of not less than 100 percent of the maximum density as determined by AASHTO T-99 Method C, unless otherwise noted. Water settling may be utilized at the option of the Contractor, however, the dewatering system must remain in service until all required density determinations are performed.

C. For structures and rigid pipelines where the backfill lies within a pavement subgrade, the backfill must be compacted to a density not less than 100 percent of the maximum density determined by AASHTO T-180.

D. For flexible pipelines (i.e. PVC pipe or corrugated metal pipe) where the backfill lies within a pavement subgrade, the subgrade backfill to 6 inches above the top of the pipe must be compacted to a density not less than 100 percent of the maximum density determined by AASTO T-99 Method C. The remaining backfill to grade is to be compacted to a density not less than 98 percent of the maximum density determined by AASHTO T-180.

E. Compact the upper one (1) foot of undisturbed subgrade or foundation grade disturbed during construction to a density of less than 98 percent of the maximum density as determined by AASHTO T-180.

3.04 PIPELINE ABANDONMENT OR TRENCH FILL USING FLOWABLE FILL AND EXCAVATABLE FILL

A. Pipelines, where noted on the drawings to be grouted and abandoned in place, shall be filled with excavatable flowable fill (grout) per Section 121, FDOT Standard Specifications for Road and Bridge Construction, Latest Edition.

B. Contractor shall locate his setups and weep points to assure that the pipe has been completely filled and furnish documentation to that effect in the form of logs, photographs, grout truck delivery tickets and such like.

3.05 TOLERANCES

A. Top Surface: Plus or minus 0.1 foot.

3.06 FIELD OBSERVATIONS

a. All structures, pipelines, pipeline joints, and other construction are subject to field observation by the Engineer and Owner prior to backfilling.

END OF SECTION

SECTION 02230

ROCK BASE COURSE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Compacted subgrade.

B. Stabilized subgrade.

C. Coquina, limerock, and shellrock base courses.

1.02 REFERENCES

A. Florida Department of Transportation – Standard Specifications for Road and Bridge Construction, Latest Edition, herein after referred to as the FDOT Specifications. This document must be onsite during the Work.

B. ASTM C136-01 – Sieve Analysis of Fine and Coarse Aggregates.

C. ASTM D2922-96 – Density of Soil-Aggregate in Place by Nuclear Methods.

D. AASHTO T 180/ASTM D1557-00 – Laboratory Compaction Characteristics of Soil Using Modified Effort.

1.03 TESTS

A. Testing of the rock for compliance with this specification will be performed when it is delivered to the project site by an independent testing laboratory. Contractor is responsible for scheduling tests and for the coordination of the testing with the testing laboratory and Engineer. Tests are to be paid for as specified in Section 01000: General Requirements.

PART 2 PRODUCTS

2.01 MATERIALS

A. Compacted Subgrade: Local sands approved in advanced by the Engineer. Free from large clods, rocks larger than one inch, organic material or other extraneous material.

B. Stabilized Subgrade: In accordance with Section 914 of the FDOT Specifications.

C. Coquina Rock Base: In accordance with Section 911 of the FDOT Specifications.

D. Limerock Base: In accordance with Section 911 of the FDOT Specifications.

E. Shellrock Base: In accordance with Section 911 of the FDOT Specifications.

F. Prime Coat: Meets Sections 300-2.1 and 916 of the FDOT Specifications.

G. Tack Coat: Meets Section 300-2.3 and 916 of the FDOT Specifications.

PART 3 EXECUTION

3.01 PREPARATION

A. Prepare, compact, and grade compacted subgrade in accordance with Section 120-9 of the FDOT Specifications.

B. Prepare, compact, and grade stabilized subgrade in accordance with Section 160-3 of the FDOT Specifications.

C. Clean subgrade surface of all foreign matter.

D. Verify gradients and elevations of subgrade are correct.

3.02 PLACING BASE MATERIAL

A. Spread base material over prepared subgrade to a total compacted thickness as shown on the Drawings.

B. Place in 6-inch maximum lifts. Compact to 98 percent of maximum density per AASHTO T-180, Method D.

C. Check finished surface with a template cut to the required crown and with a 15 foot straight edge laid parallel to the centerline of the pavement. Correct all irregularities greater than ¼ inch by scarifying, and removing or adding base material as may be required. Re-compact area to meet specified density requirements.

3.03 PRIME COAT APPLICATION

a. Apply prime coat in accordance with Section 300-7 of the FDOT Specifications except Contractor to apply prime coat at a rate of 0.15 gallons per square yard over a base course free of all loose and foreign materials which may prevent proper bond. The moisture content of the base must not exceed the optimum moisture content of the material.

3.04 FIELD OBSERVATIONS

A. Engineer to review the subgrade prior to placing base course.

B. Engineer to review the finished base prior to application of the prime coat and paving.

3.05 PROTECTION

A. Any roadway base damaged, disturbed, or destroyed in excess of maximum pipe trench widths detailed on the Drawings must be replaced in accordance with the Drawings and Specifications at no additional expense to the Owner.

END OF SECTION

SECTION 02271

GEOTEXTILE FABRIC

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Geotextile fabric material and placement for slope protection, pipe joints, and subsurface drainage.

1.02 REFERENCES

A. Florida Department of Transportation – Standard Specifications for Road and Bridge Construction, latest edition, hereinafter referred to as the FDOT Specifications. This document must be onsite during the Work.

1.03 SUBMITTALS

A. Submit geotextile fabric data sheets.

1.04 DELIVERY, STORAGE AND HANDLING

A. Wrap fabric in a protective covering which is sufficient to protect it from sunlight, dirt and other debris during shipment and storage.

PART 2 PRODUCTS

2.01 MATERIALS

A. Geotextile Fabric for Slope Protection

1. Woven fabric which allows the passage of water.
2. Consists of a long-chain synthetic polymer and resistant to deterioration due to salt water, ultraviolet light and heat exposure through basic formulation or the addition of stabilizers and/or inhibitors. The cloth should be calendared or otherwise finished so that yarns will retain their relative position with respect to each other. The edges of the cloth should be selvaged or otherwise finished to prevent the outer yard or fibers from pulling away from the fabric.
3. Meet all requirements for geotextile fabrics in Section 985 of the FDOT Specifications.

B. Filter Fabric for Pipe Joints and Subsurface Drainage

1. Non-woven fabric which allows the passage of water.
2. Consists of a long-chain synthetic polymer and resistant to deterioration due to salt water and heat exposure through basic formulation or the addition of stabilizers and/or inhibitors. The cloth should be calendared or otherwise finished so that yarns will retain their relative position with respect to each other. The edges of the cloth should be selvaged or otherwise finished to prevent the outer yarn or fibers from pulling away from the fabric.
3. Meet all requirements for subsurface drainage in Section 985 of the FDOT Specifications.

PART 3 EXECUTION

3.01 PLACEMENT – PIPE JOINTS

A. Place in accordance with the details on the Drawings.

3.02 PLACEMENT – SLOPE PROTECTION

A. Slopes to be uniform, reasonably smooth, free from mounds and wind rows, and free of any debris or projections which could damage the filter material to be placed upon it.

B. Material to be loosely laid (not stretched). Overlap adjacent strips a minimum of 24 inches. Overlaps may be eliminated if all fabric sections are either factory or field sewn.

C. Anchor in place with plastic securing pins (as recommended by the filter material manufacturer) inserted through the fabric along, but not closer than two inches to, each edge and to the extent necessary to prevent displacement before or during placement of the fabric or other material.

D. Stagger vertical laps at least five feet. Use full rolls wherever possible in order to minimize the number of vertical laps. Lengths and widths of individual sheets to be at the Contractor's option. Grommets are not required.

E. Toe-in geotextile fabric at the top of the slope and at the bottom in accordance with the detail on the Drawings.

F. Any fabric damaged or displaced before or during placement of overlying layers must be replaced or repaired to the satisfaction of the Engineer and at the Contractor's expense.

3.03 PLACEMENT-SUBSURFACE DRAINAGE

A. Cut fabric to the proper width prior to installation. Include sufficient material to conform to the trench perimeter, any irregularities, and for a 12-inch (minimum) top overlap.

B. Where overlaps are required between rolls, lap the upstream roll a minimum of two feet over the downstream roll in order to provide a shingled effect.

C. Care should be exercised to prevent natural or fill soils from intermixing with the drainage aggregate.

END OF SECTION

SECTION 02514

TYPE SP ASPHALTIC CONCRETE PAVING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Materials, surface preparation, and placement of Type SP asphaltic concrete pavement.

1.02 REFERENCES

A. Florida Department of Transportation - Standard Specifications for Road and Bridge Construction, latest edition, herein after referred to as the FDOT Specifications. These documents must be onsite during the Work.

1.03 SUBMITTALS

A. Submit a mix design for each asphaltic paving mixture in accordance with Section 334-3 of the FDOT Specifications.

PART 2 PRODUCTS

2.01 MATERIALS

A. Tack Coat: Meets Section 300 of the FDOT Specifications.

B. Type SP Asphaltic Concrete: Meets the requirements of Section 334 of the FDOT Specifications. Requirements for mixing temperature must conform to those specified in Section 320 of the FDOT Specifications.

PART 3 EXECUTION

3.01 MILLING

A. Where Milling is specified in the plans, perform Milling in accordance with Section 327 of the FDOT Specifications.

B. Perform Milling operations to the average depth shown in the plans.

C. Where cross-slope correction is specified in the plans, provide Milling in the lines, grades and slopes show in the plans to correct any cross-slope deficiencies.

3.02 PREPARATION

A. Adjust manhole rims and valve boxes to finished grade. Cost of Work to be at the unit prices on the Bid Form. If there is no separate bid item for these adjustments, the cost is to be included in the cost of the asphalt.

B. Apply an asphaltic tack coat to existing asphaltic concrete surfaces to be repaved and to new asphalt base courses. Remove all loose and foreign material from the paved surface. Apply in accordance with Section 300-8 of the FDOT Specifications.

C. Clean surface of all sand and debris prior to placing surface course.

3.02 PLACING ASPHALT PAVEMENT

A. Place in accordance with Section 330-6 of the FDOT Specifications.

B. Compact asphalt in accordance with Section 330-10 of the FDOT Specifications.

C. Prepare joints in accordance with Section 330-8 of the FDOT Specifications. Maintain a smooth transition between existing pavement and new pavement.

D. Maintain all pavement cuts to the approval of the Engineer until the Project is complete.

E. Surface course cut during construction must have all edges saw cut prior to replacement.

3.03 SURFACE REQUIREMENTS

A. The finished surface must be of uniform texture and compaction. Any pulled, torn, or loosened asphalt, or any areas with open pores, segregation, sand streaks, sand spots, or ripples must be corrected.

B. Check finished surface with a 15-foot rolling straightedge. Correct deficiencies in excess of 3/16-inch.

C. Correct deficiencies in accordance with Section 330-9.5 of the FDOT Specifications.

3.04 THICKNESS ALLOWANCES

A. The maximum allowable deficiency from the layer thickness specified on the Drawings is as follows:

1. For pavement of a specified thickness of 2-1/2 inches or more: 1/2 inch.

2. For pavement of a specified thickness of less than 2-1/2 inches: 1/4 inch.

B. Correct deficiencies either by replacing the full thickness for a length extending at least 50 feet beyond each end of the deficient area for the full width of the paving lane.

3.05. LEVELING COURSE REQUIREMENTS

A. Prepare in accordance with Section 330-4 of the FDOT Specifications.

B. Place mixture in accordance with Sections 330-6 of the FDOT Specifications.

C. Compact per Section 330-7 of the FDOT Specifications.

D. Method of Measurement will be per Section 334-7 of the FDOT Specifications. Engineer and Contractor will agree and physically mark in the field all locations to have a level course applied. Engineer will collect tonnage tickets at the time of placement and note that the material placed was a leveling course.

3.06 FIELD OBSERVATIONS

A. Engineer to observe paving activities and finished surface.

3.07 PROTECTION

A. Any roadway surface damaged, disturbed, or destroyed in excess of maximum trench widths detailed on the Drawings must be replaced in accordance with the Drawings and Specifications at no additional expense to the Owner.

END OF SECTION

SECTION 02523

SIDEWALKS, DRIVEWAYS, AND CURBS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Concrete sidewalks, driveways, curbs, and gutters.

1.02 RELATED SECTIONS

A. Section 02210 - Grading.

1.03 REFERENCES

A. AASHTO T 180/ASTM D1557-00 - Laboratory Compaction Characteristics of Soil Using Modified Effort.

B. ACI 347R-94 – Guide to Formwork for Concrete.

C. ASTM A185-97 - Steel Welded Wire Fabric, Plain, for Concrete Reinforcement.

D. ASTM A615-01 - Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.

E. ASTM C33-01 - Concrete Aggregates.

F. ASTM C39-01 - Compressive Strength of Cylindrical Concrete Specimens.

G. ASTM C42-99 - Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.

H. ASTM C94-00 - Ready-Mixed Concrete.

I. ASTM C143-00 - Slump of Hydraulic Cement Concrete.

J. ASTM C150-00 - Portland Cement.

K. ASTM C260-01 - Air-Entraining Admixtures for Concrete.

L. ASTM C309-98 - Liquid Membrane - Forming Compounds for Curing Concrete.

M. ASTM D1751-99 - Preformed Expansion Joint Filler for Concrete Paving and Structural Construction.

N. ASTM D2922-01 - Density of Soil and Soil-Aggregate in Place by Nuclear Methods.

1.04 SUBMITTALS

A. Concrete mix design indicating the proportions of cement, coarse aggregate, fine aggregate, water, and admixtures. Mix design sheet must also indicate slump, design strength, and water-cement ratio.

PART 2 PRODUCTS

2.01 MATERIALS

A. Forms: Conform to ACI 347.

B. Reinforcing Steel: ASTM A615, Grade 60, new deformed billet steel.

C. Welded Steel Wire Fabric: Plain type, ASTM A185.

D. Expansion Joints: 1/2 inch thick preformed non-extruding joint filler meeting ASTM D1751.

E. Concrete: Cement (ASTM C150, Type I), aggregates (ASTM C33), and potable water mixed in accordance with ASTM C94. Minimum of 470 lbs. of cement per cubic yard of concrete. Water-cement ratio less than or equal to 0.55. Slump of 0-5 inches. 3000 psi minimum compressive strength at 28 days.

F. Air-Entraining admixture to be from two to six percent.

G. Curing Compound: ASTM C309, Type 1 or 1-D, Class A.

PART 3 EXECUTION

3.01 SUBGRADE PREPARATION

A. Prepare subgrade in accordance with Section 02210.

B. Compacted density to be at least 98 percent of the maximum density determined by AASHTO T180.

C. Verify gradients and elevations of subgrade are correct.

D. Just prior to placing concrete, moisten subgrade and forms to provide a uniform dampened surface at the time concrete is placed.

3.02 CONCRETE PLACEMENT

A. Maintain concrete temperature at time of placement below 90 degrees Fahrenheit.

B. Deposit concrete on the subgrade in a manner which will minimize rehandling.

C. Do not disturb expansion joints.

D. Consolidate concrete against and along the faces of all forms, and along the full length on both sides of all joint assemblies.

3.03 JOINT CONSTRUCTION

A. Contraction Joints for Sidewalks and Driveways: Sidewalk joints are to be spaced 5 feet on center unless noted otherwise on Drawings. Driveway joints are to be spaced 15 to 18 feet on center unless noted otherwise on Drawings. Use saws equipped with shatterproof abrasive or diamond rimmed blades. Cut joints into concrete as soon as the surface will not be ravelled or otherwise damaged by the cutting action. Cut slot, 3/16 inch wide and not less than 1 1/2 inches deep. Joints must be completed between four (4) and twelve (12) hours after placing concrete.

B. Contraction Joints: The maximum joint spacing to be 15 feet. Depth no less than one-fourth (1/4) the pavement thickness. Width, one-eighth (1/8) inch to one-fourth (1/4) inch. Joints must be continuous across the slab unless interrupted by a full depth joint and must extend completely through any integral curbs. Alignment may be skewed or warped where necessary to reach points of stress concentration. Form using saws equipped with shatterproof abrasive or diamond rimmed blades. Cut joints into concrete paving as soon as the surface will not be ravelled or otherwise damaged by the cutting action. Joints must be completed between four (4) and twelve (12) hours after concrete has been placed. Zip strips may be used in appropriate locations.

C. Construction Joints: Place full depth construction joints at the end of concrete pours and at locations where placement operations are stopped for a period of thirty (30) minutes or more except where such pours terminate at expansion joints.

D. Expansion Joints for Sidewalks and Driveways: Construct at 100 foot intervals (unless noted otherwise on Drawings), between sidewalk and driveways, at sidewalk intersections, and around all other fixed objects within the sidewalk or driveway. Joints must contain preformed joint filler for the full depth. Edges must be finished with a 1/4 inch radius.

E. Expansion Joints for Curbs: Construct at all inlets and radius points, where new curb abuts an existing fixed object, and at intervals of 500 feet. Joints must contain 1/2 inch preformed joint filler for the full depth of the curb.

3.04 FINISHING

A. Adding water to the surface of the concrete to assist in finishing operations is not permitted.

B. A uniform gritty non-slip finish must be provided by brushing the surface with a stiff-bristled broom or by dragging a 'burlap bag' over the surface just before the water sheen disappears.

C. After the final finish has been applied, but before the concrete has become nonplastic, the edges on each side of expansion joints, construction joints, and along any structure extending into the concrete are to be carefully rounded to a 1/4 inch radius. Finish sidewalk and driveway edges with a 1/4 inch radius edging tool. Produce a well-defined and continuous radius and a smooth, dense mortar finish. Remove all concrete from the top of the joint filler.

3.05 CURING

A. After the finishing operations have been completed and as soon as the concrete has hardened sufficiently such that marring of the surface will not occur, the entire surface and the edges of the newly placed concrete are to be cured using a liquid curing compound. Rate of application to be 200 square feet per gallon or as recommended by the manufacturer.

B. Do not leave the concrete exposed for a period in excess of 30 minutes between stages of curing or during the curing period.

3.06 BACKFILLING

A. After the concrete has set sufficiently, but not later than three days after pouring, refill the spaces in front and back of curb/sidewalk to the required elevation with suitable material.

3.07 FIELD OBSERVATIONS

A. The subgrade and formwork prior to placing concrete.

B. Concrete placement activities.

C. Furnish a delivery ticket for each batch of concrete unloaded if so requested by the Engineer.

END OF SECTION

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SECTION 02580

PAVEMENT MARKING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Traffic stripes and markings using reflective paint.

B. Traffic stripes and markings using a thermoplastic compound.

C. Reflective pavement markers.

1.02 REFERENCES

A. Florida Department of Transportation - Standard Specifications for Road and Bridge Construction, Latest Edition, herein after referred to as the FDOT Specifications. This document must be onsite during the Work.

PART 2 PRODUCTS

2.01 MATERIALS

A. Reflective Paint Traffic Stripes and Markings: In accordance with Sections 710 of the FDOT Specifications.

B. Thermoplastic Traffic Stripes and Markings: In accordance with Section 711 of the FDOT Specifications.

C. Reflective Pavement Markers: In accordance with Section 706 of the FDOT Specifications, Class B.

2.02 EQUIPMENT

A. In accordance with the following FDOT Specifications: Section 710-3 for reflective paint and Section 711-3 for thermoplastic compounds.

PART 3 EXECUTION

3.01 PREPARATION

A. Establish the necessary tack points and other controls for alignment of the stripes.

B. Tolerances in dimensions and alignment to be in accordance with FDOT Specification 710-5.

3.02 APPLICATION

A. Apply reflective paint in accordance with FDOT Specification 710-4.

B. Apply thermoplastic compounds in accordance with FDOT Specification 711-4. Thermoplastics shall not be installed on roadway until 30 calendar days after final lift of asphalt has been placed with the exception of Friction Course which shall be 90 days.

