



TOWN OF SURFSIDE, FLORIDA

REQUEST FOR PROPOSALS (RFP) POINT LAKE CANAL SUBAQUEOUS WATER MAIN CROSSING TO BISCAYA ISLAND RFP No. 2020-03

Issue Date: December 10, 2020

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PUBLIC NOTICE

Request for Proposals (RFP) No. 2020-03 **Construction of Point Lake Canal Subaqueous Water Main Crossing to** **Biscaya Island**

NOTICE IS HEREBY GIVEN that the Town of Surfside is soliciting sealed proposals for construction of the Point Lake Canal Subaqueous Water Main Crossing to Biscaya Island in Surfside, Florida. Interested firm/individuals (“Proposer (s)”) may pick-up a copy of the Request for Proposals (“RFP”) No. 2020-03 from the Town Clerk’s Office, Town of Surfside, Town Hall, 9293 Harding Avenue, Second Floor, Surfside, Florida, 33154, or may download it from the Town’s website at www.townofsurfside.fl.gov. The RFP contains detailed and specific information about the scope of services, submission requirements, and selection procedures.

One (1) original, five (5) hard copies, and one (1) electronic copy on a USB drive of the completed and executed Proposal must be delivered no later than **February 11, 2021, at 2:00 PM** (“Submission Deadline”) to the following address:

**Town of Surfside Town Hall
Town Clerk’s Office
9293 Harding Avenue, Second Floor
Surfside, Florida, 33154.**

The Town reserves the right to reject late submissions, in the sole discretion of the Town Manager or his designee.

The envelope containing the sealed Proposal must be clearly marked as follows:

**SEALED PROPOSAL
RFP NO. 2020-03
CONSTRUCTION OF POINT LAKE CANAL SUBAQUEOUS WATER MAIN
CROSSING TO BISCAYA ISLAND
OPENING DATE AND TIME/SUBMISSION DEADLINE: February 11, 2021, at 2:00 PM**

A **Pre-RFP Submission Conference** is scheduled for **January 6, 2021 at 10:30 am** at the Town of Surfside Town Hall, 9293 Harding Ave., Second Floor, Surfside, Florida 33154. All Proposers planning to submit Proposals are required to attend this meeting. Proposers should allow sufficient time to ensure arrival prior to the indicated time. Proposals from those who have

failed to attend will not be accepted. All persons attending the pre-submission conference may ask questions or seek clarification regarding this RFP via the procedures outlined herein.

Any questions or clarifications concerning the proposal specifications must be received by Sandra N. McCready, MMC Town Clerk, no later than **5:00 PM, January 15, 2021**. Any questions regarding RFP No. 2020-03 are to be submitted either in writing directly to Sandra N. McCready, MMC, Town Clerk, at the following address: 9293 Harding Ave., Second Floor, Surfside, Florida 33154, or via email to: smccready@townofsurfsidefl.gov. Any questions received by the Clerk after the stated deadline will be disregarded. All questions received by the Clerk prior to the stated deadline shall be answered via an Addendum to this RFP and circulated to all registered Proposers.

The Town shall award the contract in a manner consistent with the Florida statutory requirements for public contracts. The Proposer must be a qualified underground contractor. The Town of Surfside intends to enter into a Construction Agreement with the successful Proposer for construction of Point Lake Canal Subaqueous Water Main Crossing to Biscaya Island in Surfside, Florida 33154.

The Town reserves the right to reject any or all proposals, with or without cause, to cancel this solicitation, to waive technical errors and informalities, and to accept any proposal which best serves the interests of or represents the best value to the Town.

The Town of Surfside hereby provides notice to all proposers of the adoption and imposition of a Cone of Silence for this solicitation, as set forth in Section 3-17 of the Town Code. "Cone of Silence," as used herein, means a prohibition on communication regarding a competitive bid or solicitation for a purchase exceeding \$25,000.00, including but not limited to, a particular request for proposal ("RFP") between: (1) A potential respondent, vendor, service provider, proposer, bidder, lobbyist, or consultant, and (2) The Town commissioners, Town's staff including, but not limited to, the Town Manager and his or her staff, any member of the Town's selection or evaluation committee. Please contact the Town Clerk and/or Town Attorney with any questions on the Cone of Silence.

Date Issued: December 10, 2020

Request for Proposals (RFP) No. 2020-03
Construction of Point Lake Canal Subaqueous Water Main Crossing to
Biscaya Island
INSTRUCTIONS

ARTICLE 1
DEFINITION OF TERMS

The terms defined in this Article and the Construction Agreement shall apply to all documents contained in the proposal and contract documents for this project. If a conflict exists, the definitions in the Construction Agreement supersede definitions provided in the proposal and contract documents.

- 1.1 “Addenda” or “Addendum” mean a written modification to this RFP issued by the Town covering changes, additions, or reductions in the terms of this RFP.
- 1.2 “Amendment” means a written modification to the Contract Documents covering changes, additions, or reductions in the terms of the Contract Documents.
- 1.3 “Bidder” or “Proposer” means a person or entity that timely submits a responsive Project proposal or bid.
- 1.4 “Consultant” or “Project Consultant” both shall be that certain party that the Town may engage to be an owner’s representative for the Project.
- 1.5 “Contract Documents” means this RFP, the Construction Agreement, the Plans and Specifications, and all exhibits and documents related thereto or contemplated thereby, as well as all Addenda and Amendments related to each with respect to the Project and all changes to said documents issued by the Town.
- 1.6 “County” means Miami-Dade County.
- 1.7 “Day” means consecutive days of the week or month without regard to weekends or holidays.
- 1.9 “Construction Agreement” means that agreement to be entered into between the Town and the successful Proposer for the Work. The form of the Construction Agreement will be available to all proposers in advance of the Submittal Date on the Town’s website www.townofsurfsidefl.gov and/or issued by Addendum to this RFP.
- 1.10 “FDOT” means the Florida Department of Transportation.
- 1.11 “Guaranteed Maximum Price” means the lump sum price for the Work, and is the maximum amount the Town shall be required to pay the Proposer for the performance of all obligations described in the Contract Documents.

- 1.12 “Payment Bond” shall be in the form required in this RFP.
- 1.13 “Performance Bond” shall be in the form required in this RFP.
- 1.14 “Project” means the construction, in accordance with this RFP and the Contract Documents, of the Point Lake Canal Subaqueous Water Main Crossing to Biscaya Island.
- 1.15 “Project Cost Proposal” means the guaranteed maximum price for which the Proposer offers to perform the Work, as described in the Contract Documents in the form attached hereto as Form “3”.
- 1.16 “Project Location” or “Project Site” means the area where the Project is to be constructed.
- 1.17 “Proposal/Bid Proposal” means the Technical Proposal and the Project Cost Proposal submitted together by the Proposer in response to this RFP.
- 1.18 “Proposal Security” or “Proposal Bonds” shall mean a cashier’s check or bond submitted by a Proposer in the form attached hereto as Form “4”.
- 1.19 “RFP” means this Request for Proposal.
- 1.20 “Selection Committee” shall be appointed by the Town Manager and shall review and evaluate responsive Proposals.
- 1.21 “State” shall mean the State of Florida.
- 1.22 “Subconsultant” or “Subcontractor” means any person or entity, other than the Proposer’s own employees, employed or retained by, or under contract with Proposer to perform any portion of the Work under this RFP and the Contract Documents.
- 1.23 “Technical Proposal” shall mean all information required to be submitted by the proposer for this RFP to be considered responsive, except the Project Cost Proposal.
- 1.24 “Town” or “Owner” means the Town of Surfside, a Florida municipal corporation.
- 1.25 “Town’s Representative” shall be the person designated by the Town as the Town’s contact person.
- 1.26 “Work” includes all aspects of the construction project proposed in this RFP, the Contract Documents and other bidding documents.

ARTICLE 2
INTRODUCTION, BACKGROUND, PROJECT DESCRIPTION,
AND SCOPE OF SERVICES

2.1 INTRODUCTION

- 2.1.1 The Town of Surfside, Florida (“Town”), a municipality located in Miami-Dade County, Florida, requests qualified Construction Proposers (“Proposers”) to submit proposals for construction of the Point Lake Canal Subaqueous Water Main Crossing to Biscaya Island, Surfside, Florida 33154.
- 2.1.2 The Town desires to contract with a qualified Construction Firm to construct the Project.
- 2.1.3 The Town intends to award the Construction Agreement to a qualified entity that the Town Commission determines to be in the best interest of and most advantageous to the Town based on the lowest responsive and responsible Proposer.
- 2.1.4 The Work required under this RFP is defined in this RFP, which includes the plans, technical specifications, and the Contract Documents.

2.2 **BACKGROUND.** The Town is located on a barrier island in northeast Miami-Dade County, Florida, situated between Miami Beach to the south and Bal Harbour Village to the north, and is bounded on the east by the Atlantic Ocean, on the west by Atlantic Intracoastal Waterway, on the south by 87th Terrace, and on the north by 96th Street. The Town’s standards stress high-quality visual corridors to the ocean, with access to the ocean, as well as a focus on protecting the environment, providing landscaping, and developing aesthetically attractive structures.

2.3 **PROJECT DESCRIPTION.** The Project site is located in the southwest Town limits near Point Lake, Town of Surfside, Florida 33154. It includes approximately 600 linear feet of 8-inch of HDPE pipe to be installed by horizontal directional drilling, new appurtenances, new water services, and asphalt resurfacing. Refer to Section 01010 and the technical specifications for a complete description of the Work.

2.4 **SCOPE OF SERVICES.** Refer to the plans and technical specifications for a complete description of the scope of services.

2.5 **PROJECT DURATION.** The final completion date shall be **90 calendar days** from the Notice-To-Proceed (NTP). Upon failure of the Contractor to complete the Work within this timeframe, the Contractor shall pay the Town the sum of **One Thousand Dollars (\$1,000.00)** for each and every calendar day that the completion of the Work is delayed beyond the time specified herein so long as the delay is caused by the Contractor.

ARTICLE 3 PROPOSAL INSTRUCTIONS

- 3.1 Copies of this RFP may be obtained from the Town. Proposers who obtain copies of this Proposal from sources other than the Town risk not receiving Addenda, since their names may not be included on the list of firms participating in the process for this particular RFP.
- 3.2 **CONE OF SILENCE.** Notwithstanding any other provision of these specifications, the provisions of Town “Cone of Silence” are applicable to this transaction. The “Cone of Silence”, as used herein, means a prohibition on any communication regarding a particular Request for Proposal (RFP), Request for Qualification (RFQ), or bid, between a potential vendor, service provider, contractor, bidder, lobbyist, or consultant, and the Town Commission, Town’s professional staff including, but not limited to, the Town Manager and his or her staff, any member of the Town’s selection or evaluation committee.

The Cone of Silence shall be imposed upon each RFP, RFQ, and bid after the advertisement of said RFP, RFQ, or bid.

The Cone of Silence shall terminate at time the Town Manager makes his or her written recommendation to the Town Commission. However, if the Town Commission refers the Manager’s recommendation back to the Manager or staff for further review, the Cone of Silence shall be re-imposed until such time as the Manager makes a subsequent written recommendation.

The Cone of Silence shall not apply to:

1. Oral communications at pre-proposal/pre-bid conferences.
2. Oral presentations before selection or evaluation committees.
3. Public presentations made to the Town Commission during any duly noticed public meeting.
4. Communications in writing at any time with any town employee, unless specifically prohibited by the applicable RFP, RFQ, or bid documents. The bidder or proposer shall file a copy of any written communication with the Town Clerk. The Town Clerk shall make copies available to any person upon request.
5. Communications regarding a particular RFP, RFQ, or bid between a potential vendor, service provider, contractor, bidder, lobbyist or consultant and the Town’s Purchasing Agent or Town employee designated responsible for administering the procurement process of such RFP, RFQ or bid, provided the communication is limited strictly to matters of process or procedure already contained in the corresponding solicitation document.

6. Communications with the Town Attorney and his or her staff.
7. Duly noticed site visits to determine the competency of bidders regarding a particular bid during the time period between the opening of bids and the time the Town Manager makes his or her written recommendation.
8. Any emergency procurement of goods or services pursuant to Town Code.
9. Responses to the Town's request for clarification or additional information.
10. Contract negotiations during any duly noticed public meeting.
11. Communications to enable Town staff to seek and obtain industry comment or perform market research, provided all communications related thereto between a potential vendor, service provider, contractor, bidder, lobbyist, or consultant and any member of the Town's professional staff including, but not limited to, the Town Manager and his or her staff are in writing or are made at a duly noticed public meeting.

Please contact the Town Attorney for any questions concerning Cone of Silence compliance.

Violation of the Cone of Silence by a particular bidder or proposer shall render any RFP award, RFQ award, or bid award to said bidder or proposer voidable by the Town Commission and/ or Town Manager

3.3 **PRE-SUBMITTAL CONFERENCE.** A Pre-Submittal Conference is scheduled for **January 6, 2020 at 10:30 am at the Town of Surfside Town Hall, Second Floor, 9293 Harding Avenue, Surfside, Florida 33154.** All Proposers planning to submit Proposals are required to attend this meeting. Proposers should allow sufficient time to ensure arrival prior to the indicated time. Proposals from those who have failed to attend may not be accepted.

3.4 **ADDITIONAL INFORMATION OR CLARIFICATIONS; ADDENDA.** Requests for additional information or clarifications must be received by **Sandra N. McCready, M.M.C. Town Clerk, no later than 5:00 PM, on January 15, 2021.** Any questions regarding this RFP No. 2020-03 are to be submitted either in writing to the Town Clerk's Office, Surfside Town Hall, 9293 Harding Ave., Second Floor, Surfside, Florida 33154, or via e-mail directly to Sandra N. McCready, Town Clerk, smccready@townofsurfsidefl.gov, in accordance with the deadline for receipt of questions, as also specified in the Public Notice Section of this RFP. The request for additional information and clarification must contain the RFP number and title, Proposer's name, name of Proposer's contact person, address, phone number, and e-mail. No verbal communications shall be binding; only written Addendum from the Town shall be binding. The Town will issue responses to inquiries and any other corrections or amendments it deems necessary in written addenda issued prior to the Proposal deadline. All persons attending the mandatory pre-bid conference will receive the Town's

responses. Proposers should not rely on any representations, statements or explanations other than those made in this RFP or in any written addendum to this RFP. Where there appears to be a conflict between the RFP and any addenda issued, the last addendum issued shall govern and prevail.

- 3.5 **SUBMITTAL OF PROPOSAL.** The submittal shall consist of one sealed Proposal package. The package shall include the Project Cost Proposal in a separate sealed envelope and a complete original Technical Proposal. Each Proposer shall submit one (1) original, and five (5) additional complete hard copy proposals, and one (1) electronic copy on a USB drive. Proposals shall be as thorough and detailed as possible so that the Town may properly evaluate the capabilities of respective firms to provide the required construction services. All submittals must meet or exceed the specifications and requirements provided in this RFP. Any deviations must be submitted in writing for approval. No exceptions will be made after the Construction Agreement is executed. All proposals submitted to the Town must be delivered no later than February 11, 2021 at 2:00 PM (“Submission Deadline”) to the following address.

**Town of Surfside Town Hall
Town Clerk’s Office
9293 Harding Avenue, Second Floor
Surfside, Florida 33154**

The Town reserves the right to reject late submissions, in the sole discretion of the Town Manager or his designee.

The envelope containing the sealed Proposal must be clearly marked as follows:

**SEALED PROPOSAL
RFP NO. 2020-03
CONSTRUCTION OF POINT LAKE CANAL SUBAQUEOUS WATER MAIN
CROSSING TO BISCAYA ISLAND
OPENING DATE AND TIME/SUBMISSION DEADLINE: February 11, 2021 at 2:00
PM**

No extensions to the submission due date will be granted and Proposals received after this time will be returned unopened.

- 3.5.1 Proposal Packaging - Both parts of the Proposal – Technical Proposal and Project Cost Proposal - shall be submitted in separate opaque plain sealed envelopes, parcels, boxes, or other secure packaging. The outside of the sealed packaging must clearly indicate the Proposer’s name, address, and the name and telephone number of the Proposer’s specific contact person; and must designate whether the package contains the Technical Proposal or the Project Cost Proposal. Any and all packaging must clearly and distinctly identify the Proposal by the RFP number and name: **“RFP No. 2020-03 Construction of Point Lake Canal Subaqueous Water Main Crossing to Biscaya Island – “Technical Proposal” and “RFP**

No. 2020-03 Construction of Point Lake Canal Subaqueous Water Main Crossing to Biscaya Island – “Project Cost Proposal”.

- 3.5.2 For the Project Cost Proposal, if a cost discrepancy exists between the item subtotal costs and the Guaranteed Maximum Price, the value entered as Guaranteed Maximum Price will take precedence. If a cost discrepancy exists between the written value for the Guaranteed Maximum Price and the numerical value, the written value will take precedence.
- 3.5.3 All Proposals shall be submitted on 8½ by 11 paper, type written on one side only with one (1) inch margins on all sides. Each copy of the Technical Proposal package must be individually bound.
- 3.5.4 An officer who is legally authorized to bind the proposing entity into a contractual relationship must sign the Proposals.
- 3.5.5 The Selection Committee will perform an initial review of all submitted Proposals to determine responsiveness. Any Proposals deemed non-responsive will be disqualified and not subject to further review. In determining responsiveness, the Selection Committee and/or Town Commission reserves the right to waive a non-material informality or irregularity.
- 3.5.6 This Proposal is irrevocable for one hundred twenty (120) Calendar Days from the RFP Submission Deadline.
- 3.5.7 The Proposer agrees that should the Proposer be selected to perform the Work, the Proposer shall be bound to perform the Work as specified in the Project Cost Proposal whether or not the Town awards all or a portion of the Work

3.6 CALENDAR OF IMPORTANT DATES

The Town’s proposed calendar of events is listed below. This calendar is for the Town’s and Proposer’s preliminary planning use only and is subject to change.

Date	Event
December 10, 2020	Public Notice
January 6, 2021, 2:00 pm	Pre-Proposal Conference
January 15, 2021, 5:00pm	Last day to submit questions/clarifications
February 11, 2021, 2:00pm	Submission Deadline: Proposal due to Town Clerk no later than 2:00 PM
TBD	Selection Committee meets to open Technical Proposals and eliminate non-

Date	Event
	responsive Proposals
TBD	Town Commission Action - Final Ranking - Authorization to negotiate issued to Town Manager
TBD	Town Commission Action – Award of Construction Agreement

3.7 ELIGIBILITY

- 3.7.1 All Proposers must be a Florida Licensed Underground Contractor with a minimum of ten years' experience working in South Florida. This shall include a minimum of three projects that were similar in nature to this Project successfully completed within the past five years.
- 3.7.2 Contractors and Subcontractors must meet additional licensing, certification, and bonding requirements as specified in the Construction Agreement and elsewhere in this RFP.
- 3.7.3 Proposers must submit evidence of proper State and County licensing for all contract work, professional services, and other services required under this RFP prior to the execution of the Construction Agreement and shall attach such documentation as attachments to the Statement of Qualifications (See Form 5) described below for the purposes of evaluation during the selection process as defined by this RFP.

3.8 NON-RESPONSIVE PROPOSALS

Proposals found to be non-responsive shall not be considered. Proposals may be rejected if found to be in nonconformance with the requirements and instructions herein contained. A Proposal may be found to be non-responsive by reasons, including, but not limited to, failure to utilize or complete prescribed forms, conditional proposals, incomplete proposals, indefinite or ambiguous proposals, failure to meet deadlines and improper and/or undated signatures. Other conditions which may cause rejection of proposals include evidence of collusion among Proposers, obvious lack of experience or expertise to perform the required Work, or meet financial obligations on previous contracts. Proposals will also be rejected if not delivered or received on or before the Submission Deadline.

3.9 WAIVER OF IRREGULARITIES

The Town may waive non-material informalities or irregularities in Proposals received where the correction or waiver of which is not prejudicial to other Proposers. Non-material irregularities are defined as those that will not have an adverse effect on the Town's interest and will not affect

the price of the Proposals by giving a Proposer an advantage or benefit not enjoyed by other Proposers.

Proposers shall identify separately all innovative aspects of their proposal. Innovation should be limited to Proposer's means and methods, approach to Project, use of new products, new uses for established products.

3.10 TOWN OPTIONS

The Town may, at its sole and absolute discretion, reject any or all Proposals, re-advertise this RFP, postpone or cancel this RFP process at any time, or waive any irregularities in this RFP or in the Proposals received as a result of this RFP.

The determination of the criteria and process whereby Proposals are evaluated, the decision as to who shall receive the Construction Agreement award, or whether an award shall ever be made as a result of this RFP, shall be the sole and absolute discretion of the Town.

The submittal of a Proposal will be considered by the Town as constituting an offer by the Proposer to provide the Work described in this RFP.

3.11 RULES, REGULATIONS, AND REQUIREMENTS

All proposers shall comply with all laws, ordinances, and regulations of any Federal, State of Florida, Miami-Dade County, or Town government applicable to submitting a response to this RFP and to providing the Work described herein.

ARTICLE 4 INFORMATION REQUIRED IN PROPOSALS

In order to be deemed responsive, each Proposer shall submit the following information and documents with their proposal:

- 4.1 **Transmittal Letter:** Each Proposer shall submit a transmittal letter signed by an officer authorized to represent, bid, commit and negotiate for the Proposer. The transmittal letter shall state that the Proposer has read and reviewed the RFP's terms and conditions, and accepts such terms and conditions as binding and enforceable. In addition, the letter shall acknowledge receipt and acceptance of all Addenda to the RFP. The transmittal letter shall state that the Proposer's Proposal is valid for one hundred twenty (120) days from the date of its submission.
- 4.2 **Proposal Cover Sheet:** Provide the information requested in the Proposal Cover Sheet attached hereto as Form "2".
- 4.3 **Proposer's Statement of Qualifications:** Provide the information requested in the Proposer's Statement of Qualifications attached hereto as Form "5", including the following:

- 1) The Name and address of company/firm, including, but not limited to, a business overview, financial state of the business, annual revenue for past two years, and names and addresses of all persons having financial interest in firm and key managerial personnel.
- 2) Proof of authorization from the Florida Secretary of State for the prime Proposer firm and all sub-contractors and sub-consultants to transact business in Florida, together with a copy of all applicable licenses and permits required for the Work. Proposer must be fully licensed with all required State and/or local licenses and permits to perform the Work and all services.
- 3) Resumes, with job descriptions and other detailed qualification information, for all key personnel who will be assigned to this project, including any key personnel of sub-consultants and sub-contractors.
- 4) Description of the Proposer's (including sub-consultants' and sub-contractors') experience in the construction of subaqueous and horizontal directional drill piping and implementation of the technical requirements as defined in the Project's Scope of Services. Proposers shall describe and demonstrate their successful deployment of the systems described in the Scope of Services or on systems of similar or greater complexity to that requested in this proposal.
- 5) Description of the experience, qualifications, and other vital information, including relevant experience on previous similar projects, of all key personnel, including those of sub-consultants and sub-contractors, who will be assigned to this project.
- 6) Detailed description of comparable contracts as they pertain to the Scope of Services similar to that requested herein, which the Proposer and Subcontractor has either ongoing or completed within the past five years. The description should identify for each project: (i) client, (ii) a complete description of work, (iii) total dollar value of the contract, (iv) dates covering the term of the contract, (v) client contact person and phone number, (vi) statement of whether Proposer was the prime contractor or subcontractor, and (vii) the results of the project. Where possible, list and describe those projects performed for government clients or similar size private entities (excluding any work performed for the Town of Surfside).
- 7) List all contracts which the Proposer has performed for the Town of Surfside. The Town will review all contracts the Proposer has performed for the Town. As such, the Proposer must list and describe all work performed for the Town of Surfside and include for each project:

- a. Name of the Town Department which administers or administered the contract;
 - b. Description of work;
 - c. Total dollar value of the contract;
 - d. Dates covering the term of the contract;
 - e. Town contact person and phone number;
 - f. Statement of whether Proposer was the prime contractor or subcontractor; and
 - g. Results of the project.
 - 8) General project schedule with a phasing plan.
 - 9) The Total Project Cost or price to the Town.
- 4.4 **Subcontractor and Subconsultant Information:** Provide Subcontractor and Subconsultant information in Form 5, including, but not limited to the identification of any Work, which exceeds twenty percent (20%) of the construction cost presented in the Project Cost Proposal. Identify the Subcontractors and Subconsultants, the Work to be subcontracted, and the management controls to be used to assure the Subcontractor's or Subconsultant's performance. Subcontracted and Subconsulted Work which is less than twenty percent (20%) of the Project Cost Proposal does not need to be disclosed.
- 4.5 **References:** For the Proposer, provide all clients in the last five (5) years whether the project is complete or ongoing. For each client reference, include the names, organizational affiliations, titles, addresses and telephone numbers. Also, provide client references for projects similar to the one proposed for the last five (5) years. Identify the specific services provided, the periods for which such services were provided and information relative to this proposed activity. (Use a separate sheet).
- 4.6 **Technical Proposal:** Submit Proposal complying with all Articles and Forms.
- 4.7 **Public Entity Crimes Statement:** Executed form attached hereto as Form "6".
- 4.8 **Project Schedule:** Provide a time schedule, which shall include permitting and construction time, with pertinent milestones, and start-up time.
- 4.9 **Project Organization and Management:** Identify the key personnel on the Proposer's project team, and their specific areas of expertise and responsibility. Provide a brief biographical sketch or resume of their professional qualifications and experience, including educational and licensing information.
- 4.10 **Project Cost Proposal:** Provide Project Cost Proposal in a clearly marked, separate, sealed envelope from the Technical Proposals, including specific costs for the following.

- 4.10.1 Construction price or total Project cost for the Work.
- 4.10.2 The Proposer will provide sufficient detail and breakdown of costs in Form “10” (Bid Form) to support their Project Cost Proposal.
- 4.10.3 All Project Cost Proposals are to include applicable local and state sales tax.
- 4.10.4 The Project Cost Proposal shall include a Guaranteed Maximum Price for the completion of the Work.
- 4.11 **Proposal Security.**
- 4.11.1 Each Proposal shall be accompanied by Proposal Security in the amount of five percent (5%) of the Project Cost Proposal.
- 4.11.2 Proposal Securities, if other than Bonds, will be returned to unsuccessful Proposers within fifteen (15) days following notice of the rejection of Proposals and that of the Proposer(s) shall be returned upon the execution of the Construction Agreement and delivery of all requirements for commencement of the Work, including bonds and insurance.
- 4.11.3 Should the Proposer selected by the Town Commission as the Contractor make any material misrepresentations or false statements in its Proposal, the amount of the Proposal Security shall be forfeited to the Town as liquidated damages, and not as a penalty.
- 4.12 **Insurance:** Proposer shall submit evidence of insurability from their insurance carrier for such types and minimum amounts of insurance as follows.
1. Workers’ Compensation Insurance – Statutory limits and Employer’s Liability Insurance - \$1,000,000
 2. Professional Liability (Errors and Omissions) Insurance –
 - \$1,000,000 per occurrence, \$2,000,000 aggregate on dedicated project limits with a deductible (if applicable) not to exceed \$25,000.00 per claim (audited financial statements required). The certificate of insurance shall reference any applicable deductible.
 - Claims made on the policy must have an extended coverage reporting period of two (2) years past the coverage completion date.
 - For Deductible programs or Self Insured Retention programs an Irrevocable Letter of Credit or performance Bond for amount of SIR/Deductible is required.
 3. Commercial General Liability Insurance – preferably written on an occurrence form with \$1,000,000 for each occurrence, to include contractual liability,

personal & advertising injury, and products/completed operations, combined single limit for Bodily Injury Liability and Property Damage Liability, in the amount of Two Million Dollars (\$2,000,000) aggregate. .

4. Automobile Liability Insurance – \$1,000,000 combined single limit bodily injury & property damage.

The successful Proposer must submit, prior to signing of the Construction Agreement, among other things, a Certificate of Insurance including the Town as an additional insured for Commercial General Liability and Auto Liability Insurance. The Successful Proposer shall guarantee all required insurance remain current and in effect throughout the term of Construction Agreement.

- 4.13 Performance Bonds and Payment Bonds shall be issued by approved bonding companies, to be acceptable to the Town, will be limited to those authorized to transact business in the State of Florida, having a resident agent in the State of Florida, and meeting the following requirements and/or limits: Surety shall be rated “B” or better as to the strength by Best’s Insurance Guide or Surety shall be listed on the U.S. Treasury Department’s list of acceptable sureties for federal bonds or bonding limits shall not exceed 20% of its policy surplus (capital & surplus) as listed in Best’s Insurance Guide; and, Surety shall have been in business and have a record of successful and continuous operation for at least five (5) years; and, all bonds shall contain all provisions required by Section 255.05, Florida Statutes. Said Bonds shall guarantee the performance of the Agreement and as security for the payment of all persons performing labor and furnishing materials in connection with the Agreement. The Performance Bond and Payment Bond shall be issued by the Surety Company on the forms provided within the Proposal Documents. No other forms will be acceptable. These forms are as follows.

4.13.1 **Proposer’s Performance Bond:** Required in the amount of one hundred percent (100%) of the Guaranteed Maximum Price.

4.13.2 **Proposer’s Payment Bond:** Required in the amount of one hundred percent (100%) of the Guaranteed Maximum Price.

4.14 **The Project Cost Proposal:**

4.14.1 Shall list each item of Work including for which payment will be made. Form “10” (Bid Form) shall be included with the Project Cost Proposal to facilitate payment based on Work completed to date. No payment will be made for any items other than those listed in the Project Cost Proposal.

4.14.2 Required items of Work and incidentals necessary for the satisfactory completion of the Project which are not specifically listed in the Project Cost Proposal or included in one of the items list in the Project Cost Proposal shall be considered as incidental to the Project. All costs thereof, including the Proposer’s overhead

costs and profit, shall be considered as included in the Bid Form for the Project Cost Proposal.

- 4.14.3 Project Work includes furnishing all labor, equipment, tools and materials and performing all operations required to build, implement, operate, and turn over the Project to the Town.

ARTICLE 5

PROCEDURE AND CRITERIA FOR EVALUATING PROPOSALS

- 5.1 The Town will utilize a Selection Committee appointed by the Town Manager that will lead the evaluation and recommendation process. The Selection Committee will initially review the Technical Proposals to determine responsiveness and reject any Proposals deemed non-responsive. The Selection Committee will review and evaluate the responsive Technical Proposals and shall evaluate each of the Proposals based on all information required and submitted. After the Technical Proposals are evaluated, the Cost Proposals will be opened and evaluated. The Town Manager shall submit the apparent lowest responsive and responsible Proposer's submittal to the Town Commission with recommendation(s) for selection. The Town Commission shall review and may require the Proposer to prepare an oral presentation to the Town Commission. The Town Commission will then direct staff to negotiate a Construction Agreement with the selected Proposer. The Town Commission may award the Construction Agreement as it determines to be in the best interest of the Town and most advantageous. Alternatively, the Town Commission may reject any or all Proposals or cancel this solicitation.
- 5.2 The Proposer shall present a comprehensive project schedule for completing the Work. The plan shall address all significant construction and maintenance issues and constraints and shall demonstrate efficient use of manpower, materials, equipment, construction schemes, and techniques for completing the Project.

The minimum information to be included is as follows: Anticipated Award Date, Shop Drawing Review, Procurement of Materials, Permitting, Start of Construction, Construction Milestones, Construction Phasing and Methods, conditional acceptance for all Work including punch list items, and final acceptance/completion date.

- 5.3 The Selection Committee shall review and evaluate the Proposals using the previously mentioned evaluation criteria. The Selection Committee, during its evaluation process, reserves the right to contact references and to verify information submitted by any Proposer. The Selection Committee may also request clarification or information from the Proposers.

ARTICLE 6
EXECUTION OF AGREEMENT AND COMPLETION OF WORK

- 6.1 The Construction Agreement will be prepared by the Town and provided to the selected Proposer. The Proposer shall, within 14 calendar days of receipt of the Construction Agreement execute the Agreement and furnish any bonds and provide certificates of insurance as are required at the time of the execution of the Agreement.

The Town will enter into a negotiated Construction Agreement with the successful Proposer for a Guaranteed Maximum Price for the Work. The terms and conditions of the Construction Agreement are fixed price and fixed time. The Proposer's submitted Proposal is to be a guaranteed lump sum for completing the Work in this RFP. The Proposer will provide a Bid Form to the Town for their approval. The total of the Bid Form will be the lump-sum guaranteed price for the Work. The form of the Construction Agreement will be available to all proposers in advance of the Submission Deadline on the Town's website www.townofsurfsidefl.gov or via Addenda to this RFP.

- 6.2 Upon Town Commission approval, the Proposer shall, within fourteen (14) Calendar Days after receipt of Construction Agreement from the Town, 1) execute the Construction Agreement between Town and Proposer, 2) furnish any Bonds, and provide Certificates of Insurance required to be furnished at the time of execution of the Construction Agreement.
- 6.3 Should the Proposer fail to comply with the requirements of this Article within the specified time period, the Proposer's entire Proposal Security may be forfeited to the Town as liquidated damages by reason of Proposer's failure to timely execute and deliver same.
- 6.4 Work will be initiated on the basis of a Notice to Proceed and for any such Work so initiated, and a Payment Bond and Performance Bond shall be required.
- 6.5 The Proposer acknowledges the required security of a Proposal Bond or Cashier's Check.

ARTICLE 7
GENERAL INFORMATION AND ADMINISTRATIVE REQUIREMENTS

- 7.1 **Costs Incurred by Proposers:** All costs incurred by Proposers, their employees and agents, in preparing a response to this RFP, in clarifying such response to the satisfaction of the Town, in attending any pre-Proposal meetings, or in ascertaining the conditions of the site shall be the sole responsibility of the Proposers and will not be paid or reimbursed by the Town. The Proposer is further responsible for all legal expenses incurred by the Proposer for the Project, including contract review and negotiations. The Proposer's legal costs shall not be included in the Proposer's Proposal or factored into the Proposer's Project Cost Proposal. The Town shall not reimburse the Proposer for legal costs of any kind.
- 7.2 **Rejection of Proposals:** The Town reserves the right to reject any or all Proposals. Proposals not conforming to these instructions may be disqualified.
- 7.3 **Non-Binding Interpretations:** No verbal or written information, which is obtained other than by information in this RFP or written Addendum to this RFP, shall be binding on the Town.
- 7.4 **Withdrawal of Proposals:** A Proposal may not be withdrawn before the expiration of one hundred twenty (120) calendar days from the date of Proposal opening. Proposals may be withdrawn if the Town fails to accept the Proposal within one hundred twenty (120) calendar days after the date fixed for opening Proposals.
- 7.5 **Public Records Laws:** Proposer acknowledges that except for specific statutory exceptions listed in Chapter 119, Florida Statutes, all information contained within their Proposal shall be considered a Public Record.
- 7.6 **Conflict of Interest:**
- 7.6.1 The award of this RFP is subject to the provisions of Chapter 112, Florida Statutes. All Proposers must disclose with their Proposal the name of any officer, director, or agent who is also an employee of the Town.
- 7.6.2 All Proposers must disclose the name of any Town employee, consultant or agent who owns, directly or indirectly, an interest of five percent (5%) or more of the Proposer's firm or any of its branches.

ARTICLE 8
CONSTRUCTION PLANS AND TECHNICAL SPECIFICATIONS

- 8.1 The construction plans and technical specifications are included as separate attachments and shall be considered part of the Contract Documents.

ARTICLE 9
PROPOSER'S ACKNOWLEDGEMENTS

- 9.1 By submission of this Proposal, the Proposer acknowledges that he/she has thoroughly examined all plans, technical specifications, RFP, and Contract Documents; thoroughly familiarized themselves with all existing site conditions; that no allowances shall be made by the Town for the Proposer's failure to do same; the Proposer offers to enter into a Construction Agreement with the Town to furnish Construction Services as well as all labor, materials and equipment to perform all Work included in and in accordance with the plans, technical specifications, RFP, and Contract Documents.
- 9.2 If the Proposer makes false statements or provides false information in any portion of the Proposal documents, the Proposer acknowledges that Proposer will be disqualified.
- 9.3 The Proposer understands and agrees with the form of this RFP as presented, absent any inadvertent drafting or technical errors, and agrees to not attempt to negotiate the terms and conditions of this Project, except as provided herein

ARTICLE 10
REPRESENTATIONS

- 10.1 Town is expressly relying upon the Proposer's representations for awarding this Project. Therefore, the Proposer unequivocally represents that the statements and information provided in response to this RFP are truthful.
- 10.2 The Proposer and all persons signing on behalf of the proposing person or entity, has the legal authority to bind the Proposer to the terms and conditions of this Project.
- 10.3 There are no legal impediments, conditions or orders, which would preclude the Proposer from satisfactorily performing the Proposer's duties as outlined in the RFP documents.

END OF INSTRUCTIONS

**FORM “1”
PROPOSAL CHECKLIST**

As provided in the RFP, the following items must be attached to this Proposal:

ITEMS	STATUS
Transmittal Letter	
TECHNICAL PROPOSAL	
Proposal Cover Sheet (Form 2)	
Proposer’s Statement of Qualifications (Form 5)	
Subcontractor Information (Form 5, Supplemental)	
Material/Equipment Suppliers Information (Form 5, Supplemental)	
References (Form 9)	
Statement on Public Entity Crimes (Form 6)	
Evidence of Insurability	
Project Organization and Management	
Staffing Plan	
Project Schedule	
Non-Collusion Affidavit (Form 7)	
Non-Discrimination Affidavit (Form 8)	
Project Cost Proposal (separate sealed package) (Form 3)	
Bid Form (Form 10)	
Proposal Security (Form 4)	

**FORM “2”
PROPOSAL COVER SHEET**

PROJECT: POINT LAKE CANAL SUBAQUEOUS WATER MAIN CROSSING TO
BISCAYA ISLAND

BID/PROJECT NO: RFP No. 2020-03

COMMENCEMENT: UPON TOWN’S ISSUANCE OF
“NOTICE TO PROCEED”

FINAL COMPLETION: 90 DAYS FROM “NOTICE TO PROCEED”

PROPOSAL BOND: _____

Made as of the _____ day of _____, 20____.

PROPOSER: _____

ADDRESS: _____

PHONE: _____

FAX: _____

ORGANIZATION
TYPE:

_____ INDIVIDUAL

_____ PARTNERSHIP

_____ CORPORATION

_____ OTHER (explain)

ACKNOWLEDGMENT OF ADDENDUM

The Proposer hereby acknowledges the receipt of the following addenda issued by the Town and/or Consultant and incorporated into and made part of the Construction Agreement and Contract Documents for this Project.

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

Signature

Title

ACKNOWLEDGMENT AND SEAL

_____	_____
Firm Name	Signature

Title	
_____	_____
Witness	Name
_____	_____
Witness	Name

Corporate Seal:

Incorporated under the laws of the State of _____ .

FORM "3"
PROJECT COST PROPOSAL
(GUARANTEED MAXIMUM PRICE)

Project Title: TOWN OF SURFSIDE - POINT LAKE CANAL SUBAQUEOUS WATER
MAIN CROSSING TO BISCAYA ISLAND

Payment for the various items of the Project Cost Proposal shall include all compensation for services, construction, furnishing tools, equipment, supplies, and manufactured articles, labor operations, permit fees, licenses, taxes, insurances, bonds, overhead and profit, and incidentals appurtenances thereto, and including all costs of compliance with the regulations of public agencies having jurisdiction, including but not limited to the Occupational Safety and Health Administration of the US Department of Labor (OSHA), FDOT, Miami-Dade County and the Town. No separate payment will be made for any item that is not specifically set forth in the cost proposal, and all costs therefore shall be included in the prices provided below.

PROJECT COST PROPOSAL

Lump Sum / Guaranteed Maximum Price
Total Project Cost Proposal: \$ _____ (Numerical) _____ Dollars (Written)

SUBMITTED BY

Organization

Signature

Signature of Witness

Name Title

Signature of Witness

Name Title

Date

END OF PROJECT COST PROPOSAL

**FORM “4”
PROPOSAL SECURITY FORM**

_____ Name	_____ Name
_____ Address	_____ Address
FLORIDA RESIDENT AGENT Name: Address: Telephone: Fax:	TOWN OF SURFSIDE 9293 HARDING AVENUE SURFSIDE, FLORIDA 33154 Telephone: 305-861-4863 Fax: 305-861-1302
PROJECT: _____ <div style="display: flex; justify-content: space-between;"><div style="width: 45%; text-align: center;">_____ Proposal Due Date</div><div style="width: 45%; text-align: center;">_____ Bond Number</div></div> <div style="display: flex; justify-content: space-between;"><div style="width: 45%; text-align: center;">_____ Bond Date</div><div style="width: 45%; text-align: center;">\$ _____ Penal Sum</div></div>	

[ACKNOWLEDGMENTS ON FOLLOWING PAGE]

IN WITNESS WHEREOF, Surety and Proposer, intending to be legally bound hereby, subject to the terms included in this section, do each cause this Proposal Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

PROPOSER

SURETY
(Attach Power of Attorney)

Corporate Name and Seal

Corporate Name and Seal

Signature

Signature

Name and Title

Name and Title

Attest

Attest

Attest

Attest

Note: Above addresses shall be used for giving of required notices. Any singular reference to Proposer, Surety, Florida Resident Agent, Town or other party shall be considered a plural where applicable.

1. Proposer and Surety, upon default of Proposer, jointly and severally, bind themselves, and their heirs, executors, administrators, successors and assigns to pay to Town upon default of Proposer the penal sum set forth on the face of this Bond.
2. Default of Proposer shall occur upon the failure of Proposer to deliver within the time required by the bidding documents (or any extension thereof granted in writing by Town) the executed Construction Agreement and the Bonds and Certificates of Insurance required to be furnished at the time of execution of the Construction Agreement.
3. This obligation shall be null and void if:
 - A. Town accepts Proposer's Proposal and Proposer timely complies with the requirements of Section 2 of this Bond, or
 - B. All Proposals are rejected by Town , or
 - C. Town fails to issue a notice of award to Proposer within the time specified in the bidding documents (or any extension thereof granted in writing by Proposer and, if applicable, consented to be Surety when required by paragraph 5 hereof).

4. Payment under this Bond will be due and payable upon default by Proposer and within 30 calendar days after receipt by Proposer and Surety of written notice of default from Town, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue notice of award agreed to in writing by Town and Proposer, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from bid due date without Surety's written consent.
6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in paragraph 4 above is received by Proposer and Surety and in no case later than one (1) year after bid due date.
7. Any suit or action under this Bond shall be commenced only in a Monroe County, Florida court of competent jurisdiction. Any award granted shall not be subject to prejudgment interest.
8. Notices required hereunder shall be in writing and sent to Proposer and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent or representative who executed this Bond on behalf of Surety to execute, seal and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.
11. The term "bid" as used herein includes a bid, offer or Proposal as applicable.