C. Apply reflective pavement markers in accordance with Section 706-4 of the FDOT Specifications. Use bituminous adhesives only when installing. Do not apply markers to new pavement striping or markings.

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, must be corrected by the Contractor to the approval of the Engineer.

3.04 PROTECTION

A. Protection of newly painted and applied stripes and markings to be in accordance with Sections 710-7 and 711-6 of the FDOT Specifications.

END OF SECTION

SECTION 02606

MANHOLES AND INLETS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Concrete manholes and inlets for Drainage Systems.

B. Concrete manholes for Wastewater Systems.

1.02 REFERENCES

A. ASTM A48-94 - Gray Iron Castings.

B. ASTM A185-97 - Steel Welded Wire Fabric, Plain, for Concrete Reinforcement.

C. ASTM C32-93 - Sewer and Manhole Brick.

D. ASTM C55-99 - Concrete Brick.

E. ASTM C139-99 - Concrete Masonry Units for Construction of Catch Basins and Manholes.

F. ASTM C150-99 - Portland Cement.

G. ASTM C478-96 - Precast Reinforced Concrete Manhole Sections.

1.03 SUBMITTALS

A. Fabrication drawings for manholes and inlets.

B. Manufacturer's product data for cast iron frames, grates, and covers.

PART 2 PRODUCTS

2.01 MATERIALS

A. Brick: Hardburned clay conforming to ASTM C32, Grade MM or concrete brick conforming to ASTM C55, Grade N.

B. Concrete Masonry Units: ASTM C 139.

C. Mortar: 1 part Portland Cement (ASTM C150, Type II) mixed with 2 parts sand and potable water as required.

D. Manholes and Inlets: ASTM C478. Minimum 8-inch wall thickness. Base and first riser section to be a monolithic pour. Use Type II Portland Cement. Openings must be pre-cast.

E. Cast Iron Frames, Grates, and Covers: ASTM A48, Class 30 gray iron. Castings to be smooth, true to pattern and free from projections, sand holes, warps and other defects of any kind and well cleaned. Provide concealed type pick holes in all covers. Machine at touching surfaces so as to seat firmly and not rock. Cast on covers the words ‘Sanitary Sewer’ or ‘Storm’, as applicable, the manufacturer's name and catalog number.

F. Protective Coating: Interior and exterior coatings for wastewater manholes are specified on the Drawings.

PART 3 EXECUTION

3.01 INSTALLATION

A. Manholes and inlets are to be constructed at the locations and elevations shown on the Drawings.

B. Masonry work to be built true with all courses level. Shove masonry into place (not laid) in full beds of mortar so as to bond masonry thoroughly into the mortar. Strike joints to a smooth finish. Joints should not be less than 1/4 inch nor more than 1/2 inch in thickness.

C. Plaster manholes and inlets as shown on the Drawings to leave a smooth, dense finish, completely watertight.

D. Use Ramneck at all keyed riser joints (1/2 inch thick with width at least 1/2 the wall thickness) with a non-shrink grout on inside and outside.

E. Seal all openings with a water proof, non-shrink grout.

3.02 FIELD OBSERVATIONS

A. All manholes and inlets will be observed at the option of the Engineer prior to backfilling.

B. Engineer to review the invert flow channels in wastewater manholes before field application of the interior protective coating.

END OF SECTION

SECTION 02613

DUCTILE-IRON PIPE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Ductile iron pipe and fittings for Potable Water, Wastewater, and Reclaimed Water Systems, sizes 3-inch diameter through 64-inches diameter.

1.02 RELATED SECTIONS

A. Section 02220 - Excavating, Backfilling and Compacting.

B. ~~Section 02675 - Disinfecting Water Mains~~.

1.03 REFERENCES

A. ASTM A153-19 - Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

B. ASTM A 197-15 - Cupola Malleable Iron.

C. ASTM A 307-14 - Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.

D. ASTM A 506-16 – Alloy and Structural Alloy Steel, Sheet and Strip, Hot-Rolled and Cold-Rolled.

E. ASTM A 536-19 - Ductile-Iron Castings.

F. ASTM A 575-18 - Steel Bars, Carbon, Merchant Quality, M-Grades.

G. ASTM D 1248-16 - Polyethylene Plastics Extrusion Materials for Wire and Cable.

H. ASTM D 2794-19 - Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).

I. AWWA C104-08 - Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water.

J. AWWA C105-10 - Polyethylene Encasement for Ductile-Iron Pipe Systems.

K. AWWA C110-12 – Ductile-Iron and Gray-Iron Fittings, 3 inch through 48 inch for Water.

L. AWWA C111-12 - Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.

M. AWWA C115-11 - Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges.

N. AWWA C150-14 - Thickness Design of Ductile-Iron Pipe.

O. AWWA C151-09 - Ductile-Iron Pipe, Centrifugally Cast, for Water or Other Liquids.

P. ANSI/AWWA C153-11 (latest revision) - Ductile-Iron Compact Fittings, 3 inch through 64 inch, for Water Service.

Q. AWWA C 600-10 - Installation of Ductile-Iron Water Mains and Their Appurtenances.

1.04 SUBMITTALS

A. Manufacturer's technical product data for pipe and fittings.

B. Manufacturer’s certifications of product compliance with the referenced AWWA standards.

1.05 QUALITY ASSURANCE

A. Each pipe and fitting must be marked with the following information: weight, pressure or thickness class (as applicable), manufacturer's mark, and the letters "DI" or "DUCTILE".

PART 2 PRODUCTS

2.01 PIPE

A. Manufactured in accordance with AWWA C151.

Size (inches)	Pressure Class	Special Thickness Class
3-20	--	51
24	350	--
30-42	300	--
48-64	250	--

B. Push-on type joints conforming to AWWA C111.

C. Flanged Joints (where specified on the Drawings): Conform to AWWA C115. Ductile iron conforming to the chemical and physical properties specified in AWWA C110. Pipe to be Special Thickness Class 53. Do not thread or flange pipe in the field.

D. All buried water supply pipe shall have a 2-inch wide blue band painted at 5-foot intervals for the length of the pipe and at all bends.

E. All buried wastewater pipe shall have a 2-inch wide green band painted at 5-foot intervals for the length of the pipe and at all bends.

F. All buried reclaimed watermain pipe shall have a 2-inch wide lavender band painted at 5-foot intervals for the length of the pipe and at all bends.

2.02 FITTINGS

A. Mechanical: AWWA C153 compact fittings with joints conforming to AWWA C111. All buried fittings to be mechanical type.

B. Flanged: AWWA C110 for 3-inch through 48-inch and AWWA C153 for 54-inch through 64-inch. Joints to conform to AWWA C111. All above ground fittings to be flanged.

2.03 COATINGS AND LININGS

A. Cement-mortar lined in pipe used for Potable Water and Reclaimed Water Systems conforming to AWWA C104.

B. Polyethylene Encasement (where specified on the Drawings):

1. Conforms to AWWA C105.
2. 8 mil thick tube or sheet of plastic meeting ASTM D1248.
3. Exposure of wrapped pipe should be kept to a minimum.

C. Epoxy lining for pipes used in wastewater systems.

1. The lining material for pipe and fittings to be Protecto 401. Apply in strict conformance with the manufacturer's recommendations. Provide minimum 40 mils dry film thickness.

D. All buried pipe shall have a Fusion Bonded Epoxy Coating on the exterior per ANSI/AWWA C116/A21.16 Standard.

E. Exposed pipe shall be factory primed. The primer used shall be compatible with the specified finished coating.

2.04 ACCESSORIES

A. Clamps, straps and washers: ASTM A 506.

B. Rods: ASTM A 575.

C. Rod Couplings: ASTM A 197.

D. Bolts and Nuts: ASTM A 307, Grade B.

E. All bolts, nuts, washers, couplings, rods, clamps, and straps are to be hot-dipped galvanized per ASTM A153.

F. Thrust Blocks: Concrete with a minimum compressive strength of 2500 psi at 28 days. Thrust blocks are allowed only where called for on the drawings.

G. Restrain pipe joints using either 'Field Lok' gaskets as manufactured by U.S. Pipe or 'Fast Grip' gaskets as manufactured by American Ductile Iron Pipe.

H. Restrain fittings using 'Megalugs' as manufactured by Ebaa Iron Sales, Inc. or approved equal.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install ductile iron pipe in accordance with AWWA C600.

B. Clean gaskets, sockets, and spigots of all foreign matter.

C. When ductile iron pipe is cut in the field, smooth the rough cut edge with a grinder or coarse file and bevel the end so that the cut end does not damage the gasket.

D. Lubricate the exposed face of the gasket and the spigot with the pipe and/or fitting manufacturers' recommended joint lubricant.

E. The interior of the pipe must be thoroughly cleaned of all foreign matter before being lowered into the dry trench and kept clean during laying operations by means of plugs or other approved methods.

F. Provide bell holes in the subgrade to accommodate the bells and to insure that the barrels are in contact with the foundation throughout its full length exclusive of the bell.

G. Restrain from movement all reaction forces at bends (11-1/4 degrees or greater), tees, valves, and plugs by concrete thrust blocks or mechanical restraints as specified on the Drawings.

H. Provide minimum 36-inch depth of cover except where otherwise shown on the Drawings.

I. Coat all bolts, nuts, studs, and other uncoated parts with a coal-tar epoxy coating prior to backfilling.

3.02 CLEANING

A. Upon completion of the pipe installation, the mains are to be either cannon flushed or swabbed by forcing under water pressure a soft sided swab through the mains to remove dirt and any other foreign matter.

B. When cannon flushing, achieve a minimum velocity of 2.5 feet per second in the pipe. The duration of the flushing to be sufficient to provide a minimum flush volume equal to three times the internal volume of the pipeline being flushed.

C. The size of the swab is to be the same size as the main. Install launching and exit points as required for each pipe size. The swab is to be Style V, Type B as manufactured by Knapp, Inc.

   Supply sufficient water pressure to move the swab through the system. Should a single pass reveal, in the Engineer's opinion, an excessive amount of dirt and debris, a second pass may be required at no additional cost to the Owner. The Contractor is responsible for ensuring that all valves are properly opened or closed as appropriate to facilitate the swabbing process. Neither the Owner or the Engineer will be responsible for the swab getting hung up or stuck in a main and any resulting costs for removal.

D. The cost of cannon flushing/swab cleaning, as applicable, is to be included in the cost of the pipe.

3.03 HYDROSTATIC TESTING

A. All pressure mains must be subjected to a pressure and leakage test of at least 2 hours in duration.

B. Test mains after the pipe and fittings are properly restrained but before backfilling the fittings.

C. Contractor must furnish own source of potable water.

D. The length of pipe to be tested at one time must not exceed the length allowed by the controlling utilities company, or 1500 feet, whichever is less.

E. Before applying the specified test pressure, expel air completely from the pipe, valves, and hydrants.

F. Subject pipelines to a gauge pressure of 150 psi. Subject fire service lines to a gauge pressure of 200 psi. The pressure must not vary by more than 5 psi for the duration of the test.

G. Inspect the line being tested. Stop all visible leaks by an approved method regardless of the leakage test results.

H. Maximum leakage allowed will be as set in Section 5.2 of AWWA Standard C600 or as noted on the drawings, whichever is more stringent.

I. If leakage is at a rate in excess of that allowed, the Contractor must tighten the joints or replace the defective Work until the leakage is reduced to within the allowable amount.

3.04 DISINFECTION

A. Disinfect potable water mains in accordance with Section 02675.

3.05 FIELD OBSERVATION

A. Fittings, valves, thrust blocks, mechanical restraints, cannon flushing and swab cleaning are to be observed at the option of the Engineer.

B. Engineer must be present during pressure tests.

C. All pipe and fittings are subject to visual or other inspection by the Engineer at any time. Such sections that do not conform to these Specifications will be rejected when, in the opinion of the Engineer, the methods of manufacture fail to guarantee uniform results, where the materials used are such as to produce inferior pipe, or the pipe and/or fittings are otherwise damaged or defective.

END OF SECTION

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SECTION 02624

HIGH DENSITY POLYETHYLENE (HDPE) PIPE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. High Density Polyethylene Pipe.

1.02 RELATED SECTIONS

A. Section 02220 – Excavating, Backfill, and Compacting.

B. Section 02156 – Horizontal Directional Drilling

1.03 REFERENCES

A. ASTM D3350 – HDPE Pipe and Fittings Materials.

B. ASTM D3035 – Polyethylene (PE) Pipe, Cell Classification 345434C.

C. ASTM D3261 –Butt Heat Fusion Welded Polyethylene (PE) Fittings.

D. ANSI/AWWA C909-07 – Polyethylene (PE) Pressure Pipe and Fittings, 4-In. through 63-In. for Water Distribution and Transmission.

E. ANSI/AWWA C605-05 – Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water.

F. AWWA C901 – For pipe sizes ½" through 3".

G. HDPE used for potable water shall be compliant with the standards and be approved by the National Sanitation Foundation.

1.04 SUBMITTALS

A. Submit manufacturer's technical product data.

B. The manufacturer shall certify that samples of the manufacturers production pipe have been factory tested, in accordance with ASTM D-2837, and validated in accordance with the latest revisions of PPI ASTM D-2837 and PPI TR-3.

1.05 QUALITY ASSURANCE

A. Continually and permanently mark pipe with the following information: Manufacturer's name and trademark, nominal pipe size, schedule, dimension ratio, production code, type of pipe, and working pressure at 73 degrees F.

PART 2 PRODUCTS

2.01 MATERIALS

A. Polyethylene Pipe and Fittings: AWWA C906 and ASTM D3350, PE4710, DR 9 rated at 250 psi water working pressure. All HDPE pipe and fittings shall have a ductile iron OD (DIPS) unless otherwise specified. If Iron Pipe Size (IPS) HDPE is approved for use, IPS/DIPS adaptors shall be used at the transition to other pipes or fittings. All pipe and fittings shall be NSF approved. Color to be either black for raw water, striped or solid blue for potable water, lavender for reclaimed water, or light green for wastewater.

B. Flanged connections: Shall be installed with PLEXCO Back-up Rings and shall be AWWA C207 Class D. Back-up rings shall be constructed of 316 stainless steel. All flanged connections shall have a full-face neoprene flange gasket (non-asbestos) with minimum thickness 1/16-inch. Bolts and all hardware shall be 316 stainless steel.

C. Manufacturer: DriscoPlex HDPE 4000 series (PE4710) by Performance Pipe, a division of Chevron Phillips Chemical Company or approved equal.

D. Thrust Blocks: Concrete with a minimum compressive strength of 2500 psi at 28 days.

E. Tracer Wire: HDPE shall have tracer wires furnished and affixed to the drilling head/reamer and the pipe as noted in the standard details and Section 02156.

F. A 6-inch-wide detectable marking tape shall be laid over the top of any HDPE pipe not installed by directional bore. Tape shall be marked for the type of product carried by the pipe and be as manufactured by Pro-Line Safety Products or equal.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install pipe in strict conformance with the latest published recommendations and instructions of the manufacturer or as a minimum the procedure of ANSI/AWWA C605-05.

B. Polyethylene pipe and fittings shall be joined by the heat butt fusion process at 440° or 550° F to produce a homogenous, sealed, leak tight joint unless otherwise noted as a flanged connection on the Drawings. Fusion process shall meet the requirements of ASTM D-3261. At the point of fusion, the outside diameter and minimum wall thickness shall meet the outside diameter and minimum wall thickness specifications of ASTM F-714. Polyethylene fittings shall be made from the material meeting the same requirements as the pipe. Polyethylene fittings shall be fabricated by the manufacturer of the pipe.

C. Pipe shall be handled with a nylon sling only. No chain or steel sling shall be used.

D. The interior of the pipe and fittings are to be thoroughly cleaned of all foreign matter before being lowered into the dry trench and kept clean during laying operations by means of plugs or other approved methods.

E. No trench water is allowed to enter the pipe or fittings. During suspension of Work for any reason at any time, a suitable stopper or temporary plug must be placed in the end of the pipe last laid to prevent mud or other foreign material from entering the pipe.

F. Lay pipe lines to grade and alignment as shown on the Drawings.

G. Provide minimum 36 inch depth of cover or as shown on the Drawings.

H. Any pipe and/or fitting found defective must be removed immediately and replaced with sound pipe.

I. Dig bell holes or flange holes in the pipe subgrade to accommodate the bells or flanges. Holes must be deep enough to ensure that the bell or flange does not bear on the bottom of the hole and the holes are not to be excessively wide in the longitudinal direction of the pipeline. When the pipe and fittings are laid, the barrels must be in contact with the foundation throughout its full length exclusive of the bell.

J. Thrust blocks are not required where polyethylene pipe and fittings are joined together by heat butt fusion process per ASTM D-3261. Thrust blocks shall only be installed in locations shown on the Drawings and where polyethylene pipe or fittings are joined to pipe and fittings of dissimilar materials via a process other than heat butt fusion that cannot be mechanically restrained as described in paragraph 'M' below. Thrust blocks shall be approved by the engineer.

K. Coat all bolts, nuts, studs, and other uncoated parts with a coal-tar epoxy coating prior to backfilling. All hardware shall be 316 stainless steel.

L. All operators of butt-fusion equipment shall provide a certificate or competence from the butt-fusion equipment manufacturer.

M. All transitions from HDPE pipe to Ductile Iron or PVC piping and mechanical joint fittings or valves shall be made per the HDPE pipe manufacturer's recommendations and specifications. A fusible mechanical joint adapter with a ductile iron mechanical joint gland shall be used for this type of transition. Mechanical joint adapters shall be of the same SDR rating as the pipe. Adapter shall be manufactured by the Manufacturer of the pipe.

3.02 CLEANING

A. At the conclusion of the work thoroughly clean the entire length of the new pipe to remove all dirt, stones, or other foreign material which may have entered during the construction period by forcing a cleaning swab through all mains 4" or greater. Flushing velocities shall be a minimum of 2.5 feet per second. All flushing shall be coordinated with Owner.

3.03 HYDROSTATIC TESTING

A. All pressure mains are to be subjected to a pressure and leakage test of at least 2 hours in duration using a method that is acceptable to the pipe manufacturer and Engineer.

B. Test mains after the pipe and fittings are properly restrained but before backfilling the fittings.

C. Contractor must provide his own source of potable water.

D. The length of pipe to be tested at one time must not exceed the length allowed by the controlling utilities company, or 1500 feet, whichever is less. Unless the pipe is installed via HDD, in which case the entire pull length shall be tested.

E. Before applying the specified test pressure, air must be expelled completely from the pipe, valves, and hydrants.

F. Subject pipelines to a gauge pressure of 150 psi. Fire service lines are to be subjected to a gauge pressure of 200 psi.

G. Inspect the line being tested. Stop all visible leaks by an approved method regardless of the leakage test results.

H. Maximum leakage allowed will be as set in Section 7.3 of AWWA Standard C605.

I. If leakage is at a rate in excess of that allowed, the Contractor must tighten the joints or replace the defective Work until the leakage is reduced to within the allowable amount.

3.04 DISINFECTION

A. Disinfect watermains in accordance with AWWA C651-05 and requirements of the Palm Beach County Health Department.

3.05 FIELD OBSERVATIONS

A. The polyethylene pipe, fittings, valves, thrust blocks and butt fusion welding are to be observed at the option of the Engineer.

B. The pressure test must be conducted in the presence of the Engineer.

END OF SECTION

SECTION 02626

PVC PRESSURE PIPE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. PVC pipe for potable water, raw watermains, reclaimed water, and forcemains, 4-inch through 60-inch diameter.

1.02 RELATED SECTIONS

A. Section 02220 - Excavating, Backfilling and Compacting.

B. ~~Section 02675 - Disinfecting Water Mains~~.

1.03 REFERENCES

A. ASTM D1784-11 - Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds.

B. ASTM D2241-15 - Poly (Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series).

C. ASTM D2672-14 - Joints for IPS PVC Pipe Using Solvent Cement.

D. ASTM F477-14 - Elastomeric Seals (Gaskets) for Joining Plastic Pipe.

E. ANSI/AWWA C153/A21.53-11 (latest revision) - Ductile-Iron Compact Fittings.

F. AWWA C605-13 - Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water.

G. AWWA C900-16 - Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 inch through 60 inch.

1.04 SUBMITTALS

A. Manufacturer's technical product data for pipe and fittings.

1.05 QUALITY ASSURANCE

A. Pipe for watermains must be marked with the following information: nominal size and OD, base material code designation, dimension ratio number, AWWA pressure class, AWWA designation number, manufacturer's name or trademark, production code, and the seal of the testing agency that verified the suitability of the pipe material for potable water service.

B. This space left intentionally blank.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver pipe to the site in such a manner as to provide adequate protection for the pipe ends and pipe.

B. Do not store PVC pipe in a place where it can be exposed to ultraviolet sunlight.

PART 2 PRODUCTS

2.01 MATERIALS

A. Pipe: 4-inch through 48-inch diameter shall be AWWA C900, Class 235, DR 18.

B. Pipe Color:

1. Watermain pipe color to be blue.
2. Forcemain pipe color to be green.
3. Reuse watermain pipe color to be lavender.
4. As an alternate, paint one 2-inch wide stripe for the length of the pipe in the color above for pipelines less than 12-inches in diameter. Provide two 2-inch wide stripes for pipelines 12-inches in diameter and larger.

C. Fittings: AWWA C153.

1. For Raw Water, Potable Water, and Reclaimed Water Systems provide cement-mortar lining conforming to AWWA C104.
2. For Wastewater Systems provide an epoxy lining using Protecto 401 with a minimum dry film thickness of 40 mils. Apply in strict accordance with the manufacturer's recommendations.
3. Ductile iron fittings are not allowed for brackish water or Floridan aquifer raw water transmission systems.

D. Thrust Blocks: Concrete with a minimum compressive strength of 2500 psi at 28 days. Allowed only where called for on the Drawings or where approved by the Engineer.

E. Restrained Fittings: 'Megalugs' as manufactured by Ebaa Iron Sales, Inc., or approved equal.

F. Restrained Pipe Joints: Series 1600 or 2800 Restraint Harness by Ebaa Iron Sales, Inc., or approved equal.

G. Flanged Connections: Flanges, as indicated on the Drawings or as required by connecting pipe, shall be AWWA C207 Class D and shall have back-up rings constructed of 316 stainless steel. All flanged connections shall have a full face neoprene flange gasket (non-asbestos) with minimum thickness of 1/16-inch. Bolts and all hardware shall be 316 stainless steel.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install PVC pipe, fittings and joints in accordance with the manufacturer's instructions and AWWA C605.

B. Install pipe with the spigots pointing in the direction of flow except in a looped water distribution system where the flow in the pipe line may be either way. In a looped system, lay pipe lines with the bell ends facing in the direction of laying pipe.

C. The interior of the pipe and fittings are to be thoroughly cleaned of all foreign matter before being lowered into the dry trench and kept clean during laying operations by means of plugs or other approved methods.

D. No trench water is allowed to enter the pipe or fittings. During suspension of Work for any reason at any time, a suitable stopper must be placed in the end of the pipe last laid to prevent mud or other foreign material from entering the pipe.

E. Lay pipe lines to grade and alignment as shown on the Drawings.

F. Provide minimum 36-inch depth of cover except where otherwise shown on the Drawings.

G. Any pipe and/or fitting found defective must be removed immediately and replaced with sound pipe.

H. Dig bell holes in the pipe subgrade to accommodate the bells. Bell holes must be deep enough to insure that the bell does not bear on the bottom of the hole and the holes are not to be excessively wide in the longitudinal direction of the pipe line. When the pipe and fittings are laid, the barrels must be in contact with the foundation throughout its full length exclusive of the bell.

I. All reaction forces at bends (11-1/4 degrees or greater), tees, valves, and plugs are to be restrained from movement by mechanical restraints as specified on the Drawings.

J. Coat all bolts, nuts, studs, and other uncoated parts with a coal-tar epoxy coating prior to backfilling.

3.02 PIPE LOCATION AND DETECTION PROVISIONS

A. Metallic Tape

1. All non-metallic pipe shall be marked in place by laying a metalized tape in the ditch 24 inches above the top of the pipe to allow for pipe location by a metal detecting device. The tape shall be color coded and labeled to identify the type of material being carried by the pipe.

2. The locator tape shall be 2 inches wide and continuous along the entire length of the pipeline. The tape shall be white background with green lettering that says “SEWER”. Tape shall comply with testing per ASTM B-1.

B. Tracer Wire

1. Contractor shall install a #10 THHN multi-strand copper conductor, with green insulation on to the side of the pipe along its entire length with nylon cable-ties placed at least every 10 feet.

2. Tracer wire shall be wound around each valve and extended to ground surface as shown on the construction drawing details. Alternatively the wire can be terminated inside the valve box, leaving 2-feet of extra wire inside the valve box.

3. Where necessary, the wire may be spliced using a splicing lug suitable for direct bury. Such as that manufactured by King Innovations, Dry Con Direct Bury Lug or approved equal.

4. The Contractor is responsible to install the required tracer system with complete continuity of the system. Final acceptance will include the successful testing of the tracer system.

3.03 CLEANING

A. Upon completion of the pipe installation, the mains are to be either canon flushed or swabbed by forcing under water pressure a soft sided swab through the mains to remove dirt and any other foreign matter.

B. When canon flushing, achieve a minimum velocity of 2.5 feet per second in the pipe. The duration of the flushing to be sufficient to provide a minimum flush volume equal to three times the internal volume of the pipeline being flushed.

C. The size of the swab is to be the same size as the main. Install launching and exit points as required for each pipe size. The swab to be Style V, Type B as manufactured by Knapp, Inc.

   Supply sufficient water pressure to move the swab through the system. Should a single pass reveal, in the Engineer's opinion, an excessive amount of dirt and debris, a second pass may be required at no additional cost to the Owner. The Contractor is responsible for ensuring that all valves are properly opened or closed as appropriate to facilitate the swabbing process. Neither the Owner nor the Engineer will be responsible for the swab getting hung up or stuck in a main and any resulting costs for removal.

D. The cost of canon flushing/swab cleaning, as applicable, is to be included in the cost of the pipe.

3.04 HYDROSTATIC TESTING

A. All pressure mains are to be subjected to a pressure and leakage test of at least 2 hours in duration.

B. Test mains after the pipe and fittings are properly restrained but before backfilling the fittings.

C. Contractor must provide his own source of potable water unless otherwise noted.

D. The length of pipe to be tested at one time must not exceed the length allowed by the controlling utilities company, or 1500 feet, whichever is less.

E. Before applying the specified test pressure, air must be expelled completely from the pipe, valves, and hydrants.

F. Subject pipelines to a gauge pressure of 150 psi. Fire service lines are to be subjected to a gauge pressure of 200 psi.

G. Inspect the line being tested. Stop all visible leaks by an approved method regardless of the leakage test results.

H. Maximum leakage allowed will be as set in AWWA Standard C605, latest revision.

I. If leakage is at a rate in excess of that allowed, the Contractor must tighten the joints or replace the defective Work until the leakage is reduced to within the allowable amount.

3.05 DISINFECTION

A. Disinfect potable watermains in accordance with Section 02675.

3.06 FIELD OBSERVATIONS

A. Fittings, valves, thrust blocks, mechanical restraints, canon flushing, and swab cleaning are to be observed at the option of the Engineer.

B. Engineer must be present during pressure tests.

C. All pipe and fittings are subject to observation by the Engineer at any time. Such sections that do not conform to these Specifications will be rejected when, in the opinion of the Engineer, the methods of manufacture fail to guarantee uniform results, where the materials used are such as to produce inferior pipe, or the pipe and/or fittings are otherwise damaged or defective.

END OF SECTION

SECTION 02642

PLUG VALVES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Plug valves.

B. Valve boxes.

1.02 SUBMITTALS

A. Detailed manufacturer's information for valves and valve boxes.

1.03 DELIVERY, STORAGE, AND HANDLING

A. Provide valves with manufacturer's name, year of manufacture, valve size, and pressure rating clearly cast on the body of each valve.

PART 2 PRODUCTS

2.01 GENERAL

A. Provide valves of same manufacturer throughout where possible.

B. Valves shall be as manufactured by DeZurik Corporation, Milliken, Keystone Valve Manufacturing Company, or approved equal.

2.02 VALVE CONNECTIONS

A. Provide valves suitable to connect to adjoining piping as specified for pipe joints. Use pipe size valves.

B. Thread pipe sizes 2 inches and smaller.

C. Flange pipe sizes 2-1/2 inches and larger.

D. Use grooved body valves with mechanical grooved jointed piping.

2.03 PLUG VALVES

A. General: Eccentric plug type with bodies of semi-steel. Valves are to have a balanced plug, coated with a resilient material solidly bonded to a cast iron or semi-steel core, as required, to assure low torque and bubble-tight shutoff. The valve plug shall touch on the seat when in the closed position. Seats in 3-inch and larger valves to have a welded-in overlay of not less than 90 percent pure nickel on all surfaces contacting the plug face. Joint ends as detailed on the Drawings or to conform to the pipeline in which the valve is to be installed. Valve port areas of 24-inch diameter and smaller valves to be 100 percent full pipe area. Port areas of 30-inch diameter and larger valves to be at least 80 percent of full pipe area. Valves through 20-inches in diameter to have stainless steel permanently lubricated upper and lower plug stem bushings. Valves 24-inches and larger to have permanently lubricated stainless steel upper and lower plug stem sleeves and bronze bushings. All valves 4-inches and larger are to be of the bolted bonnet design. Design valves so that they can be repacked without removing bonnet from valve. Provide adjustable multiple U-ring type packing. Zinc plate all exposed nuts, bolts, springs and washers. Buried or submerged valves are to have stainless steel nuts, bolts, springs and

washers. Design valves for tight shutoff with a minimum pressure differential of 125 psi acting in either direction. Prior to shipment from the factory, test each valve by submitting it to a hydraulic pressure equal to twice the specified working pressure. 150 psi minimum design working pressure.

B. Valve Actuators: Manual actuators for valves up to 6 inches in diameter and gear actuators on valves 6 inches in diameter and larger. Enclose gearings and run oil in seals on all shafts to prevent entry of dirt and water into the actuator. Furnish shaft bearings in the actuator with permanently lubricated bronze bushings. Clearly indicate valve position and provide an adjustable stop to set close travel limit. Valve packing adjustment on non-submerged valves must be accessible without removing the actuator from the valve. On valves and actuators for below ground and submerged service, provide seals on all shafts and gaskets on valve and actuator covers to prevent the entry of water. Enclose actuator mounting brackets for below ground and submerged surfaces and have gasket seals. Below ground valves are to have an actuating nut. Buried plug valves shall be installed vertically with non-rising stems and shall open by turning a two-inch square operating nut counterclockwise. An arrow shall be cast into the nut skirt to indicate the open direction.

C. Furnish a valve key for each valve supplied under the Contract.

2.04 VALVE BOXES

A. Cast iron construction, adjustable type.

B. Cast in the cover the word 'SEWER'.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install valves at locations shown on the Drawings.

B. Install valves with stems upright or horizontal, not inverted.

C. Provide valve boxes for all buried valves. Depth of box to be suitable for the depth of the valve below grade.

D. Mount boxes with the centerline of the box coincidental with the perpendicular to the centerline of the valve.

3.02 FIELD OBSERVATIONS

A. All valves constructed underground will be observed at the option of the Engineer prior to backfilling.

END OF SECTION

SECTION 02648

STAINLESS STEEL AIR RELEASE VALVES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Stainless steel air release valves suitable for brackish or other corrosive waters or wastewater.

B. Stainless steel air/vacuum combination valves.

1.02 SUBMITTALS

A. Submit product literature that includes information on the performance and operation of the valve, materials of construction, dimensions and weights, parts list drawings, operation and maintenance manuals, and warranty information.

B. Affidavit of Compliance' from the manufacturer indicating that the valves and other products or materials furnished meet the requirements of this Specification.

1.03 QUALILTY ASSURANCE

A. Supplier shall have at least five (5) years experience in the manufacture of air valves.

B. Provide air release valves with corrosion resistant nameplate with manufacturer's name, year of manufacture, valve size, class, etc. attached to the body or cover.

C. Valves of the same manufacturer throughout.

PART 2 PRODUCTS

2.01 GENERAL

A. All materials that come in contact with the water being treated or the finished water shall be on either the EPA or NSF lists of approved products for use in contact with potable water. Manufacturers shall submit an affidavit with the shop drawings indicating approval by the EPA or NSF for the materials used in products that come in contact with the water in accordance with Rule 62-555.320(3), Florida Administrative Code.

2.02 MANUFACTURER

A. Stainless steel air release valves shall be Model D-025 Combination Air and Vacuum Valve for Wastewater – Short Version as manufactured by A.R.I. or approved equal.

2.03 AIR RELEASE VALVES

A. Air release valves shall be automatic float operated valves designed to release air from a piping system while the system is in operation and under pressure or to allow air to enter the system while the system is draining.

B. The valve body shall be threaded with NPT or flanged inlets.

C. The cover shall be bolted to the valve body and sealed with a flat gasket.

D. The valve body shall be constructed of 316Ti stainless steel.

E. Seal shall be accomplished via a replaceable orifice button or needle and shall provide drip-tight shutoff to the full valve pressure rating.

F. Air release valves shall be capable of passing 135 CFM at 250 psi working pressure and able to withstand 250 psi test pressure.

2.04 MATERIALS OF CONSTRUCTION

A. Cover, float, seat, internal linkage and trim, and hardware shall be non-corrosive materials.

B. Seal shall be Buna-N.

PART 3 EXECUTION

3.01 INSTALLATION

A. Air release valve shall be installed in accordance with manufacturer's written Installation and Operation Manual and approved submittals.

END OF SECTION

SECTION 02924

MULCH SCREENING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Separation of soil and fine organics from mulch material.

B. Grind mulch material so it is suitable for use in landscaping.

1.02 REGULATORY REQUIREMENTS

A. Contractor or Subcontractor performing Work under this Section must be regularly engaged in mulch processing operations.

1.03 FIELD MEASUREMENTS

A. Soil and fine organics will be measured by the Engineer after it has been separated from the mulch material.

B. Mulch will be measured by the Engineer after it has been ground and screened.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

3.01 PROCESSING

A. Separate soil and fine organics from the mulch material using a 1/2-inch Tromell Screen. Stockpile soil and organics adjacent to the processing operation.

B. Reduce mulch material using a mechanical grinder until all of it can be processed through a 3-inch by 5-inch deck screen.

C. The final mulch product is to be suitable for use in landscaping.

D. Melaleuca trees are not to be reduced to mulch. They are to be removed from the site and disposed of in a legal manner.

3.02 FIELD QUALITY CONTROL

A. Engineer will observe the quality of the material after each process.

END OF SECTION

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SECTION 02936

SEEDING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Preparation of subsoil.

B. Placing topsoil.

C. Fertilizing.

D. Seeding and hydro-seeding.

E. Mulching.

F. Maintenance.

1.02 QUALITY ASSURANCE

A. Provide seed mixture in containers showing percentage of seed mix, year of production, net weight, date of packaging, and location where packaged.

1.03 REGULATORY REQUIREMENTS

A. Comply with regulatory agencies for fertilizer and herbicide composition.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver seed mixture in sealed containers. Seed in damaged packaging is not acceptable.

B. Deliver fertilizer in waterproof bags showing weight, chemical analysis and name of manufacturer.

1.05 EXISTING CONDITIONS

A. All existing grass areas which are damaged or destroyed during construction are to be repaired with new grass. Contractor is responsible for the restoration of the grass to the conditions that existed prior to construction.

1.06 FIELD MEASUREMENTS

A. On pipeline projects, seeded areas will be measured based on maximum trench widths shown on the Drawings. Seed required to be placed in excess of the maximum trench widths or limits detailed on the Drawings will be at no additional cost to the Owner.

PART 2 PRODUCT

2.01 MATERIALS

A. Topsoil: Muck; free of plants, weeds and roots. PH level between 5.0 and 7.0. Organic content of at least 1.5 percent.

B. Fertilizer: 12 percent nitrogen - 8 percent phosphoric acid - 8 percent potash.

C. Seed: Argentine Bahia Grass. Minimum pure seed content of 95 percent with a minimum germination rate of 80 percent.

D. Dry Mulch: Straw or hay, consisting of oat, rye, or wheat straw, or of pangola, peanut, coastal bermuda or bahia grass hay. Use only un-deteriorated mulch which can be readily cut into the soil.

E. Mulch for Hydro-Seeding: Applegate brand fiber mulch, paper base with green dye.

E. Water: Free of excess and harmful chemicals, acids, alkalies, or any substance which might be harmful to plant growth. Salt water not permitted.

PART 3 EXECUTION

3.01 PREPARATION OF SUBSOIL

A. Prepare sub-soil to eliminate uneven areas and low spots. Maintain lines, levels, profiles and contours. Make changes in grade gradual. Blend slopes into level areas.

B. Remove foreign materials, weeds and undesirable plants and their roots.

3.02 PLACING TOPSOIL

A. Spread topsoil to a minimum thickness of 2 inches over the entire area to be seeded.

B. Place topsoil during dry weather.

C. Roto-till to a depth of 6 inches.

D. Fine grade the area to be seeded to eliminate ridges, depressions and other irregularities, and to ensure positive drainage.

3.03 FERTILIZING

A. Fertilizing operations will not be permitted when wind velocities exceed 15 miles per hour.

B. Apply fertilizer uniformly at a rate of 400-500 pounds per acre.

C. Apply after smooth raking of topsoil and prior to seeding.

D. Apply fertilizer no more than 48 hours before seeding. When hydro-seeding, mix fertilizer with seed and mulch.

E. Lightly water to aid the dissipation of fertilizer.

3.04 SEEDING AND MULCHING

A. Seeding operations will not be permitted when the wind velocities exceed 15 miles per hour.

B. Seed only when the soil is moist and in proper condition to induce growth.

C. Seed Application Rate: 8-10 pounds of Argentine Bahia per 1,000 square feet. During late fall, winter, and early spring applications, add 4-5 pounds of rye seed to the Bahia per 1,000 square feet. During late spring, summer, and early fall, add 1-1/2 - 2 pounds of red top millet seed to the Bahia per 1,000 square feet.

D. Immediately after completion of the seeding, roll entire seeded area. At least two trips over the entire area are required.

E. Immediately following seeding and rolling, apply mulch to a loose thickness of 1 inch over the entire seeded area.

F. Apply water with a fine spray immediately after each area has been mulched.

G. Newly seeded areas are not to be watered to force seed germination but only to sustain grass growth.

3.05 HYDRO-SEEDING

A. Seed Application Rate: 8-10 pounds of Argentine Bahia per 1,000 square feet. During late fall, winter, and early spring applications, add 4-5 pounds of rye seed to the Bahia per 1,000 square feet. During late spring, summer, and early fall, add 1-1/2 - 2 pounds of red top millet seed to the Bahia per 1,000 square.

B. Mulch Application Rate: 1,100 pounds per acre.

C. Add to the mixture a dispersing agent to insure proper dispersion and a uniform application.

D. Spray hydro mulch, seed, tackifier, and fertilizer in a one step operation. Keep mixture in a homogeneous slurry at all times.