END OF PROPOSAL BOND

FORM "5"
STATEMENT OF PROPOSER'S QUALIFICATIONS

The Proposer, as well as any Subcontractors who will perform at least 20% of the construction phases of this Project, must be included in this Statement of Qualifications. Information provided on this document and its attachments will be subjectively evaluated by the Evaluation Committee. For purposes of completing this Statement of Qualifications, "Firm" means the Proposer. Construction Team means the Proposer and the Subcontractors who will perform at least 20% of the construction phases of this Project.

Use additional sheets if necessary to fully document responses.

1. List the names of the Proposer's principals and their titles:

Firm Name

Principal & Title

Principal & Title

Address

City, State & Zip Code

Phone

Fax

2. Proposer is a:
☐ Sole Proprietorship ☐ Corporation ☐ Partnership ☐ Joint Venture
☐ Other (Explain):

3. Your Federal Employer Identification Number (FEIN) is:

(If applicable) (If the entity has no FEIN, include the Social Security Number of the individual signing this sworn statement)

4. License(s) and Registration(s):

(a) What is the Proposer's primary practice or professional service:

☐ Contractor ☐ Architect ☐ Engineer ☐ Other (explain):

(Attach copies of registrations, licenses, certificates, and other documentation as issued by the State of Florida, Miami-Dade County, or other agency.)

(b) List the name(s) and title(s) of person(s) in your Firm who are authorized to enter into an Construction Agreement with the Town of Surfside for the proposed Work should your Firm be the Successful Proposer.

Name & Title

Name & Title

(c) List Principals and other key personnel licensed in the State of Florida:

Name

Registration Type

Years Registered

Years Employed
by Proposer

Name

Registration Type

Years Registered Years Employed
by Proposer

Name

Registration Type

Years Registered Years Employed
by Proposer

(Attach copies of registrations, licenses, certificates, and other documentation as issued by the State of Florida, Miami-Dade County, or other agency.)

(d) Remarks:

5. How long has your Firm been in business under its present name?
_____.

6. Construction Team Composition:

(a) List Team Members (Attach additional sheets as necessary):

Team Member Name

Principal

Discipline/Specialty

Location

Team Member Name

Principal

Discipline/Specialty

Location

- (b) Attach copies of registrations, licenses, certificates, and other documentation as issued by the State of Florida, Miami-Dade County, or other agency.

7. Financial Statements for Proposer:

- (a) Attach audited financial statements for the last three years, or, at a minimum, CPA-reviewed financial statement for the last three years.
- (b) List annual revenues (last three years) and annual net income (Loss) (last three years)

8. Past Experience:

- (a) The Proposer must demonstrate their specific construction experience in the United States as presented by their Team, including but not limited to construction/installation of subaqueous pipelines.
- (b) **References:** Detailed description of comparable contracts as they pertain to the Scope of Services similar to that requested in this RFP, which the Proposer and Subcontractor has either ongoing or completed within the past five (5) years. The description should identify for each project: (i) client, (ii) a complete description of work, (iii) total dollar value of the contract, (iv) dates covering the term of the contract, (v) client contact person and phone number, (vi) statement of whether Proposer was the prime contractor or subcontractor, and (vii) the results of the project. Where possible, list and describe those projects performed for government clients or similar size private entities (excluding any work performed for the Town of Surfside).

- (c) Has the Proposer ever failed to complete a bonded obligation? If yes, provide details including circumstances, where and when, name of bonding company, name and address of owner, and disposition of matter on an attachment to this Form.

☐ Yes ☐ No

- (d) Has the Proposer ever been declared non-responsive or defaulted on a previous contract? If yes, provide details including circumstances, identification of the project, and disposition or current status of the matter on an attachment to this Form.

☐ Yes ☐ No

- (e) Within the last five years, has the Proposer been involved in a legal matter against the Town of Surfside? If yes, provide details including circumstances, identification of the project, and disposition or current status of the matter on an attachment to this Form.

☐ Yes ☐ No

- (f) Within the last five years, has the Proposer been involved in a matter that was arbitrated against the Town of Surfside? If yes, provide details including circumstances, identification of the project, and disposition or current status of the matter on an attachment to this Form.

☐ Yes ☐ No

9. Current Workload:

- (a) List current projects including contract amounts, the scope of the project in square feet of construction, the current status or projected date of completion, and notation of whether participation in the project was fully bonded or not. Attach additional sheets as necessary to portray your total current workload.

Project

Value

Square Feet

Status

Bonded

Project

Value

Square Feet

Status

Bonded

9. Attachments:

(a) **MANDATORY ATTACHMENTS:**

1. Copy of professional registration and/or Certificates of Authorization issued by the Florida Department of Business and Professional Regulation indicating your Team's qualifications as defined in Section 287.055, Florida Statutes.
2. Copies of professional licenses, registration, certifications, or certificates of competency issued by the Florida Department of Business and Professional Regulation or Miami-Dade County for the Proposer and Team Members.
3. Further Documentation or explanatory materials related to Items 6, 7 (g), 7 (h), and 8.
4. Visual examples of two (2) different projects representative of your Team's work and comparable to the scope of services set forth in this RFP, such as photos of completed buildings or models, reproductions of renderings, plans, drawings or other types of information sufficient to indicate the quality and character of your work. Each submittal must not be larger than 8-1/2 by 11 inches and should include the following information:
 - a. The original estimated construction cost.
 - b. Construction duration.
 - c. Actual cost of construction awarded or completed.

(b) **OPTIONAL ATTACHMENTS:** Attach any brochures, photographs, video or other documentation that may assist in the evaluation of your Team. A complete copy of any optional attachment must be included with each of the required copies of your Proposal to receive consideration.

The undersigned guarantees the authenticity of the foregoing statements and does hereby authorize and request any person, team, or corporation to furnish any information requested by the Town of Surfside in verification of the recitals comprising this Statement of Proposer's Qualifications.

(c) Proposer's Representations:

1. The Proposer acknowledges that the Town of Surfside is relying upon the Proposer's statements and representations for determining the Proposer's qualifications. Therefore, any misrepresentations, misstatements, or fraudulent statements shall be used, at the Town of Surfside's sole discretion, as a basis for disqualifying the Proposer.
2. The Proposer unequivocally represents that the statements and information provided in response to this qualification statement are truthful.
3. The Proposer and all persons signing on behalf of the bidding person or entity, has the legal authority to bind the Proposer or entity to the statements and representations made in this document.

SUBMITTED BY

Signature of Proposer

Printed Name

Title

Name of Firm

Date

Signature of Witness

Printed Name

Title

Name of Firm

Signature of Witness

Printed Name

Title

Name of Firm

The following work will be performed (or provided) by Subcontractors and coordinated by the Proposer:

[illegible]

Town of Surfside – RFP No. 2020-03
Page 37 of 46

SUPPLEMENT: MATERIAL/EQUIPMENT SUPPLIERS

The following suppliers will be furnishing materials and/or equipment on this Project:

MATERIAL AND/OR EQUIPMENT SUPPLIERS

END OF SUPPLEMENT: MATERIAL/EQUIPMENT SUPPLIERS

FROM “6”
TOWN OF SURFSIDE
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 officer authorized to administer oaths.)

1. This sworn statement is submitted with the RFP Contract for Construction of Point Lake Canal Subaqueous Water Main Crossing to Biscaya Island.

2. This sworn statement is submitted by:

(Name of entity submitting sworn statement)

whose business address is:

Federal Employer Identification Number (FEIN) is: _____
(if the entity has no FEIN, include the Social Security Number of the individual signing this sworn statement)

(If applicable)

Social Security Number: _____

3. My name is: _____
(Print name of individual signing)

and my relationship to the entity is: _____

4. I understand that a “public entity crime” as defined in Section 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 a “convicted” or “conviction” as defined in Paragraph 287.133(1)(b), Florida Statutes means a finding of guilt of a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, non-jury trial, or entry of a plea of guilty or nolo contendere.

6. I understand that an “affiliate” as defined in Section 287.133(1)(a), Florida Statutes means:

- (a) A predecessor or successor of a person or a corporation convicted of a public entity crime; or
- (b) An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term “affiliate” includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm’s length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.

7. I understand that a “person” as defined in Section 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 the information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. (Please indicate which statement applies)

_____ Neither the entity submitting the 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 or 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 and (Please indicate which additional statement applies)

_____ 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 list. There has been a subsequent proceeding before a hearing officer of the State of Florida, Division of

FORM "7"
NON-COLLUSION AFFIDAVIT

The undersigned Bidder/Proposer has not divulged discussed or compared his/her Bid Proposal with any other Bidders/Proposers and has not colluded with any other Bidder/Proposer or parties to this Bid/Proposal whatsoever.

Signature

Name

Title

Date

Witness my hand and official notary seal/stamp at _____ the day and year written above.

STATE OF FLORIDA)
) ss:
COUNTY OF _____)

Sworn to and subscribed before me this ____ day of _____, 20____,
by _____ who (check one) [☐] is personally known to me or [☐] has produced as identification.

Notary Public, State of Florida

Print or Type Name of Notary Public

My commission expires:
(Seal)

END OF NON-COLLUSION AFFIDAVIT

FORM "8"
NON-DISCRIMINATION AFFIDAVIT

I, the undersigned, hereby duly sworn, depose and say that the organization, business or entity represented herein shall not discriminate against any person in its operations, activities or delivery of services under any agreement it enters into with the Town of Surfside, a Florida municipal corporation. The same shall affirmatively comply with all applicable provisions of federal, state and local equal employment laws and shall not engage in or commit any discriminatory practice against any person based on race, age, religion, color, gender, national origin, marital status, physical or mental disability, which cannot be lawfully used as a basis for service delivery.

Signature

Date

Name

Title

Witness my hand and official notary seal/stamp at _____ the day and year written above.

STATE OF FLORIDA)
) ss:
COUNTY OF _____)

Sworn to and subscribed before me this ____ day of _____, 20____
by _____ who (check one) [☐] is personally known to me or [☐] has produced as identification.

Notary Public, State of _____

Print or Type Name of Notary Public

My commission expires:
(Seal)

END OF NON-DISCRIMINATION AFFIDAVIT

**FORM “9”
REFERENCES**

The following is a list of at least three (3) references from municipalities for which Proposer provided similar services or comparable contracts to those sought in this RFP in the past five (5) years:

Name of Entity for which services were performed: _____
Brief Description of Scope of Services: _____
Amount of Contract Award: _____
Status of Contract: _____
Contact Name: _____
Telephone Number: _____

Name of Entity for which services were performed: _____
Brief Description of Scope of Services: _____
Amount of Contract Award: _____
Status of Contract: _____
Contact Name: _____
Telephone Number: _____

Name of Entity for which services were performed: _____
Brief Description of Scope of Services: _____
Amount of Contract Award: _____
Status of Contract: _____
Contact Name: _____
Telephone Number: _____

Name of Entity for which services were performed: _____
Brief Description of Scope of Services: _____
Amount of Contract Award: _____
Status of Contract: _____
Contact Name: _____
Telephone Number: _____

Name of Entity for which services were performed: _____
Brief Description of Scope of Services: _____
Amount of Contract Award: _____
Status of Contract: _____
Contact Name: _____
Telephone Number: _____

FORM "10"
BID FORM

THE PRICES FOR EACH BID ITEM SHALL BE FOR WORK DONE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND SPECIFICATIONS AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL REQUIREMENTS.

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
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I. GENERAL

1.01	General Requirements	1	LS	\$	\$
1.02	Mobilization and Demobilization	1	LS	\$	\$
1.03	Stormwater Pollution Prevention	1	LS	\$	\$
1.04	Maintenance of Traffic	1	LS	\$	\$
1.05	Miscellaneous Work and Permitting Allowance	1	AL	\$13,000.00	\$13,000.00

II. WATER

2.01	8" HDPE DR11 Water Main (HDD)	606	LF	\$	\$
2.02	8" DIP Class 350 Water Main	28	LF	\$	\$
2.03	6" DIP Class 350 Water Main	16	LF	\$	\$
2.04	8" DIP Tapping Sleeves and Valves	2	EA	\$	\$
2.05	8"-45° DIP Bends	4	EA	\$	\$
2.06	8"x6" DIP Reducers	2	EA	\$	\$
2.07	8" DIP Plugs and Caps	2	EA	\$	\$
2.08	8" DIP Gate Valves	2	EA	\$	\$
2.09	6" DIP Gate Valves	2	EA	\$	\$
2.10	Fire Hydrant Assembly	2	EA	\$	\$
2.11	2" PE Water Services	4	EA	\$	\$
2.12	Bacteriological Sampling Points	2	EA	\$	\$
2.13	Cut-in and Connect to Existing Water Main	2	EA	\$	\$
2.14	Connect New Water Services to Existing Meters	4	EA	\$	\$
2.15	Remove Existing 8" Water Main and Appurtenances	20	LF	\$	\$
2.16	Grout Existing 8" Water Main	124	LF	\$	\$
2.17	Leak Detector/Sampling Port Access Structure	1	EA	\$	\$

III. SITE WORK

3.01	1" Type SP-9.5 Asphalt Milling and Resurfacing	1,562	SY	\$	\$
3.02	Type 'F' Curb and Gutter	35	LF	\$	\$
3.03	Type 'D' Curb	10	LF	\$	\$
3.04	4" Mountable Curb and Gutter ("Miami Curb")	10	LF	\$	\$
3.05	Sod (Saint Augustine "Floritam")	200	SY	\$	\$
				GRANT TOTAL	\$

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DIVISION 8 – DOORS AND WINDOWS

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DIVISION 9 – FINISHES

(Not Used)

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(Not Used)

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(Not Used)

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(Not Used)

APPENDICES

“A”	Report of Geotechnical Investigation
“B”	Approved Permits

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SECTION 01010
SUMMARY OF WORK

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This section includes general descriptions of the Contractor use of site, location of work, description of work, work sequence, owner occupancy, and work by others.

1.02 RELATED SECTIONS

- A. Section 01012 – Measurement and Payment
- B. Section 01015 – General Requirements
- C. Section 01505 – Control of Work

1.03 REFERENCES (NOT USED)

1.04 CONTRACTOR USE OF SITE

- A. The Contractor shall limit their area of work to remain within those properties and easements as depicted in the Drawings or as approved in writing by the Owner (Surfside).
- B. Contractors' use of lands other than those depicted in the Drawings or approved by the Owner shall require written approval from the landowner and shall be at the Contractors risk and cost.

1.05 LOCATION OF WORK

- A. The Work is located within portions of Biscaya Drive, Bay Drive, and Point Lake North Canal in the southwest section of the Town of Surfside, Florida.

1.06 DESCRIPTION OF WORK

- A. The following is a general list of the work included. It is not intended to be complete. Consult the Contract Drawings and specifications for all contract requirements.
 - 1. Installation of approximately 600 linear feet of new 8-inch HDPE water main via horizontal directional drilling under an existing canal.
 - 2. New fire hydrants.
 - 3. Pressure testing and bacteriological testing.
 - 4. Cut-in and connect the new water main to the existing with DIP fittings and valves.

5. Reconnect existing water services.
6. Cut, cap, and abandon a section of the existing 8-inch water main.
7. Site restoration including sod, concrete, and asphalt milling and resurfacing.

1.07 WORK SEQUENCE

- A. The Contractor shall establish their own Work sequence based on resources and the specified Contract time. The proposed sequence shall be submitted to the Owner for approval prior to mobilizing.

1.08 OWNER OCCUPANCY

- A. Cooperate with Owner to minimize conflict, and to facilitate Residences and Owner's operations.
- B. Schedule the Work to accommodate this requirement.

1.09 WORK BY OTHERS

- A. The Contractor is advised that work by others may take place during the duration of the contract time. It shall be the Contractor's responsibility to coordinate and schedule all Work as not to delay or hinder their Work or the work by others.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01012

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This Section includes administrative and procedural requirements for determining payment for Work completed and ready for payment under the Unit Price Contract where the Unit Price Bid Form is utilized in the Applications for Payment.

1.02 RELATED SECTIONS

- A. Bid Form
- B. Section 01152 – Applications for Payment
- C. Section 01370 – Schedule of Values

1.03 REFERENCES

- A. Manual on Uniform Traffic Control Devices (MUTCD)
- B. FDOT Standard Specification for Road and Bridge Construction (Standard Specifications)
- C. FDOT Design Standards for Design, Construction, Maintenance and Utility Operations in the State Highway System (Standard Indexes)
- D. Miami-Dade County Water and Sewer Department

1.04 GENERAL REQUIREMENTS

- A. Prices shall include all costs required for the completed, in-place construction of the specified unit of Work. This may include but not be limited to, materials and delivery; cost of installation; incidentals; labor including social security, insurance, and other required fringe benefits; workman's compensation insurance; bond premiums; rental of equipment and machinery; taxes; testing; surveys; incidental expenses; and supervision.
- B. Installation, acceptance, and payment shall be in accordance with the References.
- C. The Owner reserves the right to reject the Contractor's measurement of completed Work that involves use of established unit prices, and to have this Work measured by an independent surveyor acceptable to the Contractor at the Owner's expense.
- D. Contract Sum adjustments will be by Change Order on basis of net accumulative change for each unit price category.
 - 1. Except as otherwise specified, unit prices shall apply to both deductive and

additive variations of quantities.

2. Lump sum and unit prices in the Agreement shall remain in effect until date of final completion of the entire Work.
- E. Partial payment for material and equipment properly stored and protected will be made in accordance with requirements of the Contract.
- F. Abbreviations:
1. Acre – AC
 2. Allowance – AL
 3. Cubic Yard – CY
 4. Each – EA
 5. Furnish and Install – F&I
 6. Gallons – GA
 7. Gross Mile – GM
 8. Linear Feet – LF
 9. Lump Sum – LS
 10. Million Gallons – MG
 11. Net Mile – NM
 12. Square Foot – SF
 13. Square Yard – SY
 14. Ton – TN

1.05 MEASUREMENT AND PAYMENT

- A. Payment shall constitute full compensation and will be made as indicated in the Contract.
- B. The quantity approved for payment shall be either:
1. Percentage of the Lump Sum Price - A percentage of the Lump Sum Price equivalent to the percentage of the project completion as determined by the Engineer as of the date of the pay request submitted. The percent completion of the project shall be based on the percent of the total project actually constructed and not on the percent of the Contract price completed.
 2. Measured Quantities - The actual quantities in-place and accepted as measured by the Engineer on the date of the pay request submitted in the units specified in the Bid Form or in the approved Schedule of Values.
- C. Items measured by linear foot such as pipes, culverts, curb, guardrails, and underdrains that are shown on the Drawings and on the Bid Form are measured parallel with the base or foundations upon which they are placed. Contractor shall be paid based on plan view measurements installed for these types of items regardless of vertical deflections or other changes in depth that may require additional materials.

1.06 PROTECTION

- A. Where pavement, pipes, valves, appurtenances, trees, shrubbery, fences, other property or structures are in proximity to the Work, adequate protection shall be provided. Such protection is considered incidental to construction and shall not be assigned to any pay item.

1.07 RESTORATION

- A. Where pavement, pipes, valves, structures, appurtenances, trees, shrubbery, fences, other property or structures not designated as pay items, have been damaged, removed or disturbed by the Contractor, whether deliberately or through failure to carry out the requirements of the Contract Documents, state laws, municipal ordinances or the specific direction of the Engineer, or through failure to employ usual and reasonable safeguards, such property and surface structures shall be replaced or repaired at the expense of the Contractor to a condition equal to that before Work began within a time frame approved by the Engineer. Such restoration is considered incidental to construction and shall not be assigned to any pay item.

1.08 EXPLORATORY EXCAVATIONS

- A. The Contractor shall verify the exact locations and depths of all utilities shown and shall conduct exploratory excavations of all utilities that may interfere with the Work. All such exploratory excavations shall be performed as soon as practicable after award of the Contract and, in any event, sufficient time in advance of construction to avoid possible delays to the Contractor's work. When such exploratory excavations show the utility location as shown to be in error, the Contractor shall so notify the Engineer. The cost for conducting these excavations shall be considered incidental to construction.

1.09 TESTING, SURVEY, AND RECORD DRAWINGS

- A. All survey layout and record drawings shall be considered incidental to the cost of construction and shall include all calculations and field work required, in order to establish all horizontal and vertical controls, set all stakes needed, such as grade stakes, offset stakes, reference point stakes, slopes stakes, and other reference marks or points necessary to provide lines and grades for construction and as-buitling of all roadway, utility construction, and miscellaneous items.
- B. All testing shall be considered incidental to the cost of construction and shall include all field testing and laboratory work including reports as required by the Drawings and specifications and by agencies having jurisdiction over the project.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.01 GENERAL REQUIREMENTS - BID ITEM NO. 1.01

- A. Payment shall be made as a percentage of the Lump Sum Price.

- B. The lump sum price shall include the cost of bonds, insurance, licenses, and all administrative costs not specifically identified in other bid items.
- C. The lump sum price shall exclude the cost of construction material and installation.

3.02 MOBILIZATION AND DEMOBILIZATION - BID ITEM NO. 1.02

- A. Payment shall be made as a percentage of the Lump Sum Price.
- B. The Lump Sum Price shall include compensation for all labor, materials, equipment and all other incidentals required for all temporary facilities, transportation, communications, office, maintenance, project signs, and any other pre- or post-construction expenses necessary for the start or cessation of the Work, not specifically identified in the costs of the Work.
- C. The Lump Sum Price shall exclude the cost of construction material and installation.
- D. No further payment shall be made for remobilization unless all the Work is suspended by the Engineer for a period in excess of three months and through no fault to the Contractor.

3.03 STORMWATER POLLUTION PREVENTION - BID ITEM NO. 1.03

- A. Payment shall be made as a percentage of the Lump Sum Price.
- B. The Lump Sum Price shall include full compensation for all equipment, materials, supplies, and labor necessary to prepare, obtain permit approval from the governing agency, and implement the prevention, control, and abatement of erosion and water pollution. Work shall include but not be limited to mulching, sand bagging, slope drains, sediment basins, berms, baled hay or straw, silt fences, turbidity barriers, rock bags, artificial coverings, and other items relating to the construction/removal and routine maintenance, including mowing or implementing the stormwater pollution prevention plan.

3.04 MAINTENANCE OF TRAFFIC - BID ITEM NO. 1.04

- A. Payment shall be made as a percentage of the Lump Sum Price.
- B. The Lump Sum Price shall include compensation for required labor, materials, all necessary temporary pavement markings and signing for vehicles and pedestrians, temporary pavement, temporary business signage, professional fees, and equipment necessary to provide traffic control for two way traffic at all times in accordance with the plans and specifications.
- C. MOT permits and approvals from the applicable regulatory agencies, including but not limited to Miami-Dade County and the Town of Surfside, are the responsibility of the Contractor. All MOT plans are to be sealed by a Florida Registered Engineer holding a current FDOT MOT certificate.

- D. MOT shall include both vehicular and pedestrian requirements. Temporary pavement markings and signage shall be provided wherever existing has been damaged, removed, or is no longer visible. The temporary shall be maintained until final markings are installed after asphalt resurfacing.

3.05 MISCELLANEOUS WORK AND PERMITTING ALLOWANCE – BID ITEM NO. 1.05

A. Miscellaneous Work:

- 1. The price for this item shall be full compensation for additional items of Work requested by the Owner (Surfside) or warranted unforeseen conditions found during construction and approved by the Owner. The Contractor is required to provide a quote with unit price breakdowns of the Work to the Owner for review and approval prior to commencing any Work.

B. Permitting:

- 1. Payment will be based on the actual permit, license or fee paid directly to the agency, documented by paid receipts, specifically excluding any labor, mark-up, overhead and profit, administration and other costs involved in obtaining permits or licenses or paying fees. The Contractor is responsible for submitting and obtaining all necessary regulatory agency permits other than those provided by the Owner or the Engineer, and the Contractor is responsible for paying for all associated permit fees which are specifically excluded from this allowance and to be included in the various bid items herein. Fees specifically excluded from this allowance, include, but are not limited to: reinspection fees, expired permit fees stand by time, failed test and bacteriological testing fees. Only permit fees substantiated by the Contractor and approved by the Owner and Engineer will be paid as part of this Item. Any balance in this bid item at the end of the project shall be credited back to the Owner.

3.06 8" HDPE DR11 WATER MAIN (HDD) – BID ITEM NO. 2.01

- A. Price and Payment will be full compensation for all materials, labor, and equipment associated with the installation of 8" HDPE DR11 water main by Horizontal Directional Drilling (HDD). Price shall include, but not be limited to: locating by vacuum excavation and protecting all existing utilities, repairing or replacing damaged utilities, as needed, excavation, backfilling, compaction, setting up insertion and receiving pits, preparing water service pits, coordinating interruption of service with the Owner and residents, joining HDPE pipe, tracer wires, pre-chlorination of pipe, post-chlorination, hydrostatic testing, bacteriological testing, reconnecting new water main to the existing system, HDPE pipe adapters, removal and disposal of existing pipe, proper containment and disposal of excess drilling mud, removing existing valve boxes and backfill, and restoring the surface disturbed by construction, such as swales, driveways, roadway, pavement markings, signage, and sidewalk.
- B. Contractor's Unit Price shall include all required documentation, field logs, and all other items as stated in the technical specifications. Refer to Section 02341.

3.07 DIP CLASS 350 WATER MAIN (VARIOUS SIZES) – BID ITEM NOS. 2.02 – 2.03

- A. Price and payment will be full compensation for all materials, labor, and equipment associated with the installation of DIP Class 350 water main piping including temporary bracing of existing adjacent structures, locating and protecting existing utilities, repairing or replacing damaged utilities, as needed, disposal of surplus materials, any cleaning that may be required, excavation, backfilling and compaction, limerock, asphalt, proper trench restoration, connections to existing water mains, mechanical joint adapters or other miscellaneous fittings, couplings, sleeves, joint restraints, gaskets, washers, nuts, bolts, painting, priming, coating, tracer wires, identification markers, field engineering, testing, and surveying. When a water main, drainage, or utility pipe is removed and the new pipe is constructed in approximately the same location, the cost of excavating, removing, and disposing of the old pipe shall be included in the Unit Price for the new pipe. Price and payment shall also include the complete restoration of the surface disturbed by the construction, including but not limited to: pavement restoration, sidewalk restoration, curb restoration, pavement marking and signage restoration, swale restoration, driveways restoration, landscape restoration, irrigation and brick pavers.
- B. Price shall also include removing and disposing of unsatisfactory soils and replacing with clean fill.

3.08 8" DIP TAPPING SLEEVES AND VALVES – BID ITEM NO. 2.04

- A. Payment shall be made for each tapping sleeve and valve assembly installed and accepted including materials, labor, and equipment. Full compensation for furnishing, installing, and testing the assembly shall include temporary bracing of existing adjacent structures, locating and protecting existing utilities, disposal of surplus materials, existing underground utility locations, any cleaning that may be required, excavation, backfilling and compaction, proper trench restoration, connecting to existing water mains, pouring concrete thrust blocks, joint restraints, gaskets, washers, nuts, bolts, painting, priming, coating, field engineering, testing, and surveying. Price and payment shall also include the complete restoration of the surface disturbed by the construction, including but not limited to: pavement restoration, sidewalk restoration, curb restoration, pavement marking and signage restoration, swale restoration, driveways restoration, landscape restoration, curbing, and brick paver restoration.

3.09 DIP FITTINGS (VARIOUS SIZES) – BID ITEM NOS. 2.05 – 2.07

- A. Payment shall be made for each fitting installed and accepted including materials, labor, and equipment. Full compensation for furnishing and installing the DIP fittings shall include temporary bracing of existing adjacent structures, locating and protecting existing utilities, disposal of surplus materials, existing underground utility locations, any cleaning that may be required, excavation, backfilling and compaction, proper trench restoration, connecting to existing water mains, joint restraints, gaskets, washers, nuts, bolts, pouring concrete thrust blocks, painting, priming, coating, field engineering, testing, and surveying. Price and payment shall also include the complete restoration of the surface disturbed by the construction, including but not limited to: pavement restoration, sidewalk restoration, curb restoration, pavement marking and signage restoration, swale restoration,

driveways restoration, landscape restoration, curbing, and brick paver restoration.

- B. For caps and plugs, Contractor's Unit Price shall also include cutting, capping, plugging, closing valves, removing valve nuts, and removing valve boxes.

3.10 DIP GATE VALVES (VARIOUS SIZES) – BID ITEM NOS. 2.08 – 2.09

- A. Payment shall be made at the Unit Price for each gate valve including materials, labor, and equipment. Full compensation for furnishing and installing the gate valves shall include temporary bracing of existing adjacent structures, locating and protecting existing utilities, disposal of surplus materials, existing underground utility locations, any cleaning that may be required, excavation, backfilling and compaction, proper trench restoration, connecting to existing water mains, valve boxes, risers, concrete collars, joint restraints, gaskets, washers, nuts, bolts, painting, priming, coating, field engineering, testing, and surveying. Price and payment shall also include the complete restoration of the surface disturbed by the construction, including but not limited to: pavement restoration, sidewalk restoration, curb restoration, pavement marking and signage restoration, swale restoration, driveways restoration, landscape restoration, curbing, and brick paver restoration.

3.11 FIRE HYDRANT ASSEMBLIES – BID ITEM NO. 2.10

- A. Payment for Fire Hydrant Assemblies shall be made at the Contractor's Unit Price per each fire hydrant assembly installed and accepted. The Unit Price shall include compensation for all labor, materials, and equipment required to install the fire hydrant assembly in accordance with the plans and specifications. Fittings, shoes, valves, valve stems, riser pipe, bollards, blue RPM's, concrete thrust blocks, and testing shall also be included in the Unit Price.
- B. Price shall also include complete trench restoration of the surface disturbed by construction such as asphalt, limerock, subgrade, concrete, pavers, sod, landscaping, irrigation, curbing, or other hardscape features.

3.12 2" PE WATER SERVICES – BID ITEM NO. 2.11

- A. Price and payment shall be made at the Contractor's Unit Price for each water service furnished, installed, and tested including flushing, abandoning the existing water service, installing service taps, and PE piping from the new water main, tracer wire, corporation stops, curb stops, angle valves, bends, casing pipe, and all other appurtenances required to construct up to the existing meters. Price shall also include restoring the disturbed surface such as driveways, asphalt, concrete, pavers, sidewalk, landscaping, and sod.

3.13 BACTERIOLOGICAL SAMPLE POINTS – BID ITEM NO. 2.12

- A. Payment shall be made at the Contractor's Unit Price for each bacteriological sample point including all material, labor, and equipment required to install, sample, test, and remove after successful testing results.

3.14 CUT-IN AND CONNECT TO EXISTING WATER MAIN – BID NO. 2.13

- A. Payment by each unit. Price and payment will be full compensation for all material, equipment, and labor necessary for the cut-in and connection of the new fitting to

the existing water main, including but not limited to excavation, dewatering, temporary bracing of existing adjacent structures, backfilling, bedding, restoration, and other appurtenances as detailed on the plans and specifications including cutting and removing existing pipe and fittings, as necessary, and removal, transport and disposal of the removed pipe material and fittings in accordance with local, state, and federal regulations. Price and payment shall include restraining the pipe as required, pouring concrete thrust blocks, restrained DIP sleeves, any new pipe or fittings needed to connect to the existing water main, and complete restoration of the surface disturbed by construction including pavement, sidewalk, curb, swales, pavements markings, signage, driveways, landscape, and irrigation.

3.15 CONNECT NEW WATER SERVICES TO EXISTING METERS – BID NO. 2.14

- A. Payment by each unit. Price and payment will be full compensation for all material, equipment, and labor necessary to connect the new water services to the existing water meters, including but not limited to tracer wire, corporation stops, curb stops, angle valves, tees, wyes, and bends.

3.16 REMOVE EXISTING 8" WATER MAIN AND APPURTENANCES – BID ITEM NO. 2.15

- A. Payment by linear foot. Price and payment will be full compensation for all material, equipment, and labor necessary to remove existing water main, fittings, valves, saddles, joint restraints, and other associated appurtenances and to properly dispose of the materials. The work is intended for areas where new water main is replacing existing and where it is required to cut in and connect the new water main to the existing. Price shall also include dewatering, excavation, backfilling, compaction, and complete surface restoration.
- B. Contractor's price and payment shall also include closing valves, removing valve nuts, and removing valve boxes for water main to be decommissioned in place per the Contract Drawings.

3.17 GROUT EXISTING 8" WATER MAIN – BID ITEM NO. 2.16

- A. Payment by linear foot. Includes all materials, labor, and equipment necessary to cap, grout, and abandon existing water main, including but not limited to: excavation, removal of existing pipe where necessary to separate pipe to remain in service, plugs, caps, grout, backfill, compaction, trench restoration, transport and disposal of any materials which have been removed in accordance with local, state and federal regulations. Price and payment shall also include the complete restoration of the surface disturbed by the construction, including but not limited to: pavement restoration, sidewalk restoration, curb restoration, pavement marking and signage restoration, swale restoration, driveways restoration, landscape restoration, curbing, and brick paver restoration.

3.18 LEAK DETECTOR/SAMPLING PORT ACCESS STRUCTURE – BID ITEM NO. 2.17

- A. Payment by each unit. Price and payment will be full compensation for all material, equipment, and labor necessary to furnish and install a complete structure and assembly per the Contract Drawings. Price shall include, but not be limited to concrete, rebar, brick, ring, solid cover, HDPE pipe, brass fittings, service saddles, dewatering, excavation, backfilling, compaction, gravel, filter fabric, and complete surface restoration.
- B. Price shall also include removing and disposing of unsatisfactory soils and replacing with clean fill.

3.19 CURB AND GUTTER – BID ITEM NOS. 3.01 – 3.03

- A. Payment for curb and gutter shall be made at the Contractor's Unit Price per linear foot installed and accepted. The Unit Price shall include full compensation for all labor, material, and equipment required to install the curb and gutter including subgrade, limerock base, asphalt restoration, driveway restoration, sidewalk restoration, pavement markings and signage, swale restoration, and landscape restoration complete in accordance with the plans and specifications. This shall also include replacing the concrete gutter at each driveway connection.
- B. Contractor's Unit Price shall also include cutting, filling, and regrading of limerock and subgrade, as needed, to achieve proper longitudinal slope to nearby drainage inlets.

3.20 SOD (SAINT AUGUSTINE "FLORATAM") – BID ITEM NO. 3.04

- A. Payment for sod shall be made at the Contractor's Unit Price per square yard installed and accepted. The Unit Price shall include full compensation for all labor, material, and equipment required, including but not limited to topsoil, finish grading, and temporary watering to establish the new sod.

3.21 1" TYPE SP-9.5 ASPHALT MILLING AND RESURFACING – OPTIONAL BID ITEM NO. 4.01

- A. Payment shall be made at the Unit Price per square yard milled, installed, and accepted.
- B. The Unit Price shall include full compensation for all labor, material, and equipment required for saw-cutting and milling of asphaltic concrete, including hauling and stockpiling or otherwise disposing of the milled material; installing the asphaltic concrete in accordance with the plans and specifications including Prime and Tack Coat per FDOT Specifications. The Contractor's Unit Price shall also include the complete restoration of the surface disturbed by the construction, including but not limited to pavement markings and signage in accordance with the Contract Drawings, adjusting valve covers, and adjusting grate or rim elevations to grade. Any of the new asphaltic concrete that is damaged incidental to construction or defective shall be replaced at the Contractor's expense.
- C. Contractor's Unit Price shall also include replacement of the existing pavement markings in the area to be milled and resurfaced with new thermoplastic.

- D. This optional bid item shall only be utilized as authorized by the Owner. This item may not be used at all or may be partially used. Optional bid items shall not be considered "due" to the Contractor. Therefore, this Unit Price provided in the Bidder's proposal shall not be considered when determining the lowest most responsible and responsive bidder.

END OF SECTION

SECTION 01015

GENERAL REQUIREMENTS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This Section provides for miscellaneous provisions applicable to the Work.

1.02 RELATED SECTIONS

- A. Other Sections as applicable.

1.03 TERMINOLOGY

- A. Throughout the Contract Documents, the following definitions apply:
 - 1. Owner - The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.
 - 2. Work - The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

1.04 SAFETY

- A. All Work shall be done in a safe manner and in strict compliance with all requirements of the Federal Occupational Safety and Health Act (OSHA), The Florida Trench Safety Act and all other State and local safety and health regulations.
- B. The Contractor shall comply promptly with such safety regulations as may be prescribed by the Owner or the local authorities having jurisdiction and shall, when so directed, properly correct any unsafe conditions created by, or unsafe practices on the part of, their employees. In the event of the Contractor's failure to comply, the Owner may take the necessary measures to correct the conditions or practices complained of, and all costs thereof will be deducted from any monies due. Failure of the Owner to direct the correction of unsafe conditions or practices shall not relieve the Contractor of their responsibilities.
- C. The Contractor shall provide, erect, and maintain as necessary, strong and suitable barricades, danger signs, and warning lights for the protection of the public in accordance with Section 01570 – Traffic Regulation.

1.05 APPLICABLE CODES

- A. The Contractor shall comply with the applicable standards codes and specifications

governing the Contract Documents whether Local, County, State, or Federal. The Contractor is obligated to notify the Owner and Engineer of any deficiency contained in the Contract Documents immediately upon discovery. Where conflicts exist in such, the more stringent shall govern.

1.06 APPLICABLE PERMITS AND LICENSES

- A. The Contractor shall abide by all permit conditions, whether, general, specific, limited, or otherwise. A copy of all applicable permits and licenses, with the exception of municipal permits obtained by the Contractor, are attached hereto, and made a part of the Contract Documents.

1.07 PUBLIC BID DISCLOSURE ACT 218.80 FS

- A. All the local governmental entity permits or fees are to be disclosed, including, but not limited to, all license fees, permit fees, impact fees, or inspection fees, payable by the Contractor to the unit of government that issued the bidding documents or other governmental agency,
- B. The following permits are required for this project: Town of Surfside Public Works Engineering and Building Department, SFWMD Dewatering, Miami-Dade DERM Dewatering, Miami-Dade County Fire Department, and Miami-Dade County Health Department. The cost for permit application and review fees is accounted for in the Permitting Allowance found on the Bid Form. The cost for preparing submittals, such as plans, calculations, or permit applications, shall be the responsibility of the Contractor.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 PRE-CONSTRUCTION RESPONSIBILITIES

- A. Upon receipt of the Notice To Proceed, the Contractor shall arrange for a Pre-Construction meeting. The meeting shall be held with a minimum of one weeks' notice and shall include the Engineer, the Owner, and Representatives for all affected utility companies.

3.02 TEMPORARY UTILITIES

- A. The Contractor shall be responsible to arrange for and supply all temporary utilities including, but not limited to, water, sewer, and electricity.
- B. The cost of temporary utilities shall be considered incidental to the cost of the Work and is therefore included in the Bid.

3.03 UNDERGROUND LOCATING SERVICE

- A. Prior to underground construction, the Contractor is required by the Underground

Facility Damage Prevention and Safety Act, Chapter 556 FS to contact Sunshine 811, for the location of underground utilities.

3.04 HURRICANE PREPAREDNESS PLAN

- A. Should the performance of the Work occur during Hurricane Season, within thirty days of the date of Notice to Proceed, the Contractor shall submit to the Engineer and Owner a Hurricane Preparedness Plan. The plan should outline the necessary measures that the Contractor proposes to perform at no additional cost to the Owner in case of a hurricane warning. The plan shall detail these measures with specific action items defining responsible personnel.

3.05 INCLEMENT WEATHER

- A. In the event of inclement weather, or whenever Engineer shall direct; Contractor will cause Subcontractors to protect carefully the Work and materials against damage or injury from the weather. If, in the opinion of the Engineer, any portion of Work or materials shall have been damaged or injured by reason of failure on the part of Contractor or any Subcontractor to so protect the Work, such Work and materials shall be removed and replaced at the expense of the Contractor.

B. PROTECTION OF WORK AND MATERIAL

- C. During the progress of the Work and up to the date of final payment, the Contractor shall be solely responsible for the care and protection of all Work and materials covered by the Contract.
- D. All Work and materials shall be protected against damage, injury or loss from any cause whatsoever, and the Contractor shall make good any such damage or loss at their own expense. Protection measures shall be subject to the approval of the Owner and Engineer.

3.06 CONTRACTOR USE OF PREMISES

- A. Contractor shall have limited use of the premises for construction operations, including limited use of the site. The Contractor's use of the premises is further limited to the Owner's right to perform construction operations with its own forces or to employ separate Contractors on portions of the project.
- B. The Contractor shall be responsible for coordinating their daily activities in conjunction with any Contractors presently working within the vicinity of this project.
- C. Confine operations to areas within rights-of-way and easements.
- D. Keep existing driveways and entrances serving the premises clear and available to the Owner, Residents and the Owner's employees at all times.
 - 1. Do not use these areas for parking or storage of materials.
 - 2. Schedule deliveries to minimize space and time requirements for storage of

materials and equipment on site.

3.07 ENVIRONMENTAL PROTECTION

- A. Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways, and subsoil might be contaminated or polluted, or that other undesirable effects might result.
- B. The Contractor shall raise or lower all manholes, valve boxes, etc. to finished grade. The cost of these adjustments shall be considered incidental to the cost of the Work and is therefore included in the Bid.

3.08 EXISTING IRRIGATION

- A. All existing irrigation systems within the area of the Work shall be restored to original condition or better and adjusted to finished grade. The cost of repairs and/or adjustment to existing irrigation shall be considered incidental to the cost of the Work and is therefore included in the Bid.

3.09 DEMOLITION

- A. Limits of demolition which may be shown in the Contract Documents are general in nature. Actual limits of demolition shall be as determined by the field conditions in conformance with the requirements of the Work.
- B. All sidewalks within the limits of construction that are disturbed and are not ADA compliant (cross-slopes which exceed 2% and/or running slopes which exceed 5% and/or changes in level of $\frac{1}{4}$ " or greater) shall be demolished and reconstructed to meet these requirements.
- C. When sidewalk tie-ins exist outside the limits of construction which are not ADA compliant, the Contractor shall replace those sections as directed by the Owner.

3.10 DAILY CONSTRUCTION OBSERVATION REPORTS

- A. Contractor shall prepare daily construction observation reports to include the following information:
 - 1. List of Subcontractors at the site.
 - 2. Count and role of personnel onsite.
 - 3. Equipment onsite.
 - 4. Material deliveries.
 - 5. Field testing.
 - 6. High and low temperatures and general weather conditions.
 - 7. Accidents, if applicable.
 - 8. Stoppages, delays, shortages, and losses.

9. Differing or unforeseen field conditions.
 10. Emergency procedures.
 11. Orders and requests of authorities having jurisdiction.
 12. Change Orders received and implemented.
 13. Construction Change Directives received and implemented.
 14. Services connected and disconnected.
 15. Equipment or system tests and startups.
 16. Substantial and final completion inspections.
- B. Contractor shall submit these reports on a weekly basis.

END OF SECTION

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SECTION 01021

OWNER ALLOWANCES

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This Section provides for administrative procedures for the Contractors utilization of monetary amounts for Owner Allowances when contained in the Contract Price or Total Base Bid.
- B. The Contractor has included in the Contract Price all Allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.
- C. The Contractor agrees that an Allowance, if any, is for the sole use of Owner to cover unanticipated or undetermined costs.
- D. All Owner Allowances which remain unused, in whole or in part, remain the property of the Owner.

1.02 RELATED SECTIONS

- A. Bid Form.
- B. Section 01012 – Measurement and Payment
- C. Section 01152 – Application for Payment
- D. Section 01310 - Construction Schedules
- E. Section 01340 – Shop Drawings, Working Drawings, and Samples

1.03 SCHEDULE OF ALLOWANCES

- A. See Bid Form.

1.04 PROCEDURES FOR ADMINISTRATION OF ALLOWANCES.

- A. Funds will only be drawn from Owner Allowances by receiving prior written approval from the Owner and the Engineer.
- B. Costs shall be as represented in the Unit Price Schedule.
- C. Payment shall be as represented in Section 01012 – Measurement and Payment.

1.05 COSTS INCLUDED IN PERMITTING ALLOWANCES

- A. Cost of the permit application fee determined by the Agency at the time of the Contractor's submittal. All other costs associated with obtaining the required permits shall be the responsibility of the Contractor.

1.06 COSTS INCLUDED IN OTHER ALLOWANCES

- A. Cost of materials to Contractor, less applicable trade discounts.
- B. Delivery to site, products handling at site, including unloading, uncrating, and storage.
- C. Applicable taxes unless covered by Owner Furnished Equipment agreement.

- D. Protection of products from elements and from damage.
- E. All labor, insurance, payroll, bonding, equipment rental, expenses for the installation and finishing necessary for a complete working system or product.
- F. Other expenses required to complete installation.
- G. Contractor field and home office overhead and profit.

1.07 CONTRACTOR RESPONSIBILITIES

- A. Promptly notify Engineer of any reasonable objections from supplier.
- B. On notification of selection, execute purchase agreement with designated supplier.
- C. Arrange for process shop drawings, product data, and samples.
- D. Arrange for delivery. Promptly inspect products upon delivery for completeness, damage, and defects. Submit claims for transportation damage.
- E. Install, adjust, and finish products.
- F. Provide warranties for products and installation.

1.08 CORRELATION WITH CONTRACTOR SUBMITTALS

- A. Schedule shop drawings, product data, samples, and delivery dates, in Progress Schedule for products selected under allowances.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01045

CUTTING AND PATCHING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Contractor shall be responsible for all cutting, fitting and patching required to complete the Work or to:
 - 1. Make its several parts fit together properly.
 - 2. Uncover portions of the Work to provide for installation of ill-timed Work.
 - 3. Remove and replace defective Work.
 - 4. Remove and replace Work not conforming to requirements of Contract Documents.
 - 5. Remove samples of installed Work as specified for testing.
 - 6. Investigate subsurface conditions or utilities.

1.02 RELATED SECTIONS

- A. Section 01010 – Summary of Work
- B. Section 01015 – General Requirements
- C. Section 01046 – Modifications to Existing Structures, Piping, and Equipment

1.03 SUBMITTALS

- A. Submit a written request to the Engineer in advance of executing any cutting or alteration which affects:
 - 1. Work of the Owner or any separate contractor.
 - 2. Structural value or integrity of any element of the Project.
 - 3. Integrity or effectiveness of weather-exposed or moisture-resistant elements or systems.
 - 4. Efficiency, operational life, maintenance, or safety of operational elements.
 - 5. Visual qualities of sight-exposed elements.
- B. Request shall include:
 - 1. Identification of the Project.
 - 2. Description of affected Work.
 - 3. The necessity for cutting, alteration, or excavation.
 - 4. Effect on Work of Owner or any separate contractor, or on structural or weatherproof integrity of Project.
 - 5. Description of proposed Work:
 - a. Scope of cutting, patching, alteration, or excavation.
 - b. Trades who will execute the Work.

- c. Products proposed to be used.
 - d. Extent of refinishing to be redone.
- 6. Alternatives to cutting and patching.
- 7. Cost proposal, when applicable.
- 8. Written permission of any separate contractor whose Work will be affected.
- C. Submit written notice to the Engineer designating the date and the time Work will be uncovered.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Comply with specifications and standards for each specific project involved.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Inspect existing conditions of Project, including elements subject to damage or to movement during cutting or patching.
- B. After uncovering Work, inspect conditions affecting installation of Products, or performance of Work.
- C. Report unsatisfactory or questionable conditions to the Engineer in writing; do not proceed with Work until the Engineer has provided further instructions.

3.02 PREPARATION

- A. Provide adequate temporary support as necessary to assure structural value or integrity of affected portion of Work.
- B. Provide devices and methods to protect other portions of Project from damage.
- C. Provide protection from elements for that portion of the Project which may be exposed by cutting and patching Work and maintain excavations free from water.

3.03 PERFORMANCE

- A. Execute cutting and demolition by methods which will prevent damage to other Work and will provide proper surfaces to receive installation of repairs.
- B. Execute cutting methods which will prevent settlement or damage to other Work.
- C. Employ original Installer or Fabricator to perform cutting and patching for:
 - 1. Weather-exposed or moisture-resistant surfaces.
 - 2. Sight-exposed finished surfaces.
- D. Execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances, and finishes.
- E. Restore Work which has been cut or removed; install new products to provide completed Work in accord with requirements of Contract Documents.
- F. Fit Work airtight to pipes, sleeves, ducts, conduit and other penetrations through

surfaces.

- G. Refinish entire surfaces as necessary to provide an even finish to match adjacent finishes:
 - 1. For continuous surfaces, refinish to nearest intersection.
 - 2. For an assembly, refinish entire unit.

END OF SECTION

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SECTION 01046

MODIFICATIONS TO EXISTING STRUCTURES, PIPING, AND EQUIPMENT

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Furnish all labor, materials, equipment and incidentals required to modify, alter, and convert existing structures as shown or specified and as required for the installation of new mechanical equipment, piping, and appurtenances. Existing piping and equipment shall be removed, salvaged, abandoned, or dismantled as necessary for the performance of the Work.

1.02 RELATED SECTIONS

- A. Section 01045 – Cutting and Patching
- B. Section 01310 – Construction Schedules

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 GENERAL

- A. The Contractor shall cut, repair, reuse, excavate, demolish, or otherwise remove parts of the existing structures or appurtenances, as indicated on the Drawings or specified herein or necessary for the performance of the Work.
- B. The above Work shall include the cutting of grooves and chases in existing masonry to permit the proper bonding of new masonry to old, repainting of existing masonry, drilling of holes into bolts, or other appurtenances, and the cutting of holes in masonry for the installation of pipe, conduits, and other appurtenances. The Work shall include all necessary cutting and bending of reinforcing steel, structural steel, or miscellaneous metal Work found embedded in the existing structures.
- C. Blasting with explosives will not be permitted to complete any Work under this Contract.
- D. Care shall be taken not to damage any part of existing buildings, foundations, and exterior structures both below and above ground.
- E. No existing structure, equipment, or appurtenance shall be shifted, cut, removed, or otherwise altered except with the express approval of and to the extent approved by the Engineer.
- F. When removing materials or portions of existing structures and when making openings in walls and partitions, the Contractor shall take all precautions and use all necessary barriers and other protective devices so as not to damage the structures or contents by falling or flying debris and not to damage the structures from excavation or undermining of existing structural supports, beams, footings, columns or any structural member.
- G. Materials and equipment removed in the course of making alterations and additions shall remain the property of the Owner, except that items not salvageable, as

determined by the Engineer and the Owner shall become the property of the Contractor to be disposed of by him off the site of the Work at his own place of disposal. The Contractor shall assist the Owner in loading and hauling of salvageable materials within the municipal limits of the project.

- H. All Work of altering existing structures shall be done at such time and in such manner as will comply with the approved time schedule. So far as possible before any part of the Work is started, all tools, equipment, and materials shall be assembled and made ready so that the Work can be completed without delay.
- I. All workmanship and new materials involved in constructing the alterations shall conform to the General Specifications for the classes of Work insofar as such specifications are applicable.
- J. All cutting of existing masonry or other material to provide suitable bonding to new Work shall be done in a manner to meet the requirements of the respective section of these specifications covering the new Work. When not covered, the Work shall be carried on in the manner and to extent directed by the Engineer.
- K. Where holes in existing masonry are required to be sealed, unless otherwise herein specified, they shall be sealed with cement mortar or concrete. The sides of the openings shall be provided with keyed joints and shall be suitably roughened to furnish a good bond and make a watertight joint. All loose or unsound material adjacent to the opening shall be removed and, if necessary, replaced with new material. The method of placing the mortar seal shall provide a suitable means of releasing entrapped air.
- L. Surfaces of seals visible in the completed Work shall be made to match as nearly as possible the adjacent surfaces.
- M. Non-shrink grout shall be used for setting wall castings, sleeves, leveling pump bases, doweling anchors into existing concrete and elsewhere as shown.
- N. Operating equipment shall be thoroughly cleaned and then lubricated and greased for protection during prolonged storage.
- O. The Contractor shall provide flumes, hoses, piping, etc. to divert or provide suitable plugs, bulkheads or other means to hold back the flow of wastewater, water or other liquids, all as required in the performance of the Work under this Contract.

3.02 SALVAGE

- A. Any existing equipment or material, including but not limited to, motors, electrical components or controls, pipes, fittings, couplings, etc., which is removed or replaced as a result of construction under this project may be designated as salvage by the Engineer or Owner, and, if so, shall be removed or excavated, if necessary, and delivered to the Owner at a location directed by the Owner. Any equipment or material not worthy of salvaging, as directed by the Owner, shall be disposed of by the Contractor at a suitable location.

3.03 CONNECTING TO EXISTING PIPING AND EQUIPMENT

- A. The Contractor shall verify exact location, material, alignment, joint, etc. of existing piping and equipment prior to making the connections called out in the Drawings. The verifications shall be performed with adequate time to correct any potential alignment or other problems prior to the actual time of connection.

- B. The Contractor shall dismantle and remove all existing equipment, piping and other appurtenances required, he shall cut existing pipelines for the purpose of making connections thereto. Anchor bolts for equipment and structural steel removed shall be cut off one inch below the concrete surface.
- C. At the time that a new connection is made to an existing pipeline, additional new piping, extending to and including the most convenient new valve, shall be installed.
- D. Where necessary or required for the purpose of making connections, the Contractor shall cut existing pipe lines in a manner to provide an approved joint. Where required, he shall weld beads, flanges or provide Dresser Couplings, all as specified and required.

END OF SECTION

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SECTION 01050

FIELD ENGINEERING AND SURVEYING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Provide and pay for field Engineering and surveying services required for Project as follows:
 - 1. Surveying Work required for the lay-out and execution of Work.
 - 2. Surveying Work required to identify and maintain existing control points, bench marks, and property line corners.
 - 3. Surveying Work required to verify existing utility locations.
 - 4. Surveying Work as required to create Project Record Documents.
 - 5. Civil, structural, or other professional Engineering services specified, or required to execute the Contractor's construction methods.
 - 6. Testing, sampling, calibrating, and training services specified, or required to execute the Contractor's construction methods including soils, concrete, material, etc.

1.02 RELATED SECTIONS

- A. Section 01410 – Materials and Installation Testing
- B. Section 01720 – Project Record Documents

1.03 QUALIFICATIONS OF PROFESSIONAL

- A. Florida Registered Professional Surveyor and Mapper, acceptable to the Owner and the Engineer.
- B. Florida Registered Professional Engineer(s) of the specialty required for on the Project, acceptable to the Owner and the Engineer

1.04 SURVEY REFERENCE POINTS

- A. Horizontal and vertical control points for the Project are to be established by the Engineer and provided to the Contractor.
- B. Locate and protect control points prior to starting Work and preserve all permanent reference points during construction.
 - 1. Make no changes or relocations without prior written notice to the Engineer.
 - 2. Report to the Engineer when any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations.
 - 3. Require surveyor to replace project control points which may be lost or destroyed.
 - a. Establish replacements based on original survey control.

1.05 PROJECT SURVEY REQUIREMENTS

- A. Establish a minimum of two temporary bench marks on site, referenced to data by

survey control points.

1. Record locations, with horizontal and vertical data, on Project Record Documents.
- B. Establish lines and levels, locate and lay out, by instrumentation and similar appropriate means:
 1. Site Improvements
 - a. Line and grade of pipe and structure installation; top of pipe, invert, slope, etc.
 - b. Grading for fill and topsoil placement, roadway sub-base and base installation.
 2. Controlling lines and levels required for all trades.
- C. From time to time, verify layouts by same methods.

1.06 RECORDS

- A. Maintain a complete, accurate log of all control and survey Work as it progresses in accordance with Section 01720.

1.07 SUBMITTALS

- A. Submit name and address of Professional Surveyor and Mapper or Professional Engineer to the Engineer.
- B. On request of the Engineer, submit documentation to verify accuracy of field engineering Work.
- C. Submit certificate signed by registered surveyor certifying that elevations and locations of improvements are in conformance, or non-conformance, with Contract Documents.
- D. Submit Project Record Documents in accordance with Section 01720.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01090

REFERENCES

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Applicable Publications: Whenever in these specifications references are made to published specifications, codes, standards, or other requirements, it shall be understood that wherever no date is specified, only the latest specifications, standards, or requirements of the respective issuing agencies which have been published as of the date that the Work is advertised for bids, shall apply; except to the extent that said standards or requirements may be in conflict with applicable laws, ordinances, or governing codes. No requirements set forth herein or shown on the drawings shall be waived because of any provision of, or omission from, said standards or requirements.
- B. Specialists, Assignments: In certain instances, specification text requires (or implies) that specific Work is to be assigned to specialists or expert entities, who must be engaged for the performance of that Work. Such assignments shall be recognized as special requirements over which the Contractor has no choice or option. These assignments shall not be interpreted so as to conflict with the enforcement of building codes and similar regulations governing the Work; also they are not intended to interfere with local union jurisdiction settlements and similar conventions. Such assignments are intended to establish which party or entity involved in a specific unit of Work is recognized as "expert" for the indicated construction processes or operations. The final responsibility for fulfillment of the entire set of contract requirements remains with the Contractor.

1.02 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. Without limiting the generality of other requirements of the specifications, all Work specified herein shall conform to or exceed the requirements of the following documents to the extent that the provisions of such documents are not in conflict with the requirements of these Specifications nor the applicable codes.
- B. References herein to "Building Code" or "Code" shall mean the Florida Building Code. The latest edition of the code as approved and used at the local agency having jurisdiction, shall apply to the Work herein, including, all addenda, modifications, amendments, or other lawful changes thereto.
- C. In case of conflicts between codes, reference standards, drawings and other Contract Documents, the most stringent requirements shall govern. All conflicts shall be brought to the attention of the Engineer for clarifications and directions prior to ordering or providing any materials or labor. The Contractor shall bid the most stringent requirements.
- D. Applicable Standard: The Contractor shall construct all Work in accordance with the requirements of the Contract Documents, building codes, and referenced standards specified herein.
- E. References herein to "OSHA Regulations for Construction" shall mean Title 29, Part 1926, Construction Safety and Health Regulations, Code of Federal Regulations,

including all changes and amendments thereto.

- F. References herein to "OSHA Standards" shall mean Title 29, Part 1910, Occupational Safety and Health Standards, Code of Federal Regulations (OSHA), including all changes and amendments thereto.

1.03 ABBREVIATION

- A. Wherever in these specifications references are made to the standards, specifications, or other published data of the various national, regional, or local organizations, such organizations may be referred to by their acronyms or abbreviation only. As a guide to the user of these specifications, the following acronyms and abbreviations which may appear in these specifications shall have the meanings indicated herein.

1.04 ABBREVIATIONS AND ACRONYMS

- A. Abbreviations and acronyms contained in the Contract Documents may include, but not be limited to, the following:

AAMA	Architectural Aluminum Manufacturer's Association
AAR	Association of American Railroads
AASHTO	American Association of the State Highway and Transportation Officials
AATCC	American Association of Textile Chemists and Colorists
ACI	American Concrete Institute
ACPA	American Concrete Pipe Association
ACPPA	American Concrete Pressure Pipe Association
AFBMA	Anti-Friction Bearing Manufacturer's Association, Inc.
AGA	American Gas Association
AGC	Associated General Contractors
AGMA	American Gear Manufacturer's Association
AHAM	Association of Home Appliance Manufacturers
AI	The Asphalt Institute
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
AMCA	Air Movement and Control Association
ANS	American Nuclear Society
ANSI	American National Standards Institute, Inc.
APA	American Plywood Association
API	American Petroleum Institute
APWA	American Public Works Association
AREA	American Railway Engineering Association
ASA	Acoustical Society of America
ASAE	American Society of Agricultural Engineers
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating, and Air-Conditioning Engineers
ASLE	American Society of Lubricating Engineers
ASME	American Society of Mechanical Engineers
ASPE	American Society of Plumbing Engineers

ASQC	American Society for Quality Control
ASSE	American Society of Sanitary Engineers
ASTM	American Society for Testing and Materials
AWPA	American Wood Preservers Association
AWPI	American Wood Preservers Institute
AWS	American Welding Society
AWWA	American Water Works Association
BBC	Basic Building Code, Building Officials and Code Administrators International
BHMA	Builders Hardware Manufacturers Association
CBM	Certified Ballast Manufacturers
CEMA	Conveyors Equipment Manufacturers Association
CGA	Compressed Gas Association
CLPCA	California Lathing and Plastering Contractors Association
CLFMI	Chain Link Fence Manufacturers Institute
CMA	Concrete Masonry Association
CRSI	Concrete Reinforcing Steel Institute
CSI	Construction Specifications Institute
DCDMA	Diamond Core Drill Manufacturers Association
DIPRA	Ductile Iron Pipe Research Association
EIA	Electronic Industries Association
ETL	Electrical Test Laboratories
HI	Hydraulic Institute
ICBO	International Conference of Building Officials
IEEE	Institute of Electrical and Electronic Engineers
IES	Illuminating Engineering Society
IME	Institute of Makers of Explosives
IP	Institute of Petroleum (London)
IPC	Institute of Printed Circuits
IPCEA	Insulated Power Cable Engineers Association
ISA	Instrument Society of America
ISO	International Organization for Standardization
ITE	Institute of Traffic Engineers
MBMA	Metal Building Manufacturers Association
MPTA	Mechanical Power Transmission Association
MTI	Marine Testing Institute
NAAM	National Association of Architectural Metal Manufacturers
NACE	National Association of Corrosion Engineers
NBS	National Bureau of Standards
NCCLS	National Committee for Clinical Laboratory Standards
NEC	National Electric Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NFPA	National Forest Products Association
NGLI	National Grease Lubricating Institute
NMA	National Microfilm Association
NRCA	National Roofing Contractors Association
NWMA	National Woodwork Manufacturers Association
NWWA	National Water Well Association
OSHA	Occupational Safety and Health Administration

PCA	Portland Cement Association
PCI	Precast Concrete Institute
PDI	Plumbing and Drainage Institute
RIS	Redwood Inspection Service
RVIA	Recreational Vehicle Industry Association
RWMA	Resistance Welder Manufacturers Association
SAE	Society of Automotive Engineers
SAMA	Scientific Apparatus Makers Association
SBC	Southern Building Code Congress International, Inc. (SBCCI)
SIS	Swedish Standards Association
SJI	Steel Joist Institute
SMA	Screen Manufacturers Association
SPR	Simplified Practice Recommendation
SSBC	Southern Standard Building Code, Southern Building Code Congress
SSPC	Steel Structures Painting Council
SSPWC	Standard Specifications for Public Works Construction
TAPPI	Technical Association of the Pulp and Paper Industry
TFI	The Fertilizer Institute
UBC	Uniform Building Code
UL	Underwriters Laboratories, Inc.
USGS	United States Geological Survey
WCLIB	West Coast Lumber Inspection Bureau
WCRSI	Western Concrete Reinforcing Steel Institute
WIC	Woodwork Institute of California
WPCF	Water Pollution Control Federation
WRI	Wire Reinforcement Institute, Inc.
WWPA	Western Wood Products Association

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01152

APPLICATIONS FOR PAYMENT

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Submit Applications for Payment to the Engineer in accordance with the schedule established by Conditions of the Agreement between Owner and Contractor and the Contract Documents.

PART 2 - RELATED SECTIONS

- A. Bid Form
- B. Section 01012 – Measurement and Payment
- C. Section 01050 – Field Engineering and Surveying
- D. Section 01310 – Construction Schedules
- E. Section 01370 – Schedule of Values
- F. Section 01380 – Construction Photographs
- G. Section 01700 – Contract Close Out
- H. Section 01720 – Project Record Documents

2.02 FORMAT AND DATA REQUIRED

- A. Submit applications typed on an industry standard, Application for Payment, form: the Construction Specification Institute (CSI), Engineers Joint Contract Documents Committee (EJCDC), American Institute of Architects (AIA); or use forms provided by the Owner with itemized data typed on 8-1/2 inch x 11 inch white paper and continuation sheets.
- B. Payment forms shall show significant detail to substantiate request. Additional detail may be required by the Engineer.

2.03 PREPARATION OF APPLICATION FOR EACH PROGRESS PAYMENT

- A. Application Form:
 - 1. Fill in required information, including that for Change Orders executed prior to date of submittal of application.
 - 2. Fill in summary of dollar values to agree with respective totals indicated on continuation sheets.
 - 3. Execute certification with signature of a responsible officer of Contract firm.
- B. Continuation Sheets:
 - 1. Fill in total list of scheduled component items of Work, with item number and scheduled dollar value for each item.
 - 2. Fill in dollar value in each column for each scheduled line item when Work has been performed or products stored.

- a. Round off values to nearest dollar, or as specified.
3. List each Change Order Number, and description, as for an original component item or Work.

2.04 SUBSTANTIATING DATA FOR PROGRESS PAYMENTS

- A. When the Owner or the Engineer requires substantiating data, Contractor shall submit suitable information, with a cover letter identifying:
 1. Project
 2. Application number and date
 3. Detailed list of enclosures
 4. For stored products:
 - a. Item number and identification as shown on application.
 - b. Description of specific material.
 - c. Copy of material invoice.
 - d. Address of location where item is stored
 - e. Photographs of item (if requested)
- B. Submit one copy of data cover letter for each copy of application.
- C. As a prerequisite for payment, Contractor is to submit the following:
 1. A "Surety Acknowledgment of Payment Request" letter showing amount of progress payment which the Contractor is requesting,
 2. Updated record drawings for review by the Engineer,
 3. Updated construction schedule for review by the Engineer,
 4. Construction photographs.

2.05 PREPARATION OF APPLICATION FOR FINAL PAYMENT

- A. Fill in Application form as specified for progress payments.
- B. Provide FINAL COMPLETION documentation for the final statement of accounting as specified in Section 01700 - Contract Closeout.
- C. Submit final record drawings.

2.06 SUBMITTAL PROCEDURE

- A. Submit Applications for Payment to the Engineer at the times stipulated in the Contract.
- B. Number: Five copies of each Application.
- C. When the Engineer finds Application properly completed and correct, they will transmit certificate of payment to Owner, with copy to Contractor.

PART 3 - PRODUCTS (NOT USED)

PART 4 - EXECUTION (NOT USED)

END OF SECTION

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SECTION 01200

PROJECT MEETINGS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The Owner shall schedule and administer preconstruction meetings, periodic progress meetings, and specially called meetings throughout the progress of Work. The Owner shall:
 - 1. Prepare agenda for meetings.
 - 2. Make physical arrangements for meetings.
 - 3. Preside at meetings.
 - 4. Record in writing the minutes; include significant proceedings and decisions.
 - 5. Record the meeting with an audio recording device.
 - 6. Reproduce and distribute copies of minutes within five working days after each meeting:
 - a. To participants in the meeting.
 - b. To parties affected by decisions made at the meeting.
- B. Representatives of Contractor, subcontractors, and suppliers attending meetings shall be qualified and authorized to act on behalf of the entity each represents.
- C. The Contractor shall attend meetings to assure that Work is executed consistent with Contract Documents and construction schedules.

1.02 RELATED SECTIONS

- A. Section 01310 – Construction Schedules.
- B. Section 01340 – Shop Drawings, Working Drawings, and Samples.
- C. Section 01720 – Project Record Documents.

1.03 PRECONSTRUCTION MEETING

- A. Schedule a preconstruction meeting no later than 14 days after date of Notice to Proceed.
- B. Location: A central site, convenient for all parties designated by the Owner.
- C. Attendance:
 - 1. Owner's Representative.
 - 2. Engineer and their Professional Consultants.
 - 3. Resident Project Representative.
 - 4. Contractor's Superintendent.
 - 5. Major Subcontractors.

6. Major Suppliers.
 7. Utilities.
 8. Others as appropriate.
- D. Suggested Agenda:
1. Distribution and discussion of:
 - a. List of major subcontractors and suppliers.
 - b. Projected Construction Schedule.
 2. Critical Work sequencing/critical path scheduling.
 3. Major equipment deliveries and priorities.
 4. Project Coordination.
 - a. Designation of responsible personnel.
 5. Procedures and processing of:
 - a. Field decisions.
 - b. Proposal requests.
 - c. Submittals.
 - d. Change Orders.
 - e. Applications for Payments.
 6. Adequacy of Distribution of Contract Documents.
 7. Procedures for maintaining Record Documents.
 8. Use of Premises:
 - a. Office, Work, and Storage Areas.
 - b. Owner's Requirements.
 9. Construction facilities, controls, and construction aids.
 10. Temporary Utilities.

1.04 PROGRESS MEETINGS

- A. Schedule regular periodic meetings. The progress meetings will be held as required by progress of the Work or as required by the Engineer or the Owner.
- B. Hold called meetings as required by progress of the Work.
- C. Location of the meetings: Office of the Owner or Engineer.
- D. Attendance:
 1. Owner.
 2. Engineer, and their professional consultants as needed.
 3. Contractor.
 4. Subcontractors as appropriate to the agenda.

5. Suppliers as appropriate to the agenda.
 6. Others as appropriate.
- E. Suggested Agenda:
1. Review, approval of minutes of previous meeting.
 2. Review of Work progress since previous meeting.
 3. Field observations, problems, and conflicts.
 4. Problems which impede Construction Schedule.
 5. Review of offsite fabrication, delivery schedule.
 6. Corrective measures and procedures to regain projected schedule.
 7. Revisions to Construction Schedule.
 8. Progress, schedule, during succeeding Work period.
 9. Coordination of schedules.
 10. Review submittal schedules; expedite as required.
 11. Maintenance of quality standards.
 12. Pending changes and substitutions.
 13. Review proposed changes for:
 - a. Effect on Construction Schedule and on a completion date.
 - b. Effect on other contracts of the Project.
 14. Other business.
 15. Construction schedule.
 16. Critical/long lead items.
- F. The Contractor is to attend progress meetings and is to study previous meeting minutes and current agenda items, in order to be prepared to discuss pertinent topics such as deliveries of materials and equipment, progress of Work, etc.
- G. The Contractor is to provide a current submittal log and construction schedule at each progress meeting in accordance with Section 01310 and Section 01340.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

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SECTION 01310

CONSTRUCTION SCHEDULES

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Promptly after Award of the Contract and within 14 days after the effective date of the Agreement, prepare and submit to the Owner or Engineer an estimated construction progress schedule for the Work, with sub-schedules of related activities which are essential to its progress.
- B. Submit revised progress schedules on a monthly basis.
- C. No partial payments shall be approved by the Engineer until there is an approved up to date construction progress schedule on hand.
- D. The Contractor shall designate an authorized representative of his firm who shall be responsible for development and maintenance of the schedule and of progress and payment reports. This representative of the Contractor shall have direct project control and complete authority to act on behalf of the Contractor's schedule.

1.02 RELATED SECTIONS

- A. Section 01010 – Summary of Work
- B. Section 01152 – Applications for Payment
- C. Section 01200 – Project Meetings
- D. Section 01340 – Shop Drawings, Working Drawings, and Samples
- E. Other Sections as applicable.

1.03 FORM OF SCHEDULES

- A. Prepare schedules for submittal each month with pay request. The form of the schedule is to be Microsoft Project or approved equal. The Schedule is to indicate Work completed to date and additions to or deletions from the schedule.
 - 1. Provide separate horizontal bar for each trade or operation within each structure or item.
 - 2. Horizontal time scale: In weeks from start of construction and identify the first Work day of each month.
 - 3. Scale and spacing: To allow space for notations and future revisions.
- B. Format of listings: The chronological order of the start of each item of Work for each structure.
- C. Identification of listings: By major specification section numbers as applicable and structure.

1.04 CONTENT OF SCHEDULES

- A. Construction Progress Schedule:
 - 1. Show the complete sequence of construction by activity.

2. Show the dates for the beginning of, and completion of, each major element of construction in no more than a two-week increment scale. Specifically list, but not limited to, the following:
 - a. Shop Drawing Review
 - b. Receiving Materials
 - c. Pipeline Installations
 - d. Testing
 - e. Restoration
 - f. Startup
 - g. Record Drawings
 - h. Permit Close-out
 - i. Punch List
 - j. Owner Activities, Including Inspections
 3. Show projected percentage of completion for each item, as of the first of each month.
 4. Show projected dollar cash flow requirements for each month of construction.
 5. Use of float suppression techniques such as preferential sequencing or logic, special lead/lag logic restraints, and extended activity times are prohibited, and use of float time disclosed or implied by use of alternate float-suppression techniques shall be shared to proportionate benefit of the Owner and Contractor.
 6. Pursuant to above float-sharing requirement, no time extensions will be granted nor delay damages paid until a delay occurs which (i) impacts Project's critical path, (ii) consumes available float or contingency time, and (iii) extends Work beyond contract completion date.
 7. If the Contractor provides an accepted schedule with an early completion date, the Owner reserves the right to reduce the duration of the Work to match the early completion date by issuing a deductive Change Order at no change in Contract Price.
- B. Submittal schedule for shop drawings and samples in accordance with Section 01340. Must show:
1. The dates for Contractor's submittals.
 2. The dates for submittals will be required for Owner furnished products, if applicable.
 3. The dates approved submittals will be required from the Engineer.
- C. A list of all long lead items (equipment, materials, etc.).
- 1.05 PROGRESS REVISIONS
- A. Indicate progress of each activity to date of submission.

- B. Show changes occurring since previous submission of schedule:
 - 1. Major changes in scope.
 - 2. Activities modified since previous submission.
 - 3. Revised projections of progress and completion.
 - 4. Other identifiable changes.
- C. Provide a narrative report as needed to define:
 - 1. Problem areas, anticipated delays, and the impact on the schedule.
 - 2. Corrective action recommended, and its effect.
 - 3. The effect of changes on schedules of other prime contractors.

1.06 SUBMISSIONS

- A. Submit initial schedules to the Owner or Engineer within 14 days after the effective date of the Agreement.
 - 1. The Owner or Engineer will review schedules and return review copy within 14 days after receipt.
 - 2. If required, resubmit within 7 days after return of review copy.
- B. Submit a minimum of five (5) copies of revised monthly progress schedules with that month's application for payment.

1.07 DISTRIBUTION

- A. Distribute copies of reviewed schedules to:
 - 1. Owner (Two copies)
 - 2. Engineer (Two copies)
 - 3. Job Site File (One copy)
 - 4. Subcontractors (As needed)
 - 5. Other Concerned Parties (As needed)
- B. Instruct recipients to report promptly to the Contractor, in writing, any problems anticipated by the projections shown in the schedule.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

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SECTION 01340

SHOP DRAWINGS, WORKING DRAWINGS, AND SAMPLES

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The Contractor shall submit to the Engineer for review, such working drawings, shop drawings, test reports and data on materials and equipment (hereinafter in this article called data), and material samples (hereinafter in this article called samples) as are required for the proper control of Work, including but not limited to those working drawings, shop drawings, data and samples for materials and equipment specified elsewhere in the Specifications and in the Contract Drawings.
- B. The Contractor shall submit five (5) copies of shop drawings or other data to the Engineer.
- C. Within thirty (30) calendar days after the effective date of the Agreement, the Contractor shall submit to the Engineer a complete list of preliminary data for which Shop Drawings are to be submitted. Included in this list shall be the names of all proposed manufacturers furnishing specific items. Review of this list by the Engineer shall in no way expressed or implied relieve the Contractor from submitting complete Shop Drawings and providing materials, equipment, etc., fully in accordance with the Specifications. This procedure is required in order to expedite final review of Shop Drawings.
- D. The Contractor is to maintain an accurate updated submittal log and will bring this log to each scheduled progress meeting with the Owner and Engineer. This log should include the following items:
 - 1. Submittal-Description and Number assigned.
 - 2. Date to Engineer.
 - 3. Date returned to Contractor (from Engineer).
 - 4. Status of Submittal (Approved/Resubmit/Rejected).
 - 5. Date of Resubmittal and Return (as applicable).
 - 6. Date material released (for fabrication).
 - 7. Projected date of fabrication.
 - 8. Projected date of delivery to site.
 - 9. Status of O & M submittal.

1.02 RELATED SECTIONS

- A. Section 01310 - Construction Schedules
- B. Section 01630 - Substitutions
- C. Section 01720 - Project Record Documents
- D. Section 01730 - Operating and Maintenance Data

1.03 CONTRACTOR'S RESPONSIBILITY

- A. It is the duty of the Contractor to check all drawings, data, and samples prepared by or for them before submitting them to the Engineer for review. Each and every copy of the Drawings and data shall bear Contractor's stamp will be returned to the Contractor for conformance with this requirement. Shop drawings shall indicate any deviations in the submittal from requirements of the Contract Documents.
- B. Determine and verify:
 - 1. Field measurements
 - 2. Field construction criteria
 - 3. Catalog numbers and similar data
 - 4. Conformance and Specifications
- C. The Contractor shall furnish the Engineer a schedule of Shop Drawing submittals fixing the respective dates for the submission of shop and working drawings, the beginning of manufacture, testing, and installation of materials, supplies, and equipment. This schedule shall indicate those that are critical to the progress schedule.
- D. Designate in the construction schedule, or in a separate coordinated schedule, the dates for submission and the dates that reviewed Shop Drawings, Working Drawings and Samples will be needed.
- E. The Contractor shall not begin any of the Work covered by a drawing, data, or a sample returned for correction until a revision or correction thereof has been reviewed and returned to him, approved by the Engineer.
- F. The Contractor shall submit to the Engineer all shop drawings, working drawings and samples sufficiently in advance of construction requirements and shall account for Engineer's Shop Drawing review time accordingly.
- G. The Contractor shall submit two (2) copies of descriptive or product data submittals to complement shop drawings for the Engineer plus the number of copies which the Contractor requires. The Engineer will retain two (2) sets. All blueprint shop drawings shall be submitted with one (1) set of reproducible and four (4) sets of print. The Engineer will review the drawings and return to the Contractor the set of marked-up drawings with appropriate review comments.
- H. The Contractor shall be responsible for and bear all cost of damages which may result from the ordering of any material or from proceeding with any part of Work prior to the review and Approval by Engineer of the necessary Shop Drawings.

1.04 ENGINEER'S REVIEW OF SHOP DRAWINGS

- A. The Engineer's review of drawings, data, and samples submitted by the Contractor will cover only general conformity to the Specifications. The Engineer's review and exception if any, will not constitute an approval of dimensions, quantities, and details of the material, equipment, device, or item shown.
- B. The review of drawings and schedules will be general, and shall not be construed:
 - 1. As permitting any departure from the Contract requirements;
 - 2. As relieving the Contractor of responsibility for any errors, including details,

dimensions, and materials;

3. As approving departures from details furnished by the Engineer, except as otherwise provided herein.
- C. If the drawings or schedule as submitted describe variations and/or show a departure from the Contract requirements which the Engineer finds to be in the interest of the Owner and to be minor as not to involve a change in the Contract Price or time for performance, the Engineer may return the reviewed drawings without noting an exception.
- D. When reviewed by the Engineer, each of the Shop Drawings will be identified as having received such review being so stamped and dated. Shop Drawings stamped "REVISE AND RESUBMIT" or "REJECTED" and with required corrections shown will be returned to the Contractor for correction and resubmittal.
- E. Resubmittals will be handled in the same manner as the first submittals. On resubmittals, the Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, to revisions other than the corrections requested by the Engineer on previous submissions. The Contractor shall make any corrections required by the Engineer.
- F. If the Contractor considers any correction indicated on the drawings to constitute a change to the Contract Drawings or Specifications, the Contractor shall give written notice thereof to the Engineer.
- G. The Engineer will review one submittal and one re-submittal after which cost of review will be borne by the Contractor. The cost of Engineering shall be equal to the Engineer's charges to the Owner under the terms of the Engineer's agreement with the Owner.
- H. When the Shop Drawings have been completed to the satisfaction of the Engineer, the Contractor shall carry out the construction in accordance therewith and shall make no further changes therein except upon written instructions from the Engineer.
- I. No partial submittals will be reviewed. Submittals not complete will be returned to the Contractor and will not be considered "REJECTED" until resubmitted.
- J. The Engineer shall return Shop Drawing submittals to the Contractor within fourteen (14) calendar days from the date the Engineer receives them.

1.05 SHOP DRAWINGS

- A. When used in the Contract Documents, the term "Shop Drawings" shall be considered to mean Contractor's plans for material and equipment which become an integral part of the Project. These drawings shall be complete and detailed. Shop Drawings shall consist of fabrication, erection and setting drawings and schedule drawings, manufacturer's scale drawings, and wiring and control diagrams. Cuts, catalogs, pamphlets, descriptive literature, and performance and test data shall be considered only as supportive to required Shop Drawings as defined above.
- B. Drawings and schedules shall be checked and coordinated with Work of all trades involved, before they are submitted for review by the Engineer and shall bear the Contractor's stamp of approval as evidence of such checking and coordination. Drawings or schedules submitted without this stamp of approval shall be returned

to the Contractor for resubmission.

- C. Each Shop Drawing, shall have a blank area 3 1/2 inches by 3 1/2 inches, located adjacent to the title block. The title block shall display the following:
 - 1. Number and title of the drawing.
 - 2. Date of drawing or revision.
 - 3. Name of project building or facility.
 - 4. Name of Contractor and subcontractor submitting drawing.
 - 5. Clear identification of contents and location of Work.
 - 6. Specification title and number.
- D. If drawings show variations from Contract requirements because of standard shop practice or for other reasons, the Contractor shall describe such variations in his letter of transmittal. If acceptable, proper adjustment in the Contract shall be implemented where appropriate. If the Contractor fails to describe such variations, they shall not be relieved of the responsibility for executing the Work in accordance with the Contract, even though such drawings have been reviewed.
- E. Data on materials and equipment include, without limitation, materials and equipment lists, catalog data sheets, cuts, performance curves, diagrams, materials of construction and similar descriptive material. Materials and equipment lists shall give, for each item thereon, the name and location of the supplier or manufacturer, trade name, catalog reference, size, finish, and all other pertinent data.
- F. For all mechanical and electrical equipment furnished, the Contractor shall provide a list including the equipment name, address and telephone number of the manufacturer's representative and a service company so that service and spare parts can be readily obtained. In addition, a maintenance and lubrication schedule for each piece of equipment shall be submitted along with each shop drawing submittal.
- G. All manufacturers or equipment supplier who proposes to furnish equipment or products shall submit an installation list to the Engineer along with the required shop drawings. The installation list shall include at least five installations where identical equipment has been installed and has been in operation for a period of at least five (5) years.
- H. Only the Engineer will utilize the color "red" in marking Shop Drawing submittals.
- I. Before final payment is made, the Contractor shall furnish to Engineer two (2) sets of record shop drawings all clearly revised, complete and up to date showing the permanent construction as actually made for all reinforcing and structural steel, miscellaneous metals, process and mechanical equipment, piping, electrical system and instrumentation system.

1.06 WORKING DRAWINGS

- A. When used in the Contract Documents, the term "working drawings" shall be considered to mean the Contractor's plans for temporary structures such as temporary bulkheads, support of open cut excavation, support of utilities, ground water control systems, forming and false-Work; for underpinning; and for such other Work as may be required for construction, but does not become an integral

part of the project.

- B. Copies of working drawings as noted in subparagraph 1.06A above, shall be submitted to the Engineer where required by the Contract Documents or requested by the Engineer, and shall be submitted at least thirty (30) calendar days (unless otherwise specified by the Engineer) in advance of their being required for Work.
- C. Working drawings shall be signed by a Registered Professional Engineer, currently licensed to practice in the State of Florida and shall convey, or be accompanied by, calculation or other sufficient information to completely explain the structure, machine, or system described and its intended manner of use. Prior to commencing such Work, working drawings must have been reviewed without specific exceptions by the Engineer, which review will be for general conformance and will not relieve the Contractor in any way from his responsibility with regard to the fulfillment of the terms of the Contract. The Contractor assumes all risks of error; the Owner and Engineer shall have no responsibility therefore.

1.07 SAMPLES

- A. The Contractor shall furnish, for the approval of the Engineer, samples required by the Contract Documents or requested by the Engineer. Samples shall be delivered to the Engineer as specified or directed. The Contractor shall prepay all shipping charges on samples. Materials or equipment for which samples are required shall not be used in Work until approved by the Engineer.
- B. Samples shall be of sufficient size and quantity to clearly illustrate:
 - 1. Functional characteristics of the product, with integrally related parts and attachment devices.
 - 2. Full range of color, texture, and pattern.
 - 3. A minimum of two samples of each item shall be submitted.
- C. Each sample shall have a label indicating
 - 1. Name of Project
 - 2. Name of Contractor and Subcontractor
 - 3. Material or Equipment Represented
 - 4. Place of Origin
 - 5. Name of Producer and Brand (if any)
 - 6. Location in Project(Samples of finished materials shall have additional marking that will identify them under the finished schedules.)
- D. The Contractor shall prepare a transmittal letter in triplicate for each shipment of samples containing the information required in subparagraph 1.07B above. He shall enclose a copy of this letter with the shipment and send a copy of this letter to the Engineer. Approval of a sample shall be only for the characteristics or use named in such approval and shall not be construed to change or modify any Contract requirements.

- E. Approved samples not destroyed in testing shall be sent to the Engineer or stored at the site of the Work. Approved samples of the hardware in good condition will be marked for identification and may be used in the Work. Materials and equipment incorporated in Work shall match the approved samples. Samples which failed testing or were not approved will be returned to the Contractor at their expense, if so requested at time of submission.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01370

SCHEDULE OF VALUES

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Submit to the Engineer a Schedule of Values allocated to the various portions of the Work, within 14 days after the effective date of the Agreement.
- B. At a minimum, the Contractor's Schedule of Values shall include all items listed in Section 01012 - Measurement and Payment.
- C. Once approved, the Schedule of Values shall be used as the basis for the Contractor's Applications for Payment.