E. Hydraulically spray on the ground to form a ground cover impregnated uniformly with grass seed. Allow absorption of moisture from rainfall or mechanical watering to percolate to the underlying soil.

F. Water so as to provide optimum growth conditions for the establishment of grass 24 hours after hydro-seeding. Irrigate for brief intervals, 3 to 4 times a day, until established. Keep top layer of soil moist until seeds germinate.

3.06 MAINTENANCE

A. Begin maintenance immediately after each area is planted.

B. Water to keep surface soil moist.

C. Repair washed out areas by filling with topsoil, fertilizing, seeding, and mulching.

D. Mow grass at regular intervals to maintain a maximum height of 4 inches. Do not cut more than 1/3 of grass blade at any one mowing.

E. Immediately remove clippings after mowing.

F. Roll surface to remove minor depressions or irregularities.

G. Control growth of weeds. Apply herbicides in accordance with manufacturer's instructions. Remedy damage resulting from improper use of herbicides.

H. Continue maintenance for the duration of the Contract Time but in no case less than two weeks.

3.07 ACCEPTANCE

A. If, at the end of the maintenance period, a satisfactory stand of grass has not been produced, renovate and reseed the unsatisfactory portions thereof immediately.

B. A satisfactory stand is defined as grass or section of grass that has:

1. No bare spots larger than 3 square feet.
2. Not more than 10 percent of total area with bare spots larger than 1 square foot..
3. No more than 15 percent of total area with bare spots larger than 6 inches square.

END OF SECTION

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SECTION 02938

SODDING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Preparation of subsoil.

B. Placing topsoil.

C. Fertilizing.

D. Sod installation.

E. Maintenance.

1.02 REGULATORY REQUIREMENTS

A. Comply with regulatory agencies for fertilizer and herbicide composition.

1.03 DELIVERY, STORAGE, AND HANDLING

A. Deliver sod on pallets. Protect exposed roots from dehydration.

B. Do not deliver more sod than can be laid within 24 hours.

1.04 EXISTING CONDITIONS

A. All existing grass areas which are damaged or destroyed during construction are to be replaced with new sod of the same variety, unless otherwise noted, which existed prior to construction.

B. In all cases, Contractor is responsible for the restoration of the grass to the conditions that existed prior to construction.

1.05 FIELD MEASUREMENTS

A. On pipeline projects, sodded areas will be measured based on maximum trench widths shown on the Drawings. Sod placed in excess of the maximum trench widths or limits detailed on the Drawings will be at the full expense of the Contractor.

PART 2 PRODUCTS

2.01 MATERIALS

A. Topsoil: Muck; free of plants, weeds, and roots.

B. Sod: In Kind. Live, fresh, and uninjured at time of planting, free of objectionable weeds, and have a soil mat of sufficient thickness adhering firmly to the roots to withstand all necessary handling. Transport within 24 hours after being stripped and plant as soon as possible.

C. Fertilizer: 6 percent nitrogen - 6 percent phosphoric acid - 6 percent potash, 40 percent organics.

D. Water: Free of excess and harmful chemicals, acids, alkalis, or any substance which might be harmful to plant growth. Salt water not allowed.

E. Wood Pegs: Softwood; sufficient size and length to ensure anchorage of sod on a slope.

PART 3 EXECUTION

3.01 PREPARATION OF SUBSOIL

A. Prepare subsoil to eliminate uneven areas and low spots. Maintain lines, levels, profiles and contours. Make changes in grade gradual. Blend slopes into level areas.

B. Remove foreign materials, weeds and undesirable plants and their roots. Remove contaminated soil.

3.02 FERTILIZING

A. Apply fertilizer uniformly at a rate of 16 pounds per 1000 square feet.

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. Lightly water to aid the dissipation of fertilizer.

3.03 SOD INSTALLATION

A. Moisten prepared surface immediately prior to laying sod.

B. Place sod on the prepared surface with edges in close contact and embed firmly and smoothly by light tamping with appropriate tools.

C. Do not stretch or overlap sod pieces.

D. Where sodding is used in drainage ditches, the setting of the pieces must be staggered to avoid a continuous seam along the line of flow.

E. In order to prevent erosion caused by vertical edges at the outer limits, tamp the outer pieces of sod so as to produce a feather edge effect.

F. On slopes 6 inches per foot and steeper, lay sod perpendicular to slope and secure every row with wooden pegs at maximum 2 feet on center. Drive pegs flush with soil portion of sod.

G. After installation, saturate sod with water to a depth of 4 inches into the soil.

H. After sod and soil have dried, roll sodded areas to ensure good bond between sod and soil and to remove minor depressions and irregularities.

I. After rolling, keep sod moist for the duration of the contract period and in no case less than 2 weeks. The moistened condition should extend at least to the full depth of the rooting zone.

END OF SECTION

SECTION 03001

CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Formwork.

B. Concrete reinforcement and accessories.

C. Cast-in-place concrete.

D. Pre-cast concrete.

1.02 REFERENCES

A. ACI 301-96 - Specifications for Structural Concrete.

B. ACI 318-99 - Building Code Requirements for Structural Concrete.

C. ACI SP-4 (95) – Formwork for Concrete.

D. ASTM A185-97 – Steel Welded Wire Fabric, Plain, for Concrete Reinforcement.

E. ASTM A615-01 - Deformed and Plain Billet Steel for Concrete Reinforcement.

F. ASTM A775-01 – Epoxy - Coated Reinforcing Steel Bars.

G. ASTM C31-00 - Making and Curing Concrete Test Specimens in the Field.

H. ASTM C33-01 - Concrete Aggregates.

I. ASTM C39-01 - Compressive Strength of Cylindrical Concrete Specimens.

J. ASTM C42-99 - Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.

K. ASTM C94-00 - Ready-Mixed Concrete.

L. ASTM C143-00 - Slump of Hydraulic Cement Concrete.

M. ASTM C150-00 - Portland Cement.

N. ASTM C192-90 - Making and Curing Concrete Test Specimens in the Laboratory.

O. ASTM C260-01 - Air-Entraining Admixtures for Concrete.

P. ASTM C309-98 - Liquid Membrane - Forming Compounds for Curing Concrete.

Q. ASTM D1751-99 - Preformed Expansion Joint Filler for Concrete Paving and Structural Construction.

1.03 SUBMITTALS

A. Test mix report showing the proportions of cement, aggregate, fine aggregate, water and admixtures.

B. Shop Drawings of pre-cast structures for review prior to fabrication.

PART 2 PRODUCTS

2.01 FORM MATERIALS

A. Conform to ACI 347.

2.02 REINFORCING STEEL

A. Reinforcing Bars: ASTM A615, Grade 60, new deformed billet steel.

B. Welded Wire Fabric: Plain type, ASTM A185.

C. Stirrups and Ties: ASTM A615, Grade 40 or Grade 60.

D. Bar Supports and Spacers: Steel wire with upturned legs. Mortar cubes.

E. Epoxy - Coated Reinforcing Bars: ASTM A775, Grade 60, new deformed billet steel.

2.03 CONCRETE MATERIALS

A. Cement: ASTM C150, Type I. Type II cement for wastewater structures.

B. Fine and Coarse Aggregates: ASTM C33.

Nominal maximum size of coarse aggregate not larger than:

1 The narrowest dimension between sides of forms, nor

2. 1/3 the depth of slabs, nor

3. 3/4 the minimum clear spacing between individual reinforcing bars or wires, bundles of bars, or ducts.

4. 4 inches.

C. Water: Clean, fresh, and free from injurious amounts of oils, acids, alkalis, salts, organic materials, or other substances that may be deleterious to concrete or reinforcement.

D. Air Entrainment Admixtures: ASTM C260. 'Darex' by the W. R. Grace Company or approved equal.

E. Curing Compound: ASTM C309, Type 1 or Type 1-D, Class A.

2.04 CONCRETE MIX

A. Mix concrete in accordance with ASTM C94.

B. Compressive Strength: 3000 psi minimum at 28 days for cast-in-place concrete and 4000 psi minimum at 28 days for pre-cast concrete (unless otherwise noted on Drawings).

C. Slump: 5 inches maximum (Vertical Pours)

3 inches maximum (Horizontal Pours)

2 inches minimum (Unless noted otherwise i.e. tremie, curb machine)

D. Mixing water not to exceed 6 gallons per sack of Portland Cement. This includes water entering the batches as surface moisture on the aggregates, which must be deducted from the specified 6 gallons to determine the amount of mixing water for each batch.

E. Contain not less than 5 sacks of cement per cubic yard of concrete for 3000 psi concrete and not less than 6 sacks of cement per cubic yard of concrete for 4000 psi concrete.

F. Air-Entraining admixture to produce 5 percent (+/- 1.5%) entrained air.

PART 3 EXECUTION

3.01 FORMWORK ERECTION

A. Conforms to the shapes, lines, and dimensions of the members as called for on the Drawings.

B. Provide bracing to ensure stability of formwork.

C. Design and construct forms, bracing, and supports to withstand the pressure of freshly placed concrete without bow or deflection.

D. Hand trim sides and bottom of earth forms; remove loose dirt.

E. Coordinate Work on Drawings in forming and setting openings, recesses, chases, sleeves, bolts, anchors, and other inserts.

F. Substantial and sufficiently tight to prevent leakage of mortar. Check forms prior to placing concrete and tighten as required to produce flush surfaces.

G. Tie metal remaining in the concrete to be at least 3 inches back of the concrete face. Plug holes left by the tie ends with grout.

H. Chamfer corners of beams, columns, walls and exposed edges or corners of concrete with 3/4 inch by 3/4 inch wood chamfer strips unless otherwise shown on Drawings.

I. Clean forms and apply form release agents or wet forms prior to concrete placement.

J. Remove forms in such a manner as to insure the complete safety of the structure. Where the structure as a whole is supported on shores, the removable floor forms, beams and girder sides, columns and similar vertical forms may be removed only after concrete has reached 2/3 of its design strength by test and is sufficiently hard not to be injured during form removal. In no case should supporting forms or shoring be removed until the members have acquired sufficient strength to support their weight and the load safely thereon.

3.02 REINFORCEMENT

A. Before placing concrete, clean reinforcement of foreign particles or coatings.

B. Place, support, and secure reinforcement against displacement.

C. Lap welded wire mesh at least one full mesh and lace splices with wire. Offset end laps in adjacent widths to prevent continuous laps in either direction.

D. Avoid splices at points of maximum stress. Provide sufficient lap to transfer the stress between bars by bond and shear.

E. Make bends for stirrups and ties on bars 5/8 inches in diameter and less, around a pin having a diameter not less than four times the thickness of the bar. Make bends for other bars around a pin having a diameter not less than six times the minimum thickness of the bar, except that for bars larger than one inch but less than 1-3/4 inches, the pin can not be less than eight times the minimum thickness of the bar. Bend all bars cold.

F. Splices and Offsets in Reinforcement: In slabs, beams, and girders, avoid splices of reinforcement at points of maximum stress. Provide sufficient lap to transfer the stress between bars by bond and shear and meet the requirements of ACI 318.

Where changes in the cross section of a column occur, offset the longitudinal bars in a region where lateral support is afforded. Where offset, the slope of the inclined portion should not be

more than one in six, and in the case of tied columns, space the ties not more than 3 inches on center for a distance of one foot below the actual point of offset.

G. Protection of Reinforcement: Protect the metal reinforcement by the thickness of concrete indicated on the Drawings. Where not otherwise shown, the thickness of concrete over the reinforcement should be as follows:

Where concrete is deposited against ground without the use of forms, not less than 3 inches for beams and slabs.

Where concrete is exposed to the weather or exposed to the ground but placed in forms, not less than 2 inches for bars more than 5/8 inch in diameter and 1-1/2 inches for bars 5/8 inch or less in diameter.

In slabs and walls not exposed to the ground or to the weather, not less than 1-1/2 inches.

In beams, girders and columns not exposed to the ground or to the weather, not less than 1-1/2 inches.

In all cases, the thickness of concrete over the reinforcement must be at least 1-1/2 inches.

H. Protect reinforcement bars, intended for bonding with future extensions, with approved adequate covering.

3.03 JOINTS

A. Expansion and Contraction Joints: Provide expansion joints when slabs on grade join other construction and elsewhere as indicated. Expansion joints are to be one-half (1/2) inch thick when not otherwise noted. Tool edges of slabs at expansion and contraction joints to a one-fourth (1/4) inch radius.

B. Construction Joints: In jointing fresh concrete to that which has already set, the surface of the concrete in place must be thoroughly cleaned and have all laitance removed by cutting with a suitable tool. In addition, wet and slush with a coat of grout, no leaner than one (1) part cement to two (2) parts sand.

3.04 CONCRETE MIXING

A. Mix until there is a uniform distribution of the materials and discharge completely before the mixer is recharged.

B. For job-mixed concrete, rotate the mixer at a speed recommended by the manufacturer and mix continuously for at least one minute after all materials are in the mixer.

C. Mix and deliver ready-mixed concrete in accordance with ASTM C-94.

D. Wet batches of concrete may be transported in either agitating or nonagitating trucks. When non-agitator trucks are used, the elapsed time between the addition of water to the mix and depositing the concrete in place must not exceed 45 minutes except that when a retardant admixture is used such elapsed time must not exceed 75 minutes. When the handling is done in truck agitators, such elapsed time must not exceed 60 minutes, except that when a retardant admixture is used a maximum elapsed time of 90 minutes will be permitted.

E. When concrete arrives on site with slump below that suitable for placing, as indicated by the Specifications, water may be added only if neither the maximum permissible water-cement ratio nor the maximum slump is exceeded.

3.05 PLACING CONCRETE

A. Notify Engineer a minimum of 24 hours prior to commencement of concreting operations.

B. Equipment for chuting, pumping and pneumatically conveying concrete must be sized and designed as to insure a practically continuous flow of concrete at the delivery end without separation of the materials.

C. Prevent separation or loss of materials when conveying concrete from mixer to place of final deposit.

D. No concrete that has partially hardened or been contaminated by foreign material may be deposited on the Work nor retempered.

E. Deposit as nearly as practicable to its final position to avoid segregation due to rehandling or flowing.

F. During placement, thoroughly work concrete around reinforcement and embedded fixtures and into the corners of the forms.

G. At all times, concrete is to be plastic and flow readily into the space between the bars.

When concreting is once started, carry on as a continuous operation until the placing of the panel or section is completed. The top surface to be generally level.

H. Consolidate placed concrete by mechanical vibrating equipment supplemented by hand-spading, rodding or tamping. Use vibrators designed to operate with vibratory element submerged in concrete.

3.06 UNDER-WATER PLACING (Done only on approval of Engineer)

A. When conditions require placing through water, a tremie or drop-bottom bucket should be used and the Work must be well supervised. Every precaution must be taken to prevent the cement from washing out of the concrete. The tremie is to be water-tight and large enough to allow a free flow of concrete. It must be kept filled with concrete at all times while depositing. Discharge concrete and spread by moving the tremie as to maintain as nearly as practicable a uniform flow and avoid dropping the concrete through water. If the charge is lost while depositing, the tremie must be withdrawn and refilled. Maintain concrete slump between 6 and 7 inches. Tremie concrete must be pumped into place instead of gravity placed.

3.07 COLD WEATHER PLACEMENT

A. Provide adequate equipment for heating the concrete materials and protecting the concrete during freezing or near-freezing weather. No frozen materials or materials containing ice can be used.

B. All concrete materials and all reinforcement, forms, fillers and ground with which the concrete is to come in contact must be free from frost. Whenever the temperature of the surrounding air is below 40 degrees F, all concrete placed in the forms must have a temperature of between 70 degrees F and 80 degrees F, and adequate means to provide for maintaining a temperature of not less than 70 degrees F for 3 days or 50 degrees F for 5 days. The housing covering or other protection used in connection with curing must remain in place and intact at least 24 hours after the artificial heating is discontinued. No dependence can be placed on salt or other chemicals for the prevention of freezing.

3.08 HOT WEATHER PLACEMENT

A. Cool ingredients before mixing to maintain concrete temperature at time of placement below 90 degrees F. Mixing water may be chilled, or chopped ice may be used to control the concrete temperature, provided the water equivalent of the ice is calculated to the total amount of mixing water.

B. A shorter mixing time than specified in ASTM C94 may be required. When the air temperature is between 85 and 90 degrees F, reduce the mixing and delivery time from 90 minutes to 75 minutes, and when the air temperature is above 90 degrees F, reduce the mixing and delivery time to 60 minutes.

Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that the steel temperature will not exceed the ambient air temperatures immediately before embedment in concrete. Wet forms thoroughly before placing concrete.

Do not use retarding admixtures without the written approval of the Engineer.

3.09 FINISHING CONCRETE

A. Rough finish for concrete surfaces not exposed to view in the finish Work or covered by other construction.

B. Strike - off smooth and finish with a texture matching adjacent formed surfaces at tops of walls, horizontal offsets and similar unformed surfaces occurring adjacent to formed surfaces.

C. Provide a uniform smooth rubbed finish on exposed formed concrete walls, columns, and beams.

D. Float finish monolithic slab surfaces that are to receive trowel finish or other finish.

1. Trowel Finish: After floating, begin first trowel finish operation using a power-driven trowel. Begin final troweling when surface produces a ringing sound as trowel is moved over surface. Consolidate concrete surface by final hand-troweling operation, free of trowel marks, uniform in texture and appearance, and with a surface plane tolerance not exceeding 1/4" in 10 feet when tested with a 10 foot straight-edge. Grind smooth surface defects which would show through applied floor covering system.

2. Non-slip Broom Finish: Apply non-slip fine-hair broom finish to sidewalks, driveways, handicap ramps, curbs, or other items as noted on the Drawings.

3.10 CURING

A. Protect freshly placed concrete from premature drying or heat, and maintain without drying at a relatively constant temperature for a period of time necessary for hydration of cement and proper hardening.

B. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting, keep continuously moist for not less than 72 hours.

C. Continue curing for a least 7 days and in accordance with ACI 301 procedures. Avoid rapid drying at end of final curing period.

D. In lieu of moist curing, spray a clear liquid membrane curing compound on all new concrete immediately after initial set. Rate of application to be 200 square feet per gallon or as recommended by the manufacturer.

3.11 TESTS

A. Testing and analysis of concrete will be performed by an independent testing laboratory.

B. Test firm will take cylinders and perform compression tests in accordance with ASTM C31, ASTM C39, and ASTM C192.

C. Number of cylinders and frequency of tests will be designated by the Engineer.

D. One slump test will be performed per ASTM C143 for each set of test cylinders taken.

E. Cure specimens under laboratory conditions except that when in the opinion of the Engineer, there is a possibility of the surrounding air temperature falling below 40 degrees F., additional specimens may be required and cured under job conditions.

F. If the average strength of the laboratory control cylinders for any portion of the structure falls below the compressive strengths called for on the Drawings, the Engineer has the right to order a change in the proportions or the water content for the remaining portion of the structure. If the average strength of the job-cured cylinders falls below the required strength the Engineer has the right to require conditions of temperature and moisture necessary to secure the required strength and may require tests in accordance with ASTM C42, or order load tests to be made on the portions of the structure so affected. Remove or replace failing concrete if directed by the Engineer.

3.12 PROTECTION

A. Protect concrete from damage until final acceptance of Work.

END OF SECTION

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SECTION 09900

PAINTING

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Surface preparation and application of protective coatings.