1.02 RELATED SECTIONS

- A. Bid Form
- B. Section 01012 - Measurement and Payment
- C. Section 01152 - Applications for Payment

1.03 FORM AND CONTENT OF SCHEDULE OF VALUES

- A. Present schedule on an 8-1/2 inch x 11 inch white paper; Contractor's standard forms and automated printout will be considered for approval by the Engineer upon Contractor's request. Identify schedule with:
 - 1. Title of Project and location
 - 2. Engineer and Project number
 - 3. Name and Address of Contractor
 - 4. Contract designation
 - 5. Date of submission
- B. Schedule shall list the installed value of the component parts to include individual equipment, piping, electrical, paving, of the Work (as required) in sufficient detail to serve as a basis for computing values for progress payments during construction and for additions and deletions to the Work.
- C. For the various portions of the Work:
 - 1. Each item shall include a directly proportional amount of the Contractor's overhead and profit.
- D. The sum of all values listed in the schedule shall equal the total Contract Sum.

1.04 ENGINEER'S APPROVAL

- A. The Schedule of Values is subject to the Engineer's approval.
 - 1. Additional line item detail may be required.
 - 2. Supporting information may be required.
 - 3. Additional comparison trade bids may be required.

PART 2 - PRODUCTS (NOT USED)

PART 3 - PRODUCTS (NOT USED)

END OF SECTION

SECTION 01380

CONSTRUCTION PHOTOGRAPHS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The Contractor shall employ a professional photographer to take digital construction record photographs for pre-construction conditions periodically during course of Work and post-construction.

1.02 RELATED SECTIONS

- A. Section 01381 - Audio/Video Pre-construction Record
- B. Section 01720 - Project Record Documents

1.03 PHOTOGRAPHY REQUIRED

- A. View and Quantities Required:
 - 1. Take a minimum of 24 images of the site and adjacent property at the following intervals:
 - a. Pre-construction
 - b. Monthly, or other interval, at the cut-off date in accordance with Applications for Payment.
 - c. At construction events or discoveries as directed by the Owner or Engineer.
 - d. At post-construction.
- B. Aerial photography shall be required in addition to ground level images for items out of sight of ground level photography.
- C. Photograph from locations to adequately illustrate condition of construction and state of progress.
- D. At successive periods of photography, take at least one photograph from the same overall view as previously.
- E. Consult with the Owner and Engineer at each period of photography for instructions concerning views required.

PART 2 - PRODUCTS

2.01 CAMERA REQUIREMENT

- A. A Digital Single Lens Reflex (DLSR) is required.
- B. Point and shoot, mobile phones and disposal cameras are not acceptable.

2.02 PHOTOGRAPHS

- A. The minimum file size is 6.0 megapixels per image.
- B. All images shall be color and in RGB format.

- C. Acceptable file formats include:
 - 1. Tagged Information File Format (TIFF)
 - 2. Joint Photographic Experts Group 2000 (JPEG2000)
 - 3. Digital Negative (DGN)
- D. Unacceptable file formats include:
 - 1. Bitmap (BMP)
 - 2. Graphics Interchange Format (GIFF)
 - 3. Portable Network Graphic (PNG)
 - 4. RAW format.

2.03 METADATA

- A. Each image must contain descriptive metadata as follows:
 - 1. Name of Project
 - 2. Orientation of View
 - 3. Date and time of image
 - 4. Name and address of photographer
 - 5. Photographer's numbered identification of image.
 - 6. Meaningful and descriptive filenames unique to each image.

2.04 COPYRIGHT

- A. No copyrighted photographs will be accepted.

2.05 EDITING

- A. Images shall not be edited in any way.

2.06 TECHNIQUE

- A. Factual presentation
- B. Magnification commensurate with the level of detail required.
- C. Correct image and focus
 - 1. High resolution and sharpness
 - 2. Maximum depth-of-field
 - 3. Minimum distortion

2.07 DELIVERY OF IMAGES

- A. Deliver electronic image file to the Owner and Engineer to accompany each Application for Payment or as directed.
- B. Electronic file storage media shall be a durable, commercial quality USB memory device of sufficient capacity to store the intended contents.
- C. Electronic file storage media shall be labeled and identified by project title and project number.

- D. The photographer shall keep electronic copies for a minimum of two years from Owner acceptance.

PART 3 - EXECUTION (NOT USED)

END OF SECTION

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SECTION 01381

AUDIO/VIDEO PRE-CONSTRUCTION RECORD

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The Contractor shall provide a continuous color video with audio of the entire project prior to construction and at Owner acceptance.

1.02 RELATED SECTIONS

- A. Section 01380 - Construction Photographs

1.03 SCHEDULE REQUIRED

- A. Video recordings shall not be made more than 30 days prior to construction. No construction shall begin prior to review and approval of the videos by the Engineer and the Owner.
- B. Videos not conforming to the Specifications shall be resubmitted at no additional charge.

1.04 PROFESSIONAL VIDEOGRAPHERS

- A. The Contractor shall engage the services of a professional videographer. The color audio-visual tapes shall be prepared by a responsible commercial firm known to be skilled and regularly engaged in the business of pre-construction color audio-visual documentation.

PART 2 - PRODUCTS

2.01 GENERAL

- A. The finished product shall be a bright, sharp, clear picture free of distortion and show sufficient detail acceptable to the Owner and Engineer.
- B. All videos shall be color and in RGB format.
- C. The Contractor shall furnish to the Engineer and the Owner two (2) copies each of the electronic file, which becomes a project record document.
- D. Electronic file storage media shall be a durable, commercial quality USB memory device or compact disc of sufficient capacity to store the intended contents.
- E. Electronic file storage media shall be labeled and identified by project title and project number.
- F. The videographer shall keep electronic copies for a minimum of two years from Owner acceptance.

2.02 METADATA

- A. Each video must contain descriptive metadata as follows:
 - 1. Name of Project
 - 2. Direction and road names

3. Date and time of image
4. Name and address of videographer
5. Meaningful and descriptive filenames unique to each image.

2.03 COPYRIGHT

- A. No copyrighted videos will be accepted.

2.04 EDITING

- A. Videos shall not be edited in any way other than metadata per Section 2.02.

PART 3 - EXECUTION

- A. The video recording shall show all surface features located within the construction zone. These features shall include, but not be limited to, roadways, sidewalks, outside of houses (front and sides), driveways, culverts, walls, fences, and landscaping.
- B. Where station numbering is used, coverage shall begin at the lowest station number and be continuous until the highest station number is reached. Otherwise, the entire length of the project shall be documented including each plan sheet.
- C. Provide magnification (zoom) where appropriate to properly display details germane to the subject matter.
- D. Maintain camera speed slow enough to achieve detail acceptable to the Owner and Engineer.
 1. Videos with unacceptable camera speed will not be accepted.
 2. Videographer shall be responsible to meet all traffic laws at the time of video including all necessary and appropriate safety measures.

END OF SECTION

SECTION 01400

QUALITY CONTROL

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This Section describes the Contractor's minimum responsibilities in meeting the quality requirements of the Contract Documents.

1.02 RELATED SECTIONS

- A. Section 01050 – Field Engineering and Surveying
- B. Section 01410 – Materials and Installation Testing
- C. Section 02200 – Earthwork

1.03 OBSERVATION AT PLACE OF MANUFACTURE

- A. Unless otherwise specified, all products, materials, and time and equipment shall be subject to observation by the Owner and the Engineer at the place of manufacture.
- B. The presence of the Owner and/or the Engineer at the place of manufacture however, shall not relieve the Contractor of the responsibility for furnishing products, materials, and equipment which comply with all requirements of the Contract Documents. Compliance is a duty of the Contractor.
- C. The Contractor shall advise the Owner and Engineer promptly upon placing orders for materials and equipment so that arrangements may be made, if desired, for observation before shipment from the place of manufacture.
- D. The Engineer may require the Contractor to provide statements or certificates from the manufacturers and fabricators that the materials and equipment provided by them are manufactured or fabricated in full accordance with the standard specifications for quality and workmanship indicated in the Contractor Documents. All costs of this testing and providing statements and certificates shall be a subsidiary obligation of the Contractor, and no extra charge to the Owner shall be allowed on account of such testing and certification.

1.04 SAMPLING AND TESTING

- A. Unless otherwise specified, all sampling and testing shall be in accordance with the methods prescribed in the current standards of the ASTM, as applicable to the class and nature of the article or materials considered.
- B. The Owner and the Engineer reserve the right to use any generally accepted system of sampling and testing which will insure the quality of the workmanship is in full accord with the Contract Documents.
- C. Any waiver by the Owner or Engineer of any specific testing or other quality assurance measures, whether or not such waiver is accompanied by a guarantee of substantial performance as a relief from the specified testing or other quality assurance requirements as originally specified, and whether or not such guarantee is accompanied by a performance bond to assure execution of any necessary corrective or remedial Work, shall not be construed as a waiver of any

requirements.

- D. The Owner and Engineer reserve the right to make independent investigations and tests at any time.
- E. Failure of any portion of the Work to meet any of the requirements of the Contract Document shall be reasonable cause for the Owner or Engineer to require the removal or correction and reconstruction of any such Work at the cost of the Contractor.

1.05 SITE INVESTIGATION AND CONTROL

- A. The Contractor shall verify all dimensions in the field and shall check field conditions continuously during construction. The Contractor shall be solely responsible for any inaccuracies built into the Work due to its failure to comply with this requirement.
- B. The Contractor shall inspect related and appurtenant Work and shall report in writing to the Owner and Engineer any conditions that will prevent proper completion of the Work. Failure to report any such conditions shall constitute acceptance of all site conditions, and any required removal, repair, or replacement caused by unsuitable conditions shall be performed by the Contractor at its cost.

1.06 OBSERVATION AND TESTING

- A. The Work or actions of the testing laboratory shall in no way relieve the Contractor of its obligations under the Contract. The laboratory testing Work will include such observations and testing required by the Owner or Engineer. The testing laboratory will have no authority to change the requirements of the Contract Documents, nor perform, accept or approve any of the Contractor's Work.
- B. The Contractor shall allow the Owner and Engineer ample time and opportunity for field observation and testing materials and equipment to be used in the Work.
- C. The Contractor shall at all times furnish the Owner and the Engineer facilities, including labor, and allow proper time for inspecting and testing materials, equipment, and workmanship.
- D. The Contractor must anticipate that possible delays may occur in the execution of its Work due to the necessity of materials and equipment being inspected and accepted for use.
- E. The Contractor shall furnish, at its own expense, all samples of materials required by the Owner or Engineer for testing, and shall make its own arrangements for providing water, electric power, or fuel for the various observations and tests of structures and equipment.

1.07 RIGHT OF REJECTION

- A. The Owner and Engineer shall have the right, at all times and places, to reject any articles or materials to be furnished hereunder which, in any respect, fail to meet the requirements of the Contract Documents, regardless of whether the defects in such articles or materials are detected at the point of manufacture or after completion of the Work at the site.
- B. If the Owner or its representative, through an oversight or otherwise, has accepted

materials or Work which is defective, or which is contrary to the Contract Documents, such materials, no matter in what stage or condition of manufacture, delivery, or erection, may be subsequently rejected.

- C. The Contractor shall promptly remove rejected articles or materials from the site of the Work after notification of rejection. All costs of removal and replacement of rejected articles or materials as specified herein shall be borne by the Contractor.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 BUOYANCY

- A. The Contractor shall be completely responsible for any tanks, pipelines, manholes, foundations or similar improvements that may become buoyant during the construction operations due to groundwater levels. Should there be any possibility of buoyancy, the Contractor shall take the necessary steps to prevent damage due to floating or flooding, and shall repair, or replace said improvements at no additional cost.

3.02 DEVIATION FROM SPECIFICATIONS

- A. If any part of a submittal deviates from the plans and specifications, it is up to the Contractor to indicate such deviation—in writing—to the Engineer, for determination as to acceptance of the deviation. If no deviation is submitted, it is assumed that the Contractor has fully and completely followed the plans and specifications, and that any discrepancy discovered during construction shall be corrected completely at the expense of the Contractor.

3.03 AMERICANS WITH DISABILITIES ACT (ADA)

- A. The Contractor shall make every effort to ensure all concrete Work including, but not limited to accessible sidewalks, routes, ramps and curb ramps is compliant with the ADA and Florida Building Code Accessibility.
- B. Prior to and during concrete placement, the contractor shall verify the formwork for compliance. Any and all concrete Work which is not compliant shall be removed and replaced at no cost to the Owner.

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SECTION 01410

MATERIALS AND INSTALLATION TESTING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Contractor shall employ and pay for the services of an independent testing laboratory, approved by the Engineer, to perform materials and installation testing of the type and frequency specified in the Contract Documents including, but not limited to, Geotechnical testing services and concrete testing.
- B. Geotechnical testing services shall include, but not be limited to, periodic site inspections, soil proctor tests, soil classification tests and soil densities or compaction tests.
- C. The Engineer may, at any time, elect to have materials and equipment tested for conformity with the Contract Documents.
- D. Contractor shall include cost of testing in the Contract Price.
- E. Piping pressure test and bacteriological testing shall be in accordance with the applicable Section.

1.02 RELATED SECTIONS

- A. Section 01050 – Field Engineering and Surveying
- B. Section 01400 – Quality Control
- C. Section 02200 – Earthwork
- D. Section 15010 – Testing Piping Systems

1.03 REFERENCES

- A. FDOT Design Standards.
- B. FDOT Standard Specifications for Road and Bridge Construction.
- C. AWWA Standards

1.04 LIMITATIONS OF AUTHORITY OF TESTING LABORATORY

- A. Laboratory is not authorized to:
 - 1. Release, revoke, alter or enlarge on requirements of Contract Documents
 - 2. Approve or accept any portion of the Work
 - 3. Perform any duties of the Contractor

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 CONTRACTOR'S RESPONSIBILITIES

- A. Provide all testing required by the Contract Documents as well as laws, ordinances, rules, regulations, orders, or approvals of public authorities.

- B. Employment of the laboratory shall in no way relieve Contractor's obligations to perform the Work of the Contract.
- C. Cooperate with laboratory personnel and provide access to Work and to Manufacturer's operations.
- D. Secure and deliver to the laboratory adequate quantities of representational samples of materials proposed to be used and which require testing.
- E. Provide to the laboratory the preliminary design mix proposed to be used for concrete and other materials mixes which require control by the testing laboratory.
- F. Furnish incidental labor and facilities:
 - 1. To provide access to Work to be tested
 - 2. To obtain and handle samples at the Project site or at the source of the product to be tested
 - 3. To facilitate inspections and tests
 - 4. For storage and curing of test samples
- G. Notify laboratory sufficiently in advance of operations to allow for laboratory assignment of personnel and scheduling of tests.
 - 1. When tests or inspections cannot be performed after such notice, reimburse Owner for laboratory personnel and travel expenses incurred due to Contractor's negligence.
- H. Employ and pay for the services of the same or a separate, equally qualified independent testing laboratory to perform additional inspections, sampling, and testing required for the Contractor's convenience.
- I. If the Owner requests tests in addition to those specified in the contract, and if the test results indicate the material or equipment complies with the Contract Documents, the Owner shall pay for the cost of the testing laboratory. If the tests and any subsequent retests indicate the materials and equipment fail to meet the requirements of the Contract Documents, the Contractor may pay for the laboratory costs directly to the testing firm or the total of such costs shall be deducted from any payments due the Contractor.
- J. The Contractor shall pay costs for additional trips to the project by the agency when scheduled times for tests and inspections are canceled and agency is not notified sufficiently in advance of cancellation to avoid the trip.

3.02 TESTING

- A. The following types of density tests and test frequencies are required. Copies of all reports are to be sent to the Engineer immediately upon availability.
 - 1. Density tests for trench backfill at a minimum rate of one (1) test per 6" lift per 100 feet of trench, unless otherwise directed by the Engineer.
 - 2. Density tests for subgrade compaction at a minimum rate of three (3) tests in 100 feet of roadway, unless otherwise directed by the Engineer.
 - 3. Density tests for limerock base at a minimum rate of three (3) tests per day on each course of completed compacted base, unless otherwise directed by

the Engineer.

4. Density test for roadway crossings at the rate of one test per lane per lift of compacted material, beginning one foot above the normal water table.
- B. If in the opinion of the Engineer, suitable compaction has not been achieved around structures, density tests may be required.
- C. Concrete compressive strength at the rate of three (3) cylinders per the lesser of 50 cubic yards or per day.
- D. Should any test indicate that any portion of the materials or workmanship does not comply with these Specifications; a retest shall be performed at the Contractor's expense. If the retest confirms the first test, that portion of the Work shall be removed and replaced or reworked and retested at no additional cost to the Owner until satisfactory compliance is attained.
- E. Testing in the County right-of-way shall meet the requirements of the Florida Department of Transportation.
- F. Refer to Section 15010 for additional testing requirements.

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SECTION 01505

CONTROL OF WORK

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The Contractor shall furnish personnel and equipment which will be efficient, appropriate and a quantity large enough to secure a satisfactory quality of Work and a rate of progress which will insure the completion of the Work within the time stipulated in the Proposal. If at any time such personnel appear to the Engineer to be inefficient, inappropriate, or insufficient for securing the quality of Work required or for producing the rate of progress aforesaid, he may order the Contractor to increase the efficiency, change the character or increase the personnel and equipment, and the Contractor shall conform to such order. Failure of the Engineer to give such order shall in no way relieve the Contractor of his obligations to secure the quality of the Work and rate of progress required.

1.02 RELATED SECTIONS

- A. Section 01010 – Summary of Work
- B. Section 01015 – General Requirements

1.03 PIPE LOCATIONS

- A. Pipeline shall be located substantially as indicated on the Drawings, but the Engineer reserves the right to make such modifications in locations as may be found desirable to avoid interference with existing structures or for other reasons.

1.04 OBSTRUCTIONS

- A. The attention of the Contractor is drawn to the fact that during digging at the Project site, the possibility exists of the Contractor encountering various water, sewer, gas, telephone, electrical, or other lines not shown on the Drawings. The Contractor shall exercise extreme care before and during digging to locate and flag these lines to avoid damage to the existing lines. Should damage occur to an existing line, The Contractor shall repair the line at no cost to the Owner.
- B. The Contractor shall protect all existing utilities and improvements not designated for removal and shall restore damaged or temporarily relocated utilities and improvements to a condition equal to or better than they were prior to such damage or temporary relocation, all in accordance with requirements of the Contract Documents.
- C. The Contractor shall verify the exact locations and depths of all utilities shown and the Contractor shall make exploratory excavations of all utilities that may interfere with the Work. All such exploratory excavations shall be performed as soon as practicable after award of the contract and, in any event, sufficient time in advance of construction to avoid possible delays to the Contractor's Work. When such exploratory excavations show the utility location as shown to be in error, the Contractor shall so notify the Engineer.
- D. The number of exploratory excavations required shall be that number which is sufficient to determine the alignment and grade of the utility. Test pits shall be dug at the Contractor's expense, as directed.

- E. The Contractor shall protect all Underground Utilities and other improvements which may be impaired during construction operations. It shall be the Contractor's responsibility to ascertain the actual location of all existing utilities and other improvements that will be encountered in its construction operations, and to see that such utilities or other improvements are adequately protected from damage due to such operations. The Contractor shall take all possible precautions for the protection of unforeseen utility lines to provide for uninterrupted service and to provide such special protection as may be necessary.
- F. In case it shall be necessary to move the property of any public utility or franchise holder, such utility company or franchise holder will, upon request of the Contractor, be notified by the Owner to move such property within a specified reasonable time. When utility lines that are to be removed are encountered within the area of operations, the Contractor shall notify the Engineer sufficient time in advance for the necessary measures to be taken to prevent interruption of service.
- G. Where the proper completion of the Work requires the temporary or permanent removal and/or relocation of an existing utility or other improvement which is indicated, the Contractor shall remove and, without unnecessary delay, temporarily replace or relocate such utility or improvement in a manner satisfactory to the Engineer and the owner of the facility. In all cases of such temporary removal or relocation, restoration to former location shall be accomplished by the Contractor in a manner that will restore or replace the utility or improvement as nearly as possible to its former locations and to as good or better condition than found prior to removal.
- H. Existing utility lines that are indicated or the locations of which are made known to the Contractor prior to excavation and that are to be retained, and all utility lines that are constructed during excavation operations shall be protected from damage during excavation and backfilling and, if damaged, shall be immediately repaired or replaced by the Contractor at the Contractor's expense. Sewer laterals are included.
- I. All repairs to a damaged utility or improvement are subject to inspection and approval by an authorized representative of the utility or improvement owner before being concealed by backfill or other Work.
- J. All power, telephone or the communication cable ducts, gas and water mains, irrigation lines, sewer lines, storm drain lines, poles, and overhead power and communication wires and any other cables encountered along the line of the Work shall remain continuously in service during all the operations under the Contract, unless other arrangements satisfactory to the Engineer are made with the owner of said pipelines, duct, main, irrigation line, sewer, storm drain, pole, or wire or cable. The Contractor shall be responsible for and shall repair all damage due to its operations, and the provisions of this Section shall not be abated even in the event such damage occurs after backfilling or is not discovered until after completion of the backfilling.

1.05 OPEN EXCAVATIONS

- A. All open excavations shall be adequately safeguarded by providing temporary barricades, caution signs, lights, and other means to prevent accidents to persons, and damage to property. The Contractor shall, at their own expense, provide suitable and safe bridges and other crossings for accommodating travel by pedestrians and workers. Bridges provided for access to private property during construction shall be removed when no longer required. The length of open trench

will be controlled by the particular surrounding conditions but shall always be confined to the limits prescribed by the Engineer. If the excavation becomes a hazard, or if it excessively restricts traffic at any point, the Engineer may require special construction procedures such as limiting the length of open trench or prohibiting stacking excavated material in the street and requiring that the trenches shall not remain open overnight.

- B. The Contractor shall take precautions to prevent injury to the public due to open trenches. All trenches, excavated material, equipment, or other obstacles which could be dangerous to the public shall be well lighted at night.

1.06 TEST PITS

- A. Test pits for the purpose of locating underground pipeline or structures in advance of the construction shall be excavated and backfilled by the Contractor at his cost at the direction of the Engineer. Test pits shall be backfilled immediately after their purpose has been satisfied and the surface restored and maintained in a manner satisfactory to the Engineer.

1.07 UTILITY CROSSINGS

- A. It is intended that wherever existing utilities such as service lines must be crossed, deflection of the pipe within recommended limits and cover shall be used to satisfactorily clear the obstruction unless otherwise indicated on the Drawings. However, when in the opinion of the Engineer or the Owner this procedure is not feasible, they may direct the use of fittings.

1.08 SANITATION

- A. Toilet Facilities - Fixed or portable chemical toilets shall be provided wherever needed for the use of employees. Toilets at construction job sites shall conform to the requirements of Part 1926 of the OSHA Standards for Construction.
- B. Sanitary and Other Organic Wastes - The Contractor shall establish a regular daily collection of all sanitary and organic wastes. All wastes and refuse from sanitary facilities provided by the Contractor or organic material wastes from any other source related to the Contractor's operations shall be disposed of away from the site in a manner satisfactory to the Engineer and in accordance with all laws and regulations pertaining thereto.

1.09 RELOCATIONS

- A. The Contractor shall be responsible for the relocation of structures, including but not limited to light poles, signs, sign poles, fences, piping, conduits, and drains that interfere with the positioning of the Work as set out on the Drawings. The cost of all such relocations shall be included in the bid for the project and shall not result in any additional cost to the Owner.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 COOPERATION WITHIN THIS CONTRACT

- A. All firms or persons authorized to perform any Work under this Contract shall cooperate with the General Contractor and his subcontractors or trades and shall assist in incorporating the Work of other trades where necessary or required.

- B. Cutting and patching, drilling and fitting shall be carried out where required by the trade or subcontractor having jurisdiction, unless otherwise indicated herein or directed by the Engineer.

3.02 PROTECTION OF CONSTRUCTION AND EQUIPMENT

- A. All newly constructed Work shall be carefully protected from injury in any way. No wheeling or walking or placing of heavy loads on it shall be allowed and all portions injured shall be reconstructed by the Contractor at his own expense.
- B. Further, the Contractor shall take all necessary precaution to prevent damage to any structure due to water pressure during and after construction and until such structure is accepted and taken over by the Owner.

3.03 PRIVATE LAND

- A. The Contractor shall not enter or occupy private land outside of easements, except by written permission of the land owner.

3.04 RESTORATION

- A. Temporary restoration shall be completed within five days of pipe installation. Temporary restoration shall include all driveways, sidewalks, and roadways. They shall be swept clean and be maintained free of dirt and dust. All areas disturbed by the construction activities shall be restored to proper grade, cleaned up, including the removal of debris, trash, and deleterious materials. All construction materials, supplies, or equipment, including piles of debris shall be removed from the area. All temporarily restored areas shall be maintained by the Contractor. These areas shall be kept clean and neat, free of dust and dirt, until final restoration operations are completed. The Contractor is responsible to utilize dust abatement operations in the temporarily restored areas as required, to the satisfaction of the Engineer.
- B. Wherever sidewalks or private roads have been removed for purposes of construction, the Contractor shall place suitable temporary sidewalks or roadways promptly after backfilling and shall maintain them in satisfactory condition for the period of time fixed by the authorities having jurisdiction over the affected portions before proceeding with the final restoration or, if no such period of times is so fixed, the Contractor shall maintain said temporary sidewalks or roadways until the final restoration thereof has been made.
- C. Final restoration shall be completed within thirty days of pipe acceptance. Final restoration shall include the completion of all required pavement replacement of roadways, driveways, curbs, gutters, sidewalks and other existing improvements disturbed by the construction; final grading, placement of sod, pavement marking, etc., all complete and finished, acceptable to the Engineer.
- D. To obtain a satisfactory junction with adjacent surfaces, the Contractor shall saw cut back and trim the edge to provide a clean, sound, vertical joint before permanent replacement of an excavated or damaged portion of pavement. Damaged edges of pavement along excavations and elsewhere shall be trimmed back by saw cutting in straight lines. All pavement restoration and other facilities restoration shall be constructed to finish grades compatible with the adjacent undisturbed pavement.
- E. The Contractor shall test an installed section of pipeline within five calendar days from completion of the pipeline. A section of pipe is defined as a pipe section which

can be isolated by valves for appurtenances is satisfactorily completed, the Contractor shall provide the Engineer with a "Schedule of Existing Facilities Restoration" which will be reviewed and be acceptable to the Engineer. The schedule shall show the existing facilities to be restored and schedule of beginning and completion dates for each item of restoration. The Work for completing the final restoration of existing facilities for a tested section of Work shall be completed within 30 days of acceptance of the pipeline testing.

END OF SECTION

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SECTION 01510

TEMPORARY UTILITIES

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Furnish, install and maintain temporary utilities required for construction, remove on completion of Work.
- B. Pay all fees associated with temporary utilities including water consumption charges.

1.02 RELATED SECTIONS

- A. Section 01010 – Summary of Work
- B. Section 01700 – Contract Closeout

1.03 REQUIREMENTS OF REGULATORY AGENCIES

- A. Comply with National Electric Code.
- B. Comply with Federal, State and Local codes and regulations and with utility company requirements.
- C. Comply with County Health Department and Environmental Regulations.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Materials may be new or used but must be adequate in capacity for the required usage, must not create unsafe conditions, and must not violate requirements of applicable codes and standards.

2.02 TEMPORARY ELECTRICITY AND LIGHTING

- A. Arrange with utility company, provide service required for power and lighting, and pay all costs for service and for power used in the construction, testing, and trial operation prior to final acceptance of the Work by the Owner.
- B. Install circuit and branch wiring, with the area distribution boxes located so that power and lighting is available throughout the construction by the use of construction type power cords.
- C. Provide adequate artificial lighting for all areas of Work when natural light is not adequate to Work, and all areas accessible to the public.

2.03 TEMPORARY WATER

- A. Arrange with the water utility provider to provide water for construction purposes.
- B. Install branch piping with taps located so that water is available throughout the construction by the use of hoses.
- C. Install at each and every connection to the Owner water supply a backflow preventer meeting the requirements of ANSI A40.6 and AWWA C511. Contractor shall be required to meter and pay for all water used.

2.04 TEMPORARY SANITARY FACILITIES

- A. Provide sanitary facilities in compliance with laws and regulations.
- B. Service, clean and maintain facilities and enclosures.

PART 3 - EXECUTION

3.01 GENERAL

- A. Maintain and operate systems to assure continuous service.
- B. Modify and extend systems as Work progress requires.

3.02 REMOVAL

- A. Completely remove temporary materials and equipment when their use is no longer required.
- B. Clean and repair damage caused by temporary installations or use of temporary facilities.
- C. Restore permanent facilities used for temporary services to a specified condition.

END OF SECTION

SECTION 01530

EXISTING UTILITIES

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This Section provides for specifications related to construction in the vicinity of existing utilities.

1.02 RELATED SECTIONS

- A. Section 01010 – Summary of Work
- B. Section 01015 – General Requirements

1.03 CONTRACTOR RESPONSIBILITIES

- A. The term existing utilities shall be deemed to refer to both publicly-owned and privately-owned utilities including, but not limited to, electric power and lighting, telephone, water, gas, storm drains, process lines, sanitary sewers, and all appurtenant structures.
- B. Prior to underground construction, the Contractor is required by the Underground Facility Damage Prevention and Safety Act, Chapter 556 FS to contact Sunshine 811, for the location of underground utilities.
- C. Where existing utilities and structures are indicated in the Contract Documents, it shall be understood that all of the existing utilities and structures affecting the Work may not be shown and that the locations of those shown are approximate only. It shall be the responsibility of the Contractor to ascertain the actual extent and exact location of existing utilities and structures. In every instance, the Contractor shall notify the proper authority having jurisdiction and obtain all necessary directions and approvals before performing any Work in the vicinity of existing utilities.

1.04 NOTIFICATION OF UTILITY OWNER

- A. Prior to any excavation in the vicinity of any existing underground facilities, including all water, sewer, storm drain, gas, petroleum products, or other pipelines; all buried electric power, communications, or television cables; all traffic signal and street lighting facilities; and all roadway and state highway rights-of-way the Contractor shall notify the respective authorities representing the owners or agencies responsible for such facilities not less than three days nor more than seven days prior to excavation so that a representative may be present during such excavation.

1.05 RIGHT-OF-WAY'S

- A. The Contractor shall not do any Work that would affect any oil, gas, sewer, or water pipeline; any telephone, telegraph, or electric transmission line; any fence; or any other structure, nor shall the Contractor enter upon the rights-of-way involved until notified by the Engineer that the Owner has secured authority therefore from the proper party. After authority has been obtained, the Contractor shall give said party due notice of its intention to begin Work, if required by said party, and shall remove, shore, support, or otherwise protect such pipeline, transmission line, ditch, fence, or

structure or replace the same. When two or more contracts are being executed at one time on the same or adjacent land in such manner that Work on one contract may interfere with that on another, the Owner shall determine the sequence and order of the Work. When the territory of one contract is the necessary or convenient means of access for the execution of another contract, such privilege of access or any other reasonable privilege may be granted by the Owner to the Contractor so desiring, to the extent and amount, and in the manner and at the times permitted. No such decision as to the method or time of conducting the Work or the use of territory shall be made the basis of any claim for delay or damage.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 TEMPORARY CONNECTIONS

- A. The Work shall be carried out in a manner to prevent disruption of existing services and to avoid damage to the existing utilities. Temporary connections shall be provided, as required, to insure no interruption of existing services. Any damage resulting from the Work of this Contract shall be promptly repaired by the Contractor at his own expense in a manner approved by the Engineer and further subject to the requirements of any authority having jurisdiction. Where it is required by the authority having jurisdiction that they perform their own repairs or have them done by others, the Contractor shall be responsible for all costs thereof.

3.02 UTILITY SUPPORT

- A. Where excavations by the Contractor require any utility lines or appurtenant structures to be temporarily supported and otherwise protected during the construction Work, such support and protection shall be provided by the Contractor. All such Work shall be performed in a manner satisfactory to the respective authority having jurisdiction over such Work.

3.03 UTILITY CROSSINGS

- A. It is intended that wherever existing utilities such as water, chemical, electrical, or other service lines must be crossed, deflection of the pipe within limits recommended by the pipe manufacturer and the required minimum cover shall be used to satisfactorily clear the obstruction unless otherwise indicated on the Drawings. However, when, in the opinion of the Owner or Engineer, this procedure is not feasible, then the Engineer may direct the use of fittings for a utility crossing as detailed on the Drawings. All existing utilities shall be potholed prior to construction of conflicting piping.

3.04 ADVANCE INVESTIGATIONS

- A. The Contractor shall be responsible for uncovering and exposing existing utilities sufficiently in advance of pipe laying operations to confirm elevation, size, material, and clearance separation(s). If, upon excavation, an existing utility is found to be in conflict with the proposed construction or be of a size or material different from what is shown on the plans, the Contractor shall immediately notify the Engineer, who will in turn prepare a recommendation. Failure of the Contractor to perform the advance investigation shall not relieve it of any claims for delay or damages.

3.05 UNFORESEEN UTILITIES

- A. The attention of the Contractor is drawn to the fact that during excavation, the possibility exists of encountering water, sewer, petroleum, gas, telephone, electrical, or other utilities not shown on the Drawings. The Contractor is responsible for obtaining utility locations from the utility owners or utility locating company. The Contractor shall exercise extreme care before and during digging to locate and flag these lines so as to avoid damage to the existing lines. Should damage occur to an existing line, the Contractor shall repair the line at the no cost to the Owner.

3.06 CONNECTIONS TO EXISTING SYSTEMS

- A. The Contractor shall perform all Work necessary to locate, excavate, and prepare for connections to the terminus of the existing mains all as shown on the Drawings or where directed by the Owner. The cost of this Work and the cost for the actual connection to the existing mains shall be included in the bid price and shall not result in any additional cost to the Owner.

3.07 MAINTENANCE OF EXISTING STORM WATER FACILITIES OPERATION

- A. The Contractor shall fully cooperate at all times with the Owner in order to maintain the operation of the existing facilities with the least amount of interference and interruption possible. Continuous service, public health, and safety considerations shall exceed all others and the Contractor's schedule, plans, and Work shall at all times be subject to alteration and revision, if necessary, for the above considerations.
- B. The Engineer and Owner reserve the right to require the Contractor to Work 24 hours per day in all cases where, in their opinion, interference with operation of the system may result.
- C. In no case will the Contractor be permitted to interfere with the existing system until all materials, supplies, equipment, tools, and incidentals necessary to complete the interfering portion of the Work are on the site, or a temporary by-pass system is effectively in place. All existing utilities shall be pothole located prior to construction of conflicting piping.
- D. The Contractor shall provide emergency storm drainage pumping if the existing stormwater management system is taken out of service.

3.08 RESTORATION OF PAVEMENT

- A. General: All paved areas including concrete, asphaltic concrete, berms cut or damaged during construction shall be replaced with similar materials and of equal thickness to match the existing adjacent undisturbed areas, except where specific resurfacing requirements have been called for in the Contract Documents. All pavements which are subject to partial removal shall be neatly saw-cut in straight lines.
- B. Temporary Resurfacing: Wherever required by the public authorities having jurisdiction, the Contractor shall place temporary surfacing promptly after backfilling and shall maintain such surfacing for the period of time fixed by said authorities before proceeding with the final restoration of improvements.
- C. Permanent Resurfacing: In order to obtain a satisfactory junction with adjacent surfaces, the Contractor shall saw-cut back and trim the edge so as to provide a

clean, sound, vertical joint before permanent replacement of an excavated or damaged portion of pavement. Damaged edges of pavement along excavations and elsewhere shall be trimmed back by saw cutting in straight lines. All pavement restoration and other facilities restoration shall be constructed to finish grades compatible with adjacent undisturbed pavement.

END OF SECTION

SECTION 01531

PROTECTION OF EXISTING PROPERTY

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The Contractor shall be responsible for the preservation and protection of property adjacent to the Work site against damage or injury as a result of his operations under this project. Any damage or injury occurring on account of any act, omission or neglect on the part of the Contractor shall be restored in a proper and satisfactory manner or replaced by and at the expense of the Contractor to an equal or superior condition than previously existed.
- B. In the event of any claims for damage or alleged damage to property as a result of Work, the Contractor shall be responsible for all costs in connection with the settlement of or defense against such claims. Prior to commencement of Work in the vicinity of property adjacent to the Work site, the Contractor, at his own expense, shall take such surveys as may be necessary to establish the existing condition of the property. Before final payment can be made, the Contractor shall furnish satisfactory evidence that all claims for damage have been legally settled or sufficient funds to cover such claims have been placed in escrow, or that an adequate bond to cover such claims has been obtained.

1.01 RELATED SECTIONS

- A. Section 01015 – General Requirements
- B. Section 01570 – Traffic Regulation

1.02 PRESERVATION AND RESTORATION

- A. Contractor shall be responsible for the preservation and protection of property adjacent to the Work site against damage or injury as a result of his operations under this project. Any damage or injury occurring on account of any act, omission or neglect on the part of the Contractor shall be restored in a proper and satisfactory manner or replaced by and at the expense of the Contractor to an equal or superior condition than previously existed.

1.03 ADJACENT PROPERTY OWNER NOTIFICATION

- A. The Contractor shall prepare a written notice to property owners adjacent to the project Work site notifying them of the schedule of Work affecting them and anticipated inconveniences they may expect. The notice shall meet the approval of the Engineer and be delivered to property owners at least 72 hours prior to construction adjacent to their property. This notice shall indicate the Work to be performed, the time it will take to perform the Work, and the time when the water service to the property owner will be disrupted.

1.04 PROTECTION OF STREET OR ROADWAY MARKERS

- A. The Contractor shall not destroy, remove, or otherwise disturb any existing survey markers or other existing street or roadway markers without proper authorization. No pavement breaking or excavation shall be started until all survey or other

permanent marker points that will be disturbed by the construction operations have been properly referenced for easy and accurate restoration. It shall be the Contractor's responsibility to notify the proper representatives of the Owner of the time and location that Work will be done. Such notification shall be sufficiently in advance of construction so that there will be no delay due to waiting for survey points to be satisfactorily referenced for restoration. All survey markers or points disturbed by the Contractor without proper authorization by the Engineer will be accurately restored by the Owner at the Contractor's expense after all street or roadway resurfacing has been completed.

1.05 BARRICADES, WARNING SIGNS AND LIGHTS

- A. In addition to the requirements of Section 01570 – Traffic Regulation, the Contractor shall provide, erect, and maintain as necessary, strong and suitable barricades, danger signs, and warning lights for the preservation and protection of property adjacent to the Work site. All barricades and obstructions along public roads shall be illuminated at night and all lights for this purpose shall be kept burning from sunset to sunrise.

1.06 TREES AND LANDSCAPING PROTECTION

- A. General: The Contractor shall exercise all necessary precautions so as not to damage or destroy any trees or landscaping in or near the project site and shall not trim or remove any trees or landscaping unless such trees or landscaping have been approved for trimming or removal by the jurisdictional agency or owner. All existing trees or landscaping which are damaged during construction shall be replaced by the Contractor or a certified tree/landscaping company to the satisfaction of the owner.
- B. Replacement: The Contractor shall immediately notify the jurisdictional agency or owner if any tree or landscaping is damaged by the Contractor's operations. If, in the opinion of the jurisdictional agency or owner, the damage is such that replacement is necessary, the Contractor shall replace the tree or landscaping at its own expense. The tree or landscaping shall be of a like size and variety as the tree or landscaping damaged, or, if of a smaller size, the Contractor shall pay any compensatory payment.
- C. All permit fees associated with the removal and replacement of trees and landscaping damaged or destroyed shall be the responsibility of the Contractor.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01540

SECURITY

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This Section provides for requirements of security, entry control, personnel identification, and miscellaneous restrictions.

1.02 RELATED SECTIONS

- A. Section 01010 - Summary of Work

1.03 SECURITY PROGRAM

- A. Protect Work, existing premises and Owner's operations from theft, vandalism, and unauthorized entry.
- B. Initiate program in coordination with Owner's existing security system at job mobilization.
- C. Maintain program throughout construction period until Owner occupancy as directed by Engineer.

1.04 ENTRY CONTROL

- A. Restrict entrance of persons and vehicles into project site and existing facilities.
- B. Allow entrance only to authorized persons with proper identification.
- C. Maintain log of workers and visitors, make available to Owner on request.
- D. Coordinate access of Owner's personnel to site in coordination with Owner's security forces.

1.05 PERSONNEL IDENTIFICATION

- A. All personnel shall wear clothing bearing the company information of which they are employed.
- B. Provide additional security as required by the Owner.
- C. Become familiar with Owner and Engineer representatives and restrict access to job site to these representatives.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

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SECTION 01550

SITE ACCESS AND STORAGE

PART 1 - GENERAL

1.01 GENERAL

- A. This section provides general specifications for the contractors' mobilization, demobilization, access to the site and limitations on storage or lay-down area.

1.02 RELATED SECTIONS

- A. Section 01015 – General Requirements
- B. Section 01505 – Control of Work

1.03 REFERENCES

- A. FDOT Standard Specifications for Road and Bridge Construction
- B. FDOT Design Standards
- C. Standards and Specifications of the local municipality
- D. The requirements of the Owner

1.04 HIGHWAY LIMITATIONS

- A. The Contractor shall make their own investigation of the condition of available public and private roads and of clearances, restrictions, bridge load limits, and other limitations affecting transportation and ingress and egress to the site of the Work.

1.05 CONTRACTOR'S WORK AND STORAGE AREA

- A. Contractor's Work and storage area plan shall be submitted for Owners approval no later than 30 days after NTP.
 - 1. Owner approval of the Work area and storage plan is required prior to commencement.
 - 2. The limits of the Contractor's staging area and other applicable restrictions shall be subject to the local municipality.
- B. The Contractor shall make their own arrangements and pay for any necessary off-site storage or shop areas necessary for the proper execution of the Work.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 GENERAL

- A. The Contractor shall set up construction facilities in a neat and orderly manner within designated areas and shall confine operations to Work and storage areas.

3.02 RESTORATION

- A. All areas disturbed by the construction activities shall be restored to proper grade, cleaned up, including the removal of debris, trash, and deleterious materials.

- B. Temporary restoration shall include all driveways, sidewalks, and roadways. They shall be swept clean and be maintained free of dirt and dust.
- C. All construction materials, supplies, or equipment, including piles of debris shall be removed from the area.
- D. All temporarily restored areas shall be maintained by the Contractor. These areas shall be kept clean and neat, free of dust and dirt, until final restoration operations are completed.
- E. Temporary restoration shall be completed within five days of pipe installation or as specified.
- F. The Contractor is responsible to utilize dust abatement operations in the temporarily restored areas as required, to the satisfaction of the Engineer.
- G. Final restoration shall be completed within 30 days of pipe acceptance. Final restoration shall include the completion of all required pavement replacement of roadways, driveways, curbs, gutters, sidewalks and other existing improvements disturbed by the construction; final grading, placement of sod, pavement marking, etc., all complete and finished, acceptable to the Engineer.
- H. In order to obtain a satisfactory junction with adjacent surfaces, the Contractor shall saw cut back and trim the edge so as to provide a clean, sound, vertical joint before permanent replacement of an excavated or damaged portion of pavement. Damaged edges of pavement along excavations and elsewhere shall be trimmed back by saw cutting in straight lines. All pavement restoration and other facilities restoration shall be constructed to finish grades compatible with the adjacent undisturbed pavement.

3.03 DEMOBILIZATION

- A. At the completion of Work the Contractor shall remove its personnel, equipment, and temporary facilities from the site in a timely manner. The Contractor shall also be responsible for transporting all unused materials belonging to the Owner to a place of storage on site designated by the Owner and for removing from the site and disposing of all other materials and debris resulting from the construction. It shall then return all areas used for its activities to a condition as recorded in the pre-construction video or better.

END OF SECTION

SECTION 01570

TRAFFIC REGULATION

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The Work to be performed under this section shall include furnishing all materials and labor necessary to regulate vehicular and pedestrian traffic.
- B. Provide, operate, and maintain equipment, services, and personnel, with traffic control and protective devices, as required to expedite vehicular traffic flow around the construction area.
- C. Remove temporary equipment and facilities when no longer required, restore grounds to original, or to specified conditions.

1.02 RELATED SECTIONS

- A. Section 01015 – General Requirements
- B. Section 01505 – Control of Work

1.03 REFERENCES

- A. The Work under this Contract shall be in strict accordance with the following codes and standards.
 - 1. The applicable municipality
 - 2. Miami-Dade County Traffic Engineering Division
 - 3. Florida Department of Transportation Design Standards and Specifications
 - 4. OSHA Safety and Health Standards for Construction.
 - 5. Federal Highway Administration Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD)
 - 6. Federal Highway Administration Traffic Controls for Street and Highway Construction and Maintenance Operations

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 MAINTENANCE OF TRAFFIC

- A. For the maintenance and protection of vehicular and pedestrian traffic in public or private streets and ways, the Contractor shall provide, place, and maintain all necessary barricades, traffic cones, warning signs, lights and other safety devices in accordance with the requirements of the "Manual on Uniform Traffic Control Devices, Part VI - Traffic Controls for Street and Highway Construction and Maintenance Operations," published by U.S. Department of Transportation, Federal Highway Administration (ANSI D6.1).
- B. The Contractor shall provide a Maintenance of Traffic Plan, sealed by a Professional Engineer registered in the State of Florida holding a current FDOT MOT certificate.

The plan, and subsequent revisions, must be approved by Miami-Dade County and/or the Florida Department of Transportation and the local municipality.

- C. The Contractor shall take all necessary precautions for the protection of the Work and the safety of the public. All barricades and obstructions shall be illuminated at night, and all lights shall be kept burning from sunset until sunrise. The Contractor shall station such guards or flaggers and shall conform to such special safety regulations relating to traffic control as may be required by the public authorities within their respective jurisdictions. All signs, signals, and barricades shall conform to the requirements of OSHA and Subpart G, Part 1926, of the OSHA Safety and Health Standards for Construction.
- D. The Contractor shall remove traffic control devices when no longer needed, shall repair all damage caused by installation of the devices, and shall remove post settings and backfill the resulting holes to match grade.

3.02 CORRECTIONS

- A. Upon notification by the owner either verbally or in writing, the Contractor shall correct any noted deficiencies within one hour.
- B. Inspection of all traffic control items shall be accomplished at least twice per day. One of these inspections shall be at the end of the work day or at night.

3.03 TRAFFIC AND VEHICULAR ACCESS:

- A. Emergency Vehicles: No single-family residence, multi-family residence, apartment, commercial building, or place of employment shall be without access to emergency vehicles for a period longer than three hours. The Contractor shall notify in writing the Engineer, the police, fire and other emergency departments and agencies when and where Work is to be accomplished that will affect their operations at least two days in advance of such Work.
- B. Commercial Properties: Access to commercial property shall not be blocked for a period of more than 30 minutes during the time such properties are open for business.
- C. Residential Property: Access to residential property shall not be blocked for a period of more than 4 hours.

3.04 ROAD CLOSURE

- A. No roads shall be blocked to traffic without adequate detour facilities for a period of more than 30 minutes or as directed by the governing authority.
- B. At least seven days prior to a proposed road closure, the contractor shall submit to the Owner a complete traffic control plan. This plan shall include the following minimum information:
 - 1. Sketch of Work site and all area roads, streets, and mark driveways.
 - 2. Proposed detour route.
 - 3. All necessary traffic control devices to be used.
 - 4. Emergency contractor contact person name and phone to be available 24 hours a day.
 - 5. Estimated times/dates of road closure.

3.05 CONSTRUCTION IN OTHER THAN STATE HIGHWAY RIGHT-OF-WAY:

- A. Construction within right-of-way other than State highway shall be made in full compliance with all requirements of the Florida Department of Transportation and to the satisfaction of the local governing bodies. All necessary barricades, detours, lights and other protective measures shall be provided for the protection of both pedestrian and vehicular traffic.
- B. The Contractor shall provide and maintain such other warning signs and barricades in areas of and around their respective Work as may be required for the safety of all those employed in the Work or those visiting the site.

3.06 FLAGMEN

- A. Provide qualified and suitably equipped flaggers when construction operations encroach on traffic lanes, as required for regulation of traffic.

3.07 FLARES AND LIGHTS

- A. Provide lights as required to clearly delineate traffic lanes and to guide traffic as required.
- B. Provide lights for use by flaggers in directing traffic.
- C. Provide illumination of critical traffic and parking areas as required.

3.08 CONSTRUCTION PARKING CONTROL

- A. Control vehicular parking to preclude interference with public traffic or parking, access by emergency vehicles, Owner's operations, or construction operations.
- B. Monitor parking of construction personnel's private vehicles.
- C. Maintain free vehicular access to and through parking areas and driveways.
- D. Prohibit parking on or adjacent to access roads, or in non-designated areas.

END OF SECTION

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SECTION 01580

PROJECT IDENTIFICATION SIGNS

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Furnish, install, and maintain one project identification sign.
- B. Remove sign upon completion of construction.
- C. Allow no other signs to be displayed without approval of Owner.

1.02 PROJECT IDENTIFICATION SIGN

- A. One painted or printed sign of size, design, and lettering as shown on sample provided by Owner.
 - 1. Locate as directed by Owner.
 - 2. Colors as indicated.

1.03 QUALITY ASSURANCE

- A. Provide one electronic proof for Owner approval prior to release for printing or painting.

PART 2 - PRODUCTS

2.01 SIGN MATERIALS

- A. Structure and framing shall be pressure treated (2) 4"x4"x10' posts.
- B. Foundation shall be two eighty pound bags of concrete per post.
- C. Sign Surfaces shall be exterior grade plywood 8 feet wide by 4 feet high with a minimum thickness of 5/8 inch.
- D. Rough Hardware: Galvanized
- E. Finishes and painting shall be adequate to resist weathering and fading for scheduled construction period.

PART 3 - EXECUTION

3.01 PROJECT IDENTIFICATION SIGN

- A. Paint exposed surfaces of supports, framing and surface material; one coat of primer and one coat of exterior paint.
- B. Paint graphics in styles, sizes, and colors selected.
- C. Lettering shall be as noted.
- D. Logo shall be shown as directed by Owner.
- E. Background shall be white.

3.02 SIGN LOCATION

- A. Sign shall be located within the right of way or in an area approved by the Owner.

3.03 MAINTENANCE

- A. Maintain sign and supports in a neat, clean condition; repair damages to structure, framing or sign.
- B. Relocate sign as required by progress of the Work.

3.04 REMOVAL

- A. Remove sign, framing, supports, and foundations at completion of project or at direction of the Engineer.

END OF SECTION

SECTION 01600

MATERIAL AND EQUIPMENT

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Material and equipment incorporated into the Work.
 - 1. Conform to applicable specifications and standards.
 - 2. Comply with size, make, and type and qualify specified, or as specifically approved in writing by the Engineer.
 - 3. Manufactured and Fabricated Products.
 - a. Design, fabricate, and assemble in accord with the best Engineering and shop practices.
 - b. Manufacture like part of duplicate units to standard sizes and gauges, to be interchangeable.
 - c. Two or more items of the same kind shall be identical, by the same manufacturer.
 - d. Products shall be suitable for service conditions.
 - e. Equipment capacities, sizes, and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.
 - 4. Do not use material or equipment for any purpose other than that for which it is designed or is specified.

1.02 RELATED SECTIONS

- A. Section 01340 – Shop Drawings, Working Drawings, and Samples
- B. Section 01630 – Substitutions
- C. Section 01730 – Operating and Maintenance Data
- D. Section 01740 – Warranties and Bonds

1.03 APPROVAL OF MATERIALS

- A. Only new materials and equipment shall be incorporated in the Work. All materials and equipment furnished by the Contractor shall be subject to the inspection and approval of the Engineer. No material shall be delivered to the Work without prior approval of the Engineer.
- B. Within 30 days after the effective date of the Agreement, the Contractor shall submit to the Engineer, data relating to materials and equipment he proposes to furnish for the Work. Such data shall be in sufficient detail to enable the Engineer to identify the particular product and to form an opinion as to its conformity to the specifications.
- C. Facilities and labor for handling and inspection of all materials and equipment shall be furnished by the Contractor. If the Engineer requires, either prior to beginning or during progress of the Work, the Contractor shall submit samples of materials for

such special tests as may be necessary to demonstrate that they conform to the specifications. Such samples shall be furnished, stored, packed, and shipped as directed at the Contractor's expense. Except as otherwise noted, the Owner will make arrangements for and pay for the tests.

- D. The Contractor shall submit data and samples sufficiently early to permit Work. Any delay of approval resulting from the Contractor's failure to submit samples or data promptly shall not be used as a basis of claim against the Owner or the Engineer.
- E. In order to demonstrate the proficiency of workers or to facilitate the choice among several textures, types, finishes, and surfaces, the Contractor shall provide such samples of workmanship or finish as may be required.
- F. The materials and equipment used on the Work shall correspond to the approved samples or other data.

1.04 MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION

- A. When Contract Documents require that installation of Work shall comply with manufacturer's printed instruction, obtain, and distribute copies of such instructions to parties involved in the installation, including copies to the Engineer.
 - 1. Maintain one set of complete instructions at the job site during installation and until completion.
- B. Handle, install, connect, clean, condition, and adjust products in strict accord with such instructions and in conformity with specified requirements.
 - 1. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with Engineer for further instructions.
 - 2. Do not proceed with Work without clear instructions.
- C. Perform Work in accord with manufacturer's instructions. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by Contract Documents.

1.05 TRANSPORTATION AND HANDLING

- A. Arrange deliveries of Products in accord with construction schedules; coordinate to avoid conflict with Work and conditions at the site.
 - 1. Deliver Products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.
 - 2. Immediately upon delivery, inspect shipments to assure compliance with requirements of Contract Documents and approved submittals, and that Products are properly protected and undamaged.
- B. Provide equipment and personnel to handle Products by methods to prevent soiling or damage to Products or packaging.

1.06 STORAGE AND PROTECTION

- A. The Contractor shall furnish a covered, weather-protected storage structure, providing a clean, dry, noncorrosive environment for all mechanical equipment, valves, electrical and instrumentation equipment, and special equipment to be incorporated into this project. Storage of equipment shall be performed to allow

easy access and be in strict accordance with the "instructions for storage" of each equipment supplier and manufacturer including weather/humidity protection, connection of heaters, placing of storage lubricants in equipment, blocking, or skid storage, etc. Corroded, damaged, or deteriorated equipment and parts shall be replaced before acceptance of the project.

- B. Store Products in accord with manufacturer's instructions, with seals and labels intact and legible.
 - 1. Store products subject to damage by the elements in weather-tight enclosures.
 - 2. Maintain temperature and humidity within the ranges required by manufacturer's instructions.
 - 3. Store fabricated products above the ground, on blocking or skids, to prevent soiling or staining. Cover products which are subject to deterioration with impervious sheet coverings. Provide adequate ventilation to avoid condensation.
 - 4. Store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter.
- C. All materials and equipment to be incorporated in the Work shall be handled and stored by the Contractor before, during, and after shipment in a manner to prevent warping, twisting, bending, breaking, chipping, rusting, and any injury, theft or damage of any kind whatsoever to the material or equipment.
- D. Cement, sand, and lime shall be stored under a roof, off the ground, and shall be kept completely dry at all times. All structural and miscellaneous steel and reinforcing steel shall be stored off the ground, or otherwise, to prevent accumulations of dirt or grease, and to minimize rusting. Brick, block, and similar masonry products shall be handled and stored in a manner to reduce breakage, chipping, cracking, and spalling to a minimum.
- E. Moving parts shall be rotated a minimum of once weekly to insure proper lubrications, and to avoid metal-to-metal "welding". Upon installation of the equipment, the Contractor shall start the equipment, at least half-load, once weekly, for an adequate period of time to ensure that the equipment does not deteriorate from lack of use. All materials which, in the opinion of the Engineer, have become so damaged as to be unfit for the use intended or specified, shall be promptly removed from the site of the Work, and the Contractor shall receive no compensation for the damaged material or its removal.
- F. Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored Products to assure that Products are maintained under specific conditions, and free from damage or deterioration.
- G. Contractor shall be responsible for protection after installation by providing substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations.
- H. The Contractor shall be responsible for all materials, equipment, and supplies sold and delivered to the Owner under this Contract, until final inspection of the Work and acceptance thereof by the Owner. In the event any such material, equipment, and supplies are lost, stolen, damaged, or destroyed prior to final inspection and acceptance, the Contractor shall replace same without additional cost to the Owner.

- I. Should the Contractor fail to take proper action on storage and handling of equipment supplied under this Contract within seven days after written notice to do so has been given, the Owner retains the right to correct all deficiencies noted in previously transmitted written notice and deduct the cost associated with these corrections from the Contractor's Contract. These costs may be comprised of expenditures for labor, equipment usage, administrative, clerical, Engineering, and any other costs associated with making the necessary corrections.

1.07 SPECIAL TOOLS

- A. Manufacturers of equipment and machinery shall furnish any special tools (including grease guns or other lubricating devices) required for normal adjustment, operations and maintenance, together with instructions for their use. The Contractor shall preserve and deliver to the Owner these tools and instructions in good order no later than upon completion of the Contract.

1.08 STORAGE AND HANDLING OF EQUIPMENT ON SITE

- A. Because of the long period allowed for construction, special attention shall be given to the storage and handling of equipment on site. As a minimum, the procedure outlined below shall be followed.
 1. Equipment shall not be shipped until approved by the Engineer. The intent of this requirement is to reduce on-site storage time prior to installation and/or operation. Under no circumstances shall equipment be delivered to the site more than one month prior to installation without written authorization from the Engineer, unless upon arrival it is to be stored as specified in Paragraph 1.06. Operation and maintenance data, as described in Section 01730, shall be submitted to the Engineer for review prior to shipment of equipment.
 2. All equipment having moving parts, such as gears, electric motors, etc. and/or instruments, shall be stored in a temperature and humidity-controlled building approved by the Engineer, until such time as the equipment is to be installed.
 3. All equipment shall be stored fully lubricated with oil, grease, etc. unless otherwise instructed by the manufacturer.
 4. Manufacturer's storage instructions shall be carefully studied by the Contractor and reviewed with the Engineer by them. These instructions shall be carefully followed and a written record of this kept by the Contractor.
 5. Moving parts shall be rotated a minimum of once weekly to insure proper lubrication, and to avoid metal-to-metal "welding". Upon installation of the equipment, the Contractor shall start the equipment, at least half-load, once weekly for an adequate period of time to ensure that the equipment does not deteriorate from lack of use.
 6. Lubricants shall be changed upon completion of installation and as frequently as required thereafter during the period between installation and acceptance. Mechanical equipment to be used in the Work, if stored for longer than ninety (90) days, shall have the bearings cleaned, flushed, and lubricated prior to testing and start up, at no extra cost to the Owner.

7. Prior to acceptance of the equipment, the Contractor shall have the manufacturer inspect the equipment and certify that its condition has not been detrimentally affected by the long storage period. Such certifications by the manufacturer shall be deemed to mean that the equipment is judged by the manufacturer to be in a condition equal to that of equipment that has been shipped, installed, tested, and accepted in a minimum time period. As such, the manufacturer will guarantee the equipment equally in both instances. If such a certification is not given, the equipment shall be judged to be defective. It shall be removed and replaced at the Contractor's expense.

1.09 WARRANTY

- A. For all major pieces of equipment, submit a warranty from the equipment manufacturer as specified in Section 01740.

1.10 SPARE PARTS

- A. Spare parts for certain equipment have been specified in the pertinent sections of the Specifications. The Contractor shall collect and store all spare parts so required in an area to be designated by the Engineer. In addition, the Contractor shall furnish to the Engineer an inventory listing all spare parts, the equipment they are associated with, the name and address of the supplier, and the delivered cost of each item. Copies of actual invoices for each item shall be furnished with the inventory to substantiate the delivered cost.

1.11 LUBRICANTS

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

1.12 GREASE, OIL AND FUEL

- A. All grease, oil, and fuel required for testing of equipment shall be furnished with the respective equipment. The Owner shall be furnished with a year's supply of required lubricants including grease and oil of the type recommended by the manufacturer with each item of the equipment supplied.
- B. The Contractor shall be responsible for changing the oil in all drives and intermediate drives of each mechanical equipment after initial break-in of the equipment, which in no event shall be any longer than three weeks of operation.

1.13 PROTECTION AGAINST ELECTROLYSIS

- A. 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 acceptable materials.

1.14 FASTENERS

- A. All necessary bolts, anchor bolts, nuts, washers, plates and bolt sleeves shall be furnished by the Contractor. Bolts shall have suitable washers and, where so required, their nuts shall be hexagonal.
- B. All bolts, anchor bolts, nuts, washers, plates, and bolt sleeves shall be Type 316

stainless steel unless otherwise specifically indicated or specified.

- C. Fasteners of dis-similar metals shall be provided with nylon spacer washers.
- D. Unless otherwise specified, stud, tap, and machine bolts shall be of the best quality refined bar iron. Hexagonal nuts of the same quality of metal as the bolts shall be used.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 EQUIPMENT, TESTING, AND INSPECTION

- A. Regardless of the number of days specified in the individual sections for the manufacturer's representative to be present on the site for inspection and testing, if the equipment fails to perform as specified, then the representative shall remain on site until the malfunction is corrected.
- B. The cost for the additional days shall not be added to the cost for the Owner but shall be to the account of the Contractor.

END OF SECTION

SECTION 01610

MANUFACTURERS FIELD SERVICES

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Provide field services by manufacturer-trained personnel for the duration as specified in the individual equipment sections.
- B. Person-Day: One person for 8 hours within regular Contractor working hours.

1.01 RELATED SECTIONS

- A. Section 01730 – Operating and Maintenance Data
- B. Section 01740 – Warranties and Bonds

1.02 SUBMITTALS

- A. Training Schedule:
 - 1. Where specified, submit a training schedule not less than 21 days prior to start of equipment installation and revise as necessary for acceptance.
 - 2. Training Materials:
 - a. Submit written outlines of proposed training sessions not less than 21 days prior to scheduled training.
 - b. Provide complete training materials, to include operation and maintenance data as required in this section to be retained by each trainee.
- B. Quality Control Submittals:
 - 1. Manufacturer's Certificate of Proper Installation:
 - a. When specified in the individual specifications, submit certificate certifying:
 - 1) The product or system has been installed in accordance with the manufacturer's recommendations, inspected by manufacturer's authorized representative, and serviced with the proper lubricants.
 - 2) Necessary safety equipment has been properly installed.
 - 3) Electrical and mechanical connections have been made meeting quality and safety standards as required.
 - 4) Free from undue stress imposed by exterior connections or loads.
 - 5) Proper adjustments have been made and the product or system is ready for testing, facilities startup and operation.
 - b. Submit on form appended to this section.
 - 2. Certificate of Successful Testing and Startup: Prepare and submit where specified in individual Specification sections, and upon completion of

successful testing and startup of respective equipment system, subsystem, or component.

3. Certificate of qualification of manufacturer's representative.

1.03 QUALIFICATIONS OF MANUFACTURER'S REPRESENTATIVE

- A. Authorized representative of the manufacturer, factory trained and experienced in technical applications, installation, operation and maintenance of respective equipment, subsystem, or system. Representative subject to acceptance by Owner and Engineer. No substitute representatives will be allowed unless prior written approval by the Engineer has been given.

1.04 FULFILLMENT OF SPECIFIED MINIMUM SERVICES

- A. Where manufacturers' services are specified, furnish manufacturer's representative qualified to provide these services. Where time is necessary in excess of that stated in the Specifications for manufacturers' services, additional time required to perform the specified services shall be considered incidental Work.
- B. Schedule manufacturer's field services to avoid conflicting with other field testing or other manufacturer's field services.
 1. Determine that all conditions necessary to allow successful testing have been met before scheduling field services.
- C. Only those days of service approved by the Engineer will be credited to fulfill the specified minimum services.
- D. If specified, manufacturer's services shall include as a minimum:
 1. Inspection, checking, and adjustment as required for equipment to function as warranted by manufacturer and necessary to provide written approval of installation.
 2. Revisiting the site as required to correct problems and until installation and operation are acceptable to the Engineer.
 3. Resolution of assembly or installation problems attributable to or associated with, respective manufacturer's products and systems.
 4. Assistance during functional and performance testing and startup demonstration, and until product acceptance by the Owner.
 5. Training of the Owner's personnel in the operation and maintenance of respective product as required herein.
 6. Completion of Manufacturer's Certificate of Proper Installation with applicable certificates for proper installation and initial, interim, and final test or service.

1.05 TRAINING SCHEDULE

- A. List specified equipment and systems with respective manufacturers that require training services of manufacturers' representatives and show:
 1. Estimated dates for installation completion.
 2. Estimated training dates to allow for multiple sessions when several shifts are involved.

- B. Adjust training schedule to ensure training of appropriate personnel as deemed necessary by the Owner, and to allow full participation by manufacturers' representatives. Adjust schedule for interruptions in operability of equipment.

1.06 TRAINING OWNER'S PERSONNEL

- A. Provide trained, articulate personnel to coordinate and expedite training, to be present during training coordination meetings with the Owner, and familiar with operation and maintenance manual information specified in Section 01730 - Operation and Maintenance Data.
- B. Furnish manufacturers' representatives to provide detailed training to the Owner's personnel on operation and maintenance of specified product (system, subsystem, and component) and as may be required in applicable Specifications.
 - 1. Training services include pre-startup classroom instruction, post-startup classroom instruction, and onsite hands-on instruction.
 - 2. Manufacturer's Representative: Familiar with facility operation and maintenance requirements as well as with specified equipment.
- C. Pre-startup Training:
 - 1. Coordinate training sessions with the Owner's operating personnel and manufacturers' representatives, and with submission of operation and maintenance manuals in accordance with Section 01730 - Operating and Maintenance Data.
 - 2. Complete at least 14 days prior to actual startup.
- D. Post-Startup Training: If required in Specifications, furnish and coordinate training of the Owner's operating personnel by respective manufacturer's representatives.
- E. Taping of Training Sessions: Provide audio and color video taping of pre-startup and post-startup instruction sessions, including manufacturers' representatives' hands-on equipment instruction.
 - 1. Suitable for playback on standard equipment available commercially in the United States.
 - 2. Video Training Tapes: Produced by a qualified, professional video production company.
 - 3. Furnish the Owner with two complete sets of tapes fully indexed and cataloged with printed labels stating sessions and dates taped.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 EQUIPMENT, TESTING & INSPECTION

- A. Regardless of the number of days specified in the individual sections for the manufacturer's representative to be present on the site for inspection and testing, if the equipment fails to perform as specified, then the representative shall remain on site until the malfunction is corrected.
- B. The cost for the additional days shall not be added to the cost for the Owner but shall be to the account of the Contractor.

END OF SECTION

SECTION 01630

SUBSTITUTIONS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Furnish and install products specified and named in their respective Specifications or on the Drawings unless substitution is allowed.
- B. For products specified only by reference standard, select product meeting that standard, by any manufacturer.
- C. For products specified by naming several products or manufacturers, select any one of those products and manufacturers names which complies with their respective Specifications.
- D. For products specified by naming only one or more products or manufacturers and stating, "or equal", submit a request as for substitutions, for any product or manufacturer which is not specifically named.
- E. Requests for any substitutions not submitted in accordance with the instructions herein will be denied.

1.02 RELATED SECTIONS

- A. Section 01340 – Shop Drawings, Working Drawings, and Samples

1.03 PRODUCTS LIST

- A. Within 30 days after execution of the Contract, submit to Engineer five copies of complete list of major Products which are proposed for installation.
- B. Product selection is governed by the Contract Documents and governing regulations, not by previous project experience.
 - 1. Where a single or multiple products or manufacturers are named, provide one of the products indicated or submit a request for substitution for any product or manufacturer not named unless no substitutions are permitted
 - 2. Where the Specifications only require compliance with performance requirements, an imposed code, standard or regulation, select a product that complies with the requirements, standards, codes or regulations specified.
 - 3. Manufacturers named in a Specification section are those manufacturers considered capable of manufacturing products conforming to the specified requirements. The naming of a particular manufacturer does not imply acceptance or approval of just any standard product of that manufacturer.
- C. Tabulate Products by specification section number and title.
- D. For products specified only by reference standards, list for each such Product:
 - 1. Name and address of manufacturer.
 - 2. Trade Name.
 - 3. Model or catalog designation.

4. Manufacturer's data:
 - a. Reference standards.
 - b. Performance test data.

1.04 SUBSTITUTION SUBMITTAL REQUIREMENTS

- A. For convenience in designation in the Contract Documents, materials to be incorporated in the Work may be designated under a trade name or the name of a manufacturer and its catalog information. The use of alternative material which is equal in quality and of the required characteristics for the purpose intended will be permitted, subject to the following requirements:
 1. The burden of proof as to the quality and suitability of such alternative equipment, products, or other materials shall be upon the Contractor.
 2. The Engineer will be the sole judge as to the comparative quality and suitability of such alternative equipment, products, or other materials and its decisions shall be final.
 3. Base Bid requirements outlined in the Bid Form.
- B. The Contractor may offer any material, process, or equipment which it considers equivalent to that indicated. Unless otherwise authorized in writing by the Engineer, the substantiation of offers of equivalency must be submitted within 30 days after execution of the Contract. The Contractor, at its sole expense, shall furnish data concerning items it has offered as equivalent to those specified. The Contractor shall have the material as required by the Engineer to determine that the quality, strength, physical, chemical, or other characteristics, including durability, finish, efficiency, dimensions, service, and suitability are such that the items will fulfill its intended function. Installation and use of a substitute item shall not be made until accepted by the Engineer. If a substitute offered by the Contractor is found to be not equal to the specified material, the Contractor shall furnish and install the specified material.
- C. The Contractor's attention is further directed to the requirement that failure to submit data substantiating a request for the substitution of an "or equal" item within said 30-day period after the execution of the Contract, shall be deemed to mean that the Contractor intends to furnish one of the specific brand-named products named in the specification, and the Contractor does hereby waive all rights to offer or use substitute products in each such case. Wherever a proposed substitute product has not been submitted within said 30-day period, or wherever the submission of a proposed substitute product fails to meet the requirements of the specifications and an acceptable resubmittal is not received by the Engineer within said 30-day period, the Contractor shall furnish only one of the products originally-named in the Contract Documents.
- D. Within a period of 30 days after execution of the Contract, Engineer will consider formal requests from the Contractor for substitution of specified products. Substitution requests shall not be accepted during bidding nor prior to Contract execution.
- E. After the end of that period, the request will be considered only in case of product unavailability or other conditions beyond the control of the Contractor.

- F. Submit a separate request for each substitution. Support each request with:
1. Complete data substantiating compliance of the proposed substitution with requirements stated in the Contract Documents:
 - a. Product identification, including manufacturer's name and address.
 - b. Manufacturer's literature; identify:
 - 1) Product description.
 - 2) Reference standards.
 - 3) Performance and test data.
 - c. Samples, as applicable.
 - d. Name and address of similar projects on which product has been used, and the date of each installation.
 2. Itemized comparison of the proposed substitution with product specified; List significant variations.
 3. Comparison of the qualities of the proposed substitution with that specified.
 4. Changes required in other elements of the Work because of the substitution.
 5. Availability of maintenance service, and source of replacement materials.
 6. Data relating to changes in the construction schedule.
 7. Any effect of the substitution on separate contracts.
 8. List of changes required in other Work or products.
 9. Accurate cost data comparing proposed substitution with product specified.
 10. Designation of required license fees or royalties.
 11. Designation of availability of maintenance services, and sources of replacement materials.
 12. Cost data is complete and includes related costs under this Contract, but not:
 - a. Cost data comparing the proposed substitution with the product specified.
 - b. Any required license fees or royalties.
 - c. Engineer's costs of redesign or revision of Contract Documents.
 13. Substitute products shall not be ordered or installed without written acceptance of Engineer.
- G. Do not imply or indicate substitutions on shop drawings or product data submittals without a separate formal request.
- H. Only one request for substitution for each product will be considering. If not accepted, Contractor shall provide specified product.
- I. Substitutions or alternates that require re-design or analysis by the Engineer will not be evaluated without the written approval from the Owner that the Engineer will be paid by the Owner for the evaluation.
- J. Equipment, materials, products, and/or layouts submitted as a variance to the

Contract Documents shall include the reason for proposed change, post-bid credit offering, and documentation that it meets the required specifications. Failure to include any of these items may result in rejection.

- K. Circumstances necessitating a revision to the permitted documents may not be accepted and will not be reviewed unless accompanied by an approval by the Owner that the Engineer shall be paid for the necessary evaluation and changes to the documents.

1.05 SUBSTITUTIONS WILL NOT BE CONSIDERED FOR ACCEPTANCE WHEN:

- A. They are indicated or implied on Shop Drawings or product data submittals without a formal request from Contractor.
- B. The manufacture of the product substitution does not meet the Qualifications as stated in the specifications as determined by the Engineer.
- C. They are requested directly by a subcontractor or supplier.
- D. No data is provided relating to changes in construction schedule.
- E. There is any effect of substitution on separate contracts.
- F. Changes are required in other Work or products.
- G. There is no accurate cost data comparing proposed substitution with product specified.
- H. There are required license fees or royalties above and beyond the specified vendor.
- I. Availability of maintenance services, sources of replacement materials does not equal that provided by the specified vendor.
- J. Acceptance will require substantial revisions to the Contract Documents.

1.06 CONTRACTOR'S REPRESENTATION

- A. A request for a substitution constitutes a representative that Contractor:
 - 1. Has investigated proposed product and has determined that it is equal to or superior in all respects to that specified.
 - 2. Will provide the same warranties or bonds for substitution as for product specified.
 - 3. Will coordinate installation of accepted substitution into the Work and will make such changes as may be required for the Work to be complete in all respects.
 - 4. Waives claims for additional costs caused by substitution which may subsequently become apparent.

1.07 ENGINEER'S DUTIES

- 1. Review Contractor's requests for substitutions in accordance the Shop Drawing review requirements.
- 2. Notify Contractor, in writing, of decision to accept or reject requested substitution.
- 3. The Engineer shall be the judge of the acceptability of the proposed substitution.

1.08 SUBSTITUTION SUBMITTAL REQUIREMENTS – “NO SUBSTITUTIONS PERMITTED”

- A. Contractor may not request a substitute item or vendor/manufacturer for which the specifications indicate “No Substitutions Permitted”.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

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SECTION 01700

CONTRACT CLOSEOUT

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Administrative and procedural requirements for project closeout.
 - 1. Inspection procedures.
 - 2. Project Record Document submittal.
 - 3. Final cleaning.
- B. Warranty and bond submittal.
- C. Closeout submittals, warranties, and bonds required for specific products of Work.

1.02 RELATED SECTIONS

- A. Section 01310 - Construction Schedules
- B. Section 01370 - Schedule of Values
- C. Section 01380 - Construction Photographs
- D. Section 01710 - Cleaning
- E. Section 01720 - Project Record Documents
- F. Section 01740 - Warranties and Bonds

1.03 SUBSTANTIAL COMPLETION

- A. Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request.
 - 1. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.
 - 2. Advise Owner of pending insurance change-over requirements.
 - 3. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications, and similar documents.
 - 4. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities; include occupancy permits, operating certificates, and similar releases.
 - 5. Submit record drawings, maintenance manuals, and similar final record information.
 - 6. Complete start-up testing of systems, and instruction of the Owner's operating and maintenance personnel. Discontinue or change over and remove temporary facilities from the site, along with construction tools, mock-ups, and similar elements.
- B. When the Contractor considers the Work to be substantially complete, they shall submit a written notice to the Engineer that the Work, or designated portion of the

Work, is complete and ready for inspection.

- C. Within a reasonable time of receipt of a request for inspection, the Engineer will either proceed with inspection or advise the Contractor of unfulfilled requirements. When the Engineer and Owner concur that the Work, or designated portion of the Work, is substantially complete, the Engineer will prepare the Certificate of Substantial Completion following inspection.
- D. Should the Engineer determine that the Work is not substantially complete, they will advise the Contractor of construction that must be completed or corrected before the certificate will be issued.
 - 1. The Engineer will repeat inspection when requested and assured that the Work has been substantially completed.
 - 2. Results of the completed inspection will form the basis of requirements for final acceptance.

1.04 FINAL COMPLETION

- A. When Contractor considers the Work to be complete, they shall submit written certification to the Engineer that the Work is completed and ready for final inspection. Include the following:
 - 1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
 - 2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
 - 3. Submit a certified copy of the Engineer's final inspection list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, the list has been endorsed and dated by the Engineer.
 - 4. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of Substantial Completion, or when the Owner took possession of and responsibility for corresponding elements of the Work.
 - 5. Submit consent of surety to final payment.
 - 6. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
- B. The Engineer will inspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except items whose completion has been delayed because of circumstances acceptable to the Engineer.
 - 1. Upon completion of inspection, the Engineer will prepare a certificate of final acceptance or advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
 - 2. If necessary, re-inspection process will be repeated.
- C. Refer to Section 01720 - Project Record Documents.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

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SECTION 01710

CLEANING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Execute cleaning, during progress of the Work, and at completion of the Work, as required by General Conditions.

1.02 RELATED SECTIONS

- A. Section 01010 – Summary of Work
- B. Section 01505 – Control of Work
- C. Section 01550 – Site Access and Storage

1.03 DISPOSAL REQUIREMENTS

- A. Do not dispose of any unsuitable fill, hazardous or organic material onsite. All such material shall be disposed of in a legal manner by the Contractor, the cost of which shall be included in the Bid.
- B. Conduct cleaning and disposal operations to comply with applicable codes, ordinances, regulations, and anti-pollution laws.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Use only those cleaning materials which will not create hazards to health or property and which will not damage surfaces.
- B. Use only those cleaning materials and methods recommended by manufacturer of the surface material to be cleaned.
- C. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 - EXECUTION

3.01 DURING CONSTRUCTION

- A. The Contractor shall keep the area of the Work and other areas utilized or impacted by construction in a neat and clean condition, free from any accumulation of rubbish. The Contractor shall dispose of all rubbish and waste materials of any nature occurring at the Work site and shall establish regular intervals of collection and disposal of such materials and waste. The Contractor shall also keep its haul roads free from dirt, rubbish, and unnecessary obstructions resulting from its operations.
- B. Disposal of all rubbish and surplus materials shall be off the site of construction in accordance with local codes and ordinances governing locations and methods of disposal, and in conformance with all applicable safety laws, and to the particular requirements of Part 1926 of the OSHA Safety and Health Standards for

Construction.

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

3.02 DUST ABATEMENT

- A. The Contractor shall furnish all labor, equipment, and means required and shall carry out effective measures wherever and as often as necessary to prevent its operation from producing dust in amounts damaging to property, cultivated vegetation, or domestic animals, or causing a nuisance to persons living in or occupying buildings in the vicinity. Means for the control of dust shall include, but not be limited to, sweeping and water trucks. The Contractor shall be responsible for any damage resulting from any dust originating from its operations. The dust abatement measures shall be continued until the Contractor is relieved of further responsibility by the Engineer.

3.03 FINAL CLEANING

- A. Remove temporary protection and facilities installed for protection of the Work during construction.
- B. Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.
- C. Where extra materials of value remaining after completion of associated Work have become the Owner's property, arrange for disposition of these materials as directed.

END OF SECTION

SECTION 01720

PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This Section includes the requirements for maintaining, recording and submitting Project Record Documents including, but not limited to,
 - 1. Record Drawings or As-Built Drawings
 - 2. Record Specifications and other Contract Documents
 - 3. Record Samples, Shop Drawings or Record Product Data

1.02 RELATED SECTIONS

- A. Section 01050 – Field Engineering and Surveying
- B. Section 01152 – Applications for Payment
- C. Section 01340 – Shop Drawings, Working Drawings, and Samples
- D. Section 01700 – Project Closeout

1.03 MAINTENANCE OF DOCUMENTS AND SAMPLES

- A. Maintain at the site for the Owner and Engineers review one record copy of:
 - 1. Drawings
 - 2. Specifications
 - 3. Addenda
 - 4. Change Orders and other Modifications to the Contract
 - 5. Engineer's Field Orders or Written Instructions
 - 6. Approved Shop Drawings, Working Drawings, and Samples
 - 7. Field Test Reports
 - 8. Construction Photographs
- B. Store Record Documents in the Contractor's field office apart from documents used for construction.
- C. File Record Documents in accordance with the CSI format number system utilized in the Contract Documents.
- D. Maintain Record Documents in a clean, dry, legible condition and in good order. Do not use Record Documents for construction purposes.
- E. Make Record Documents available at all times for inspection by the Engineer.
- F. As a prerequisite for monthly progress payments, the Contractor is to exhibit the current updated Record Documents for review by the Engineer and the Owner.

1.04 RECORDING

- A. Record Drawings:

1. Maintain a clean, undamaged set of prints of Contract Drawings to serve as the project Record Drawings.
 2. Label each sheet "RECORD DRAWING" in neat large printed letters with red erasable pencil; use other colors to distinguish between variations in separate categories of the Work.
 3. The Record Drawings shall be presented at the same scale as the Contract Drawings.
 4. The Record Drawings shall correctly and accurately show all changes from the Contract Drawings made during construction. This shall include a revised graphical representation overlaid on the original design layout.
 5. All information shall be verified and certified by an independent Professional Surveyor and Mapper registered in the State of Florida.
 6. All vertical information shall be provided in the datum indicated in the Contract Drawings.
 7. Horizontal and vertical locations referenced to base-line or permanent surface improvements.
 8. Mark whichever drawing is most capable of showing conditions fully and accurately; where Shop Drawings are used, record a cross reference at the corresponding location on the Record Drawings.
 9. Give particular attention to concealed elements that would be difficult to measure and record at a later date.
 10. Mark new information that was not shown on Contract Drawings or Shop Drawings.
 11. Note related Change Order numbers where applicable.
 12. Organize Record Drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates, and other identification on the cover of each set.
 13. Do not use Record Drawings for construction purposes.
 14. Record information concurrently with construction progress.
- B. The Record Drawings shall be neat and legible including the following:
1. Above ground piping and equipment:
 - a. All equipment locations, dimensions, and elevations as indicated in the Contract Drawings.
 - b. All building and tank locations, dimensions, and elevations as indicated in the Contract Drawings.
 - c. All above ground piping size, material, class, lengths, dimensions, and elevations as indicated in the Contract Drawings.
 - d. Horizontal locations of piping, fittings, valves, and appurtenances.
 - e. Elevations of the top of pipe, fittings, valves and appurtenances as indicated in the Contract Drawings and at 50' maximum increments

- f. All changes from the original design including a revised graphical representation overlaid on the original design layout.
- 2. Underground pressure pipe including potable water mains, sanitary sewer force mains, drainage force mains, and the like:
 - a. All piping size, material, class, lengths, dimensions, bury depth, and elevations as indicated in the Contract Drawings.
 - b. Horizontal locations of piping, fittings, valves, and appurtenances.
 - c. Elevations of the top of pipe, fittings, valves, and appurtenances.
 - d. Elevations as indicated in the Contract Drawings and at 50' maximum increments
 - e. Lengths of restrained pipe.
 - f. Water service locations.
 - g. Meter sizes.
 - h. All changes from the original design including a revised graphical representation overlaid on the original design layout.
- 3. Gravity sanitary sewer:
 - a. All piping size, material, class, lengths, slopes, dimensions, and elevations as indicated in the Contract Drawings.
 - b. Horizontal locations of manholes.
 - c. Rim, invert, and size of all manholes.
 - d. Service terminal end locations.
 - e. Wet well construction including rim elevation, diameter, bottom, invert, float elevations, and pump model with specs.
 - f. All changes to piping from the original design including a revised graphical representation overlaid on the original design layout.
- 4. Stormwater Drainage:
 - a. All piping size, material, class, lengths, dimensions, and elevations as indicated in the Contract Drawings.
 - b. Horizontal locations of manholes and catch basins.
 - c. Rim, invert, bottom elevations, and size of all manholes and catch basins.
 - d. All surface elevations indicated on the Contract Drawings including, but not limited to, swales, berms, yards, sidewalks, and the like.
 - e. Horizontal location and elevation of all storm water retention or detention areas.
 - f. All changes from the original design including a revised graphical representation overlaid on the original design layout.
- 5. Limerock base:

- a. Upon completion of all underground utilities and limerock base, and before placement of asphalt, provide the following for Engineer review:
 - 1) Finished limerock base elevations taken at the location of finished asphalt elevations as indicated in the Contract Drawings.
 - 2) Additional elevations as required by the Engineer, including, but not limited to:
 - (a) Finished limerock base at centerline, edge of median and edge of pavement.
 - (b) Back of sidewalk or right of way.
 - (c) Bottom of swale or flow line of gutter.
 - (d) Top of curb.
 - (e) High points, low points and grade breaks.
 - (f) Intersections.
- 6. Electrical, instrumentation, and controls:
 - a. Horizontal location of all electrical equipment and control cabinetry.
 - b. Elevations of the bottom of all electrical and control panels.
 - c. Horizontal location and elevation of all conduits including conduit size, route and wire size.
 - d. Horizontal location of all light poles and junction boxes.
- 7. Miscellaneous:
 - a. Horizontal location and elevation of all concrete slabs.
 - b. Horizontal location, size, and material of all fencing.
 - c. Location size and material of all existing utilities encountered during construction whether indicated on the Contract Drawings or not.
 - d. Location of internal utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.
 - e. Depths of various elements of foundation in relation to finish first floor datum.
 - f. Field changes of dimensions and details.
 - g. Details not on original contract drawings.
- C. Record Specifications: Maintain one complete copy of the Project Manual, including addenda, and one copy of other written construction documents such as Change Orders and modifications issued in printed form during construction.
 - 1. Mark these documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications.
 - 2. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot otherwise be readily discerned later by direct observation.