B. Interior and exterior coating systems.

1.02 REFERENCES

A. ASTM B117-90 - Salt Spray (Fog) Testing.

B. ASTM D2247-87 - Testing Water Resistance of Coatings in 100% Relative Humidity.

C. ASTM D3359-87 - Measuring Adhesion by Tape Test.

D. ASTM D3363-74 - Film Hardness by Pencil Test.

E. ASTM D4060-84 - Abrasion Resistance of Organic Coatings by the Taber Abraser.

F. ASTM D4541-85 - Pull-Off Strength of Coatings Using Portable Adhesion-Testers.

G. ASTM D4585-87 - Testing the Water Resistance of Coatings Using Controlled Condensation.

H. AWWA C210-84 - Liquid Epoxy Coating System for the Interior and Exterior of Steel Water Pipelines.

I. AWWA D102-78 - Painting Steel Water-Storage Tanks.

J. Steel Structures Painting Council (SSPC) Specifications.

1. SP-1 Solvent Cleaning: Remove all grease, oil, salt, acid, alkali, dirt, dust, wax, fat, foreign matter and contaminates, etc. by one of the following methods: steam cleaning, alkaline cleaning, or volatile solvent cleaning.

2. SP-2 Hand Tool Cleaning: Removal of loose rust, loose mill scale and loose paint to a clean sound substrate by hand chipping, scraping, sanding and wire brushing.

3. SP-3 Power Tool Cleaning: Removal of loose mill scale and loose paint to a clean sound substrate by power tool chipping, descaling, sanding, wire brushing and grinding.

4. SP-5 White Metal Blast Cleaning: Complete removal of all mill scale, rust, rust scale, previous coating, etc., leaving the surface a uniform gray-white color.

5. SP-6 Commercial Blast Cleaning: Complete removal of all dirt, rust scale, mill scale, foreign matter and previous coating, etc., leaving only shadows and/or streaks caused by rust stain and mill scale oxides. At least 66% of each square inch of surface area is to be free of all visible residues, except slight discoloration.

6. SP-7 Brush-Off Blast Cleaning: Removal of rust scale, loose mill scale, loose rust and loose coatings, leaving tightly-bonded mill scale, rust and previous coatings. On concrete surfaces, brush-off blast clean to remove all laitance, form oils and solid contaminates. Blasting should be performed sufficiently close to the surface so as to open up surface voids, bugholes, air pockets and other subsurface irregularities, but so as not to expose underlying aggregate.

7. SP-8 Shop Pickled: Complete removal of rust and mill scale by acid pickling, duplex pickling or electrolytic pickling (may reduce the resistance of the surface to corrosion, if not to be primed immediately).

8. SP-10 Near-White Metal Blast Cleaning: Removal of all rust scale, mill scale, previous coating, etc., leaving only light stains from rust, mill scale and small specks of previous coating. At least 95% of each square inch of surface area is to be free of all visible residues and the remainder limited to slight discoloration.

9. VIS-1 Pictorial Surface Preparation Standards for Painting Steel Surfaces

1.03 ABBREVIATIONS

A. ASTM - American Society of Testing Materials

B. AWWA - American Water Works Association

C. DFT - Dry film thickness.

D. Exterior - Outside, exposed to weather.

E. Interior Dry - Inside, concealed or protected from weather.

F. Interior Wet - Inside, subject to immersion service.

G. NACE - National Association of Corrosion Engineers

H. SSPC - Steel Structures Painting Council

1.04 SUBMITTALS

A. Product data sheets and application instructions.

B. Color samples for selection by the Owner.

C. For each coating application, submit an affidavit from the manufacturer stating that the paint selected is recommended for its intended use.

D. When removal of lead containing paint is part of the Work, submit qualifications such as a copy of a Certification of Training, demonstrating that the person supervising the Work has been trained in removing lead containing paint. In addition, submit a plan for the methods to be employed for surface preparation, containment and ventilation, and collection of debris.

1.05 QUALITY ASSURANCE

A. All Work to be done by skilled and experienced craftsmen.

B. When removal of lead containing paint is part of the Work, the person supervising the Work must be trained in lead paint removal by a nationally recognized training organization. A minimum of 16 hours classroom training is required.

C. The following instruments must be available on the job site for Engineer's use, during all painting activities:

1. Moisture meter.
2. 'Tape' type mill profile micrometer.
3. 'Nordson-Mikrotest' dry film gauge.

4. Tooke - gauge.
5. Sponge type holiday detector.

D. Primers and other undercoat paint must be produced by same manufacturer as finish coats.

E. Use only thinners approved by the paint manufacturer, and use only within recommended limits.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers.

B. Container labeling to include manufacturer's name, type of paint, brand name, brand code, batch number, date of manufacturer, shelf life, coverage, surface preparation, drying time, cleanup, color designation, and instructions for mixing and reducing.

C. Store painting materials in a clean, dry, well-ventilated place, protected from sparks, flame, direct rays of the sun or from excessive heat.

1.07 REGULATORY REQUIREMENTS

A. All coatings used for potable water service must be approved and certified for use by the National Sanitation Foundation (NSF) Standard 61 and conform to AWWA D-102 and AWWA C-210.

B. All coatings must meet the requirements for volatile organic compounds (VOC) of not more than 3.5 lbs/gallon after thinning.

C. Contain, handle, and dispose of all hazardous materials, including but not limited to lead containing paint, resulting from surface preparation and painting, in accordance with all applicable local, state and federal requirements.

1.08 ENVIRONMENTAL REQUIREMENTS

A. Apply paint only on thoroughly dry surfaces and during periods of favorable weather, unless otherwise allowed by the paint manufacturer. Except as provided below, painting is not permitted when the atmospheric temperature is below 50° F, or when freshly painted surfaces may be damaged by rain, fog, dust, or condensation, and/or when it can be anticipated that these conditions will prevail during the drying period.

B. Do not apply coatings unless the surface temperature is a minimum of 5° above the dew point; temperature must be maintained during curing.

C. Dew Point Calculation Chart

Ambient Air Temperature - Fahrenheit

Relative Humidity	20	30	40	50	60	70	80	90	100	110	120
90%	18	28	37	47	57	67	77	87	97	107	117
85%	17	26	36	45	55	65	76	84	95	104	113
80%	16	25	34	44	54	63	73	82	93	102	110
75%	15	24	33	42	52	62	71	80	91	100	108
70%	13	22	31	40	50	60	68	78	88	96	105
65%	12	20	29	38	47	57	66	76	85	93	103
60%	11	29	27	36	45	55	64	73	83	92	101

55%	9	17	25	34	43	53	61	70	80	89	98
50%	6	15	23	31	40	50	59	67	77	86	94
45%	4	13	21	29	37	47	56	64	73	82	91
40%	1	11	18	26	35	43	52	61	69	78	87
35%	-2	8	16	23	31	40	48	57	65	74	83
30%	-6	4	13	20	28	36	44	52	61	69	77

SURFACE TEMPERATURE AT WHICH CONDENSATION OCCURS

D. Suitable enclosures to permit painting during inclement weather may be used if provisions are made to control atmospheric conditions artificially inside the enclosure, within limits suitable for painting throughout the painting operations.

1.09 EXISTING CONDITIONS

A. When unable to inspect the interior surfaces of existing tanks during bidding, assume 25 percent of the area is pitted as defined by the Steel Structures Painting Council.

1.10 EXTRA MATERIALS

A. Provide a one-gallon container of each color and surface texture to Owner.

B. Label each container with color, texture, location used, in addition to the manufacturer's label.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. All materials specified herein are manufactured by the Tnemec Company, Inc., North Kansas City, Missouri, unless noted otherwise. These products are specified to establish standards of quality and are approved for use on this Project.

B. Equivalent materials of other manufacturers may be substituted on approval of the Engineer. Requests for substitution must include manufacturer's literature for each product giving the name, generic type, ASTM performance criteria, chemical resistance charts, descriptive information and evidence of satisfactory past performance and an independent laboratory certification that their product meets the performance criteria of the specified materials.

C. Performance Criteria

1. Abrasion - ASTM D4060, CS-17 Wheel, 1,000 grams load.

2. Adhesion - ASTM D3359, Method B or ASTM D4541.

3. Exterior Exposure - Exposed at 45 degrees facing the ocean (South Florida Marine Exposure).

4. Hardness - ASTM D3363.

5. Humidity - ASTM D2247 or ASTM D4585.

6. Salt Spray (Fog) - ASTM B117.

D. Substitutions which decrease the film thickness, the number of coats applied, change the generic type of coating, or fail to meet the performance criteria of the specified materials will not be approved. Primer and finish coats on all surfaces must be furnished by the same manufacturer.

2.02 MATERIALS

A. Coatings: Ready mixed, except field catalyzed coatings. Process pigments to a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating. Good flow and brushing properties; capable of drying or curing free of streaks or sags.

B. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified. Of commercial quality.

C. Cement - Base Patching: Thorite by Thoro System Products of Miami, Florida.

D. Colors: When not specified, as selected by the Owner.

2.03 EQUIPMENT

A. Use effective oil/water separators on all compressed air lines serving spray painting and sandblasting operations to remove oil or moisture from the air before it is used. Place separators as far as practicable from the compressor.

B. All equipment for application of the paint and the completion of the Work must be in first-class condition and comply with recommendations of the paint manufacturer.

PART 3 - EXECUTION

3.01 INSPECTION

A. Applicator must examine areas and conditions under which painting Work is to be completed and notify Engineer in writing of conditions detrimental to proper and timely completion of Work.

B. Inspect the substrate and report any unsatisfactory conditions. Contractor is not responsible for latent defects in the substrate which can not be detected during a reasonable visual inspection. Starting the Work indicates acceptance of the substrate as constructed.

C. All surfaces to be painted are subject to review by the Engineer before application of the prime coat and each succeeding coat. Any defects or deficiencies are to be corrected by the Contractor before application of any subsequent coat.

D. When any appreciable time has elapsed between coats, previously coated areas are to be reviewed by the Engineer. Where surfaces are damaged or contaminated, they are to be cleaned and recoated. Adhere to recoating times of manufacturer's printed instructions.

3.02 SURFACE PREPARATION

A. General: Clean surfaces as specified and in accordance with the manufacturer's recommendation for the coating being used. If surfaces are subject to contamination other than mill scale or normal atmospheric rusting, the surfaces are to be pressure washed, and acid or caustic pH residues neutralized, in addition to the specified surface preparation.

B. Concrete and Masonry: Remove all oil, grease, dirt, laitance and other foreign materials. Blast remove all existing coatings using equipment rated at 3500 psi. Acid etch with a solution of muriatic acid and then rinse with clean water. Verify required acid-alkali balance is achieved. Surface must be dry and free of dust prior to painting. New concrete and masonry must be cured a minimum of 28 days before treating and coating.

Repair damaged concrete using a cement base patching system. Use in strict accordance with the manufacturer's recommendations.

C. Plaster: Remove dirt, loose mortar, scale, chalk, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry. Fill hairline cracks, small holes, and imperfections with a latex patching plaster.

D. Gypsum Drywall: Latex fill minor defects. Spot prime after repair. Remove dust from surface by wiping with clean rags or other means.

E. Carbon Steel: Remove all oily and greasy residues in accordance with SSPC-SP1. Blast clean using Dupont's 'Starblast' as the blasting media in accordance with SSPC-SP10. 'Starblast' is the only blasting media allowed to be used. Apply primer coat before any rust bloom forms.

F. Galvanized Steel and Other Non-Ferrous Metals: Surface to be clean and dry. Remove oil, grease, and protective mill coatings by solvent cleaning per SSPC-SP1. Remove white rust from galvanized steel by hand or power brushing. Take care not to damage or remove the galvanizing. Remove rust from old galvanized steel by hand or power tool cleaning in accordance with SSPC-SP2 or SSPC-SP3.

G. PVC Pipe: Remove surface contaminants. Roughen surface by sanding to provide adhesion for primer coat.

H. Wood: Remove dust, grit and foreign matter. Seal knots, pitch streaks, and sappy sections. Fill nail holes and cracks. Wood must be clean and dry before application of coating.

I. Fiberglass Reinforced Plastic: Roughen by brush blasting to provide adhesion for primer coat.

3.03 PROTECTION

A. Protect elements surrounding the Work of this Section from damage or disfiguration.

B. Repair damage to other surfaces caused by Work of this Section.

C. Furnish drop cloths, shields, and protective methods to prevent spray or droppings from disfiguring other surfaces.

D. Erect, maintain, and dismantle scaffolding without damage to structures, machinery, equipment or pipe. Use drop cloths to protect buildings and equipment.

E. Construct a temporary shroud or cover to contain and collect all spent abrasives and old paint. Dispose of spent abrasives and old paint in accordance with all local, state and federal requirements.

3.04 APPLICATION

A. Apply products in strict accordance with the coating manufacturer's instructions.

B. Apply coating uniformly at the prescribed thickness. Prevent film defects that would adversely affect the appearance or performance.

C. Apply prime coat immediately following surface preparation and in no case later than the same working day. Apply by brushing, paint mitt and roller, conventional spraying, or airless spraying, using equipment approved by the coatings manufacturer.

D. Recoat as per the manufacturer's instructions. Coating is considered recoatable when an additional coat can be applied without any detrimental film irregularities such as lifting or loss of adhesion.

E. Surfaces that will be inaccessible after assembly are to receive either the full specified paint system or three shop coats of the specified primer before assembly.

F. Brushing or rolling is to be done so that a smooth coat as nearly uniform in thickness as possible is obtained. Smooth the film so as not to leave detrimental marks.

G. When using an air, airless or hot spray, apply paint in a uniform layer, with a 50 percent overlap pattern. Brush out all runs and sags immediately or the paint will have to be removed and the surface resprayed.

H. High build coatings should be applied by a cross-hatch method of spray application to ensure proper film thickness of the coating.

I. Surfaces not accessible to brushes, rollers or sprays may be painted by a dauber, sheepskin, or paint mitt.

J. Sand lightly between each succeeding alkyd enamel or varnish coat.

3.05 FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT

A. Approval from the Owner is required prior to field painting in the vicinity of, or on, energized electrical and rotating equipment, and equipment and/or pipes in service.

B. Exercise extreme care in the painting of operable equipment, such as valves, electric motors, etc., so that the proper functioning of the equipment will not be affected.

C. Degloss factory finish and confirm compatibility.

D. Do not paint identification markings or code required labels.

E. Match associated piping color with finished paint color. See piping color code.

3.06 CLEANING

A. Contain paint overspray and debris by suitable means, including but not limited to, full shrouding of the area.

B. As Work proceeds, promptly remove paint where spilled, splashed or splattered.

C. During progress of Work maintain premises free of unnecessary accumulation of tools, equipment, surplus materials, and debris.

3.07 COATING SYSTEMS - INTERIOR SURFACES

A. Concrete Floors

1. One coat of Tnemec Series 287 Enviro-Tread (Waterborne Epoxy) applied at 3.0 mils DFT (273 SF/Gal).
2. A second coat of Tnemec Series 287 Enviro-Tread applied at 3.0 mils (273 SF/Gal).
3. Where requested by Owner add or broadcast 30/50 mesh (sand) to the 1st coat for a non-slip finish.

B. Masonry Block Walls

1. One coat Tnemec 1254 EpoxoBlock WB 100% SBV waterbased epoxy. Apply at a minimum rate of 80-100 square feet per gallon to concrete block surfaces only.
2. One coat Series 113 H.B. Tnemec-Tufcoat water-base acrylic epoxy. Apply at a minimum rate of 120-170 square feet per gallon. Two coats will be required if applied by roller.

C. Concrete (including exposed ceilings)

1. Two coats Series 113 H.B. Tnemec-Tufcoat water base acrylic epoxy. Apply at a minimum rate of 120-170 square feet per gallon.

D. Gypsum Drywall

1. One coat Tnemec 51 PVA Sealer. Apply at a minimum rate of 400 square feet per gallon.
2. One coat Series 113 H.B. Tneme-Tufcoat water-base acrylic-epoxy. Apply at a minimum rate of 120-170 square feet per gallon. Two coats will be required if applied by roller.

E. Carbon Steel, Ductile Iron, or Cast Iron

1. Prime coat Tnemec Series N69-1211 Epoxoline Primer epoxy-polyamide, 3-5 mils DFT.
2. Finish coat Tnemec Series N69 Hi-Build Epoxoline II epoxy-polyamide, 4-6 mils DFT.

F. Fuel Oil Tanks

1. Prime coat Series 61-5002 Tneme-Liner high solids catalyzed epoxy, 8-12 mils DFT.
2. Finish coat Series 61-5001 Tneme-Liner high solids catalyzed epoxy, 8-12 mils DFT.

G. Galvanized Steel and Other Non-Ferrous Metals

1. One coat Tnemec Series N69 Hi-Build Epoxoline epoxy-polyamide, 4-6 mils DFT.

H. PVC Piping

1. Two coats Tnemec Series 1095 Endura-Shield. Apply at a minimum rate of 2-3 mils DFT per coat.

I. Shop Finished Electrical and Mechanical Equipment

1. Prime coat Tnemec Series N69-1211 Epoxoline Primer epoxy-polyamide, 3-5 mils DFT.
2. One coat Tnemec Series N69 Hi-Build Epoxoline epoxy-polyamide, 4-6 mils DFT.

J. Wood Trim and Doors - Painted

1. Two coats of Tenemec Series 1029 (Low Semi-Gloss) Enduratone applied at a rate of 2.0-3.0 mils DFT.

3.08 COATING SYSTEMS - EXTERIOR SURFACES

A. Carbon Steel, Ductile, or Cast Iron

1. Prime coat Tnemec Series 135 (Chembuild Surface Tolerant Epoxy), 3-5 mils DFT.
2. Finish coat Tnemec Series 1095 Endura-Shield high build acrylic polyurethane, 2-5 mils DFT.

B. Galvanized Steel and Other Non-Ferrous Metals

1. Prime coat Tnemec Series N69 Hi-Build Epoxoline epoxy-polyamide, 2-3 mils DFT.
2. Finish coat Tnemec Series 1095 Endura-Shield high build acrylic polyurethane, 2-5 mils DFT.

C. Above Ground Fuel Storage Tanks

1. Shop Primer: One coat Series 90-97 Tneme-Zinc zinc-rich urethane, 2.5-3.5 mils DFT.
2. Field Touch-Up: Series 90-97 Tneme-Zinc, 2.5-3.5 mils DFT.
3. Full first coat Tnemec Series N69 Hi-Build Epoxoline epoxy polyamide, 2-3 mils DFT.
4. Finish coat Tnemec Series 1095 Endura-Shield high-build acrylic polyurethane, 3.0-5.0 mils DFT.

D. PVC Piping

1. One coat Tnemec Series N69 Hi-Build Epoxoline epoxy polyamide. Apply at a rate of 2.0-3.0 mils DFT.
2. One coat Tnemec Series 1095 Endura-Shield III high-build acrylic polyurethane. Apply at a minimum rate of 3.0-5.0 mils DFT.

E. Fiberglass Reinforced Plastic

1. One coat Tnemec Series N69 Hi-Build Epoxoline epoxy polyamide. Apply at a rate of 2.0-3.0 mils DFT.
2. One coat Tnemec Series 1095 Endura-Shield III high-build acrylic polyurethane. Apply at a minimum rate of 3.0-5.0 mils DFT.

F. Shop Finished Electrical and Mechanical Equipment

1. One coat Tnemec Series N69 Hi-Build Epoxoline epoxy polyamide. Apply at a rate of 2.0-3.0 mils DFT.
2. One coat Tnemec Series 1095 Endura-Shield III high-build acrylic polyurethane. Apply at a rate of 3.0-5.0 mils DFT.

G. Masonry Block Walls

1. Block Filler – Tnemec Series 1254 EpoxoBlock WB 100% SBV waterbased epoxy applied at 80± SF/Gal.
2. Finish per requirements below.