3. Note related record drawing information and Product Data.
 4. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed.
 5. Changes made by field order or by Change Order.
- D. Record Product Data (Shop Drawings): Maintain one copy of each Product Data submittal.
1. Mark these documents to show significant variations in actual Work performed in comparison with information submitted. Include variations in products delivered to the site, and from the manufacturer's installation instructions and recommendations.
 2. Give particular attention to concealed products and portions of the Work which cannot otherwise be readily discerned later by direct observation.
 3. Note related Change Orders and mark-up of record drawings and Specifications.
- E. Record Sample Submitted: Immediately prior to the date or dates of Substantial Completion, the Contractor will meet at the site with the Engineer and the Owner to determine which of the submitted Samples that have been maintained during progress of the Work are to be transmitted to the Owner for record purposes. Comply with delivery to the Owner's Sample storage area.
- F. Miscellaneous Record Submittals: Refer to other Specification Sections for requirements of miscellaneous record-keeping and submittals in connection with actual performance of the Work.

1.05 SUBMITTAL

- A. Project Record Documents, demonstrating construction progress, shall be submitted with each Application for Payment.
- B. Interim Project Record Drawings shall be submitted at significant project milestones including:
1. Construction of wet well or other structures.
 2. Construction of catch basins, manholes, pipes, and appurtenances.
 3. As required by the Engineer.
- C. Project Record Documents, demonstrating construction completion shall be submitted with the balance of Closeout documents at the conclusion of construction including:
1. Three sets of signed and sealed sets of prints.
 2. One flash drive of record drawings in PDF and AutoCAD 17 format or later.
- D. Accompany submittals with transmittal letter in duplicate, containing:
1. Date
 2. Project Title and Number
 3. Contractor's Name and Address
 4. Title and Number of each Record Document

5. Signature of Contractor or their Authorized Representative

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01730

OPERATING AND MAINTENANCE DATA

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Compile product data and related information appropriate for Owner's maintenance and operation of products furnished under Contract.
 - 1. Prepare operating and maintenance data as specified in this Section and as referenced in other pertinent sections of Specifications.
- B. Instruct Owner's personnel in maintenance of products and in operation of equipment and systems.

1.02 RELATED SECTIONS

- A. Section 01340 – Shop Drawings, Working Drawings, and Samples
- B. Section 01700 – Contract Closeout
- C. Section 01720 – Project Record Documents
- D. Section 01740 – Warranties and Bonds

1.03 QUALITY ASSURANCE

- A. Preparation of data shall be done by personnel:
 - 1. Trained and experienced in maintenance and operation of described products.
 - 2. Familiar with requirements of this Section.
 - 3. Skilled as technical writers to the extent required to communicate essential data.
 - 4. Skilled as drafters competent to prepare required drawings.

1.04 FORM OF SUBMITTALS

- A. Prepare data in form of an instructional manual for use by Owner's personnel.
- B. Format
 - 1. Size: 8 1/2 inches x 11 inches
 - 2. Paper: 20 pound minimum, white, for typed pages.
 - 3. Text: Manufacturer's printed data, or neatly typewritten.
 - 4. Drawings:
 - a. Provide reinforced punched binder tab, bind in with text.
 - b. Reduce larger drawings and fold to size of text pages, but not larger than 11 inches x 17 inches.
 - 5. Provide fly-leaf for each separate product, or each piece of operating equipment.

- a. Provide types description of product, and major component parts of equipment.
 - b. Provide indexed tabs.
 - 6. Cover: Identify each volume with typed or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS". List:
 - a. Title of Project
 - b. Identity of separate structure as applicable.
 - c. Identity of general subject matter covered in this manual.
- C. Binders
 - 1. Commercial quality three-ring binders with durable and cleanable plastic covers.
 - 2. Maximum ring diameter shall be 2 inches.
 - 3. When multiple binders are used, correlate the data into related consistent groupings.

1.05 CONTENT OF MANUAL

- A. Neatly typewritten Table of Contents for each volume, arranged in systematic order.
 - 1. Contractor, name of responsible principal, address, and telephone number.
 - 2. A list of each product required to be included, indexed to content of the volume.
 - 3. List, with each product, name, address, and telephone number of:
 - a. Subcontractor of installer.
 - b. Maintenance contractor, as appropriate.
 - c. Identify area of responsibility of each.
 - d. Local source of supply for parts and replacement.
 - 4. Identify each product name and other identifying symbols as set forth in Contract Documents.
- B. Product Data
 - 1. Include only those sheets which are pertinent to the specific product.
 - 2. Annotate each sheet to:
 - a. Clearly identify specific product or part installed.
 - b. Clearly identify data applicable to installation.
 - c. Delete references to inapplicable information.
- C. Drawings
 - 1. Supplement product data with drawings as necessary to clearly illustrate:
 - a. Relations of component parts of equipment and systems.
 - b. Control and flow diagrams.

2. Coordinate drawings with information in Project Record Documents to assure correct illustration of completed installation.
3. Do not use Project Record Documents as maintenance drawing.
- D. Written text, as required to supplement product data for the particular installation:
 1. Organize in consistent format under separate headings for different procedures.
 2. Provide logical sequence of instructions of each procedure.
- E. Copy of each warranty, bond, and service contract issued:
 1. Provide information sheet for Owner's personnel, give:
 - a. Proper procedures in event of failure.
 - b. Instances which might affect validity of warranties or bonds

1.06 MANUAL FOR MATERIALS AND FINISHES

- A. Submit five copies of complete manual in final form.
- B. Content for architectural products, applied materials and finishes
 1. Manufacturer's data, giving full information on products.
 - a. Catalog number, size, and composition.
 - b. Color and texture designations.
 - c. Information required for re-ordering special-manufactured products.
 2. Instructions for care and maintenance.
 - a. Manufacturer's recommendation for types of cleaning agents and methods.
 - b. Cautions against cleaning agents and methods which are detrimental to product.
 - c. Recommended schedule for cleaning and maintenance.
 3. Content, for moisture-protection and weather-exposed products
 4. Manufacturer's data, giving full information on products
 - a. Applicable standards.
 - b. Chemical composition.
 - c. Details of installation.
 5. Instructions for inspection, maintenance, and repair.
- C. Additional requirements for maintenance data: Respective sections of Specifications.
- D. Provide complete information for products specified.

1.07 MANUAL FOR EQUIPMENT AND SYSTEMS

- A. Submit five copies of complete manual in final form.

- B. Content, for each unit of equipment and system, as appropriate:
1. Description of unit and component parts.
 - a. Function, normal operating characteristics and limiting conditions
 - b. Performance curves, Engineering data and tests
 - c. Complete nomenclature and commercial number of replaceable parts.
 2. Operating procedures
 - a. Start-up, break-in, routine and normal operating instructions
 - b. Regulation, control, stopping, shut-down, and emergency instructions.
 - c. Summer and winter operating instructions
 - d. Special operating instructions
 3. Maintenance Procedures
 - a. Routine operations
 - b. Guide to "trouble-shooting"
 - c. Disassembly, repair and reassembly
 - d. Alignment, adjusting and checking
 4. Servicing and lubrication schedule
 - a. List of lubricants required
 5. Manufacturer's printed operating and maintenance instructions.
 6. Description of sequence of operation by control manufacturer.
 7. Original manufacturer's parts list, illustrations, assembly drawings and diagrams required for maintenance.
 - a. Predicted list of parts subject to wear.
 - b. Items recommended to be stocked as spare parts
 8. As-installed control diagrams by controls manufacturer.
 9. Each contractor's coordination drawings
 - a. As-installed color-coded piping diagrams
 10. Charts of valve tag numbers, with location and function of each valve.
 11. List of original manufacturer's spare parts, manufacturer's current prices and recommended quantities to be maintained in storage.
 12. Other data as required under pertinent sections of specifications.
- C. Contents, for each electric and electronic system, as appropriate.
1. Description of system and component parts
 - a. Function, normal operating characteristics, and limiting conditions

- b. Performance curves, Engineering data and tests
 - c. Complete nomenclature and commercial number of replaceable parts
 - 2. Circuit directories of panel-boards
 - a. Electrical service
 - b. Controls
 - 3. As-installed color-coded wiring diagrams
 - 4. Operating procedures:
 - a. Routine and normal operating instructions
 - b. Sequences required
 - c. Special operating instructions
 - 5. Maintenance procedures
 - a. Routine operations
 - b. Guide to "trouble-shooting"
 - c. Disassembly, repair and reassembly
 - d. Adjustment and checking
 - 6. Manufacturer's printed operating and maintenance instructions
 - 7. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.
 - 8. Other data as required under pertinent sections of specifications
- D. Prepare and include additional data when the need for such data becomes apparent during instruction of Owner's personnel.
- E. Additional requirements for operating and maintenance data: Respective sections of Specifications.
- F. Provide complete information for product specified.

1.08 SUBMITTAL SCHEDULE

- A. Submit two copies of preliminary draft of proposed formats and outlines of contents of Operation and Maintenance Manuals within 30 days after Notice to Proceed.
 - 1. The Engineer will review the preliminary draft and return one copy with comments.
- B. Submit two copies of completed data in final form no later than 30 days following the Engineer's review of the last shop drawing and submittal specified under Section 01340.
 - 1. One copy will be returned with comments to be incorporated into final copies.
- C. Submit specified number of copies of approved data in final form directly to the offices of the Engineer within 30 calendar days of product shipment to the project site and preferably within 30 days after the reviewed copy is received.

- D. Submit six copies of addendum to the operation and maintenance manuals as applicable and certificates within 30 days after final inspection and plant start-up test.
- E. Final Operation and Maintenance submittals shall be in large three-ring binders organized by specification Section and plainly marked.

1.09 INSTRUCTION OF OWNER'S PERSONNEL

- A. Prior to final inspection or acceptance, fully instruct Owner's designated operating and maintenance personnel in operation, adjustment, and maintenance of products, equipment, and systems.
- B. Operating and maintenance manual shall constitute the basis of instruction.
 - 1. Review contents of manual with personnel in full detail to explain all aspects of operations and maintenance.

1.10 ENGINEER'S O & M CHECKLIST

- A. The Engineer will review Operation and Maintenance Manuals submittals on operating equipment for conformance with the requirements of this Section. The review will generally be based upon the O&M Review Checklist (presented on the pages at the end of this section for the benefit of the Contractor and their suppliers).

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

O & M REVIEW CHECKLIST

EQUIPMENT SUBMITTED _____ DATE OF SUBMITTAL _____

MANUFACTURER _____ DEGREE OF APPROVAL _____

SPECIFICATION SECTION _____ DRAWING NUMBER _____

- _____ Is the submittal correct for model/series/configuration originally submitted with shop drawings?
- _____ Is the binding correct with assigned color/printing etc.?
(Pertains to final three volumes)
- _____ Is the submittal properly indexed?
- _____ Does the submittal pertain only to equipment being furnished?
- _____ Is the submittal easily understood and instructively arranged?
- _____ Does the submittal include start-up, shutdown and troubleshooting procedures?
- _____ Are sufficient drawings and schematics included to supplement written descriptions?
- _____ Is the listing of name plate data for each piece of supplied equipment provided and attached?
- _____ Are all submitted "C" and "D" size drawings printed on paper that is 11 inches high and folded to 8 1/2 inches wide?
- _____ Is proper and complete instruction for servicing included?
- _____ Is there a suggested operating log sheet for equipment?
- _____ Is schedule for lubrication provided?
- _____ Is there a recommended preventative maintenance schedule?
- _____ Are necessary safety precautions clearly indicated where they relate to the equipment?
- _____ Is the Area Representative information provided, i.e., Name, Address, Telephone Number?
- _____ Are specified spare parts indicated and listed?

The following are the points of rejection requiring resubmittal by Contractor:

END OF SECTION

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SECTION 01740

WARRANTIES AND BONDS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Compile warranties and bonds as specified in the Contract Documents.
- B. Co-execute submittals when so specified.
- C. Review submittals to verify compliance with Contract Documents.
- D. Submit to the Engineer for review and transmittal to Owner.

1.02 RELATED SECTIONS

- A. Section 01700 - Contract Closeout

1.03 SUBMITTAL REQUIREMENTS

- A. Assemble warranties, bond, service, and maintenance contracts, executed by each of the respective manufacturers, suppliers, and subcontractors.
- B. Number of original signed copies required: two (2) each.
- C. Table of Contents: neatly typed, in orderly sequence. Provide complete information for each item.
 - 1. Product or Work item
 - 2. Firm, with name of principal, address and telephone number
 - 3. Scope
 - 4. Date of beginning of Warranty, bond or service and maintenance contract
 - 5. Duration of warranty, bond or service maintenance contract
 - 6. Provide information for Owner's personnel:
 - a. Proper procedure in case of failure
 - b. Instances which might affect the validity of warranty or bond
 - 7. Contractor, name of responsible principal, address and telephone number

1.04 FORM OF SUBMITTALS

- A. Prepare in duplicate packets
- B. Format:
 - 1. Size 8 1/2 inches x 11 inches, punch sheets for standard 3-post binder
 - 2. Cover: Identify each packet with typed or printed title "WARRANTIES AND BONDS". List:
 - a. Title of Project
 - b. Name of Contractor
- C. Binders: Commercial quality, three-post (3) binder, with durable and cleanable

plastic covers and maximum post width of 2 inches.

1.05 WARRANTY SUBMITTAL REQUIREMENTS

- A. For all equipment, submit a one-year warranty from the equipment manufacturer unless otherwise specified. The manufacturer's warranty period shall be concurrent with the Contractor's for one year commencing at the time of acceptance by the Owner.
- B. The Contractor shall be responsible for obtaining certificates for equipment warranty for all major equipment and which has a 1 HP motor, or which lists for more than \$1,000. The Engineer reserves the right to request warranties for equipment not classified as major. The Contractor shall still warrant equipment not considered to be "major" in the Contractor's one-year warranty period even though certificates of warranty may not be required.
- C. In the event that the equipment manufacturer or supplier is unwilling to provide a one-year warranty commencing at the time of Owner acceptance, the Contractor shall obtain from the manufacturer a two (2) year warranty commencing at the time of equipment delivery to the job site. This two-year (2) warranty from the manufacturer shall not relieve the Contractor of the one-year warranty starting at the time of Owner acceptance of the equipment.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 02100

SITE PREPARATION

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Section covers clearing, grubbing, stripping and demucking of the construction site, complete as specified herein.
- B. Clear and demuck the area within the limits of construction as required, including drainage easements.

1.02 RELATED SECTIONS

- A. Section 02221 - Trenching, Bedding, and Backfill for Pipe
- B. Section 02513 - Asphaltic Concrete Paving

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 CLEARING

- A. The surface of the ground, for the area to be cleared and grubbed shall be completely cleared of all timber, brush, stumps, roots, grass, weeds, rubbish and all other objectionable obstructions resting on or protruding through the surface of the ground. However, those trees which are designated by the Engineer shall be preserved as hereinafter specified. Clearing operations shall be conducted so as to prevent damage to existing structures and installations, and to those under construction, so as to provide for the safety of employees and others. Clearing for structures shall consist of topsoil and vegetation removal. Clearing for pipelines shall consist of vegetation removal.

3.02 GRUBBING

- A. Grubbing shall consist of the complete removal of all stumps, roots larger than 1¹/₂ inches in diameter, matted roots, brush, timber, logs and any other organic or metallic debris resting on, under or protruding through the surface of the ground to a depth of 18 inches below the subgrade. All depressions excavated below the original ground surface for or by the removal of such objects, shall be refilled with suitable materials and compacted to a density conforming to the surrounding ground surface.

3.03 STRIPPING

- A. In areas so designated, top soil, not muck shall be stockpiled. Topsoil stockpiled shall be protected until it is placed as specified. Any topsoil remaining after all work is in place shall be disposed of by the Contractor.

3.04 DEMUCKING

- A. When encountered, organic material (muck) shall be excavated and removed. This material may be stockpiled temporarily but must be disposed of as directed by the Engineer or the Owner.

3.05 DISPOSAL OF CLEARED AND GRUBBED MATERIAL

- A. The Contractor shall dispose of all material and debris from the clearing and grubbing operation by shipping such material and debris and disposing such material to a suitable location as required by the Engineer or the governmental agencies. Disposal by deep burial will not be permitted. The cost of disposal of material (including hauling) shall be considered a subsidiary obligation of the Contractor, the cost of which shall be included in the contract prices.

3.06 PRESERVATION OF TREES

- A. Those trees which are designated by the Engineer or as shown on the drawings for preservation shall be carefully protected from damage. The Contractor shall erect such barricades, guards, and enclosures as may be considered necessary by them for the protection of the trees during all construction operations.

3.07 PRESERVATION OF DEVELOPED PRIVATE PROPERTY

- A. The Contractor shall exercise extreme care to avoid necessary disturbance of developed private property as applicable. Trees, shrubbery, gardens, lawn and other landscaping, which in the opinion of the Engineer must be removed, shall be replaced and replanted to restore the construction easement to the condition existing prior to construction.
- B. All soil preparation procedures and replanting operations shall be under the supervision of nurseryman experienced in such operations.
- C. Improvements to the land such as fences, walls, outbuildings, etc., which of necessity must be removed shall be replaced with equal quality materials and workmanship.
- D. The Contractor shall clean up the construction site across developed private property directly after construction is complete upon approval of the Engineer.

3.08 PRESERVATION OF PUBLIC PROPERTY

- A. The appropriate paragraphs of Articles 3.06 and 3.07, of these specifications shall apply to the preservation and restoration of all damaged areas of public lands, rights-of-way, easements, etc.

END OF SECTION

SECTION 02200

EARTHWORK

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Earthwork operations necessary to achieve the Work including, but not limited to, excavation of soil, grading, removal and replacement of unsuitable soil, fill, backfill, embankment and compaction more specifically described as follows:
 - 1. Earthwork operations generally consist of excavation and embankment of soil materials from the existing elevations to the proposed elevations.
 - 2. Embankment necessary to achieve the proposed elevations may consist of in situ soils, whether classified as suitable or unsuitable, or imported suitable soil material. All imported soil material for embankment is to be included in the Contract price.
 - 3. Soil material categorized as sub-grade is to be imported suitable soil. The Owner reserves the right to decline imported sub-grade material should in-situ suitable material be encountered and may seek a credit for imported, placed and compacted sub-grade per the Unit Price Schedule.
 - 4. Where unsuitable soil materials are encountered under or around sidewalks, pipes, exfiltration trenches, or structural elements, the Owner reserves the right to specify removal and replacement of unsuitable soil with imported suitable soil. All imported suitable soil material for placement under or around structural elements shall be included in the Contractor's Price.

1.02 RELATED SECTIONS

- A. Section 01410 – Materials and Installation Testing
- B. Section 02100 – Site Preparation
- C. Section 02210 – Finish Grading

1.03 REFERENCES

- A. FDOT Standard Specifications for Road and Bridge Construction
- B. FDOT Design Standards
- C. ASTM D2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)
- D. AASTHO M-145 - Standard Specification for Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes

1.04 PROJECT CONDITIONS

- A. Locate existing underground utilities in areas of work. Provide adequate means of support and protection during earthwork operations.
- B. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult utility owner immediately for directions. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.
- C. Do not interrupt existing utilities serving occupied facilities.
- D. Use of Explosives: If the use of explosives is necessary for the execution of the Work, and the use of explosives is allowed by local government, the Contractor shall conduct their blasting operations in conformance with these specifications and all applicable state and local codes and regulations.
 - 1. The contractor shall obtain a testing laboratory to perform pre- and post-blasting surveys of all nearby structures at no cost to the Owner.
- E. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

PART 2 - PRODUCTS

2.01 SOIL MATERIALS

- A. Satisfactory or Suitable Soil Materials: ASTM D2487 soil classification groups GW, GP, GP-GM, and SW.
- B. Unsatisfactory or Unsuitable Soil Materials: ASTM D2487 soil classification groups GM, GC, SW, SM, SC, CL, ML, OL, CH, MH, OH, and PT.
- C. Satisfactory and unsatisfactory soil materials for roadway embankment, including pipe trench backfill under roadways, shall meet the requirements as defined in AASHTO M-145 soil classification groups and FDOT index 505.
- D. Satisfactory materials encountered during excavation, may be stored in segregated stockpiles for reuse. All material which, in the opinion of the Engineer, is not suitable for reuse shall be spoiled as specified herein for disposal of unsuitable materials.
- E. Sub-base material
 - 1. Satisfactory materials may be Select, Structural, or Common fill.
- F. Select or Structural Fill
 - 1. Select or Structural fill material shall be a satisfactory soil material, well graded, consisting of a minimum of 60 percent clean medium fine grain

sized quartz sand, free of organic, deleterious and/or compressible percent clean medium fine grain sized quartz sand, free of organic, deleterious and/or compressed material. Rock in excess of one inch in diameter shall not be permitted.

G. Common Fill

1. Common fill material shall be a satisfactory soil material containing no more than 20 percent by weight finer than No. 200 mesh sieve. It shall be free from organic matter, muck, marl, and rock exceeding 2 1/2 inches in diameter.

H. Course Aggregate

1. Course aggregate, or gravel, shall be used for rock bedding, drainage rock or as otherwise depicted in the Drawings. Unless otherwise noted, course aggregate shall consist of washed and graded crushed limrock meeting FDOT specification 901, size number 57 or approved equal.

I. Sand

1. Where specified, sand, clean sand, silica sand or other nomenclature shall refer to silica sand meeting FDOT specification 902-2.

J. Satisfactory or suitable soil materials shall free of muck, clay, rock, or gravel larger than 2-1/2 inches in any dimension, debris, trash, waste, frozen materials, broken concrete, masonry, rubble, vegetable or other similar materials or deleterious matter. Materials of this nature encountered during the excavation which, in the opinion of the Engineer, is not suitable for reuse shall be stockpiled for disposal as unsuitable materials.

K. Material substitutions may be permitted if accompanied by a Geotechnical Engineer's report substantiating the proposed substitution which is approved by the Engineer and is at no cost to the Owner.

PART 3 - EXECUTION

3.01 EXCAVATION

- A. The contractor shall perform trench excavations in accordance with applicable trench safety standards and is responsible to determine any safety or safety related standards that apply to the Project. The Owner and Engineer are not responsible to review and/or assess safety precautions, programs and costs, and the means, methods, techniques or technique adequacy, reasonableness of cost, sequences, and procedures of any safety precaution, including, but not limited to, compliance with any and all requirements of Florida Trench Safety Act.
- B. Excavation is Unclassified, and includes excavation to sub-grade elevations indicated, regardless of character of materials and obstructions encountered.
- C. Unauthorized Excavation: Removal of materials beyond indicated sub-grade elevations or dimensions without specific direction. Unauthorized excavation, as

well as remedial work directed by Engineer, shall be at Contractor's expense.

D. Additional Excavation

1. Where unsuitable soil materials are encountered under or around structural elements, the Owner reserves the right to specify removal and replacement of unsuitable soil with imported suitable soil.

E. Stability of Excavations

1. Slope sides of excavations to comply with local codes and ordinances having jurisdiction.
2. Shore and brace where sloping is not possible because of space restrictions or stability of material excavated.
3. Maintain sides and slopes of excavations in safe condition until completion of backfilling.

F. Shoring and Bracing

1. Establish requirements for trench shoring and bracing to comply with local codes and authorities having jurisdiction.
2. Maintain shoring and bracing in excavations regardless of time period excavations will be open. Carry down shoring and bracing as excavation progresses.

G. Dewatering

1. The bottom of the excavations shall be firm and dry and, in all respects, acceptable to the Engineer.
2. Prevent surface water and sub-surface or ground water from flowing into excavations. Do not allow water to accumulate in excavations.
3. Provide and maintain pumps, well points, sumps, suction and discharge lines, and other dewatering system components necessary to convey water away from excavations.
4. The Contractor shall obtain all dewatering permits as required from agencies having jurisdiction

H. Stockpile satisfactory excavated materials where directed, until required for embankment, backfill or fill. Place, grade, and shape stockpiles for proper drainage.

I. Excavation for Trenches: Dig trenches to the uniform width required for particular item to be installed, sufficiently wide to provide ample working room. Provide minimum 6 in. clearance on each side of pipe or conduit.

1. Excavate trenches to depth indicated or required for indicated flow lines and invert elevations.
2. Where rock is encountered, carry excavation 6 in. below scheduled elevation and backfill with a 6 in. layer of crushed stone or gravel prior to installation of pipe.

3. For pipes or conduit 5 in. or less, excavate to indicate depths. Hand excavate bottom cut to accurate elevations and support pipe or conduit on undisturbed soil.
 4. For pipes or conduit 6 in. or larger, tanks and other work indicated to receive sub-base, excavate to sub-base depth indicated, or, if not otherwise indicated, to 6 in. below bottom of work to be supported.
 5. Except as otherwise indicated, excavate for exterior water-bearing piping so top of piping is minimum 3'-6" below finished grade.
 6. Grade bottoms of trenches as indicated, notching under pipe bells to provide solid bearing for entire body of pipe.
- J. Do not backfill trenches until tests and inspections have been made and backfilling authorized by Engineer.

3.02 COMPACTION

- A. Areas to be compacted shall be moistened and compacted by either rolling, tamping or any other approved method by the Engineer in order to obtain the desired density.
- B. Hydraulic compaction will require a Geotechnical engineers' recommendation, observation, and certification at the Contractors expense.
- C. The Contractor shall inspect all compacted areas prior to further construction operations to ensure that satisfactory compaction has been obtained.
- D. All sub-grade shall be compacted as stated in the FDOT Standard Specifications for Road and Bridge Construction.
- E. All embankment shall be compacted by proof-rolling to achieve 95% of AASHTO T-99.
- F. All soil beneath structures shall be compacted to 98% of AASHTO T-180.
- G. Hydraulic compaction shall be permitted if accompanied by a geotechnical engineers' report substantiating the proposed methods. The geotechnical engineers report shall be submitted to the Engineer prior to any work and shall be at no cost to the Owner.
- H. The frequency of testing shall be as stated in the FDOT Standard Specifications for Road and Bridge Construction.
- I. All earthwork testing shall be at the expense of the Contractor unless otherwise stated in the Contract Documents.
- J. The Contractor shall instruct the testing laboratory to forward copies of all test reports to the Engineer.
- K. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density.

3.03 EMBANKMENT, BACKFILL, AND FILL

- A. Place specified soil material in layers required to achieve proposed elevations:
 - 1. Place materials in layers of 8 inches loose depth for material compacted by heavy compaction equipment and 4 in. in loose depth for material compacted by hand operated tampers.
 - 2. Place materials in layers of 12 inches loose depth for material compacted by proof rolling equipment.
 - 3. Under grassed areas, use satisfactory or unsatisfactory excavated or imported soil material if approved by the Engineer.
 - 4. Under walks and pavements, use sub-base material, or satisfactory excavated or borrow material, or combination of both. Place shoulders along edges of sub-base course to prevent lateral movement with satisfactory excavated or borrow material.
 - 5. Under steps, use sub-base material.
 - 6. Under building slabs, use drainage fill material.
 - 7. Under piping and conduit, use sub-base material where sub-base is indicated under piping or conduit; shape to fit bottom 90 degrees of cylinder.
- B. Backfill excavations as promptly as work permits, but not until completion of the following:
 - 1. Acceptance of construction below finish grade including waterproofing and perimeter insulation.
 - 2. Inspection, testing, approval, and recording locations of underground utilities.
 - 3. Removal of shoring and bracing, and backfilling of voids with satisfactory materials.
- C. Remove all trash, roots, vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placement of fills. Plow strip, or break-up sloped surfaces steeper than 1 vertical to 4 horizontal so that fill material will bond with existing surface.
- D. When existing ground surface has a density less than that specified for particular area classification, break up ground surface, pulverize, moisture-condition to optimum moisture content, and compact to required depth and percentage of maximum density.
- E. Before compaction, moisten or aerate each layer as necessary to provide optimum moisture content. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
- F. Place backfill and fill materials evenly adjacent to structures, without wedging against structures or displacement of piping or conduit. Compaction equipment used within 10 ft. of buried walls and soil supported structures shall not exceed

2000 lbs.

3.04 GRADING

- A. Grading Outside Building Lines: Grade areas adjacent to building lines to drain away from structures and to prevent ponding and as follows:
 - 1. Finish to within not more than 0.10 ft. above or below required sub-grade elevations.
 - 2. Walks: Shape surface to line, grade, and cross-section, with finish surface not more than 0.10 ft. above or below required sub-grade elevation.
 - 3. Pavements: Shape surface to line, grade, and cross-section, with finish surface 1/2 in. above or below required sub-grade elevation.
 - 4. Sod: Where sod abuts pavement, sidewalks, etc., finish surface below as required to accommodate thickness of sod as not to prohibit drainage.
- B. Grading Surface of Fill under Building Slabs: Grade smooth and even, free of voids, compacted as specified, and to 1/2 in. below required elevation.

3.05 QUALITY CONTROL

- A. Perform earthwork in compliance with applicable requirements of governing authorities having jurisdiction.
- B. Contractor will engage soil testing and inspection service for quality control testing during earthwork operations.
- C. Allow testing service to inspect and approve sub-grades and fill layers before further construction work is performed.
- D. If in opinion of Engineer, based on testing service reports and inspection, sub-grade or fills which have been placed below specified density, provide additional compaction and testing at no additional expense to Owner.

3.06 CLEANING AND PROTECTION

- A. Protect newly graded areas from traffic and erosion. Keep free of trash and debris.
- B. Repair and re-establish grades in settled, eroded, and rutted areas to specified tolerances.
- C. Remove excess excavated and waste materials, including unacceptable excavated material, trash, and debris, and legally dispose of it at no cost to the Owner.

END OF SECTION

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SECTION 02210

FINISH GRADING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Provide all labor, materials, necessary equipment or services to complete the Finish Grading work, as indicated on the Contract Documents.

1.02 RELATED SECTIONS

- A. Section 02200 - Earthwork

1.03 SITE INSPECTION

- A. The Contractor shall visit the site and acquaint themselves with all existing conditions. The Contractor shall be responsible for their own subsurface investigations, as necessary, to satisfy requirements of this Section. All subsurface investigations shall be performed only under time schedules and arrangements approved in advance by the Engineer or Owner's Representative.

1.04 EXISTING CONTOURS

- A. The existing elevations shown on the Drawings are approximate only. The contractor is responsible for grading to meet existing elevations as required.
- B. The contours and elevations established under contract will be the finished grades shown. The Contractor under this Contract shall perform the work for construction using the finished grades previously established and making whatever corrections and/or repairs to grades to make them consistent with the requirements of the drawings and specifications.

1.05 UTILITIES

- A. Before starting site operations, verify that the earlier contractors have disconnected all temporary utilities which might interfere with the fine grading work.
- B. Locate all existing, active utility lines traversing the site and determine the requirements for their protection. Preserve in operating condition all active utilities adjacent to or transversing the site that are designated to remain.
- C. Observe rules and regulations governing respective utilities in working under requirements of this section. Adequately protect utilities from damage, remove or relocate as indicated, specified or required. Remove, plug or cap inactive or abandoned utilities encountered in excavation. Record location of active utilities.

1.06 QUALITY ASSURANCE

- A. Requirements of all applicable building codes and other public agencies having jurisdiction upon the work.
- B. Primary emphasis should be given to the aesthetic appearance and functioning of berms and swales, as directed by the Engineer or Owner's Representative. The Contractor shall employ skilled personnel and any necessary equipment to ensure that finish grading is smooth, aesthetically pleasing, drains well, and is ideal for receiving sod and plant materials.
- C. As-build survey drawings of all finished grading are to be submitted to the Engineer for review prior to landscape installation or agency certifications.

PART 2 - MATERIALS

2.01 TOP SOIL

- A. In areas to receive turf, rough grade shall be a minimum of 2 inches below finished grades.
- B. Rough grade fill is to be fine, compacted, satisfactory fill material, with no rocks larger than 2-inches.
- C. Both surface and subsurface, both before and after fill operations, shall be checked to confirm that percolation/compaction levels meet the needs of the proposed planting for that area.

PART 3 - EXECUTION

3.01 EXCAVATION

- A. Excavate where necessary to obtain subgrades, percolation, and surface drainage as required.
- B. All unsatisfactory soil materials are to be removed and replaced with satisfactory soil materials.
- C. Remove entirely any existing obstructions after approval by the Engineer or Owner's Representative.
- D. Remove from site and dispose of debris and excavated material not required.

3.02 GRADING

- A. The Contractor shall establish finished grades as shown on the Engineers grading plans, and as directed by Engineer and/or Owner's Representative, including areas where the existing grade has been disturbed by other work.
- B. Finished grading shall be smooth, aesthetically pleasing, drain well and ready to

receive sod and other plant material to full satisfaction of Engineer and Owner's Representative.

- C. Finish grading accuracy is to be within 1/10 foot of specified elevations.
- D. Finish grading is to be performed using hand raking throughout and shall remove all objectionable material and rocks greater than 1 inch in diameter.
- E. A finish grading inspection is required prior to sod placement.

3.03 COMPACTION

- A. Compact each layer of fill in designated areas with approved equipment in accordance with Section 02200.
 - 1. In landscaped areas, compaction shall not exceed 85% of maximum density and no less than 75%.
 - 2. In landscaped areas which are sloped at 1:4 or steeper, compaction shall not exceed 90% of maximum density and no less than 85%.
- B. No backfill shall be placed against any masonry or other exposed building surface until permission has been given by the Owner's Representative, and in no case until the masonry has been in place seven days.
- C. Compaction in limited areas shall be obtained using mechanical tampers or approved hand tampers. When hand tampers are used, the materials shall be deposited in layers not more than four inches thick. The hand tampers used shall be suitable for this purpose and shall have a face area of not more than 100 square inches. Special precautions shall be taken to prevent any wedging action against masonry, or other exposed building surfaces.

3.04 CORRECTION OF GRADE

- A. Bring to required grade levels areas where settlement, erosion, or other grade changes occur. Adjust grades as required to carry drainage away from buildings and to prevent ponding around the buildings and on pavements.
- B. All soil surfaces shall have sufficient percolation and surface drainage to support grasses and plant material.
- C. Contractor shall be responsible for stabilizing grades by approved methods prior to landscaping and shall be responsible for correction of grades as mentioned above, and cleanup of any wash outs or erosion.

END OF SECTION

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SECTION 02221

TRENCHING, BEDDING, AND BACKFILL FOR PIPE

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Furnish labor, materials, equipment, and incidentals necessary to perform all excavation, backfill, fill, grading, and slope protection required to complete the piping work shown on the Drawings and specified herein. The work shall include, but not necessarily be limited to, manholes, vaults, duct conduit, pipe, roadways, paving, bedding, backfilling, fill, required borrow; grading, disposal of surplus and unsuitable materials, and all related work such as sheeting, bracing, and dewatering

1.02 RELATED SECTIONS

- A. Section 01340 – Shop Drawings, Working Drawings, and Samples
- B. Section 02100 – Site Preparation
- C. Section 02200 – Earthwork
- D. Section 02401 – Dewatering

1.03 REFERENCES

- A. FDOT Standard Specifications for Road and Bridge Construction
- B. FDOT Design Standards
- C. ASTM D2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)
- D. AASTHO M-145 - Standard Specification for Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes

1.04 JOB CONDITIONS

- A. The Contractor shall examine the site and review the available test borings or undertake their own soil borings prior to submitting their bid, taking into consideration all conditions that may affect their work. The Owner and Engineer will not assume responsibility for variations of sub-soil quality or conditions at locations other than places shown and at the time the available test borings were made.
- B. Existing Utilities: Locate existing underground utilities in the areas of work. If utilities are to remain in place, provide adequate means of protection during earthwork operations.
 - 1. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult the Engineer and the Owner of such piping or utility immediately for directions.
 - 2. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.
 - 3. Demolish and completely remove from site existing underground utilities

indicated on the drawings to be removed.

- C. Protection of Persons and Property: Contractor shall barricade open excavations occurring as part of this work and post with warning lights. Operate warning lights as recommended by authorities having jurisdiction.
 - 1. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

1.05 SUBMITTALS

- A. The Contractor shall furnish the Engineer, for approval, a certificate of origin and compliance with specifications for any fill material obtained from off-site sources.
- B. At the discretion of the Engineer, the Contractor shall furnish the Engineer, for approval, a representative sample of fill material obtained from on-site sources weighing approximately 50 pounds, at least 14 calendar days prior to the date of anticipated use of such material.
- C. At the discretion of the Engineer, for each material obtained from off-site sources, the Contractor shall notify the Engineer of the source of the material and shall furnish the Engineer, for approval, a representative sample weighing approximately 50 pounds, at least 14 calendar days prior to the date of anticipated use of such material.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Satisfactory Soil Materials: ASTM D2487 soil classification groups GW, GP, SW, and SP.
- B. Unsatisfactory Soil Materials: ASTM D2487 soil classification groups GM, GC, SM, SC, CL, ML, OL, CH, MH, OH, and PT.
- C. Satisfactory and unsatisfactory soil materials for roadway embankment, including pipe trench backfill under roadways, shall meet the requirements as defined in AASHTO M-145 soil classification groups and FDOT index 505.
- D. Satisfactory materials encountered during excavation, may be stored in segregated stockpiles for reuse. All material which, in the opinion of the Engineer, is not suitable for reuse shall be spoiled as specified herein for legal disposal at the cost of the Contractor as unsuitable materials.
- E. Sub-base material
 - 1. Refer to roadway section and/or specifications.
- F. Select or Structural Fill
 - 1. Select or Structural fill material shall be a satisfactory soil material, well graded, consisting of a minimum of 60 percent clean medium fine grain sized quartz sand, free of organic, deleterious and/or compressible percent clean medium fine grain sized quartz sand, free of organic, deleterious and/or compressed material. Rock in excess of 1 inch in diameter shall not be permitted.
- G. Common Fill

1. Common fill material shall be a satisfactory soil material containing no more than 20 percent by weight finer than No. 200 mesh sieve. It shall be free from organic matter, muck, marl, and rock exceeding 2 1/2 inches in diameter.
- H. Course Aggregate
 1. Course aggregate, or gravel, shall be used for rock bedding, drainage rock or as otherwise depicted in the Drawings. Unless otherwise noted, course aggregate shall consist of washed and graded crushed limerock meeting FDOT specification 901, size number 57 or approved equal.
- I. Sand
 1. Where specified, sand, clean sand, silica sand, or other nomenclature shall refer to silica sand meeting FDOT specification 902-2.
- J. Satisfactory soil materials shall free of muck, clay, rock, or gravel larger than 2-1/2 inches in any dimension, debris, trash, waste, frozen materials, broken concrete, masonry, rubble, vegetable or other similar materials or deleterious matter. Materials of this nature encountered during the excavation which, in the opinion of the Engineer, is not suitable for reuse shall be stockpiled for disposal as unsuitable materials.
- K. Material substitutions may be permitted if accompanied by a Geotechnical Engineer's report substantiating the proposed substitution which is approved by the Engineer and is at no cost to the Owner.

PART 3 - EXECUTION

3.01 GENERAL

- A. All excavation, backfill, and grading necessary to complete the work shall be made by the Contractor and the cost thereof shall be included in the Contract price.
- B. Material shall be furnished as required from off-site sources and hauled to site.
- C. The Contractor shall take all necessary precautions to maintain the work area in a safe and workable condition.
- D. The Contractor shall protect their work at all times by flagging, marking, lighting, and barricading. It shall also be the Contractor's responsibility to preserve and protect all above and underground structures, pipe lines, conduits, cables, drains, or utilities which are existing at the time they encounter them. Failure of the Drawings to show the existence of these obstructions shall not relieve the Contractor from this responsibility. The cost of repair of damage which occurs to these obstructions during or as a result of construction shall be borne by the Contractor without additional cost to the Owners.

3.02 DEWATERING

- A. The bottom of the excavations shall be firm and dry and, in all respects, acceptable to the Engineer.
- B. Prevent surface water and sub-surface or ground water from flowing into excavations. Do not allow water to accumulate in excavations.
- C. Provide and maintain pumps, well points, sumps, suction and discharge lines, and

other dewatering system components necessary to convey water away from excavations.

- D. The Contractor shall obtain all dewatering permits as required from agencies having jurisdiction

3.03 TRENCH EXCAVATION

- A. Excavation for all trenches required for the installation of pipes shall be made to the depths indicated on the Drawings. Excavate trench to provide minimum of 30-inch clear cover over the pipe bell unless otherwise noted on the Drawings. Excavate in such manner and to such widths as will give suitable room for laying the pipe within the trenches, for bracing and supporting and for pumping and drainage facilities. The trench width at the top of the pipe shall not exceed the allowable as determined by the depth of cut and indicated on the Drawings.
- B. Rock shall be removed to a minimum 8-inches clearance around the bottom and sides of all the pipe or ducts being laid.
- C. Where pipe is to be laid in limerock bedding or encased in concrete, the trench may be excavated by machinery to or just below the designated subgrade provided that the material remaining in the bottom of the trench remains undisturbed.
- D. Where the pipes or ducts are to be laid directly on the trench bottom the lower part of the trenches shall not be excavated to the trench bottom by machinery. The last of the material being excavated shall be done manually in such a manner that will give a flat bottom true to grade so that pipe can evenly and uniformly supported along its entire length on undisturbed material or bedding rock. Bell holes shall be made as required manually so that there is no bearing surface on the bells and pipes are supported along the barrel only.
- E. The bottom of the excavations shall be firm and dry and, in all respects, acceptable to the Engineer. Excavate any organic soil material from the bottom of the trench and replace with rock bedding, at least 6 inches thick.

3.04 TRENCH PROTECTION

- A. The Contractor shall perform trench excavations in accordance with applicable trench safety standards and is responsible to determine any safety or safety related standards that apply to the Project. The Owner and Engineer are not responsible to review and/or assess safety precautions, programs and costs, and the means, methods, techniques or technique adequacy, reasonableness of cost, sequences, and procedures of any safety precaution, including, but not limited to, compliance with any and all requirements of Florida Trench Safety Act.
- B. The Contractor shall construct and maintain sheeting and bracing as required to support the sides of excavations, to prevent any movement which could in any way diminish the width of the excavation below that necessary for proper construction, and to protect adjacent structures, existing piping, and foundation material from disturbance, undermining, or other damage. Care shall be taken to prevent voids outside of the sheeting, but if voids form, they shall be immediately filled and compacted.
- C. For pipe trench sheeting, no sheeting is to be withdrawn if driven below mid-diameter of any pipe, and no wood sheeting shall be cut off at a level lower than 1 foot above the top of any pipe unless otherwise directed by the Engineer. If during the progress of the work the Engineer decides that additional wood sheeting should

be left in place, the Engineer may direct the Contractor in writing. If steel sheeting is used for trench sheeting, removal shall be as specified above, unless written approval is given by the Engineer for an alternate method of removal.

- D. All sheeting and bracing not left in place, shall be carefully removed in such a manner as not to endanger the construction or other structures, utilities, existing piping, or property. All voids left or caused by withdrawal of sheeting shall immediately be refilled with sand or rammed with tools especially adapted to that purpose, by watering or otherwise as may be directed.
- E. The right of the Engineer to order sheeting and bracing left in place shall not be construed as creating any obligation on their part to issue such orders, and their failure to exercise their right to do so shall not relieve the Contractor from liability for damages to persons or property occurring from or upon the work occasioned by negligence or otherwise growing out of a failure on the part of the Contractor to leave in place sufficient sheeting and bracing to prevent any caving or moving of the ground.

3.05 PIPE INTERFERENCES AND ENCASEMENT

- A. The Contractor shall abide by the following schedule of criteria concerning interferences with other utilities.
 - 1. In no case shall there be less than 0.5 feet between any two pipe lines and structures.
 - 2. Concrete Encasement: Wherever there is less than 1.0-foot clearance between water mains and another pipe and water mains cross under,, then a 4" concrete encasement shall be provided for both pipes.
- B. The Engineer shall have full authority to direct the placement of the various pipes and structures in order to facilitate construction, expedite completion and to avoid conflicts.

3.06 BACKFILLING

- A. Do not backfill trenches until tests and inspections have been made and backfilling authorized by Engineer.
- B. Perform backfill in lifts and compact as specified in the Drawings.
- C. Backfilling over pipes shall begin as soon as practical after the pipe has been laid, jointed, and inspected and the trench filled with suitable compacted material to the mid-diameter of the pipe.
- D. Backfilling over ducts shall begin not less than three days after placing concrete encasement.
- E. All backfilling shall be prosecuted expeditiously as detailed on the Drawings.
- F. Any space remaining between the pipe and sides of the trench shall be packed full by hand shovel with selected earth and thoroughly compacted with a tamper as fast as placed, up to a level of one foot above the top of pipe.
- G. The filling shall be carried up evenly on both sides with at least one man tamping for each man shoveling material into the trench.
- H. The Contractor shall take all precautions necessary to maintain the bedding in a compacted state and to prevent washing, erosion or loosening of this bed.

- I. In areas where unsuitable soil is discovered in the pipe bedding, the unsuitable soil shall be removed and stockpiled for disposal by the contractor. Suitable soils shall be substituted at a depth as directed by the Engineer. If gravel is required by the Engineer as suitable bedding, the gravel shall be wrapped in filter fabric prior to backfill operations.
- J. Gravel bedding shall not be used under any circumstances as a drain for ground water.
- K. In locations where pipes pass through building walls, the Contractor shall take the following precautions to consolidate the refill up to an elevation of at least 1 foot above the bottom of the pipes:
 - 1. Place structural fill in such areas for a distance of not less than 3 feet either side of the centerline of the pipe in level layers not exceeding 6-inches in depth.
 - 2. Wet each layer to the extent directed and thoroughly compact each layer with a power tamper to the satisfaction of the Engineer.

3.07 COMPACTION

- A. Perform compaction and compaction tests as specified in the Drawings.
- B. Hydraulic compaction shall be permitted if accompanied by a Geotechnical Engineer's report substantiating the proposed methods. The Geotechnical Engineer's report shall be prepared and submitted to the Engineer prior to any work and shall be at no cost to the Owner.

3.08 GRADING

- A. Grading shall be performed at such places as are indicated on the Drawings, to the lines, grades, and elevations shown or as directed by the Engineer and shall be made in such manner that the requirements for formation of embankments can be followed. All unacceptable material encountered, of whatever nature within the limits indicated, shall be removed and disposed of as directed. During the process of excavation, the grade shall be maintained in such condition that it will be well drained at all times. When directed, temporary drains and drainage ditches shall be installed to intercept or divert surface water which may affect the prosecution or condition of the work.
- B. If at the time of excavation, it is not possible to place any material in its proper section of the permanent structure, it shall be stockpiled in approved areas for later use. No extras will be considered for the stockpiling or double handling of excavated material.
- C. The right is reserved to make minute adjustments or revisions in lines or grades if found necessary as the work progresses, due to discrepancies on the Drawings or in order to obtain satisfactory construction.
- D. Stones or rock fragments larger than 2 1/2 inches in their greatest dimensions will not be permitted in the top 6 inches of the subgrade line of all fills or embankments.
- E. All fill slopes shall be uniformly dressed to the slope, cross-section and alignment shown on the Drawings, or as directed by the Engineer.
- F. In cut, all loose or protruding rocks on the back slopes shall be barred loose or otherwise removed to line or finished grade of slope. All cut and fill slopes shall be

uniformly dressed to the slope, cross-section and alignment shown on the Drawings or as specified by the Engineer.

- G. No grading is to be done in areas where there are existing pipe lines that may be uncovered or damaged until such lines which must be maintained are relocated, or where lines are to be abandoned, all required valves are closed and drains plugged at manholes.
- H. The Contractor shall replace all pavement cut or otherwise damaged during the progress of the work as specified elsewhere herein or as shown on the Drawings.

3.09 DISPOSAL OF UNSUITABLE AND SURPLUS MATERIAL

- A. All surplus and unsuitable excavated material shall be disposed of at the Contractor's cost in one of the following ways as directed by the Engineer.
 - 1. Transport to soil storage area on Owner's property and stockpile or spread as directed by the Engineer.
 - 2. Transport from Owner's property and legally dispose of. Any permit required for the hauling and disposing of this material beyond Owner's property shall be obtained prior to commencing hauling operations. Copies of all required permits shall be provided to the Engineer.
- B. Suitable excavated material may be used for fill if it meets the specifications for common fill and is approved by the Engineer. Excavated material so approved may be neatly stockpiled at the site where designated by the Engineer provided there is an area available where it will not interfere with the operation of the facility nor inconvenience traffic or adjoining property owners.

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SECTION 02341

HORIZONTAL DIRECTIONAL DRILLING (HDD) WITH (HDPE) PIPE

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Furnish all labor, materials and equipment required to install HDPE pipe using directional drilling method of installation, all in accordance with the requirements of the Contract Documents. The pipe size, type, and length shall be as specified in the Drawings. Work included shall include and not be limited to proper installation, testing, restoration of underground utilities and environmental protection and restoration.
- B. The directional drill shall be accomplished by first drilling a pilot hole then enlarging the pilot hole to sufficient size to accommodate the specified HDPE pipe and finally pulling the pipe back through the enlarged hole. All drilling shall be performed to proper industry standards.
- C. A Geotechnical investigation has been performed and has been made a part of the Contract Documents.

1.02 RELATED SECTIONS

- A. Section 01015 – General Requirements
- B. Section 01340 – Shop Drawings, Working Drawings, and Samples
- C. Section 01720 – Project Record Documents.
- D. Section 15010 – Testing Piping Systems
- E. Section 15060 – HDPE Pipe

1.03 REFERENCES

- A. ASTM F 1962 – Use of Maxi-Horizontal Directional Drilling for Placement of Polyethylene Pipe or Conduit Under Obstacles, Including River Crossings.
- B. Plastic Pipe Institute (PPI) – TR-46 – Guidelines for the Use of Mini-Horizontal Directional Drilling for Placement of High Density Polyethylene Pipe.

1.04 SUBMITTALS

- A. Shop Drawings: Submit shop drawings in accordance with the requirements of Section 01340 - Submittals and the following supplemental requirements:
 - 1. Directional drilling Contractor's qualifications and experience.

2. Work Plan: Prior to beginning work, the Contractor must submit to the Engineer for approval a work plan detailing the procedure, schedule and location of entry and exit pits to be used to execute the project. The work plan must include:
- a. Description of all equipment to be used, down-hole tools, list of personnel and their qualifications and experience (including backup personnel in the event that an individual is unavailable), list of Sub Contractors, schedule of work activity, safety plan (including MSDS of any potentially hazardous substances to be used), an environmental protection plan,
 - b. Contingency plans for possible problems.
 - c. Drilling operations addressing:
 - 1) Procedures for pilot hole drilling and reaming. Procedures for tracking and controlling the drilling head location.
 - 2) Procedures for preparing as-builts.
 - 3) Drilling fluid management plan.
 - 4) Spoils handling and disposal plan.
 - 5) Pipe storage and handling, addressing means and methods for protecting pipe and ensuring temperature control in accordance with the Contractor's installation calculations.
 - 6) Pipeline assembly and installation, addressing: Procedures for pipe joining, pipeline pullback, and pullback monitoring.
 - 7) Prevention of inadvertent fluid losses and spills, and contingencies for rapid containment and cleanup, addressing: Measures to mitigate risk of inadvertent fluid returns to surface. Procedures for monitoring and controlling drilling fluid flows and pressures. Equipment, resources, and procedures for identifying, containing, and cleaning up fluid losses and spills.
 - 8) Quality control and testing procedures.
 - d. Traffic control plans for entry and exit pit sites, prepared by a Florida Registered Engineer, ready for submittal by Contractor for procurement of City and/or County Maintenance of Traffic/Right of way permit.
 - e. Plans for mitigating the potential for inadvertent drilling fluid losses to surface, and for rapidly identifying and cleaning up spills near the investigation borings located along the project alignment. Investigation boreholes along the alignment have been backfilled as reported in the Geotechnical Report. The Contractor's work plans shall address the risk that all investigation boreholes may contribute to the risk of drill fluid loss.
 - f. Contingency plan for rapidly identifying, locating, and containing any drilling fluid returns.
 - g. The Contractor shall submit a contingency plan to address procedures to be employed in the event any of the listed items occur.
 - 1) Utility strike, obstruction, or inability to advance drill pipe.

- 2) Excessive deviation from proposed line and grade, as described within this Section.
 - 3) Inability to move pipe through borehole during pullback.
 - 4) Settlement or heave of roadways and structures within 50 feet of the alignment
- 3. Work plan should be comprehensive, realistic and based on actual working conditions for this particular project. Plan should document the thoughtful planning required to successfully complete the project.
 - 4. Material: Specifications on material to be used shall be submitted to Engineer. Material shall include the pipe, fittings and any other item which is to be an installed component of the project.
 - 5. Equipment: Submit specifications on directional drilling equipment to be used to ensure that the equipment will be adequate to complete the project. Equipment shall include but not be limited to: drilling rig, mud system, mud motors (if applicable), down-hole tools, guidance system, and rig safety systems. Calibration records for guidance equipment shall be included. Specifications for any drilling fluid additives that Contractor intends to use or might use shall be submitted.

1.05 QUALITY ASSURANCE

- A. All directional drilling operations shall be done by a qualified directional drilling Underground Licensed Contractor or SUBCONTRACTOR who has self-performed using own forces for a minimum of (5) horizontal directional drilling projects in the last three (3) years involving work of a similar nature and scope to the work required of this project.
- B. Notify Engineer and Owner a minimum of three (7) days in advance of the start of work contained in this Section.
- C. All work shall be performed in the presence of the Owner or Engineer.

PART 2 - PRODUCTS

2.01 HIGH DENSITY POLYETHYLENE (HDPE) PIPE

- A. Section 15060 – HDPE Pipe

2.02 DIRECTIONAL DRILLING EQUIPMENT REQUIREMENTS

- A. General: The directional drilling equipment shall consist of a directional drilling rig of sufficient capacity to perform the bore and pull back the pipe, a drilling fluid mixing and delivery system of sufficient capacity to successfully complete the installation, an optional drilling fluid recycling system to remove solids from the drilling fluid so that the fluid can be reused, a magnetic guidance system or walk over system to accurately guide boring operations, a vacuum truck of sufficient capacity to handle the drilling fluid volume, 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 this project.

- B. Drilling Rig: The directional drilling machine shall consist of a hydraulically powered system to rotate, push and pull hollow drill pipe into the ground at a variable angle while delivering a pressurized fluid mixture to a guidable drill (bore) head. The machine shall be anchored to the ground to withstand the pulling, pushing and rotating pressure required to complete the installation. The hydraulic power system shall be self-contained with sufficient pressure and volume to power drilling operations. Hydraulic system shall be free of leaks. Rig shall have a system to monitor maximum pull-back pressure during pull-back operations. There shall be a system to detect electrical current from the drill string and an audible alarm which automatically sounds when an electrical current is detected.
- C. Drill Head: The drill head shall be steerable by changing its rotation and shall provide the necessary cutting surfaces and drilling fluid jets.
- D. Mud Motors (if required): Mud motors shall be of adequate power to turn the required drilling tools.
- E. Drill Pipe: Shall be constructed of high quality 4130 seamless tubing, grade D or better, with threaded box and pins. Tool joints should be hardened to 32-36 RC.

2.03 GUIDANCE SYSTEM

- A. General: A Magnetic Guidance System (MGS) probe or proven gyroscopic probe and interface shall be used to provide a continuous and accurate determination of the location of the drill head during the drilling operation. The guidance shall be capable of tracking at all depths up to one hundred feet and in any soil condition, including hard rock. It shall enable the driller to guide the drill head by providing immediate information on the tool face, azimuth (horizontal direction), and inclination (vertical direction). The guidance system shall be accurate to and calibrate to manufactures specifications of the vertical depth of the borehole at sensing position at depths up to ten feet and accurate to 2-feet horizontally.
- B. Components: The Contractor shall supply all components and materials to install, operate, and maintain the guidance system.
- C. The Guidance System shall be of a proven type such as Share Well TruTracker MGS, or other proven guidance system, and shall be set up and operated by personnel trained and experienced with this system with a minimum of 3 years of experience. The operator shall be aware of any geo-magnetic anomalies and shall consider such influences in the operation of the guidance system.

2.04 DRILLING FLUID (MUD) SYSTEM

- A. Mixing System: 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 a minimum of 500 gallons. Mixing system shall continually agitate the drilling fluid during drilling operations.
- B. Drilling Fluids: Drilling fluid shall be composed of clean water and bentonite clay. The water shall be from an authorized source with a pH of 8.5 - 10. Water of a lower pH or with excessive calcium shall be treated with the appropriate amount of sodium carbonate or equal. No additional material may be used in drilling fluid without prior approval from Engineer. The bentonite mixture used shall have the

minimum viscosities as measured by a March Funnel. The following viscosities are provided as a guide; these are to be adjusted to conditions found in the geotechnical report:

1. Rock, Clay - 60 sec.
 2. Hard Clay - 40 sec.
 3. Soft Clay - 45 sec.
 4. Sandy Clay - 90 sec.
 5. Stable Sand - 80 sec.
 6. Loose Sand - 110 sec.
 7. Wet Sand - 110 sec.
 8. These viscosities may be varied to best fit the soil conditions encountered, as approved by the Engineer.
- C. Delivery System: The mud pumping system shall have a capacity capable of delivering the drilling fluid at a constant minimum pressure. The delivery system shall have filters in-line to prevent solids from being pumped into the drill pipe. Connections between the pump and drill pipe shall be relatively leak-free. Used drilling fluid and drilling fluid spilled during drilling operations shall be contained and conveyed to the drilling fluid recycling system or shall be removed by vacuum trucks or other methods acceptable to Engineer. A berm or other suitable means of containment, minimum of 12 inches high, shall be maintained around drill rigs, drilling fluid mixing system, entry and exit pits and drilling fluid recycling system to prevent spills into the surrounding environment. Pumps and or vacuum truck(s) of sufficient size shall be in place to convey excess drilling fluid from containment areas to storage and recycling facilities or disposal.
- D. Drilling Fluid Recycling System: The drilling fluid recycling system, if used, shall separate sand, dirt and other solids from the drilling fluid and render the drilling fluid reusable. Spoil separated from the drilling fluid will be stockpiled for later use or disposal.

2.05 OTHER EQUIPMENT

- A. Pipe Rollers: Pipe rollers shall be of sufficient size to fully support the weight of the pipe while being hydrostatically tested and during pullback operations. Sufficient number of rollers shall be used to prevent excess sagging of pipe.
- B. Pipe Rammers: Hydraulic or pneumatic pipe rammers may only be used if necessary and with the authorization of Engineer.
- C. Restrictions: Other devices or utility placement systems for providing horizontal thrust other than those previously defined in the preceding sections shall not be used unless approved by the Engineer prior to commencement of the work. Consideration for approval will be made on an individual basis for each specified location. The proposed device or system will be evaluated prior to, approval or rejection on its potential ability to complete the utility placement satisfactorily without undue stoppage and to maintain line and grade within the tolerances prescribed by the particular conditions of the project.

2.06 PERSONNEL REQUIREMENTS

- A. All personnel shall be fully trained in their respective duties as part of the directional drilling crew and in safety. Each person must have at least two years directional drilling experience. The Owner shall have sole authority to determine the adequacy of representative projects.
- B. A competent and experienced supervisor representing the Contractor and Drilling SUBCONTRACTOR shall be present at all times during the actual drilling operations. A responsible representative who is thoroughly familiar with the equipment and type work to be performed must be in direct charge and control of the operation at all times. In all cases, the supervisor must be continually present at the job site during the actual Directional Bore operation. The Contractor and SUBCONTRACTOR shall have a sufficient number of competent workers on the job at all times to insure the Directional Bore is made in a timely and satisfactory manner.
- C. Personnel who are unqualified, incompetent, or otherwise not suitable for the performance of this project shall be removed from the jobsite and replaced with a suitable person.
- D. All HDPE fusion equipment operators shall be qualified to perform pipe joining using the means, methods and equipment employed by the Contractor. Fusion equipment operators shall have current, formal training on all fusion equipment employed the project. Training received more than two years prior to operation of the fusion equipment shall not be considered current. The Contractor shall submit written certification of training provided by the fusion equipment manufacturer.

PART 3 - EXECUTION

3.01 GENERAL REQUIREMENTS

- A. The 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 operation have been made. The Engineer 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. It shall be the responsibility of Engineer to provide inspection personnel at such times as appropriate without causing undue hardship by reason of delay to the Contractor.
- B. All work under this specification affecting the Miami-Dade Water and Sewer Department (WASD), South Florida Water Management District (SFWMD), or the Florida Department of Transportation (FDOT) property, right-of-way, or facilities shall be carried out to the full satisfaction of the WASD, SFWMD, or FDOT authorized representative. The Contractor shall fully inform themselves of all requirements of each agency as they pertain to the specific project and shall coordinate with these representatives and conduct all their work accordingly.
- C. All equipment used by the Contractor on Owner's property and rights-of-way may be inspected by the Owner or the Owner's Representatives and shall not be used if considered unsatisfactory by Owner or Owner's Representatives.
- D. The Contractor shall be fully responsible for all damages arising from their failure to comply with the regulations and the requirements of these Specifications.

3.02 DIRECTIONAL DRILLING OPERATION

- A. The Contractor shall provide all material, equipment, and facilities required for directional drilling. Proper alignment and elevation of the bore hole shall be consistently maintained throughout the directional drilling operation. The method used to make the directional drilling shall conform to the requirements of all applicable permits. Copies of all permits will be supplied to the Contractor by the Owner.
- B. 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 must be surveyed prior to construction for any surface magnetic variations or anomalies by which may interfere with the Contractor prior to commencement guidance system. This pre-construction magnetic interference survey shall be submitted for Engineers review. The cost of alternative guidance systems shall not be considered as additional cost to the bid.
- C. The Contractor shall coordinate utilities locations with Sunshine State One-Call of Florida, Inc., (#811 or web site www.callsunshine.com). Once the locate service has field marked all utilities, the Contractor shall verify each utility (including any service laterals, i.e. water, sewer, cable, gas, electric, phone, etc.) and those within each paved area. Verification may be performed utilizing Ground Penetrating Radar, hand dig, or vacuum excavation. Prior to initiating drilling, the Contractor shall record on the drawings both the horizontal and vertical location of the utilities off of a predetermined baseline. The Contractor shall utilize the Ground Penetrating Radar over the projected bore path whether utilities are located in the horizontal drill pathway or not, in order to reduce the opportunity of conflicting with any unforeseen obstructions.
- D. Contractor shall place silt fence between all drilling operations and any drainage, wetland, waterway or other area designated for such protection by contract documents, state, federal and local regulations. 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 may not be stored in bulk containers within 200 feet of any water body or wetland.
- E. Readings shall be recorded after advancement of each successive drill pipe, and the readings plotted on a scaled drawing of 1-inch=20-feet, both vertical and horizontal. Access to all recorded readings and plan and profile information shall be made available to the Engineer, or field representative, at all times.
- F. A complete list of all drilling fluid additives and mixtures to be used in the directional operation will be submitted to the Engineer, along with their respective Material Safety Data Sheets. All drilling fluids and loose cuttings shall be contained in pits or holding tanks for recycling or disposal, no fluids shall be allowed to enter any unapproved areas or natural waterways. Upon completion of the directional drill project, the drilling mud and cuttings shall be disposed of by the Contractor in accordance with applicable regulations.

- G. HDPE pipe shall be installed with a minimum of 36 inches of cover and at the separation distances indicated by the drawings. Upon Engineer's approval, the Contractor will be allowed to exceed 36 inches of cover.
- H. Pilot hole shall be drilled on bore path with no deviations greater than 5% of depth over a length of 100 feet. In the event that pilot does deviate from bore path more than 5% of depth in 100 feet, Contractor will notify Engineer and Engineer may require Contractor to pull-back and re-drill from the location along bore path before the deviation. In the event that a drilling fluid fracture, inadvertent returns or returns loss occurs during pilot hole drilling operations, Contractor shall cease drilling, wait at least 30 minutes, inject a quantity of drilling fluid with a viscosity exceeding 120 seconds as measured by a Marsh funnel and then wait another 30 minutes. If mud fracture or returns loss continues, Contractor will cease operations and notify Engineer. Engineer and Contractor will discuss additional options and work will then proceed accordingly.
- I. Upon completion of the pilot hole phase of the operation, a complete set of as-built records shall be submitted in duplicate to the Owner. These records shall include copies of the plan and profile drawing, as well as directional survey reports as recorded during the drilling operation.
- J. Upon approval of the pilot hole location the hole opening or enlarging phase of the installation shall begin. The bore hole diameter shall be increased to accommodate the pullback operation of the required size of HDPE pipe. The type of hole opener or back reamer to be utilized in this phase shall be determined by the types of subsurface soil conditions that have been encountered during the pilot hole drilling operation. Reaming operations shall be conducted to enlarge the pilot hole after the acceptance of the pilot bore. The Contractor must ream bore hole to a size at least 25% greater than the pipe diameter, and must not attempt to ream at one time, more than what the equipment is designed to safely handle.
- K. The open borehole may be stabilized by means of bentonite drilling slurry being pumped through the inside diameter of the drill pipe and through openings in the reamer. The slurry will also serve as an agent to carry the loose cuttings to the surface through the annulus of the borehole. These cuttings and bentonite slurry are to be contained at the exit or entry side of the directional bore in pits or holding tanks. The slurry may be recycled at this time for reuse in the hole opening operation, or it shall be disposed of by the Contractor in accordance with applicable regulations.
- L. The HDPE pipe shall be joined together according to manufacturer's specifications and be supported over roadways and other obstacles as required, by the use of pipe rollers or comparable equipment, in preparation of pullback through the enlarged borehole. A pulling eye will be attached to the product pipe which in turn will be attached to a swivel on the end of the drill pipe. This will allow for a straight, smooth pull of the product pipe as it enters and passes through the borehole toward the drill rig and original entrance hole of the directional bore. The product pipe will be elevated to the approximate angle of exit and supported by means of a sideboom with roller arm, or similar equipment, to allow for a "free stress" situation as the pipe is pulled into the exit hole toward the drill rig. The product pullback phase of the-directional operation shall be carried out in a continuous manner until the pipe reaches the original entry side of the bore.

- M. Drilling pits shown on the plans are for reference only. If actual pit dimensions exceed the dimensions shown on the plans, the Contractor shall be responsible for complete restoration of the pit area to the original condition including all fill, sub-base, limerock base, asphalt, concrete, landscaping, etc.

3.03 PIPE HANDLING

- A. Care shall be taken during transportation of the pipe such that it will not be cut, kinked or otherwise damaged.
- B. Ropes, fabric or rubber protected slings and straps shall be used when handling pipes. Chains, cables or hooks inserted into the pipe ends shall not be used. Two slings spread apart shall be used for lifting each length of pipe. Pipe or fittings shall not be dropped onto rocky or unprepared ground.
- C. Pipes shall be stored on level ground, preferably turf or sand, free of sharp objects which could damage the pipe. Stacking of the pipe shall be limited to a height that will not cause excessive deformation of the bottom layers of pipes under anticipated temperature conditions. Where necessary due to ground conditions the pipe shall be stored on wooden sleepers, spaced suitably and of such width as not to allow deformation of the pipe at the point of contact with the sleeper or between supports.
- D. The handling of the joined pipe line shall be in such a manner that the pipe is not damaged by dragging it over sharp and cutting objects. Slings for handling the pipeline shall not be positioned at butt fused joints. Sections of the pipes with deep cuts and gouges shall be removed and the ends of the pipeline rejoined.
- E. Pipe shall be welded/fused together in one length, if space permits. Pipe may be placed on pipe rollers before pulling into bore hole to minimize damage to the pipe. It is critical that all original oxidized pipe surfaces be removed in order for fusion to take place. The scraping process requires that approximately .10" of the outer "skin" be removed in order to penetrate the oxidation and contamination barrier. Oxidized pipe surface simply will not bond.
- F. ACCEPTABILITY OF DAMAGED PIPE: Cuts or gouges that reduce the wall thickness by more than 10% is not acceptable and must be cut out and discarded.
- G. BUTT FUSION LOG: Each butt fusion shall be recorded and logged by an electronic monitoring device (McElroy Datalogger or approved equal is required) affixed to the fusion machine. Joint data shall be submitted as part of the As-Recorded information, in accordance with this specification.
- H. BUTT FUSION TESTING: When requested by an inspector, butt fusion testing will be performed. The test fusion shall be allowed to cool completely, and then fusion test coupons shall be cut out.
- I. MECHANICAL JOINING: Polyethylene pipe and fittings may be joined to other materials by means of flanged connections (flange adapters, electrofused couplings, and back-up rings) or mechanical couplings designed for joining polyethylene pipe or for joining polyethylene pipe to another material. Mechanical couplings shall be fully pressure rated and fully thrust restrained such that when installed in accordance with manufacturer's recommendations, a longitudinal load applied to the mechanical coupling will cause the pipe to yield before the mechanical coupling disjoins. External joint restraints shall not be used in lieu of fully restrained

mechanical couplings.

- J. Contractor shall have the ability to electrofuse couplings to the pipe at an 11.25 deg angle in the pit to allow installation of the 11.25 deg elbows on the end of the pipe.

3.04 TESTING PIPE

- A. Cleaning and flushing are to be done by the Contractor in accordance with AWWA/ANSI C651.
- B. Directional drilled pipe shall be tested by Contractor prior to and after pullback. This testing is to be included in the contract price. The pressure shall be maintained at 150 psi for at least one hour. Contractor shall adhere to any additional requirements of ASTM F2164-18 and Sections 15010 and 15060.
- C. Pipe shall be tested in sections, end to end, or 2,000 linear feet whichever distance is smaller.

3.05 SITE RESTORATION

- A. Following drilling operations, Contractor will de-mobilize equipment and restore the work site to original conditions. All excavations will be backfilled and compacted in accordance with the plans.
- B. Surface restoration shall be completed in accordance with the Specifications.
- C. Drilling pits shown on the plans are for reference only. If actual pit dimensions exceed the dimensions shown on the plans, the Contractor shall be responsible for complete restoration of the pit area to the original condition including all fill, sub-base, limerock base, asphalt, concrete, landscaping, etc.
- D. Disposal of fluids is the responsibility of the Contractor. Disposal of fluids shall be done in a manner that is in compliance with all permits and applicable federal, state, or local environmental regulations. The bentonite drilling slurry may be recycled for reuse in the hole opening operation, or shall be hauled by the Contractor to an approved location or landfill for proper disposal. Contractor shall thoroughly clean entire area of any fluid residue upon completion of installation, and replace any and all plants and sod damaged, discolored or stained by drilling fluids.

3.06 RECORD KEEPING AND AS-BUILTS

- A. Contractor shall maintain a daily project log of drilling operations and a guidance system log with a copy given to Engineer at completion of project.
- B. The MGS data shall be recorded every 25 feet during the actual crossing operation. The Contractor shall furnish "As-Built" plan and profile drawings based on these recordings showing the actual location horizontally and vertically of the installation, and all utility facilities found during the installation. The MGS data shall be certified accurate by the Contractor to the capability of the MGS System.
- C. As-built drawings shall be completed by a professional surveyor.

PART 4 - ENVIRONMENTAL AND SAFETY CONCERNS

4.01 GENERAL REQUIREMENTS

- A. The horizontal directional drilling operation is to be operated in a manner to eliminate the discharge of water, drilling mud and cuttings to the adjacent water

bodies, stormwater systems, or land areas involved during the construction process. The Contractor shall provide equipment and procedures to maximize the recirculation or reuse of drilling mud to minimize waste. All excavated pits used in the drilling operations shall be lined by the Contractor with heavy duty plastic sheeting with sealed joints to prevent the migration of drilling fluids and/or ground water.

- B. The Contractor shall visit the site and must be aware of all structures and site limitations at the directional drill crossing and provide the Engineer with a drilling plan outlining procedures to prevent drilling fluid from adversely affecting the surrounding area.
- C. The general work areas on the entry and exit sides of the crossing shall be enclosed by a berm to contain unplanned spills or discharge.
- D. Waste cuttings and drilling mud shall be processed through a solids control plant comprised as a minimum of sumps, pumps, tanks, de-salter/de-sander, centrifuges, material handlers, and haulers all in a quantity sufficient to perform the cleaning/separating operation without interference with the drilling program. The cuttings and excess drilling fluids shall be dewatered and dried by the Contractor to the extent necessary for disposal in offsite landfills. Water from the dewatering process shall be treated by the Contractor to meet permit requirements and disposed of locally. The cuttings and water for disposal are subject to being sampled and tested. The construction site and adjacent areas will be checked frequently for signs of unplanned leaks or seeps.
- E. Equipment (graders, shovels, etc.) and materials (such as groundsheets, hay bales, booms, and absorbent pads) for cleanup and contingencies shall be provided in sufficient quantities by the Contractor and maintained at all sites for use in the event of inadvertent leaks, seeps, or spills.
- F. Waste drilling mud and cuttings shall be dewatered, dried, and stock piled such that it can be loaded by a front-end loader, transferred to a truck and hauled offsite to a suitable legal disposal site. The maximum allowed water content of these solids is 50% of weight.
- G. Due to a limited storage space at the worksites, dewatering and disposal work shall be concurrent with drilling operations. Treatment of water shall satisfy regulatory agencies before it is discharged.
- H. Contractor shall place silt fence between all drilling operations and any drainage, wetland, waterway, or other areas designated for such protection by contract documents, state, federal, and 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' of any water body or wetland.

- I. Contractor shall adhere to all applicable state, federal, and local safety regulations and all operations shall be conducted in a safe manner. Safety meetings shall be conducted at least weekly with a written record of attendance and topic submitted to the Engineer.

END OF SECTION

SECTION 02401

DEWATERING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The Work to be performed under this Section shall include furnishing all professional services, equipment, and labor necessary to dewatering subsurface waters from excavation areas in accordance with the requirements set forth herein.
- B. The Contractor shall be responsible to determine whether dewatering is necessary for the means and methods chosen for the completion of the Work and shall be responsible to design, install, and operate the dewatering system.
- C. The Contractor shall apply for and obtain all required dewatering permits. All costs associated with dewatering permits shall be considered incidental to the cost of construction and shall be included in the Contract Price unless specified otherwise.

1.01 RELATED SECTIONS

- A. Section 02221 – Trenching, Bedding, and Backfill for Pipe

1.02 REFERENCES

- A. The dewatering of any excavation area and the disposal of the water shall be performed in strict accordance with the latest revision of all applicable government Agency rules and regulations including but not limited to:
 - 1. The local Agency Having Jurisdiction (AHJ)
 - 2. The Florida Department of Environmental Protection
 - 3. South Florida Water Management District
 - 4. Miami-Dade County

PART 2 - PRODUCTS

2.01 STORMWATER AND SUBSURFACE WATER MANAGEMENT PLAN

- A. The Contractor shall submit to the regulatory agencies for approval, its plans for managing storm and subsurface water in accordance with the agency requirements.
- B. The plan should include both narrative and pictorial information clearly showing how storm and subsurface waters will be accumulated, treated, and disposed.
 - 1. The dewatering plan shall be designed in accordance with the Best Management Practices (BMP's) adopted by FDEP.

- C. The Contractor shall provide and submit a dewatering permit application signed and sealed by a State of Florida Licensed Professional Engineer or Geologist as required by the applicable government Agency. The cost of these professional services shall be considered incidental to the cost of dewatering.

2.02 ENVIRONMENTAL CONTAMINATION

- A. It was determined that the project area is in proximity to a few known environmentally contaminated site, as determined by the Miami-Dade County Environmental Considerations website. If the Contractor deems it necessary to dewater, the Contractor shall be required to obtain a dewatering permit from Miami-Dade County and adhere to all permit conditions. This is in addition to a dewatering permit, if required, by SFWMD. All costs associated with this shall be considered incidental to the cost of construction.

PART 3 - EXECUTION

3.01 DEWATERING

- A. When subsurface water is encountered, the Contractor shall utilize suitable equipment to adequately dewater the excavation so that it will be dry for structural work and pipe laying. At a minimum, the groundwater shall be lowered to at least 6-inches below the lowest point of the excavation bottom.
- B. The Contractor shall provide testing and monitoring of dewatering operations in accordance with conditions of the agency permits obtained by the Contractor. The cost of testing and monitoring shall be considered incidental to the cost of dewatering.

3.02 DISPOSAL

- A. Water pumped from the trench or other excavation shall be disposed of in accordance with the BMP's and permit conditions. Contractor is responsible for acquiring all permits required to discharge the water and shall protect waterways from turbidity during the dewatering operation.
 - 1. The Contractor's plan shall include temporary settling boxes, culverts, barricades and other protective measures to prevent damage to property or injury to any person or persons.
 - 2. No flooding of streets, roadways, driveways, or private property will be permitted. Engines driving dewatering pumps shall be equipped with critical grade mufflers.
 - 3. All dewatering operations shall be in compliance with Stormwater Pollution Prevention measures.

END OF SECTION

SECTION 02513

ASPHALTIC CONCRETE PAVING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Furnish all labor, materials, equipment and incidentals required and place asphaltic concrete pavement in accordance with the elevations and typical sections as depicted in the Drawings and specified herein.

1.02 RELATED SECTIONS

- A. Section 01340 – Shop Drawings, Working Drawings, and Samples
- B. Section 01410 – Materials and Installation Testing
- C. Section 02100 – Site Preparation

1.03 REFERENCES

- A. The Work under this Contract shall be in strict accordance with the following codes and standards.
 - 1. The applicable municipality.
 - 2. Miami-Dade County Traffic Engineering Division.
 - 3. Florida Department of Transportation Specifications (FDOT).
 - 4. OSHA Safety and Health Standards for Construction.

1.04 SUBMITTALS

- A. Submit mix design for approval in accordance with Section 01340.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Asphaltic concrete pavement shall conform to the following FDOT Standard Specifications:
 - 1. Section 160 – Stabilization.
 - 2. Section 200 – Limerock base.
 - 3. Section 300 – Prime and tack coats.
 - 4. Section 331 (2000) – Type S Asphalt.
 - 5. Section 334 – Superpave asphalt concrete.
- B. The materials of the asphaltic concrete surface shall conform the applicable sections of FDOT Standard Specifications for Asphaltic Concrete with the following exception:
 - 1. Recycled asphalt may not be used for the final course.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. All asphalt installation shall be in accordance with FDOT Standard Specification 330 – Hot Mix Asphalt General Construction Requirements.
- B. All soft and yielding material and other portions of the subgrade which will not compact readily shall be removed and replaced with suitable material and the whole subgrade brought to line and grade and to a foundation of uniform compaction and supporting power. The cost of removing and replacing unsuitable material shall be included in the bid for the paving.
- C. The subgrade, in both cut and fill sections, shall be compacted to a density and LBR as indicated in the Drawings. Unless the subgrade material at the time of compacting contains sufficient moisture to permit proper compaction it shall be moistened as necessary and then compacted. Subgrade material containing excess moisture shall be permitted to dry to the proper consistency before being compacted. The subgrade shall be shaped prior to making the density tests. The required density shall be maintained until the base or pavement has been laid or until the aggregate materials for the base or pavement course have been spread in place.
- D. The minimum compacted thickness of the limerock base shall be as depicted in the Drawings applied in four-inch maximum layers of equal depth unless otherwise depicted in the Drawings. The width of the limerock base shall be wider than the pavement as depicted in the Drawings.
- E. Before the prime coat is applied, all loose material, dust, dirt or other foreign material which might prevent bond with existing surface shall be moved to the shoulders to the full width of the base by means of revolving brooms, mechanical sweepers, blowers, supplemented by hand sweeping or other approved methods. The glazed finish shall have been removed from the base. The prime coat shall be applied by a pressure distributor so that approximately 0.1 gallons per square yard is applied uniformly and thoroughly to a clean surface.
- F. Prior to the application of the surface course, all loose material, dust, dirt and all foreign material which might prevent proper bond with the existing surface shall be removed to the full width of the repair by means of approved mechanical sweepers and supplemented by hand sweeping if required.
- G. Apply bituminous tack coat at a rate between 0.02 and 0.10 gallons per square yard. Bituminous material shall be heated as per manufacturers' recommendations.
- H. All manhole castings, valve boxes or other utility castings within the area to be surfaced shall be adjusted to the proposed surface elevation by the Contractor. The work shall be accomplished in such a manner as to leave the casting fixed permanently in its correct position.
- I. Prior to the application of the surface course, all landscaping (including sodding) and irrigation shall be properly installed and accepted by the Owner or the Engineer.

3.02 PAVEMENT REPAIR

- A. All damage to pavement as a result of the work (construction or maintenance) under this contract shall be repaired according to the plans and specifications at the

Contractor's cost. Pavement shall be repaired to match the original surface material and original grade; however, the asphalt concrete thickness shall not be less than 1 inch. The repair shall include the preparation of the subgrade, the placing and compacting of the limerock base, the preparation and priming of the base, the placing and maintaining of the surface treatment, all as specified herein and as shown on the Drawings.

- B. The width of all repairs shall extend at least 12 inches beyond the limit of the damage or as shown on the Drawings. The edge of the pavement to be left in place shall be saw cut to a true edge and should provide a clean edge to abut the repair. The line of the repair shall be reasonably uniform with no unnecessary irregularities.

3.03 TESTING

- A. Refer to Section 01410 – Materials and Installation Testing.

END OF SECTION

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SECTION 02580

PAVEMENT MARKINGS AND SIGNING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The Contractor shall supply all labor, equipment, materials and incidentals necessary to install pavement markings and signing in accordance with the Drawings and the following specifications.
- B. The Contractor and/or sub-contractor that performs the pavements markings and signage Work for the project shall have a current Miami-Dade County Certificate of Competency.

1.02 RELATED SECTIONS

- A. Section 01340 – Shop Drawings, Working Drawings, and Samples

1.03 REFERENCED SPECIFICATIONS, CODES AND STANDARDS

- A. The American Association of State Highway and Transportation Officials (AASHTO)
- B. Federal Highway Administration – Manual on Uniform Traffic Control Devices (MUTCD) (2009)
- C. FDOT Design Standards (FY 2019-20).
- D. FDOT Standard Specifications for Road and Bridge Construction (July 2019).
- E. Other standard references in the Drawings.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. All pavement markings shall be thermoplastic unless otherwise noted. Thermoplastic pavement markings shall be fully reflectorized and meet the requirements of AASHTO M249 and the FDOT Standard Specifications for Road and Bridge Construction.
- B. Traffic paint shall be fully reflectorized and meet the requirements of the FDOT Standard Specifications for Road and Bridge Construction and shall be Sherwin-Williams "Pro-Mar" Traffic Marking Paint, series B29 or Glidden Traffic paint #63228. Provide two (2) coats of paint, 5 mil minimum wet film thickness each.
- C. Pavement markings on brick or concrete pavers shall be 3M 5730/31 tape applied with contact cement per manufacturers specifications.
- D. All signs in right of way shall have type XI retroreflective sheeting materials made with prisms, except for school zone and pedestrian signs which shall be comprised of reflective fluorescent yellow-green with type IV reflective sheeting.

PART 3 - EXECUTION

- A. All pavement marking and signing shall be applied in accordance with standard details for Pavement Markings, Signing and Geometrics as applicable to the County

in which the Work resides.

- B. All pavement markings shall be temporarily applied as paint upon completion of construction of asphalt paving. All such temporary paint shall be replaced with thermoplastic at least 14 days, but no later than 120 days, after paving.
- C. Precast concrete bumpers (wheelstops) are required for all parking stall unless specifically stated in the Drawings. Wheelstops are to be pinned using (2) - 24" #4 bar. Wheelstops are to be painted as directed by the Owner.
- D. Parking stalls shall be marked in accordance with the typical pattern indicated on the Drawings. Stall width and depth, and drive widths indicated are minimum and must not be reduced.
- E. An FDOT approved sealer must be applied to concrete surfaces prior to application of pavement markings.
- F. Paint concrete base and base plate at all parking lot lighting standards.
- G. Blue/blue RPM's are to be placed next to fire hydrants. The location shall be the center of the adjacent lane or as directed by the utility Owner.
- H. The Contractor shall refurbish pavement marking and signs damaged during construction at no additional cost to the Owner.
- I. All signs and sign supports intended for removal shall be removed completely and disposed of properly.
- J. All signs to be relocated shall be properly installed in a temporary location with applicable viability and not interfere with construction prior to proper installation in the proposed location.
- K. All signs in public right of way shall include the installer's ID sticker/decal on the back of all signs installed as part of this project.

END OF SECTION

SECTION 15010

TESTING PIPING SYSTEMS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Perform pressure testing of water mains and sewage force mains using Contractor's qualified personnel or employ and pay for a qualified organization to perform specified services.

1.02 RELATED SECTIONS

- A. Section 15060 – HDPE Pipe
- B. Section 15062 – Ductile Iron Pipe and Fittings
- C. Other Sections as applicable.