H. Precast and Cast In Place Concrete – Submerged Exposure

1. Surface Preparation: ICRI CSP-5 (SSPC-SP13).
2. Surfacer: Tnemec 218 MortarClad Epoxy Modified Cementitious Mortar, 1/16-inch thickness.
3. First – 1 Coat: Tnemec 104 H.S. Epoxy Cycloaliphatic Amine Epoxy, 6-8 mils DFT.
4. Second – 1 Coat: Tnemec 104 H.S. Epoxy Cycloaliphatic Amine Epoxy, 6-8 mils DFT.
5. Finish* – 1 Coat: Tnemec 1095 (color match) Aliphatic Acrylic Polyurethane, 3-4 mils DFT.

   Minimum total thickness, 17 mils.
   *Finish coat shall only be provided above the waterline.

I. Plaster, Above Grade Concrete, and Stucco

1. Prime Coat: Thoro Primer 2K by Thoro System Products of Miami, Florida. Apply at the minimum rate of 200 square feet per gallon.
2. Finish Coats: Two coast Thorosheen by Thoro System Products of Miami, Florida. Apply at the minimum rate of 200 square feet per gallon.
3. See Section 07145 for additional requirements for new or repaired concrete and masonry surfaces.

3.09 PIPING COLOR CODE – PLANT FACILITY

<u>Water Lines</u>	
Raw	Olive Green
Settled or Clarified	Aqua
Finished or Potable	Dark Blue
<u>Chemical Lines</u>	
Alum or Primary Coagulant	Orange
Ammonia	White

Carbon Slurry	Black
Caustic	Yellow with Green Band
Chlorine (Gas and Solution)	Yellow
Fluoride	Light Blue and Red Band
Lime Slurry	Light Green
Ozone	Yellow with Orange Band
Phosphate Compounds	Light Green with Red Band
Polymers or Coagulant Aids	Orange with Green Band
Potassium Permanganate	Violet
Soda Ash	Light Green with Orange Band
Sulfuric Acid	Yellow with Red Band
Sulfur Dioxide	Light Green with Yellow Band

Fuel Oil Lines

Black Oil	Yellow
Diesel	Yellow

Waste Lines

Backwash Waste	Light Brown
Sludge	Dark Brown
Sewer (Sanitary and Other)	Dark Gray

Other

Compressed Air	Dark Green
Gas	Red
Other Lines	Light Gray

3.10 PIPING COLOR CODE – DISTRIBUTION AND COLLECTION

Potable Water	Blue
Sanitary Sewer	Green
Reclaimed / IQ Water	Lavender

END OF SECTION

APPENDIX A

LOXAHATCHEE RIVER DISTRICT ENVIRONMENTAL CONTROL DISTRICT
MANUAL OF MINIMUM CONSTRUCTION STANDARDS
AND TECHNICAL SPECIFICATIONS

CAN BE DOWNLOADED AT
https://loxahatcheeriver.org/wp-content/uploads/2023/09/LRECD-Construction-Standards-and-Technical-Specifications_20230921.pdf

APPENDIX B

CONTRACTOR PERFORMANCE 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 and 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 C

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION – ENVIRONMENTAL RESOURCE PERMIT (50-0433593-001-EI)

FLORIDA DEPARTMENT OF Environmental Protection

Southeast District Office
3301 Gun Club Road, MSC 7210-1
West Palm Beach, FL 33406
561-681-6600

Project Name: LRD Loxahatchee River FM

Permittee/Authorized Entity:
Loxahatchee River Environmental Control District
c/o D. Albrey Arrington
2500 Jupiter Park Drive
Jupiter, FL 33458 8962
Email: albrey@lrecd.org

Authorized Agent:
Mock Roos
c/o Tyler Thompson
Email: tyler.thompson@mockroos.com

Environmental Resource Permit - Granted

State-owned Submerged Lands Authorization – Granted

U.S. Army Corps of Engineers Authorization – Separate Corps Authorization Required

Permit No.: 50-0433593-001-EI
BOT / Easement No's.: 500367976 / 43034

Permit Issuance Date: April 11, 2024

Permit Construction Phase Expiration Date: April 11, 2029

Consolidated Environmental Resource Permit and State-owned Submerged Lands Authorization

Permit No.: 50-0433593-001-EI

PROJECT LOCATION

The activities authorized by this Permit and state-owned submerged lands authorization are located beneath the Loxahatchee River, within the Loxahatchee River-Lake Worth Creek Aquatic Preserve, Outstanding Florida Waters, Class II Waters, west of the Glynn Mayo Highway bridge in Jupiter (Section 36, Township 40 South, Range 42 East), in Palm Beach County (Latitude N 26°56'49.7351, Longitude W -80°5'24.9538").

PROJECT DESCRIPTION

This permit authorizes the installation of a 20' HDPE force main to be installed via horizontal direction drilling for a distance of 2,100 ln. ft. Approximately 700 ln. ft. will be below the submerged bottom with a minimum depth of 40 feet below the submerged bottom.

No impacts to wetlands are proposed, and submerged resources are not located within the project boundaries; therefore, there will be no adverse impacts to these resources and mitigation is not required.

The attached standard manatee conditions (version 2011) shall be adhered to during all in-water work. Prior to construction commencement, weighted floating turbidity curtains, extending to within one- foot from the submerged bottom shall be utilized around the project area to ensure that any turbidity resulting from construction activities will be contained within the project boundaries. All water bodies, including any adjacent submerged aquatic vegetation outside the specific limits of construction authorized by this permit shall be protected from erosion, siltation, sedimentation, and/or scouring.

AUTHORIZATIONS

Environmental Resource Permit

The Department has determined that the activity qualifies for an Environmental Resource Permit. Therefore, the Environmental Resource Permit is hereby granted, pursuant to Part IV of Chapter 373, Florida Statutes (F.S.), and Chapter 62-330, Florida Administrative Code (F.A.C.).

Sovereignty Submerged Lands Authorization

The activity is located on sovereignty submerged lands owned by the State of Florida. It therefore also requires authorization from the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees), pursuant to Article X, Section 11 of the Florida Constitution, and Section 253.77, F.S., and Chapter 258, F.S.

As staff to the Board of Trustees under Sections 253.002, F.S., the Department has determined that the activity qualifies for and requires a public easement, as long as the work performed is located within the boundaries as described and is consistent with the terms and conditions herein.

The final documents required to execute the public easement will be sent to the permittee by the Department's Division of State Lands for execution. The Department intends to issue the public

easement, upon satisfactory execution of those documents, including payment of required fees and compliance with the conditions in the attached permit. **You may not begin construction of the activities described until you receive a copy of the executed public easement from the Department.**

Federal Authorization

Your proposed activity as outlined on your application and attached drawings **does not qualify** for Federal authorization pursuant to the State Programmatic General Permit and a **SEPARATE permit** or authorization **shall be required** from the Corps. You must apply separately to the Corps using their APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT, ENG FORM 4345, or alternative as allowed by their regulations. More information on Corps permitting may be found online in the Jacksonville District Regulatory Division Source Book at: https://www.saj.usace.army.mil/Missions/Regulatory/Source-Book.

Authority for review - an agreement with the USACOE entitled "Coordination Agreement Between the U. S. Army Corps of Engineers (Jacksonville District) and the Florida Department of Environmental Protection (or Duly Authorized Designee), State Programmatic General Permit", Section 10 of the Rivers and Harbor Act of 1899, and Section 404 of the Clean Water Act.

Coastal Zone Management

Issuance of this authorization also constitutes a finding of consistency with Florida's Coastal Zone Management Program, as required by Section 307 of the Coastal Zone Management Act.

Water Quality Certification Granted

This permit also constitutes a grant of water quality certification under Section 401 of the Clean Water Act, 33 U.S.C. Section 1341. Pursuant to Rule 62-330.062, F.A.C. issuance of the individual or conceptual approval permit under this chapter shall constitute certification of compliance with water quality standards.

Other Authorizations

You are advised that authorizations or permits for this activity may be required by other federal, state, regional, or local entities including but not limited to local governments or municipalities. This permit does not relieve you from the requirements to obtain all other required permits or authorizations.

The activity described may be conducted only in accordance with the terms, conditions and attachments contained in this document. Issuance and granting of the permit and authorizations herein do not infer, nor guarantee, nor imply that future permits, authorizations, or modifications will be granted by the Department.

PERMIT

The activities described must be conducted in accordance with:

- **The Specific Conditions**
- **The General Conditions**
- **The limits, conditions and locations of work shown in the attached drawings**

- **The term limits of this authorization**

You are advised to read and understand these conditions and drawings prior to beginning the authorized activities, and to ensure the work is conducted in conformance with all the terms, conditions, and drawings herein. If you are using a contractor, the contractor also should read and understand these conditions and drawings prior to beginning any activity. Failure to comply with these conditions, including any mitigation requirements, shall be grounds for the Department to revoke the permit and authorization and to take appropriate enforcement action.

Operation of the facility is not authorized except when determined to be in conformance with all applicable rules and this permit and sovereignty submerged lands authorization, as described.

SPECIFIC CONDITIONS- PROJECT FORMS & ATTACHMENTS

1. The attached project drawings (Sheets 1 through 21), the frac-out contingency plan, the "Florida EPPC's 2015 Invasive Plant Species List" which can be downloaded at http://www.fleppc.org/list/2015FLEPPCLIST-LARGEFORMAT-FINAL.pdf; and DEP forms 62-330.310(3), 62-330.310(1); 62-330.310(2); 62-330.340(1); and 62-330.350(1), which may be downloaded at http://www.dep.state.fl.us/water/wetlands/erp/forms.htm become part of this permit. If the permittee does not have access to the Internet, please contact the Department at (561) 681-6600 to request the aforementioned forms and/or document(s).

2. The attached standard manatee conditions (version 2011) shall be adhered to during all in-water work. Prior to construction commencement, weighted floating turbidity curtains, extending to within one- foot from the submerged bottom shall be utilized around the project area to ensure that any turbidity resulting from construction activities will be contained within the project boundaries. All water bodies, including any adjacent submerged aquatic vegetation outside the specific limits of construction authorized by this permit shall be protected from erosion, siltation, sedimentation, and/or scouring.

SPECIFIC CONDITIONS - PRIOR TO CONSTRUCTION

3. After selection of the contractor to perform the authorized activities and prior to the initiation of any work authorized by this permit, the permittee (or authorized agent) and the contractor shall attend a pre-construction conference with a representative of the Department. It shall be the responsibility of the permittee to contact the Department's Compliance Assistance Program, by email, SED_Compliance@FloridaDEP.gov, or by phone (561) 681-6600, to schedule the pre-construction conference.

4. Best management practices for erosion control shall be implemented prior to construction commencement and shall be maintained at all times during construction to prevent siltation and turbid discharges in excess of State water quality standards (>0 NTU's above background, pursuant to Rule 62-302, F.A.C). Methods may include, but are not limited to the use of staked hay bales, staked filter cloth, sodding, seeding, staged construction and the installation of turbidity screens around the immediate project site.

SPECIFIC CONDITIONS – CONSTRUCTION ACTIVITIES

5. Prior to initiation of any work authorized by this permit, all surface waters, outside the specific limits of construction authorized by this permit shall be protected from erosion, siltation, sedimentation, and/or scouring, including the placement of staked erosion control devices around the project area and staging area(s) that are located outside of any authorized impact areas.

6. Wetland areas or waterbodies that are outside the specific limits of construction authorized by this permit, must be protected from erosion, sedimentation, siltation, scouring, excess turbidity, and/or dewatering. There shall be no discharge in violation of the water quality standards in Chapter 62-302, F.A.C. Turbidity/erosion controls shall be installed prior to clearing, excavation or placement of fill material, shall be maintained until construction is completed, disturbed areas are stabilized, and turbidity levels have fallen to less than 0 NTU's above background. The turbidity and erosion control devices shall be removed within 14 days once these conditions are met.

7. Storage or stockpiling of tools and materials (i.e., lumber, pilings, debris) within wetlands or other surface waters is prohibited.

8. Best management practices for erosion control within the staging area shall be implemented and maintained at all times during construction of the entry pits and drilling operations to prevent siltation and turbid discharges in excess of State water quality standards. Methods shall include, but are not limited to the immediate fence, hay bales to contain the drilling mud. Hay bales shall be utilized, however they shall not impact wetlands or surface waters. Dewatering will require a permit from the South Florida Water Management District.

9. The entry and exit points of the directional drill shall be located on uplands and contained with silt fences/staked hay bales to contain any material from traveling into surrounding areas.

10. Return water shall not be discharged into adjacent surface waters and/or wetlands, and all severed materials shall be temporarily placed in the self-contained upland containment pits, as shown on the attached drawings. The spoil containment pits shall be constructed to contain all severed materials and prevent the escape of severed materials and associated effluent into adjacent storm drains, surface waters, and/or wetlands. All containment pits and staging areas shall be located on uplands. Construction personnel shall maintain daily logs (including a depiction of the area inspected) outlining all bore route inspections conducted during construction.

11. In the event of a frac-out during construction activities, preparedness and avoidance procedures shall be implemented and adhered to as stated in the attached frac-out plan.

12. Within 14 days of the pipe installation, the permittee shall fully restore the staging area to its original condition. Paved surfaces shall be repaired and unpaved surface areas shall be replanted with native vegetation.

13. To provide an additional level of resource protection, the volume of bentonite in the drill string shall be monitored at all times during directional drilling operation. Should a drop in volume of bentonite occur, the following measures will be taken:

a. Immediately conduct a visual inspection of both terrestrial and subaqueous portions of the HDD corridor. If a frac-out is detected, notify the Southeast District Compliance Project Manager listed in the Specific Condition above, within 2 hours of detection.
b. Should the release of drilling materials occur, the appropriate actions shall take place in strict accordance with the attached "Frac-Out Monitoring & Emergency Management Plan."

14. In order to minimize the possibility of a bentonite release during punch out, the site project manager shall consider the use of water in place of bentonite during the last 30 to 50 feet of the directional bore. The HDD operator shall stop the flow of recirculated bentonite and the borehole shall be flushed with water to remove the bentonite. Once the drill string is clear of bentonite, drilling will continue using only water as the boring medium. The first monitoring report submitted to the Department will discuss if water was used during the final stages of drilling and if not, the reasons why it wasn't feasible.

15. Additives to the bentonite drilling muds shall not be used without the Department's prior approval. If additives are needed, a permit modification will be required. Toxicity evaluations using marine organisms with concentrations of additives representative of those proposed for HDD boring will be required to evaluate the permit modification request.

16. A fully enclosed truck shall remain onsite for frac-out assistance as well as to remove all drilling fluids prior to backfilling the containment pits. If night-time drilling and/or boring activities are performed beneath wetlands or surface waters, the permittee and/or contractor shall provide evidence to the Department that the contracted construction personnel is equipped with the best available lighting to detect a frac-out during low light conditions, which shall be utilized when tracing the HDD at night. Prior to night-time drilling and/or boring activities, the permittee and/or contractor shall contact the Department at the address in Specific Condition No. 2, a minimum of 48 hours prior to commencement of drilling, etc.

SPECIFIC CONDITIONS – MANATEE CONDITIONS

17. 1. If a manatee appears to be in distress after coming in contact with drilling mud, work vessels or equipment, it shall be reported immediately by calling the Florida Fish and Wildlife Conservation Commission (FWC) Hotline at 1-888-404-3922. Any collision with or injury to a manatee shall also be reported immediately. A follow-up written report shall be sent to FWC as soon as practicable at ImperiledSpecies@myfwc.com, including the permit number, dates, details and status of the event.

18. During in-water construction activities and in the event of a frac-out, the following manatee conditions shall be followed:

a. All personnel associated with the project shall be instructed about the presence of manatees and manatee speed zones, and the need to avoid collisions with and injury to manatees. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.

b. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" while in the project area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible and follow any posted speed zones.

c. If used, siltation, turbidity barriers, booms or curtains shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee entanglement or entrapment. Barriers must not impede manatee movement.

d. All on-site project personnel are responsible for observing water-related activities for the presence of manatee(s). All in-water operations, including vessels, must be shut-down if a manatee(s) comes within 50 feet of the operation. Activities will not resume until the manatee(s) has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the manatee(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.

e. Temporary signs concerning manatees shall be posted on all vessels associated with the project. This sign shall measure at least 8 ½" by 11" and explain the requirements for "Idle Speed/No Wake" and the shutdown of in-water operations. Information on this sign is available at: https://myfwc.com/wildlifehabitats/wildlife/manatee/education-for-marinas/.

SPECIFIC CONDITIONS – LISTED SPECIES

19. This permit does not authorize the permittee to cause any adverse impact to or "take" of state listed species and other regulated species of fish and wildlife. Compliance with state laws regulating the take of fish and wildlife is the responsibility of the owner or applicant associated with this project. Please refer to Chapter 68A-27 of the Florida Administrative Code for definitions of "take" and a list of fish and wildlife species. If listed species are observed onsite, FWC staff are available to provide decision support information or assist in obtaining the appropriate FWC permits. Most marine endangered and threatened species are statutorily protected and a "take" permit cannot be issued. Requests for further information or review can be sent to FWCConservationPlanningServices@MyFWC.com.

20. If new information (e.g. listing of new species, new critical habitat, etc.) shows that the magnitude of impacts to federally listed species has the potential for adverse effects, the U.S. Fish and Wildlife Service (USFWS) will notify the Department. The Department will initiate coordination with the permittee and with the USFWS to determine what adverse impacts are likely and if additional minimization measures, reporting, or monitoring are required in order to be consistent with the Endangered Species Act, as deemed necessary by USFWS.

21. The Permittee shall report any injured, sick, or dead federally or state listed animal(s) discovered onsite to the Florida Fish and Wildlife Conservation Commission Wildlife Alert number at 888-404-FWCC (3922).

GENERAL CONDITIONS FOR INDIVIDUAL PERMITS

The following general conditions are binding on all individual permits issued under chapter 62-330, F.A.C., except where the conditions are not applicable to the authorized activity, or where the conditions must be modified to accommodate project-specific conditions.

(1) All activities shall be implemented following the plans, specifications and performance criteria approved by this permit. Any deviations must be authorized in a permit modification in accordance with Rule 62-330.315, F.A.C. Any deviations that are not so authorized may subject the permittee to enforcement action and revocation of the permit under Chapter 373, F.S.

(2) A complete copy of this permit shall be kept at the work site of the permitted activity during the construction phase, and shall be available for review at the work site upon request by the Agency staff. The permittee shall require the contractor to review the complete permit prior to beginning construction.

(3) Activities shall be conducted in a manner that does not cause or contribute to violations of state water quality standards. Performance-based erosion and sediment control best management practices shall be installed immediately prior to, and be maintained during and after construction as needed, to prevent adverse impacts to the water resources and adjacent lands. Such practices shall be in accordance with the State of Florida Erosion and Sediment Control Designer and Reviewer Manual (Florida Department of Environmental Protection and Florida Department of Transportation June 2007), and the Florida Stormwater Erosion and Sedimentation Control Inspector's Manual (Florida Department of Environmental Protection, Nonpoint Source Management Section, Tallahassee, Florida, July 2008), which are both incorporated by reference in subparagraph 62-330.050(9)(b)5., F.A.C., unless a project-specific erosion and sediment control plan is approved or other water quality control measures are required as part of the permit.

(4) At least 48 hours prior to beginning the authorized activities, the permittee shall submit to the Agency a fully executed Form 62-330.350(1), "Construction Commencement Notice," [October 1, 2013], which is incorporated by reference in paragraph 62-330.350(1)(d), F.A.C., indicating the expected start and completion dates. A copy of this form may be obtained from the Agency, as described in subsection 62-330.010(5), F.A.C. If available, an Agency website that fulfills this notification requirement may be used in lieu of the form.

(5) Unless the permit is transferred under Rule 62-330.340, F.A.C., or transferred to an operating entity under Rule 62-330.310, F.A.C., the permittee is liable to comply with the plans, terms and conditions of the permit for the life of the project or activity.

(6) Within 30 days after completing construction of the entire project, or any independent portion of the project, the permittee shall provide the following to the Agency, as applicable:

a. For an individual, private single-family residential dwelling unit, duplex, triplex, or quadruplex – "Construction Completion and Inspection Certification for Activities Associated With a Private Single-Family Dwelling Unit" [Form 62-330.310(3)]; or
b. For all other activities – "As-Built Certification and Request for Conversion to Operational Phase" [Form 62-330.310(1)].

c. If available, an Agency website that fulfills this certification requirement may be used in lieu of the form.

(7) If the final operation and maintenance entity is a third party:

a. Prior to sales of any lot or unit served by the activity and within one year of permit issuance, or within 30 days of as- built certification, whichever comes first, the permittee shall submit, as applicable, a copy of the operation and maintenance documents (see sections 12.3 thru 12.3.3 of Volume I) as filed with the Department of State, Division of Corporations and a copy of any easement, plat, or deed restriction needed to operate or maintain the project, as recorded with the Clerk of the Court in the County in which the activity is located.

b. Within 30 days of submittal of the as- built certification, the permittee shall submit "Request for Transfer of Environmental Resource Permit to the Perpetual Operation Entity" [Form 62-330.310(2)] to transfer the permit to the operation and maintenance entity, along with the documentation requested in the form. If available, an Agency website that fulfills this transfer requirement may be used in lieu of the form.

(8) The permittee shall notify the Agency in writing of changes required by any other regulatory agency that require changes to the permitted activity, and any required modification of this permit must be obtained prior to implementing the changes.

(9) This permit does not:

a. Convey to the permittee any property rights or privileges, or any other rights or privileges other than those specified herein or in Chapter 62-330, F.A.C.;
b. Convey to the permittee or create in the permittee any interest in real property;
c. Relieve the permittee from the need to obtain and comply with any other required federal, state, and local authorization, law, rule, or ordinance; or
d. Authorize any entrance upon or work on property that is not owned, held in easement, or controlled by the permittee.

(10) Prior to conducting any activities on state-owned submerged lands or other lands of the state, title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund, the permittee must receive all necessary approvals and authorizations under Chapters 253 and 258, F.S. Written authorization that requires formal execution by the Board of Trustees of the Internal Improvement Trust Fund shall not be considered received until it has been fully executed.

(11) The permittee shall hold and save the Agency harmless from any and all damages, claims, or liabilities that may arise by reason of the construction, alteration, operation, maintenance, removal, abandonment or use of any project authorized by the permit.

(12) The permittee shall notify the Agency in writing:

a. Immediately if any previously submitted information is discovered to be inaccurate; and
b. Within 30 days of any conveyance or division of ownership or control of the property or the system, other than conveyance via a long-term lease, and the new owner shall request transfer of the permit in accordance with Rule 62-330.340, F.A.C. This does not apply to the sale of lots or units in residential or commercial subdivisions or condominiums where the stormwater management system has been completed and converted to the operation phase.

(13) Upon reasonable notice to the permittee, Agency staff with proper identification shall have permission to enter, inspect, sample and test the project or activities to ensure conformity with the plans and specifications authorized in the permit.

(14) If any prehistoric or historic artifacts, such as pottery or ceramics, stone tools or metal implements, dugout canoes, or any other physical remains that could be associated with Native American cultures, or early colonial or American settlement are encountered at any time within the project site area, work involving subsurface disturbance in the immediate vicinity of such discoveries shall cease. The permittee or other designee shall contact the Florida Department of State, Division of Historical Resources, Compliance and Review Section, at (850) 245-6333 or (800) 847-7278, as well as the appropriate permitting agency office. Such subsurface work shall not resume without verbal or written authorization from the Division of Historical Resources. If unmarked human remains are encountered, all work shall stop immediately and notification shall be provided in accordance with Section 872.05, F.S.

(15) Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered binding unless a specific condition of this permit or a formal determination under Rule 62-330.201, F.A.C., provides otherwise.

(16) The permittee shall provide routine maintenance of all components of the stormwater management system to remove trapped sediments and debris. Removed materials shall be disposed of in a landfill or other uplands in a manner that does not require a permit under Chapter 62-330, F.A.C., or cause violations of state water quality standards.

(17) This permit is issued based on the applicant's submitted information that reasonably demonstrates that adverse water resource-related impacts will not be caused by the completed permit activity. If any adverse impacts result, the Agency will require the permittee to eliminate the cause, obtain any necessary permit modification, and take any necessary corrective actions to resolve the adverse impacts.

(18) A Recorded Notice of Environmental Resource Permit may be recorded in the county public records in accordance with subsection 62-330.090(7), F.A.C. Such notice is not an encumbrance upon the property.

GENERAL CONDITIONS FOR SOVEREIGNTY SUBMERGED LANDS AUTHORIZATION

Any use of sovereignty submerged lands is subject to the following general conditions are binding upon the applicant and are enforceable under Chapter 253, F.S. and Chapter 258, F.S.

(1) Sovereignty submerged lands may be used only for the specified activity or use. Any unauthorized deviation from the specified activity or use and the conditions for undertaking that activity or use will constitute a violation. Violation of the authorization will result in suspension or revocation of the applicant's use of the sovereignty submerged lands unless cured to the satisfaction of the Board of Trustees.

(2) Authorization under Rule 18-21.005, F.A.C., conveys no title to sovereignty submerged lands or water column, nor does it constitute recognition or acknowledgment of any other person's title to such land or water.

(3) Authorizations under Rule 18-21.005, F.A.C., may be modified, suspended or revoked in accordance with its terms or the remedies provided in Sections 253.04, F.S. and Chapter 18-14, F.A.C.

(4) Structures or activities will be constructed and used to avoid or minimize adverse impacts to resources.

(5) Construction, use, or operation of the structure or activity will not adversely affect any species which is endangered, threatened or of special concern, as listed in Rules 68A-27.003, 68A-27.004, and 68A-27.005, F.A.C.

(6) Structures or activities will not unreasonably interfere with riparian rights. When a court of competent jurisdiction determines that riparian rights have been unlawfully affected, the structure or activity will be modified in accordance with the court's decision.

(7) Structures or activities will not create a navigational hazard.

(8) Structures will be maintained in a functional condition and will be repaired or removed if they become dilapidated to such an extent that they are no longer functional.

(9) Structures or activities will be constructed, operated, and maintained solely for water dependent purposes.

(10) The applicant agrees to indemnify, defend and hold harmless the Board of Trustees and the State of Florida from all claims, actions, lawsuits and demands in any form arising out of the authorization to use sovereignty submerged lands or the applicant's use and construction of structures on sovereignty submerged lands. This duty to indemnify and hold harmless will include any and all liabilities that are associated with the structure or activity including special assessments or taxes that are now or in the future assessed against the structure or activity during the period of the authorization.

(11) Failure by the Board of Trustees to enforce any violation of a provision of the authorization or waiver by the Board of Trustees of any provision of the authorization will not invalidate the provision not enforced or waived, nor will the failure to enforce or a waiver prevent the Board of Trustees from enforcing the unenforced or waived provision in the event of a violation of that provision.

(12) Applicant binds itself and its successors and assigns to abide by the provisions and conditions set forth in the authorization. If the applicant or its successors or assigns fails or refuses to comply with the provisions and conditions of the authorization, the authorization may be terminated by the Board of Trustees after written notice to the applicant or its successors or assigns.

Upon receipt of such notice, the applicant or its successors or assigns will have thirty (30) days in which to correct the violations. Failure to correct the violations within this period will result in the automatic revocation of this authorization.

(13) All costs incurred by the Board of Trustees in enforcing the terms and conditions of the authorization will be paid by the applicant. Any notice required by law will be made by certified mail at the address shown on page one of the authorization. The applicant will notify the Board of Trustees in writing of any change of address at least ten days before the change becomes effective.

(14) This authorization does not allow any activity prohibited in a conservation easement or restrictive covenant that prohibits the activity.

NOTICE OF RIGHTS

Petition for Administrative Hearing

A person whose substantial interests are affected by the Department's action may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57, F.S. Pursuant to Rules 28-106.201 and 28-106.301, F.A.C., a petition for an administrative hearing must contain the following information:

(a) The name and address of each agency affected and each agency's file or identification number, if known;
(b) The name, address, any e-mail address, any facsimile number, and telephone number of the petitioner, if the petitioner is not represented by an attorney or a qualified representative; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination;
(c) A statement of when and how the petitioner received notice of the agency decision;
(d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;
(e) A concise statement of the ultimate facts alleged, including the specific facts that the petitioner contends warrant reversal or modification of the agency's proposed action;
(f) A statement of the specific rules or statutes that the petitioner contends require reversal or modification of the agency's proposed action, including an explanation of how the alleged facts relate to the specific rules or statutes; and
(g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wishes the agency to take with respect to the agency's proposed action.

The petition must be filed (received by the Clerk) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, or via electronic correspondence at Agency_Clerk@dep.state.fl.us. Also, a copy of the petition shall be mailed to the applicant at the address indicated above at the time of filing.

Time Period for Filing a Petition

In accordance with Rule 62-110.106(3), F.A.C., petitions for an administrative hearing by the applicant and persons entitled to written notice under Section 120.60(3), F.S., must be filed

within 14 days of receipt of this written notice. Petitions filed by any persons other than the applicant, and other than those entitled to written notice under Section 120.60(3), F.S., must be filed within 14 days of publication of the notice or within 14 days of receipt of the written notice, whichever occurs first. You cannot justifiably rely on the finality of this decision unless notice of this decision and the right of substantially affected persons to challenge this decision has been duly published or otherwise provided to all persons substantially affected by the decision. While you are not required to publish notice of this action, you may elect to do so pursuant Rule 62-110.106(10)(a).

The failure 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 (in a proceeding initiated by another party) will be only at the discretion of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C. If you do not publish notice of this action, this waiver may not apply to persons who have not received a clear point of entry.

Extension of Time

Under Rule 62-110.106(4), F.A.C., a person whose substantial interests are affected by the Department's action may also request an extension of time to file a petition for an administrative hearing. The Department may, for good cause shown, grant the request for an extension of time. Requests for extension of time must be filed with the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, or via electronic correspondence at Agency_Clerk@dep.state.fl.us, before the deadline for filing a petition for an administrative hearing. A timely request for extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

Mediation

Mediation is not available in this proceeding.

FLAWAC Review

The applicant, or any party within the meaning of Section 373.114(1)(a) or 373.4275, F.S., may also seek appellate review of this order before the Land and Water Adjudicatory Commission under Section 373.114(1) or 373.4275, F.S. Requests for review before the Land and Water Adjudicatory Commission must be filed with the Secretary of the Commission and served on the Department within 20 days from the date when this order is filed with the Clerk of the Department.

Judicial Review

Once this decision becomes final, any party to this action has the right to seek judicial review pursuant to Section 120.68, F.S., by filing a Notice of Appeal pursuant to Florida Rules of Appellate Procedure 9.110 and 9.190 with the Clerk of the Department in the Office of General Counsel (Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000) 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 must be filed within 30 days from the date this action is filed with the Clerk of the Department.

Executed in Palm Beach County, Florida.

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

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Sirena Davila
District Director
Southeast District

CERTIFICATE OF SERVICE
The undersigned duly designated deputy clerk hereby certifies that this permit and all copies were sent on the filing date below to the following listed persons:

FDEP – Sirena Davila, Norva Blandin MSEM, Danielle C. Sattelberger, Antonella Rocco, Abigail Davis, Rachael Griffin, Irene Arpayoglou, Matthew Anderson
Joseph B. Chaison, P.E., Jupiter Inlet District, JChaison@jupiterinletdistrict.org
Matt Mitchell, Palm Beach County, Environmental Resources, mmitchell@pbcgov.org

FILING AND ACKNOWLEDGMENT
FILED, on this date, pursuant to Section 120.52, F. S., with the designated Department Clerk, receipt of which is hereby acknowledged.

Kamail Akbar April 11, 2024
Clerk **Date**

Attachments:
Project Drawings and Design Specs., 13 pages
Frac-Out Plan, 3 pages
Standard Manatee Conditions for In-Water Work, 2011
As-built Certification and Request for Conversion to Operational Phase Form 62-330.310(1)*
Request for Transfer to the Perpetual Operation Entity Form 62-330.310(2)*
Request to Transfer Permit Form 62-330.340(1)*
Commencement Notice Form 62-330.350(1)*
*Can be downloaded at: https://floridadep.gov/water/submerged-lands-environmental-resources-coordination/content/forms-environmental-resource

STANDARD MANATEE CONDITIONS FOR IN-WATER WORK

2011

The permittee shall comply with the following conditions intended to protect manatees from direct project effects:

a. All personnel associated with the project shall be instructed about the presence of manatees and manatee speed zones, and the need to avoid collisions with and injury to manatees. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.

b. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.

c. Siltation or turbidity barriers shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee entanglement or entrapment. Barriers must not impede manatee movement.

d. All on-site project personnel are responsible for observing water-related activities for the presence of manatee(s). All in-water operations, including vessels, must be shutdown if a manatee(s) comes within 50 feet of the operation. Activities will not resume until the manatee(s) has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the manatee(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.

e. Any collision with or injury to a manatee shall be reported immediately to the Florida Fish and Wildlife Conservation Commission (FWC) Hotline at 1-888-404-3922. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-731-3336) for north Florida or Vero Beach (1-772-562-3909) for south Florida, and to FWC at ImperiledSpecies@myFWC.com

f. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the permittee upon completion of the project. Temporary signs that have already been approved for this use by the FWC must be used. One sign which reads *Caution: Boaters* must be posted. A second sign measuring at least 8 ½" by 11" explaining the requirements for "Idle Speed/No Wake" and the shut down of in-water operations must be posted in a location prominently visible to all personnel engaged in water-related activities. These signs can be viewed at MyFWC.com/manatee. Questions concerning these signs can be sent to the email address listed above.

CAUTION: MANATEE HABITAT

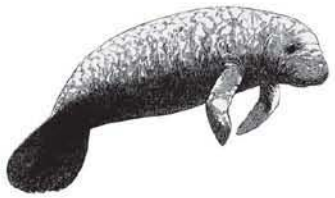
All project vessels

IDLE SPEED / NO WAKE

When a manatee is within 50 feet of work
all in-water activities must

SHUT DOWN

Report any collision with or injury to a manatee:



Wildlife Alert:

1-888-404-FWCC(3922)

cell *FWC or #FWC

Loxahatchee River District
Subaqueous Forcemain Loxahatchee River Crossing

Proposed Frac-out Plan

Proposed Methods for Protection of Water Quality for Directional Bored Water Crossings (best management practices [BMPs] and Frac-out Plan)

BMPs

The Loxahatchee River District (LRD) intends to have [the Contractor] implement the following BMPs to minimize the potential for adverse environmental impacts during horizontal directional drilling activities:

- BMPs for erosion control within the staging area shall be implemented and maintained at all times during the drilling and back-reaming operations to prevent siltation and turbid discharges in excess of State Water Quality Standards pursuant to Rule 62-302, F.A.C. Methods shall include, but are not limited to the immediate placement of turbidity containment devices such as turbidity screen, silt containment fence, hay bales, and earthen berms, etc. to contain the drilling mud. Earthen berms shall not be utilized as to impact wetlands or other surface waters.

Frac-out Plan

To provide an additional level of resource protection, the following measures shall be taken by the Contractor to monitor any potential releases of drilling fluid:

- Measures used to prevent frac-out during the drilling operation include maintaining the proper depth for the soil conditions along the drilling route as well as proper management of drilling fluids circulation pressure. Under the waterway, the minimum distance between the pipe and the bottom of the waterway will be 40 feet as shown on the cross section. This is expected to be sufficient to prevent frac-out when drilling under the waterway.
- Non-toxic fluorescent dyes will be added to the drilling lubricant as a method for monitoring bentonite releases in the underwater portions of this drilling. Details of the fluorometry monitoring method shall be submitted to the USACE prior to the preconstruction meeting.
- The volume of bentonite in the drill string will be monitored at all times during the directional drilling operation. Should a drop in volume of bentonite occur, immediately conduct a visual inspection of both terrestrial and subaqueous portions of the horizontal directional drilling corridor.
- Should the detection of dye or a drop in volume of bentonite occur, the Contractor will follow the Release Procedures outlined below.

- The Contractor will identify prior to commencement of construction an environmental scientist/biologist with experience in-water quality monitoring and habitat protection to be used in the event of a frac-out. The biologist will supervise the implementation of the Frac-Out Plan, Release Procedure, and Containment Plan outlined below. Divers shall be present during drilling operations in order to respond to a potential frac-out release.

- All drilling fluids associated with the horizontal directional drilling operation will be contained on site. The volume of the drilling fluids recirculation/solids settlement pit will be determined by the Contractor at the Pre-Construction meeting. Periodically during the drilling process settled solids will be removed from the pit by a backhoe and disposed of at a site of the Contractor's choice in accordance with applicable regulations. At the conclusion of drilling operations, drilling fluid remaining in the pit will be settled and hauled to a disposal site of the Contractor's choice in accordance with applicable regulations. After back-reaming, drilling materials will be removed from the inside of the pipeline by pigging it from the exit point towards the rig area.

- At all times, adequate protection will be taken to avoid impacts to the Aquatic Preserve/Outstanding Florida Waters and contiguous wetlands. This shall include, but is not limited to halting of construction/drilling and/or placement of turbidity containment devices.

- A Vactor Truck shall be onsite and available at all times.

- A Spill Kit (i.e., absorbent pads/brooms, goggles, gloves) shall be on-site and available at all times.

Release Procedure

- If a frac-out is confirmed, all construction activity contributing to the frac-out shall cease immediately.

- If the return drilling mud/fluid is less than the projected amount to be recovered, divers shall begin their search for the missing material within 1 hour of potential release. Once the drilling mud and frac-out is located, then the drilling mud containment plan shall be immediately implemented.

- If a frac-out has occurred during construction activities, the permittee shall notify the USACE of Engineers, Palm Beach Gardens Regulatory office, within 24 hours of the occurrence. The notification shall include the time of the frac-out, the response time of the underwater diver, and the environmental conditions of the affected area.

Drilling Mud Containment Plan

- Should the release of drilling materials occur on land, a sediment fence shall be constructed around the site and the material shall be removed by vacuum truck.

- Should the release of drilling materials occur in-water, clean-up with a vacuum system shall commence within 24 hours.

- The scientist/biologist underwater divers will guide the suction hose of the pump to minimize both the removal of natural bottom material and the disturbance of any existing vegetation.
- Any escaped drilling lubricant must be pumped into filter bags or directly into a vactor truck.
- A barge company will be contacted to transport a vactor truck should it be needed to respond "in-water."
- Once the spill is contained, the escaped drilling lubricant shall be properly disposed of in an approved upland disposal site.
- Clean-up with a vacuum system shall commence within 24 hours.
- After containment/recovery of the drilling material/resources, a detailed written report shall be submitted to the USACE, within 10 business days, indicating the location of the frac-out, amount of drilling material discharged and the amount of drilling mud recovered, the process in which the drilling mud was recovered, and the area that was affected by the drilling discharge.

APPENDIX D

DEPARTMENT OF THE ARMY PERMIT
(SAJ-2023-00183)

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, JACKSONVILLE DISTRICT
4400 PGA BOULEVARD, SUITE 500
PALM BEACH GARDENS, FLORIDA 33410

April 26, 2024

Regulatory Division
South Permits Branch
Palm Beach Gardens Section
SAJ-2023-00183(NWP-KMM)

Loxahatchee River Environmental Control District
c/o D. Albrey Arrington
2500 Jupiter Park Drive
Jupiter, Florida 33458
Sent via email: albrey@lrecd.org

Dear D. Albrey Arrington:

The U.S. Army Corps of Engineers (Corps) has completed the review of your application for a Department of the Army permit received on January 25, 2023. Your application was assigned file number SAJ-2023-00183(NW-KMM). A review of the information and drawings provided indicates that the proposed work would result in the improvement of a utility service by removing existing 24-inch force main and replacing with 2,100 linear feet (of which 700 linear ft is subaqueous) of an 18-inch in diameter high density polyethylene (HDPE) force main via horizontal directional drill (HDD). The project is located in Loxahatchee River west of Alternate A1A, Jupiter (Section 31, Township 40 South, Range 43 East), Palm Beach County, Florida. The entry point of proposed work is: Latitude 26.949426°, Longitude -80.089073° and the exist point of the proposed work is: 26.944838°, Longitude -80.092836°. The activities subject to this permit are authorized pursuant to authorities under Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. § 403).

Your project, as depicted on the enclosed drawings, is authorized by Nationwide Permit (NWP) 58 (Utility Line Activities for Water and Other Substances). **This verification is valid until March 14, 2026.** In order for this NWP authorization to be valid, you must ensure that the work is performed in accordance with the Nationwide Permit General Conditions, the Jacksonville District Regional Conditions, and the General and Project-Specific Special Conditions listed below. Furthermore, if you commence or are under contract to commence this activity before the date that the relevant NWP is modified or revoked, you will have 12 months from the date of the modification or revocation of the NWP to complete the activity under the present terms and conditions of this NWP. You can access the U.S. Army Corps of Engineers' (Corps) Jacksonville District's Regulatory Source Book webpage for links to view NWP information at: https://www.saj.usace.army.mil/Missions/Regulatory/Source-Book/. Please be aware

this Internet address is case sensitive and should be entered as it appears above. Once there, you will need to select “Nationwide Permits.” Among other things, this part of the Source Book contains links to the federal register containing the text of the pertinent NWP authorization and the associated NWP general conditions, as well as separate links to the regional conditions applicable to the pertinent NWP verification.

You must comply with all of the special and general conditions for NWP-58, including any project-specific conditions included in this letter and all conditions incorporated by reference as described above.

General Conditions:

1. The time limit for completing the work authorized ends on **March 14, 2026**.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity, or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort of if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit you must obtain the signature of the new owner on the attached transfer form (Attached) and forward a copy to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions (Attached).

6. You must allow a representative from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Project Specific Special Conditions:

The following project specific special conditions are included with this verification:

1. **Reporting Address:** The Permittee shall submit all reports, notifications, documentation and correspondence required by the general and special conditions of this permit to either (not both) of the following addresses:

    a. For electronic mail (preferred): SAJ-RD-Enforcement@usace.army.mil (not to exceed 15 MB).
    b. For standard mail: U.S. Army Corps of Engineers, Regulatory Division, Enforcement Section, P.O. Box 4970, Jacksonville, Florida 32232-0019.

    The Permittee shall reference this permit number, SAJ-2023-00183 (NW-KMM), on all submittals.

2. **Commencement Notification:** Within 10 days from the date of initiating the work authorized by this permit the Permittee shall submit a completed "Commencement Notification" Form (Attachment 2).

3. **Notification of Work:** National Ocean Service (NOS) has been notified of this authorization. You must notify NOS and this office in writing, at least two weeks before you begin work and upon completion of the activity authorized by this permit. The post-construction notification will include "as-built plans" by a registered surveyor/engineer licensed in the State of Florida, that certify the project is constructed as authorized; and must include an accurate depiction of the location and configuration of the completed activity in relation to the mean high water or ordinary high water of the navigable water. The Permittee shall notify the District Engineer in writing at U.S. Army Corps of Engineers, Regulatory Division, Enforcement Section, P.O. Box 4970, Jacksonville, FL 32232-0019; and, the NOAA, either in mailed correspondence to Nautical Data Branch Office of Coast Survey N/CS26, 1315 East-West Highway, Silver Spring, MD 20910-3282 or by electronic mail correspondence, with the requisite documents attached, through ocs.ndb@noaa.gov.

4. **As-Built Certification with X-Y-Z Coordinates:** Within 60 days of completion of the authorized work or at the expiration of the construction window of this permit, whichever occurs first, the Permittee shall submit as-built drawings of the authorized work and a completed version of the enclosed "As-Built Certification by Professional Engineer or Surveyor" form (Attachment 3) to the Corps. The drawings shall be signed and sealed by a registered professional engineer or a

professional land surveyor confirming the actual location of all authorized work/structures with respect to the Federal channel and/or within the Federal easement and include the following:

a. A plan view drawing of the location of the authorized work footprint (as shown on the permit drawings) with an overlay of the work as constructed in the same scale as the attached permit drawings (8½-inch by 11-inch). The drawings shall include the X & Y State Plane coordination points of the most waterward point of the structure, as well as the Z-azimuth for subaqueous utilities. The drawings shall include the dimensions of the structure, depth of water (at mean low water) at the waterward end of the structure, and the distance from the waterward end of the structure to the near design edge of the Federal channel.

b. List of any deviations between the work authorized by this permit and the work as constructed. In the event the completed work deviates, in any manner, from the authorized work, describe on the As-Built Certification Form the deviations between the work authorized by this permit and the work as constructed. Clearly indicate on the as-built drawings any deviations that have been listed. Please note the depiction and/or description of any deviations on the drawings and/or As-Built Certification Form does not constitute approval of any deviations by the Corps.

c. The Department of the Army Permit number.

d. Within 60 days of completion of the work authorized by this permit, the Permittee shall provide a courtesy copy of the signed and sealed As-Built drawings to the Corps, Engineering Division. Submittals shall be sent either electronically by email at ENPermits.CESAJ@usace.army.mil or by standard mail at Post Office Box 4970, Jacksonville Florida 32232-0019.

5. **Assurance of Navigation and Maintenance:** The Permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structures or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of

the navigable waters, the Permittee will be required, upon due notice from the U.S. Army Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

6. **Manatee Conditions:** The Permittee shall comply with the "Standard Manatee Conditions for In-Water Work – 2011" (Attachment 4). The most recent version of the Manatee Conditions must be utilized.

7. **Jacksonville District Programmatic Biological Opinion (JAXBO):** Structures and activities authorized under this permit will be constructed and operated in accordance with all applicable PDCs contained in the JAXBO, based on the permitted activity. Johnson's seagrass and its critical habitat were delisted from the Endangered Species Act on May 16, 2022. Therefore, JAXBO PDCs required to minimize adverse effects to Johnson's seagrass and its critical habitat are no longer applicable to any project. Failure to comply with applicable PDCs will constitute noncompliance with this permit. In addition, failure to comply with the applicable PDCs, where a take of listed species occurs, would constitute an unauthorized take. The NMFS is the appropriate authority to determine compliance with the Endangered Species Act. The most current version of JAXBO can be accessed at the Jacksonville District Regulatory Division website in the Endangered Species section of the Sourcebook located at: http://www.saj.usace.army.mil/Missions/Regulatory/SourceBook.aspx

   JAXBO may be subject to revision at any time. The most recent version of the JAXBO must be utilized during the design and construction of the permitted work.

8. **Turbidity Barriers:** Prior to the initiation of any of the work authorized by this permit, the Permittee shall install floating turbidity barriers with weighted skirts that extend within 1 foot of the bottom around all work areas that are in, or adjacent to, surface waters. The turbidity barriers shall remain in place and be maintained daily until the authorized work has been completed and turbidity within the construction area has returned to ambient levels. Turbidity barriers shall be removed upon stabilization of the work area.

9. **Cultural Resources/Historic Properties:**
   a. No structure or work shall adversely affect impact or disturb properties listed in the National Register of Historic Places (NRHP) or those eligible for inclusion in the NRHP.

b. If, during permitted activities, items that may have historic or archaeological origin are observed the Permittee shall immediately cease all activities adjacent to the discovery that may result in the destruction of these resources and shall prevent his/her employees from further removing, or otherwise damaging, such resources. The applicant shall notify both the Florida Department of State, Division of Historical Resources, Compliance Review Section at (850)-245-6333 and the Corps, of the observations within the same business day (8 hours). Examples of submerged historical, archaeological or cultural resources include shipwrecks, shipwreck debris fields (such as steam engine parts, or wood planks and beams), anchors, ballast rock, concreted iron objects, concentrations of coal, prehistoric watercraft (such as log "dugouts"), and other evidence of human activity. The materials may be deeply buried in sediment, resting in shallow sediments or above them, or protruding into water. The Corps shall coordinate with the Florida State Historic Preservation Officer (SHPO) to assess the significance of the discovery and devise appropriate actions. Project activities shall not resume without verbal and/or written authorization from the Corps.

c. Additional cultural resources assessments may be required of the permit area in the case of unanticipated discoveries as referenced in accordance with the above Special Condition and, if deemed necessary by the SHPO or Corps, in accordance with 36 CFR 800 or 33 CFR 325, Appendix C (5). Based on the circumstances of the discovery, equity to all parties, and considerations of the public interest, the Corps may modify, suspend, or revoke the permit in accordance with 33 CFR Part 325.7. Such activity shall not resume on non-federal lands without written authorization from the SHPO for finds under his or her jurisdiction, and from the Corps.

d. In the unlikely event that unmarked human remains are identified on non-federal lands; they will be treated in accordance with Section 872.05 Florida Statutes. All work and ground disturbing activities within a 100-meter diameter of the unmarked human remains shall immediately cease and the Permittee shall immediately notify the medical examiner, Corps, and State Archaeologist within the same business day (8-hours). The Corps shall then notify the appropriate SHPO. Based on the circumstances of the discovery, equity to all parties, and considerations of the public interest, the Corps may modify, suspend, or revoke the permit in accordance with 33 CFR Part 325.7. Such activity shall not resume without written authorization from the SHPO and from the Corps.

10. **Individual Section 408 Approval:** It has been determined that the activities authorized do not impair the usefulness of the Loxahatchee River and are not injurious to the public interest. The Permittee shall adhere to the conditions and limitations referenced in the Section 408 approval memo, 408-2023-0056 in Attachment 5 of this permit. All documentation required in the Section 408 approval memo, including but not limited to: GPS locations, limits of work performed, signed and sealed As-Built Drawings, the date the work was performed, etc. shall be submitted either electronically by email at ENPermits.CESAJ@usace.army.mil or by standard mail at Post Office Box 4970, Jacksonville Florida 32232-0019. For all questions related to the Section 408 approval, contact the Corps, Jacksonville Engineering Division by telephone at 904-232-1604. Engineering Division is the appropriate authority to determine compliance with the terms and conditions of Section 408 approval.

11. **In the Event of a Frac-Out:** Should a frac-out and release of drilling fluids occur within navigable waters of the U.S., and in-water work is required to remediate the action, the Permittee shall comply with the following special conditions:

    a. Frac-Out Contingency Plan: The Permittee shall comply with the frac-out contingency plan (Attachment 7).

12. **Seagrass and Monitoring and Reporting Timeframes**: The Permittee shall comply with the following monitoring and reporting requirements to document any indirect impacts to submerged aquatic vegetation:

    a. Perform a pre-construction aquatic resource survey documenting the location, species and percent coverage of all onsite seagrass within 30 days from the date of initiating in-water work.Perform a post-construction survey within 30 days of completion of in-water work that documents the location of the onsite seagrass.

    b. Submit both the pre and post construction surveys and report within 60 days from the completion of the post construction survey. The report shall include a summary of the pre and post surveys and indicate any direct or secondary impacts to the adjacent seagrass and corals. The report will be submitted to the Corps reporting address in special condition 1. Upon review of the report, the Corps will determine whether additional mitigative measures are required.

Jurisdictional Determination:

A jurisdiction determination was not completed with this request. Therefore, this is not an appealable action. However, you may request an approved JD, which is an appealable action, by contacting the Corps for further instruction.

This letter of authorization does not include conditions that would prevent the 'take' of a state-listed fish or wildlife species. These species are protected under sec. 379.411, Florida Statutes, and listed under Rule 68A-27, Florida Administrative Code. With regard to fish and wildlife species designated as species of special concern or threatened by the State of Florida, you are responsible for coordinating directly with the Florida Fish and Wildlife Conservation Commission (FWC). You can visit the FWC license and permitting webpage (http://www.myfwc.com/license/wildlife/) for more information, including a list of those fish and wildlife species designated as species of special concern or threatened. The Florida Natural Areas Inventory (http://www.fnai.org/) also maintains updated lists, by county, of documented occurrences of those species.

This letter of authorization does not give absolute Federal authority to perform the work as specified on your application. The proposed work may be subject to local building restrictions mandated by the National Flood Insurance Program. You should contact your local office that issues building permits to determine if your site is located in a flood-prone area, and if you must comply with the local building requirements mandated by the National Flood Insurance Program.

This letter of authorization does not preclude the necessity to obtain any other Federal, State, or local permits, which may be required.

Thank you for your cooperation with our permit program. The Corps' Jacksonville District Regulatory Division is committed to improving service to our customers. We strive to perform our duty in a friendly and timely manner while working to preserve our environment. We invite you to complete our automated Customer Service Survey at https://regulatory.ops.usace.army.mil/customer-service-survey/. Please be aware this Internet address is case sensitive and you will need to enter it exactly as it appears above. Your input is appreciated – favorable or otherwise.

Should you have any questions related to this NWP verification or have issues accessing the documents reference in this letter, please contact Kaitlyn Mallett at the letterhead address above, via telephone at 561-545-4885, or via e-mail at Kaitlyn.M.Mallett@usace.army.mil .

Sincerely,

Kaitlyn Mallett

Kaitlyn Mallett
Project Manager

Enclosures

Cc:
Tyler E. Thompson, Mock Roos, tyler.thompson@mockroos.com

APPENDIX E

TOWN OF JUPITER – ENGINEERING/UTILITY PERMIT
(22-002623-EU)

PERMIT

Engineering/Utilities Permit No:
22-002623-EU

Type: **Engineering/Utilites**
Work Class: **Franchise Utilities**
Status: **Issued**

Expiration Date: 07/21/2023

Permit Information

Job Address
214 E RIVERSIDE DR
JUPITER, FL 33469

Geo Parcel Number: 30434031320000080

Project:

District: Town of Jupiter - All

Issued Date: 2/21/2023

Square Feet: 0

Valuation: $0.00

Work Site Info

Replacement of a forcemain along Alternate A1A from Center St to East Riverside Dr. Installation of approximately 2100 LF of 18" HDPE via directional drills under the Loxahatchee River, approximately 550 LF of 16" PVC, 100 LF of 16" DIP, and 10 LF of 24" PVC via open cut.

Conditions

Contacts

Type	Contact Name	Mailing Address	Phone Number
Applicant	Mock Roos & Associates	5720 Corporate Way West Palm Beach, FL 33407	
Owner	Loxahatchee River Environmental Control District		(561) 747-5700
Applicant	LRECD	2500 Jupiter Park DR Jupiter, FL 33458	(561) 262-3461
Owner	Loxahatchee River Environmental Control District	2500 Jupiter Park DR Jupiter, FL 33458	(561) 401-4024

Contractors

Type	Contact Name	Mailing Address	Phone Number
Contractor	LRECD	2500 Jupiter Park DR Jupiter, FL 33458	(561) 262-3461

Fees Due

Invoice Number:

Invoice Total:
Total Due:

Fees Paid

Invoice Number: 00148728

Check

ENG Engineering Fee	$400.00
	$400.00
Invoice Fees Paid:	**$400.00**

Inspections

Inspection Type
Pre-Construction
Maintenance of Traffic
Pre-Final Grading
Road / Alley Subgrade
Road / Alley Base
Road / Alley Asphalt
Road / Alley Striping
Utility Trench and Backfill
Utility Pipe or Structure
Utility Directional Bore
Engineering Final

Town of Jupiter Engineering Department 741-2372 fax 741-2515
Schedule inspections On-Line @ www.jupiter.fl.us

PERMIT SHALL BE POSTED AT JOB SITE
PERMITS EXPIRE IN 6 MONTHS WITH NO ACTIVITY
APPROVED INSPECTION, WILL CONTINUE ACTIVITY

LOXAHATCHEE RIVER ENVIRONMENTAL CONTROL DISTRICT

LOXAHATCHEE RIVER SUBAQUEOUS FORCEMAIN CROSSING REPLACEMENT

☐ Approved ☐ Revise & Resubmit ☑ Approved As Noted ☐ Rejected

The Engineer's review of shop drawings, submittals or samples is only for conformance with the contract documents. The Engineer's approval does not relieve the Contractor of the responsibility for any deviation from the requirements of the contract documents nor from responsibility for errors and omissions in the shop drawings, submittals or samples. The Contractor shall determine and verify all field measurements, field construction criteria, quantities, materials, catalog numbers, and similar data. Town of Jupiter - Engineering Division By _____ Date: 2-8-2023

JANUARY 2023

VICINITY MAP
NTS

SECTION 31, TOWNSHIP 40 SOUTH, RANGE 43 EAST

INDEX OF SHEETS

SHEET	SHEET TITLE
C0-1	COVER
C0-2	GENERAL NOTES, LEGENDS, AND KEY MAP
C0-3	EXISTING SITE AND DEMOLITION PLAN VIEW
C0-4	EXISTING SITE AND DEMOLITION PLAN VIEW
C0-5	EXISTING SITE AND DEMOLITION PLAN VIEW
C0-6	EXISTING SITE AND DEMOLITION PLAN VIEW
C0-7	BORING LOCATION
C0-8	BORING PROFILES
C1-1	PLAN & PROFILE VIEW
C1-2	PLAN & PROFILE VIEW
C1-3	PLAN & PROFILE VIEW
C1-4	PLAN & PROFILE VIEW
C1-5	PLAN & PROFILE VIEW
C1-6	PLAN & PROFILE VIEW
C2-1	RESTORATION PLAN VIEW
C2-2	RESTORATION PLAN VIEW
C5-1	LRD DETAILS
C5-2	LRD DETAILS
C5-3	DETAILS
C5-4	DETAILS
C5-5	DETAILS

TOTAL NUMBER OF SHEETS: 21

LOXAHATCHEE RIVER ENVIRONMENTAL CONTROL DISTRICT • 1971 •

GOVERNING BOARD

CHAIRMAN	JAMES D. SNYDER
VICE CHAIRMAN	DR. MATT H. ROSTOCK
TREASURER	STEPHEN B. ROCKOFF
SECRETARY	GORDON M. BOGGIE

NO WORK UNDER THIS PLAN SET SHALL BE PERFORMED UNTIL A PRECONSTRUCTION MEETING HAS BEEN SCHEDULED AND CONDUCTED INCLUDING TOJ REPRESENTATIVES, AND UNTIL AN MOT PLAN IS SUBMITTED REVIEWED AND APPROVED BY THE TOWN ENGINEER

811 KNOW WHAT'S BELOW ALWAYS CALL 811 BEFORE YOU DIG
It's fast. It's free. It's the law.
www.sunshine811.com

PERMIT SET
JANUARY 2023

Vertical Datum: NAVD88
Datum Conversion: NGVD29 - 1.51'
P.A. No. C0089.40
Dwg. No. 40-43-31-04
Location: PALM BEACH COUNTY, FL

No.	Date	By	Revision

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TYLER E. THOMPSON
Florida P.E. No. 86558
Date

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CONSULTING ENGINEERS
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(561) 683-3113, www.MockRoos.com
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LOXAHATCHEE RIVER SUBAQUEOUS FORCEMAIN CROSSING REPLACEMENT
LOXAHATCHEE RIVER DISTRICT

COVER

JANUARY 2023
C0-1