1.01 REFERENCES

- A. AWWA C600 – Installation of Ductile-Iron Mains and their Appurtenances
- B. AWWA C605 – Underground Installation of PVC and Molecularly Oriented PVCO Pressure Pipe and Fittings
- C. ASTM F2164-18 – Standard Practice for Field Leak Testing of Polyethylene (PE) and Crosslinked Polyethylene (PEX) Pressure Piping Systems Using Hydrostatic Pressure

1.02 DESCRIPTION

- A. Perform testing of piping systems in accordance with the latest edition of the AWWA REFERENCES and as specified above.
- B. Provide instrument required for testing of piping systems.
 - 1. Make instruments available to Engineer to facilitate spot checks during testing.
 - 2. Retain possession of instruments; remove from site at completion of services.
- C. Provide all water required for flushing and testing. The Contractor shall obtain a construction meter from the local municipality at current rates and pay for meter rental and all water used.
- D. Provide all necessary pumping equipment and other equipment, materials, and facilities required for proper completion of the flushing and testing specified.

- E. Source and quality of water, procedure, and test equipment shall be acceptable to the Engineer. Length of tested line shall not exceed 2,000 feet.
- F. All tests shall be made in the presence of the Engineer. Notify Engineer at least 48 hours before any Work is to be inspected or tested.
- G. If inspection or test shows defects, the piping system(s) shall be repaired or replaced, and inspection repeated, until such piping is acceptable to the Engineer.
- H. All pipe, fittings, valves, and joints shall be carefully examined during test. Leaky joints shall be tightened by remaking the joint.
- I. Sections of the system may be tested separately. It shall be distinctly understood that any defect which may subsequently develop in section already tested and accepted shall promptly be corrected and that section retested.
- J. Disposal of the water used for testing shall be subject to the approval of the Engineer.

1.03 QUALITY ASSURANCE

- A. The organization which performs the testing shall, prior to testing, provide their qualifications and demonstrate their ability to perform the services to the satisfaction of the Engineer.

1.04 SUBMITTALS

- A. Preliminary
 - 1. Submit three copies of documentation to confirm compliance with Quality Assurance provisions:
 - a. Organization supervisor and personnel training and qualifications.
 - b. Specimen copy of each of the report forms proposed for use.
- B. At least 14 days prior to Contractor's request for final inspection, submit three copies of final reports on applicable reporting forms, for review.
 - 1. Each individual final reporting form must bear the signature of the person who recorded data and that of the supervisor of the reporting organization.
 - 2. Identify instruments of all types which were used and last date of calibration of each.

1.05 JOB CONDITIONS

- A. Prior to start of testing of piping systems, verify that required "Job Conditions" are met:
 - 1. System or system element installation is complete.
 - 2. All required materials, water, instruments, etc. are on hand.

3. All other preparations are completed.

1.06 TESTING PROCEDURES

A. Gravity Sewer System:

1. Deflection Testing

- a. PVC pipe shall be tested for excessive deflection by means of a "Go, No-Go" mandrel or sewer ball. A 7 1/2% Deflection Mandrel shall be pulled through each manhole section to determine if excessive deflection has taken place. If the mandrel fails to be pulled through the sewer pipe, the Contractor shall attempt to pull the mandrel through from the other end of the manhole section. If the mandrel fails to be pulled through, again, the Contractor shall repair or replace that portion of the sewer main which has exceeded the 7 1/2% allowable pipe deflection.
- b. The Deflection Mandrel to be used for testing shall be submitted to the Engineer for approval prior to use. Each mandrel shall be constructed and utilized in accordance with the Uni-Bell Handbook of P.V.C. Pipe and the North American Pipe Corporation.
- c. Deflection Testing shall not take place until thirty days following the final backfilling over the pipe. This will allow time for settlement of all the backfill material. The Engineer's representative shall be present at all deflection tests.
- d. As an alternative to Deflection Mandrel testing, deflection testing may be performed by lamping if approved by the Owner and Engineer. Sewer lamping shall be witnessed by the Engineer and a representative of the Owner.

2. Exfiltration and Infiltration Testing

- a. Leakage tests by exfiltration and infiltration, as described below, will be made on all pipe. The Engineer shall have the option of determining which test(s) shall be employed. Generally, if the groundwater table is below the bottom of the pipe an exfiltration test shall be used. All other pipe shall be tested for infiltration.
- b. Exfiltration Test
 - 1) Exfiltration tests will be made on the pipe before or after backfilling at the discretion of the Engineer. The length of the sewer to be tested shall be such that the head over the crown of the upstream end is not less than 2 feet and the head over the downstream crown is not more than 6 feet unless directed otherwise by the Engineer. The sewer shall be plugged by pneumatic bags or mechanical plugs in such a manner that the air can be released from the sewer while it is being filled with water. The test shall be continued for one hour and provisions shall be made for measuring the amount of water required to maintain the water at a constant level during this period. If test results are unsatisfactory, the

Engineer may direct that additional tests are made on any or all of the pipe.

- 2) If any joint shows an appreciable amount of leakage, the jointing material shall be removed and joint remade. If any pipe is defective, it shall be removed and replaced. No amount of leakage will be accepted. If the amount of leakage indicates defective joints or broken pipes, they shall be corrected by the Contractor.

c. Infiltration Test

- 1) Pipe shall be tested for infiltration after the backfill has been placed. Infiltration tests shall be made under the supervision of the Engineer, and the length of line to be tested shall be as directed by the Engineer. There shall be no allowable leakage.
- 2) Manhole exfiltration leakage shall not exceed 4 gallons per day per unit.
- 3) Sewer pipe exfiltration leakage shall not exceed 10 gallons per day per inch diameter per mile in a two-hour test period for any length of section tested.
- 4) Visible manhole or sewer pipe infiltration leakage shall not be acceptable.
- 5) Rates of infiltration shall be determined by means of a V-notch weir to be provided and installed by the Contractor in an approved manner, and at such times and locations as may be directed by the Engineer.
- 6) If an inspection of the completed sewer or any part thereof shows any manholes, pipes, or joints which allow the infiltration of water in a noticeable stream or jet, the defective work or material shall be replaced or repaired as directed.
- 7) All water used in testing and flushing shall be furnished at the Contractor's expense.

3. The sanitary sewer system shall be televised prior to final acceptance by the Engineer or the Owner. Video recording and reporting shall be reviewed. Contractor shall be responsible for correcting any deficiencies prior to acceptance by the Owner or submittal to any permitting agency. Testing and corrections shall be at the Contractor's expense.

B. Pressure Piping Systems

1. Water, sewer, and drainage pressure piping shall pass a hydrostatic pressure test and a leakage test as defined below before acceptance. The pressure and leakage test shall be made after all jointing operations are completed and after backfilling is completed. All concrete reaction blocks, or other bracing and restraining facilities, shall be in place at least 14 days before the initial filling of the line.

2. The pressure and leakage tests may be applied to an individual section of line isolated between the existing line valves or may be applied to shorter sections of line at the Contractor's option. If shorter sections are tested, test plugs or bulkheads as required at the ends of the test section shall be furnished and installed by the Contractor at his expense, together with all anchors, braces, and other devices required to withstand the hydrostatic pressure on such plug or plugs, without imposing any hydraulic thrust on the pipe line or any part thereof. The Contractor shall be solely responsible for any and all damage to the pipe line, and/or to any other facility, which may result from the failure of test plugs furnished by them or supports therefore, in any case.

3. Hydrostatic Tests:

- a. The section of line to be tested shall be slowly filled with water and all air expelled from the pipe. Care shall be taken that all air valves are installed and open in the section being filled, and that the rate of filling does not exceed the venting capacity of the air valves.

- b. Hydrostatic test pressure shall be as follows:

System	Test Pressure
Wastewater Force Main	150 psi
Potable Water Main	150 psi
Other Pressure Pipe	1.5 times maximum operation pressure at the lowest elevation of the test section.

- c. After the pipe has been laid, all newly laid pipe of any valved section thereof shall be subjected to a hydrostatic pressure test.

1) Test pressure shall:

- i. Not exceed pipe or thrust-restraint design pressures.
- ii. Be of at least 2-hour duration.
- iii. Not vary by more than ± 5 psi (0.35 Bar) for the duration of the test.
- iv. Not exceed twice the rated pressure of the valves or hydrants when the pressure boundary of the test section includes closed gate valves or hydrants.
NOTE: Valves shall not be operated in either direction at differential pressures exceeding the rated pressures.
- v. Not exceed the rated pressure of the valves when the pressure boundary of the test section includes closed valves.

- 2) Each valved section of pipe shall be filled with water slowly and the specified test pressure based on the elevation of the lowest point of the line or section under test and corrected to the elevation of the test gauge shall be applied by means of a pump connected to the pipe in a manner satisfactory to the

Engineer. Valves shall not be operated in either the opening or closing direction at differential pressures above the rated pressure. The system shall be allowed to stabilize at the test pressure before conducting the leakage test.

- d. Examination: Any exposed pipe, fittings, valves, hydrants, and joints shall be examined carefully during the test. Any damaged or defective pipe fittings, valves, or hydrants that are discovered following the pressure test shall be repaired or replaced with sound material and the test shall be repeated until it is satisfactory to the Engineer.

1) Leakage Test

- i. A leakage test shall be conducted concurrently with the pressure test. Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe, or valved section thereof, to maintain pressure within 5 psi (0.35 Bar) of the specified test pressure after the air in the pipeline has been expelled and the pipe has been filled with water. Leakage SHALL NOT BE MEASURED BY A DROP IN PRESSURE IN A TEST SECTION OVER A PERIOD OF TIME.
- ii. No pipe installation will be accepted if the leakage is greater than that determined by the following formula:

$$L = \frac{SD * P^{\frac{1}{2}}}{148,000}$$

In which L is the allowable leakage, in gallons per hour; S is the length of pipe tested in feet; D is the nominal diameter of the pipe in inches; and P is the average test pressure during the leakage test in pounds per square inch.

- (a) To obtain leakage in liter/hour, multiply the values in the table by 3.785.
- (b) When testing against closed metal-seated valves, an additional leakage per closed valve of 0.0078 gal/h/in (0.0012 L/h/mm) of nominal valve size shall be allowed.
- (c) When hydrants are in the test section, the test shall be made against the closed hydrant.
- (d) Acceptance shall be determined on the basis of allowable leakage. If any test of pipe laid discloses leakage greater than that specified in Section "b" above, Contractor shall, at his own expense, locate and make repairs as necessary until the leakage is within the specified allowance.

- (e) All visible leaks are to be repaired regardless of the amount of leakage.

- e. For hydrostatic testing of HDPE, Contractor shall adhere to the requirements of ASTM F2164. See Section 15060.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 GENERAL

- A. Prior to testing, pig and flush all piping systems with water to remove all debris in the system. Pigging of lines 12" and smaller is not required unless the line becomes contaminated.
- B. No separate payment for testing shall be made.

END OF SECTION

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SECTION 15060

HIGH DENSITY POLYETHYLENE (HDPE) PIPE AND FITTINGS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Furnish all labor, materials, equipment and incidentals required to install HDPE pressure pipe, fittings, and appurtenances as shown on the Drawings and specified herein. The products and materials specified herein are intended to be standard types of HDPE Pressure Mains (AWWA C901 and C905) and ductile iron fittings.

1.02 RELATED SECTIONS

- A. Section 02221 - Trenching, Bedding, and Backfill for Pipe
- B. Section 02341 - Horizontal Directional Drilling (HDD) with (HDPE) Pipe
- C. Section 15100 - Valves and Appurtenances
- D. Other Sections as applicable.

1.03 REFERENCES

- A. AWWA C901 Polyethylene (PE) Pressure Pipe & Tubing - ½ Inch Through 3 Inch for Water Service.
- B. AWWA C906 Polyethylene (PE) Pressure Pipe & Fittings - 4 Inch Through 63 Inch for Water Distribution.
- C. ASTM D1238 Melt Flow Index
- D. ASTM D1505 Density of Plastics
- E. ASTM D2837 Hydrostatic Design Basis
- F. ASTM D3035 Standard Spec for PE Pipe (DR-PR) Based on Controlled Outside Diameter.
- G. ASTM D3261 Butt Heat Fusion PE Fittings for PE Pipe & Tubing
- H. ASTM D3350 Standard Specification for PE Pipe & Fittings Materials
- I. NSF/ANSI STD. #61 Drinking Water Components
- J. NSF/ANSI STD. #14 Plastic Piping Components & Related Materials

1.04 QUALIFICATIONS

- A. All of the HDPE pipe and ductile-iron fittings shall be furnished by manufacturers who are fully experienced, reputable, and qualified in the manufacture of the materials to be furnished. The pipe and fittings shall be designed, constructed, and installed in accordance with AWWA Standards for HDPE Pipe and using the best practices and methods as specified herein. The pipe manufacturer shall supply a one year warranty from date of shipment of their products. All pipes and fittings shall have NSF product certification and be U.L. product certified.

1.05 SUBMITTALS

- A. Submit to the Engineer within thirty (30) days after execution of the Contract a list of materials to be furnished, the names of the suppliers, and the date of delivery of materials to the site.
- B. All HDPE pipe and ductile-iron fittings to be installed under this Contract shall be inspected and tested at the foundry as required by the standard specifications to which the material is manufactured. Furnish to the Engineer in duplicate sworn certificates of such tests and their results. In addition, all HDPE pipe and ductile iron fittings to be installed under this Contract may be inspected at the foundry for compliance with these Specifications by an independent testing laboratory selected by the Owner. The manufacturer's cooperation shall be required in these inspections. The cost of foundry inspection requested by the Owner of all pipe approved for this contract will be borne by the Owner.
- C. Shop Drawings shall be submitted to the Engineer for approval and shall include dimensioning, methods and locations of supports and all pertinent technical specifications for all piping to be furnished. Shop drawings shall be prepared by the pipe manufacturer.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Materials used for the manufacture of polyethylene pipe and fittings shall be made from a PE4710 high density polyethylene resin compound meeting cell classification 345434C per ASTM D3350; and meeting Type III, Class C, Category 5, Grade P34 per ASTM D1238.
- B. High Density Polyethylene (HDPE) pipe shall comply with AWWA Specifications C901 or 906 as applicable.
- C. If rework compounds are required, only those generated in the Manufacturer's own plant from resin compounds of the same class and type from the same raw material supplier shall be used.
- D. Dimensions and workmanship shall be as specified by ASTM F714. HDPE fittings and transitions shall meet ASTM D3261. HDPE pipe shall have a minimum density

of 0.955 grams per cubic centimeter. All HDPE pipe and fittings shall have a Hydrostatic Design Basis (HDB) of 1,600 psi.

- E. HDPE pipe and accessories shall have a Dimension Ration (DR) as indicated on the Drawings.
- F. The pipe manufacturer must certify compliance with the above requirements.

2.02 FITTINGS

- A. All fittings shall be ductile iron pipe (DIP) unless otherwise indicated on the Drawings.
- B. HDPE fittings:
 - 1. All molded fittings and fabricated fittings shall be fully pressure rated to match the pipe DR pressure rating to which they are made. All fittings shall be molded or fabricated by the manufacturer. No Contractor fabricated fittings shall be used unless approved by the Engineer.
 - 2. The manufacturer of the HDPE pipe shall supply all HDPE fittings and accessories as well as any adapters and/or specials required to perform the work as shown on the Drawings and specified herein.
 - 3. All fittings shall be installed using butt-fused fittings, thermo-fused fittings/couplings, or flanged adapters and must be approved by the Engineer. No size on size wet taps shall be permitted.
- C. All transition from HDPE pipe to ductile iron or PVC shall be made per the approval of Engineer and per the HDPE pipe manufacturer's recommendations. A molded flange connector adapter within a carbon steel back-up ring assembly shall be used for pipe type transitions. Ductile iron back-up rings shall mate with cast iron flanges per ANSI B16.1. A 316 stainless steel back-up ring shall mate with a 316 stainless steel flange per ANSI B16.1
 - 1. Transition from HDPE to ductile iron fittings and valves shall be approved by Engineer before installation.
 - 2. No solid sleeves shall be allowed between such material transitions.

2.03 PIPE IDENTIFICATION

- A. The following shall be continuously indent printed on the pipe or spaced at intervals not exceeding 5 feet:
 - 1. Name and/or trademark of the pipe manufacturer.
 - 2. Nominal pipe size.
 - 3. Dimension ratio.

4. The letters PE followed by the polyethylene grade in accordance with ASTM D1248 followed by the hydrostatic design basis in 160's of psi, e.g., PE 3408.
5. Manufacturing standard reference, e.g., ASTM F714 or D3035, as required.
6. A production code from which the date and place of manufacture can be determined.
7. Color identification, either stripped by co-extruding longitudinal identifiable color markings or shall be solid in color and as follows:
 - a. BLUE – Potable Water
 - b. GREEN – Sanitary Sewer
 - c. LAVENDAR – IQ Cover All
 - d. BLACK - Drainage

PART 3 - EXECUTION

3.01 JOINTING METHOD

- A. The pipe shall be joined with butt, heat fusion joints as outlined in ASTM D3261. All joints shall be made in strict compliance with the manufacturer's recommendations. A factory qualified joining technician as designated by the pipe manufacturer or an experienced, trained technician shall perform all heat fusion joints in the presence of the inspector.
- B. Lengths of pipe shall be assembled into suitable installation lengths by the butt-fusion process. All pipes so joined shall be made from the same class and type of raw material made by the same raw material supplier. Pipe shall be furnished in standard laying lengths not to exceed 50 feet and no shorter than 20 feet.
- C. On days butt fusions are to be made, the first fusion shall be a trail fusion in the presence of an inspector. The following shall apply:
 1. Heating plates shall be inspected for cuts and scrapes. The plate temperature shall be measured at various locations to ensure proper heating/melting per manufacturer's recommendations and approval by inspector.
 2. The fusion or test section shall be cut out after cooling completely for inspection.
 3. The test section shall be 12" or 30 times (minimum) the wall thickness in length and 1" or 1.5 times the wall thickness in width (minimum).
 4. The joint shall be visually inspected as to continuity of "beads" from the melted material, and for assurance of "cold joint" prevention (i.e. joint shall

have visible molded material between walls of pipe). Joint spacing between the walls of the two ends shall be a minimum of 1/16" to a maximum 3/16".

- D. The polyethylene flange adapters at pipe material transitions shall be backed up by stainless steel flanges conforming to ANSI B16.1 and shaped as necessary to suit the outside dimensions of the pipe. The flange adapter assemblies shall be connected with corrosion resisting bolts and nuts of Type 316 Stainless Steel. All bolts shall be tightened to the manufacturer's specified torques. Bolts shall be tightened alternatively and evenly. After installation apply a bitumastic coating to bolts and nuts.

3.02 INSTALLATION

- A. High Density Polyethylene (HDPE) pipe shall be installed in accordance with the instruction of the manufacturer, as shown on the drawings and as specified herein. A factory qualified joining technician as designated by the pipe manufacturer shall perform all heat fusion joints.
- B. HDPE shall be installed either by Open Trench Construction or Directional Bore Method as outlined in this section.
- C. Care shall be taken in loading, transporting, and unloading to prevent injury to the pipe. Pipe or fitting shall not be dropped. All pipe or fitting shall be examined before installation, and no piece shall be installed which is found to be defective. Any damage to the pipe shall be repaired as directed by the Engineer. If any defective pipe is discovered after it has been installed, it shall be removed and replaced with a sound pipe in a satisfactory manner by the contractor, at their own expense.
- D. Under no circumstances shall the pipe or accessories be dropped into the trench or forced through a directional bore upon "pull-back".
- E. Care shall be taken during transportation of the pipe such that it will not be cut, kinked, or other damaged.
- F. Ropes, fabric, or rubber protected slings and straps shall be used when handling pipes. Chains, cables, or hooks inserted into the pipe ends shall not be used. Two slings spread apart shall be used for lifting each length of pipe.
- G. Pipes shall be stored on level ground, preferable turf or sand, free of sharp objects, which could damage the pipe. Stacking of the polyethylene pipe shall be limited to a height that will not cause excessive deformation of the bottom layers of pipes under anticipated temperature conditions. Where necessary due to ground conditions, the pipe shall be stored on wooden sleepers, spaced suitably and of such width as not to allow deformation of the pipe at the point of contact with the sleeper or between supports.
- H. Pipe shall be stored on clean level ground to prevent undue scratching or gouging. The handling of the pipe shall be in such a manner that the pipe is not damaged by dragging it over sharp and cutting objects. The maximum allowable depth of cuts,

scratches, or gouges on the exterior of the pipe is 10 percent of wall thickness. The interior pipe surface shall be free of cuts, gouges, or scratches.

- I. Pipe shall be laid to lines and grade shown on the drawings with bedding and backfill as shown on the drawings.
- J. When laying is not in progress, including lunchtime, the open ends of the pipe shall be closed by fabricated plugs, or by other approved means.
- K. Sections of pipe with cuts, scratches, or gouges exceeding 10 percent of the pipe wall thickness shall be removed completely and the ends of the pipeline rejoined.
- L. The pipe shall be joined by the method of thermal butt fusion, as outlined in this section. All joints shall be made in strict compliance with the manufacturer's recommendations.
- M. Mechanical connections of the polyethylene pipe to auxiliary equipment such as valves, pumps, and tanks shall be through flanged connections which shall consist of the following:
 - 1. A polyethylene flange shall be thermally butt-fused to the stub end of the pipe.
 - 2. A 316 stainless steel back up ring shall mate with a 316 stainless steel flange.
 - 3. 316 stainless steel bolts and nuts shall be used.
- N. Flange connections shall be provided with a full-face neoprene gasket.
- O. All HDPE pipe must be at the temperature of the surrounding soil at the time of backfilling and compaction.
- P. If a defective pipe is discovered after it has been installed, it shall be removed and replaced with a sound pipe in a satisfactory manner at no additional cost to the Owner. All pipe and fittings shall be thoroughly cleaned before installation, shall be kept clean until they are used in the work and when laid, shall conform to the lines and grades required.
- Q. Open Trench Installation:
 - 1. Specification, Section 022221 – Trenching, Bedding, and Backfilling shall apply in its entirety.
 - 2. The centerline of the pipe shall not deviate from a straight line drawn between the centers of the openings at the ends of the pipe by more than 1/16 inch per foot of length. If a piece of pipe fails to meet this requirement check for straightness, it shall be rejected and removed from the site. Laying instructions of the manufacturer shall be explicitly followed.
 - 3. Good alignment shall be preserved during installation. Deflection of the pipe

shall occur only at those places on design drawings and as approved by the Engineer. Fittings, in addition to those shown on the drawings, shall be used only if necessary or required by the Engineer.

4. Each length of the pipe shall have the assembly mark aligned with the pipe previously laid and held securely until enough backfill has been placed to hold the pipe in place. Joints shall not be "pulled" or "cramped".
5. Precautions shall be taken to prevent flotation of the pipe in the trench.
6. When moveable trench bracing such as trench boxes, moveable sheeting, shoring or plates are used to support the sides of the trench, care shall be taken in placing and moving the boxes or supporting bracing to prevent movement of the pipe, or disturbance of the pipe bedding and the backfill. Trench boxes, moveable sheeting, shoring, or plates shall not be allowed to extend below top of the pipe. As trench boxes, moveable sheeting, shoring, or plates are moved, pipe bedding shall be placed to fill any voids created and the backfill shall be re-compacted to provide uniform side support for the pipe.
7. Restrained joints shall be installed where shown on the drawings or as directed by the Engineer.

R. Directional Bore Installation

1. Refer to Section 02341 in its entirety.

3.03 PRESSURE AND LEAKAGE TESTS OF UNDERGROUND PRESSURE PIPING

- A. Hydrostatic pressure and leakage test shall conform to ASTM F2164-18.
- B. The pressure required for the field hydrostatic pressure test shall be 150 psi. The Contractor shall provide temporary plugs and blocking necessary to maintain the required test pressure. Corporation cocks at least 3/4 inches in diameter, pipe riser and angle globe valves shall be provided at each pipe dead-end in order to bleed air from the line. Duration of pressure test shall be at least two hours. The cost of these items shall be included as a part of testing.
- C. The leakage test shall be a concurrent test at the maximum operating pressure as determined by the Engineer with the pressure test and shall be of not less than 1-hour duration. All leaks evident at the surface shall be repaired and leakage eliminated regardless of total leakage as shown by test. Lines which fail to meet tests shall be repaired and retested as necessary until test requirements are complied with. Defective materials, pipes, valves, and accessories shall be removed and replaced. The pipelines shall be tested in such sections as may be directed by the Engineer by shutting valves or installing temporary plugs as required. The line shall be filled with water and all air removed and the test pressure shall be maintained in the pipe for the entire period by means of a force pump to be furnished by the Contractor. Accurate means shall be provided for measuring the water required to maintain this pressure. The amount of water required is a

measure of the leakage.

- D. The amount of leakage which will be permitted shall be in accordance with ASTM F2164-18.
- E. The Contractor must submit their plans for testing to the Engineer for review at least ten (10) days before starting the test. The Contractor shall remove and adequately dispose of all blocking material and equipment after completion and acceptance of the field hydrostatic test, unless otherwise directed by the Engineer. Any damage to the pipe coating shall be repaired by the Contractor. Lines shall be totally free and clean prior to final acceptance.

3.04 CLEANING AND FLUSHING

- A. The pipe shall be thoroughly cleaned of all foreign matter before installation. It is the responsibility to insure cleanliness of the pipe during installation and backfilling. At the conclusion of the work, the Contractor shall thoroughly clean all of the pipe, if necessary, by flushing with water or other materials which may have entered during the construction period. Debris cleaned from the lines shall be removed from the lowest outlet. If pipe is cleaned and if the groundwater level is above the pipe or following a heavy rain, the Engineer will examine the pipe for leaks. If defective pipes or joints are discovered at this time, they shall be repaired by the Contractor.

END OF SECTION

SECTION 15062

DUCTILE IRON PIPE AND FITTINGS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Ductile iron pipe and fittings piping shall be installed in those locations and depths as shown on the Drawings.
- B. The equipment and materials specified herein is intended to be standard and ductile iron pipe and fittings used in transporting water and wastewater.

1.02 RELATED SECTIONS

- A. Section 01340 – Shop Drawings, Working Drawings and Samples
- B. Section 15010 – Testing Piping Systems
- C. Section 15100 - Valves and Appurtenances
- D. Other Sections as Applicable.

1.03 REFERENCES

- A. ASTM International, (ASTM)
 - 1. ASTM B 117-99(2007) – Standard Practice for Operating Salt Spray (Fog) Apparatus.
 - 2. ASTM C 413-01(2006) – Standard Test Method for Absorption of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes.
 - 3. ASTM C 868-02(2008) – Standard Test Method for Chemical Resistance of Protective Linings.
 - 4. ASTM D 149-09 – Standard Test Method for Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies.
 - 5. ASTM D 870-09 – Standard Practice for Testing Water Resistance of Coatings Using Water Immersion.
 - 6. ASTM D 1653-03(2008) – Standard Test Methods for Water Vapor Transmission of Organic Coating Films.
 - 7. ASTM D 2370-98(2002) – Standard Test Method for Tensile Properties of Organic Coatings.
 - 8. ASTM D 2240-05 – Standard Test Method for Rubber Property—Durometer Hardness.
 - 9. ASTM D2583-07 – Standard Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor.

10. ASTM D 2794-93(2004) – Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
11. ASTM D 4400-99(2007) – Standard Test Method for Sag Resistance of Paints Using a Multinotch Applicator.
12. ASTM D 4060-14 – Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser.
13. ASTM D 4541-09 – Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers.
14. ASTM G 8-96(2003)e1 - Standard Test Methods for Cathodic Disbonding of Pipeline Coatings.
15. ASTM G 210-13 – Standard Practice for Operating the Severe Wastewater Analysis Testing Apparatus (S.W.A.T.).
16. ASTM A307 Grade B - Low-Carbon Steel Bolts for Flanged Pipe.
- B. ANSI/AWWA C10 - Cement-Mortar Lining for Ductile Iron and Gray Iron Pipe and Fittings for Water.
- C. ANSI/AWWA C105 - Polyethylene Encasement for Ductile Iron Piping for Water and Other Liquids.
- D. ANSI/AWWA C110 - Ductile Iron and Gray Iron Fittings 3 inch through 48 inch for Water and Other Liquids.
- E. ANSI/AWWA C150 - Thickness Design of Ductile Iron Pipe.
- F. ANSI/AWWA C151 - American National Standard for Ductile Iron Pipe, Centrifugally Cast.
- G. ANSI/AWWA C153 - Ductile Iron Compact and Gray Iron Fittings 3 inch through 16 inch for Water and Other Liquids.
- H. ANSI/AWWA C600 - Installation of Ductile Iron Water Mains and Their Appurtenances.
- I. ANSI/AWWA C651 - Disinfecting Water Mains.
- J. ASME/ANSI B16.1 - Cast Iron Pipe Flanges and Flanged Fittings, Class 125.
- K. ASME/ANSI B16.5 - Pipe Flanges and Flanged Fittings, Class 150 (Flat Face Flange).
- L. ASME/ANSI B16.42 - Ductile Iron Pipe flanges and Flanged Fittings, Class 150 (Flat Face Flange).
- M. Ductile Iron Pipe Research Association - Thrust Restraint Design for Ductile Iron Pipe.

1.04 SUBMITTALS

- A. Submit a list of materials to be furnished, with the names of the suppliers and the date of delivery.

- B. Submit sworn certificates of foundry material and strength tests, and their results. In addition, all ductile iron pipe and fittings may be inspected at the foundry for compliance with the Specifications by an independent testing laboratory selected by the Owners. The manufacturer's cooperation shall be required in these inspections. The cost of foundry inspections requested by the Owner will be borne by the Contractor.
- C. Waiving of the inspection privileges shall not relieve the Contractor or manufacturer of the responsibility of furnishing pipe and fittings meeting the Specification.
- D. Shop Drawings shall be submitted in accordance with Section 01340 and shall include dimensioning, methods and location of supports and all other pertinent technical specifications for all pipe and fittings to be furnished. Shop drawings shall be prepared by the pipe and fittings manufacturer.
- E. Manufacturer shall furnish a laying schedule providing a location, type, and size of all pipe joints.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Ductile iron pipe and fittings shall be furnished by manufacturers who are fully experienced, reputable, and qualified in the manufacture of the materials. The pipe and fittings shall be designed, constructed, and installed in accordance with the best practices and methods and shall comply with the Specifications in all respects. Acceptable manufacturers include:
 - 1. American Cast Iron Pipe Company
 - 2. US Pipe
 - 3. McWane Ductile

2.02 COMPRESSION JOINT PIPE AND FITTINGS

- A. Pipe shall conform to ANSI/AWWA C151/A21.51 and C150/A21.50 and shall conform to Rule 62-555.322, F.A.C.
- B. Fittings shall conform to ANSI/AWWA C110/A21.10 and C153/A21.53 and shall conform to Rule 62-555.322, F.A.C.
- C. Rubber gaskets shall conform to ANSI/AWWA C111/A21.11.
- D. Thickness shall be minimum pressure Class 350 through 12" and pressure Class 300 in sizes 14" and larger.
- E. Install compression joint pipe below ground. Provide sufficient quantities of lubricant and gaskets.

2.03 MECHANICAL JOINT PIPE AND FITTINGS

- A. Pipe shall conform to ANSI/AWWA A21.50/C151 and C150/A21.50 and shall

conform to Rule 62-555.322, F.A.C.

- B. Fittings shall conform to ANSI/AWWA C110/A21.10 & C153/A21.53 and shall conform to Rule 62-555.322, F.A.C.
- C. Thickness shall be minimum pressure Class 350 through 12" and pressure Class 300 in sizes 14" and larger.
- D. Rubber gaskets shall conform to ANSI/AWWA C111/A21.11.
- E. Bolts for mechanical joint pipe shall be tee-head design. Nuts and bolts shall be high-strength low alloy steel.
- F. Mechanical joint pipe shall be installed below ground.
- G. Furnish with sufficient supply of accessories, ie, gaskets, bolts, and glands, as required for each joint.

2.04 FLANGED JOINT PIPE AND FITTINGS

- A. Pipe and fittings shall conform to ANSI/AWWA C115/A21.15 and shall conform to Rule 62-555.322, F.A.C.
- B. Thickness shall be minimum pressure Class 350 through 12" and pressure Class 300 in sizes 14" and larger.
- C. Flanges and flanged fittings shall be flat face conforming to ANSI/AWWA C110/A21.10. Full face 1/8 inch thick rubber ring gaskets shall conform to ANSI/AWWA C110/A21.10.
- D. Flanges shall be ductile iron. Cast iron flanges will not be allowed.
- E. Flanged ductile iron pipe shall have factory applied screwed long hub flanges. Flanges shall be faced and drilled after being screwed on the pipe, with flanges true to 90 degrees with the pipe axis and shall be flush with end of pipe conforming to ANSI B16.1 Class 125.
- F. Bolts for flange pipe shall be low-carbon steel conforming to ASTM A307 Grade B.
- G. Flanged joints shall be used for above ground piping and exposed piping in vaults and in indoor pipe galleries.

2.05 GROOVED END PIPE AND FITTINGS

- A. Grooved end pipe and fittings shall be acceptable for above-ground installation and shall conform to Rule 62-555.322, F.A.C.
- B. Pipe shall conform to ANSI/AWWA C606.
- C. Grooved end pipe shall be minimum thickness to conform to former Class 53.
- D. Grooved end joints shall be flexible type, radius cut grooved, conforming to AWWA

C606.

- E. Grooved end fittings shall be ANSI B16.1, radius cut grooved, rigid joint, as manufactured by Victaulic Company, Gustin-Bacon, or approved equal.
- F. Grooved end pipe adapter flanges shall be ductile iron, ASTM A536, Victaulic, Gustin-Bacon, or approved equal.
- G. Bolts shall be manufactured standard.
- H. Gaskets for grooved end joints shall be manufacturer's flush-seal type specifically designed for cast surfaces. Properties shall be as designated in ASTM D 2000. Dimensions shall conform to AWWA C606. Lubricant shall be manufacturer's standard.
- I. Install in accordance with manufacturer's printed instructions. Dress cut ends of pipe for couplings and adapters as recommended.

2.06 LININGS AND COATINGS

- A. Pipe and fittings for potable water service shall be cement mortar lined in accordance with ANSI/AWWA C104/A21.4. Cement lining shall be Type 2 Portland Cement, a sulfate resistant cement.
- B. Pipe and fittings for wastewater service shall be ceramic epoxy lined with Protecto 401 or approved equal. The lining must be factory applied by certified installers and warranted by the pipe manufacturer.
- C. Performance Criteria Requirements must be met:
 - a. Abrasion: (ASTM D4060-07, CS-17 wheel, 1,000 grams) – 41 mg loss. (BS EN 598:2007+A1:2009, 50,000 cycles) – 0.6 mils loss.
 - b. Adhesion: (ASTM D 4541) – Not less than 3,000 psi, DIP.
 - c. Severe Wastewater Analysis Test: (ASTM G 210-13) – Initial electrochemical impedance of 11.8 log-Z at 0.001 Hz (ohms·cm²). No blistering, cracking, checking or loss of adhesion. Not less than 88% retained impedance and no more than 1.26 ohms·cm² reduction in log-Z following 28 days exposure.
 - d. Cathodic Disbondment: ASTM G 8 (1.5 V) Classification Group A. No more than 0.00 inch (0.00 mm) disbonded equivalent circle diameter.
 - e. Chemical Resistance: (ASTM C 868-02, 25 percent sulfuric acid, 100 degrees F, 100 days – (NACE TM0174-2002, 6 months continuous immersion, 50 percent sulfuric acid, 13 percent sodium hypochlorite, 5 percent sodium hydroxide, 75 degrees F – No effect.
 - f. Dielectric Strength: (ASTM D 149-09) – greater than 600 volts per mil
 - g. Hardness: (ASTM D 2240): Shore D hardness of 79.
 - h. Immersion: 140°F (60°C) De-ionized Water Immersion. No blistering, cracking or delamination of film after 5,000 hours continuous immersion.
 - i. Impact: (ASTM D 2794-04) – No visible cracking or delamination after 160 inch-pounds (18.0 J) direct impact.
 - j. Salt Spray (ASTM B 117-09): No blistering, cracking, rusting or delamination of film. No rust creepage at scribe after 1,000 hrs.
 - k. Water Absorption (ASTM C 413-01(2006) – 0.0 percent water absorption.

1. Water Vapor Transmission (ASTM D 1653-03(2008) Method B, Wet Cup, Condition C) – 1.25 g/m² per 24 h water vapor transmission and 0.09 perms water vapor permeance.
- D. Below ground pipe and fittings shall receive a manufacturer's standard exterior bituminous coating per AWWA C151 for ductile iron pipe, AWWA C115 for flange pipe and AWWA C110 for fittings.
- E. Pipe and fittings exposed to view in the finished work shall not receive the standard bituminous or asphalt coat on the outside surfaces but shall be shop primed on the outside with one coat of Tnemec Series N140 Pota-Pox Plus or Tnemec Series 20HS Pota-Pox. Should portions of the pipe inadvertently be given the outside coating of coal tar enamel instead of the rust inhibitive primer as required for exposed piping, the surfaces shall be sealed with a non-bleeding sealer coat. Sealer shall be a part of the work of this Section.
- F. Pipe and fitting installations in corrosive soils between the limits shown on the drawings or as required by the Engineer shall be fully encased in an 8 mil polyethylene sleeve in accordance with ANSI/AWWA C105/A21.5 Method "A".

2.07 SPECIAL PIPE AND FITTING

- A. Long span flange pipe shall be minimum pressure Class 350. Gaskets shall be Toruseal type with O-ring or equal.
- B. Wall castings shall be of the size and types shown on the Drawings and bituminous coated.
- C. Flexible joint (ball joint or river crossing) type pipe shall comply with ANSI/AWWA C151/A21.51 and ANSI/AWWA C110/A21.10. Pipe shall provide a variable deflection of up to 15 degrees. The spherical threaded socket shall be manufactured in conformance with AWWA C110 and ANSI B2.1.

2.08 RESTRAINED JOINTS

- A. The location and number of restrained joints are shown on the drawings and details.
- B. Joints shall be the standard design of the pipe and fitting manufacturer and shall provide a 2:1 safety factor.
- C. Restrained joints shall be designed for a pressure class rating of 350 psi in sizes 4 inch through 12 inch and 300 psi for 14 inch through 64 inch unless shown otherwise on the drawings.
- D. Bolts and nuts for restrained joints shall be low alloy, high strength steel.
- E. Restrained joints are to meet the applicable requirements of ANSI/AWWA C110/A21.10 and shall be manufacturer's standard, Mega lug by EBAA Iron Inc. or approved equal.

PART 3 - EXECUTION

3.01 HANDLING PIPE AND FITTINGS

- A. Care shall be taken in loading, transporting and unloading to prevent injury to the pipe or coatings. Pipe or fittings shall not be dropped. All pipe or fittings shall be examined before laying. No piece shall be installed which is found to be defective. Any damage to the pipe coatings shall be required as directed by the Engineer.
- B. All pipe and fittings shall be subjected to a careful inspection prior to being laid or installed.
- C. If any defective pipe is discovered after it has been laid, it shall be removed and replaced with a sound pipe in a satisfactory manner at no additional expense to the Owner. All pipe and fittings shall be thoroughly cleaned before laying, shall be kept clean until they are used in the work, and when installed or until they are used in the work, and when installed or laid, shall conform to the lines and grades required.

3.02 LAYING PIPE AND FITTINGS

- A. Ductile iron pipe and fittings shall be installed in accordance with requirements of ANSI/AWWA C600 except as otherwise provided herein.
- B. All pipe shall be sound and clean before laying. When laying is not in progress, including lunchtime, the open ends of the pipe shall be closed by watertight plugs or other approved means.
- C. Suitable excavations shall be made in the trench bottom to receive pipe with raised bells.
- D. As soon as the excavation is completed to the normal grade of the bottom of the trench, immediately place screen gravel or crushed stone (where applicable) bedding in the trench, and then the pipe shall be firmly bedded in this material to conform accurately to the line and grade indicated on the Drawings. Blocking under the pipe will not be permitted. Bedding shall conform with Type 2 condition unless otherwise specified.
- E. When cutting pipe is required, the cutting shall be done by machine, leaving a smooth cut at right angles to the axis of the pipe. Cut ends of pipe to be used with a "Tyton" type bell shall be beveled to conform to the manufactured spigot end. The lining shall remain undamaged.

3.03 JOINTS

- A. Push-on joints shall be made in strict accordance with the manufacturer's instructions. Pipe shall be laid with bell ends looking ahead. A rubber gasket shall be inserted in the groove of the bell end of the pipe, and the joint surfaces cleaned and lubricated. The plain end of the pipe is to be aligned with the bell of the pipe to which it is to be joined and pushed home with a jack or by other means. After joining the pipe, a metal feeler shall be used to make certain that the rubber gasket is correctly located.

- B. Mechanical joints at valves, fittings, and where designated on the Drawings and as specified, shall be in accordance with the "Notes on Method of Installation" under ANSI A21.11 and the instructions of the manufacturer. To assemble the joints in the field, thoroughly clean the joint surfaces and rubber gasket with soapy water before tightening bolts. Bolts shall be tight to the specified torques. Under no condition shall extension wrenches, pipe over handle or ordinary ratchet wrenches be used to secure greater leverage.
- C. Ball joints, where designated on the drawings and as specified, shall be installed in strict accordance with the manufacturer's instructions. Where ball joint assemblies occur at the face of structures or tanks, the socket end shall be at the structure or tank and the ball end assembled to the socket.
- D. Flanged joints shall be in accordance with ANSI A21.15 including its Appendix "A" and the instructions of the manufacturer. Flanged joints shall be fitted so that the contact faces bear uniformly on the gasket and then are made up with relatively uniform bolt stress.
- E. All valves, hydrants, fittings and other appurtenances needed upon the pipe lines shall be set and jointed as indicated on the Drawings or as required by the manufacturer.
- F. Unless otherwise noted, underground piping shall be push-on joint or mechanical joint with restraints as needed and above ground or exposed piping shall be flanged.
- G. Deflected bell pipe shown on the Drawings is shown only to assistance in illustrating a preferred means of installation in specific locations and is not intended to indicate all deflected bell pipe necessary to affect the installation as shown in plan and profile views. The cost of all such deflections shall be included within the bid price for furnishing and installing the pipe.
- H. When it is necessary to deflect pipe from a straight line in either the vertical or horizontal plane, or where long radius curves are permitted, the amount of deflection shall not exceed 50% of the maximum deflection allowed by manufacturer.

3.04 RESTRAINED JOINTS

- A. Section of piping designated on the Drawings as having restrained joints or those requiring restrained joints shall be constructed using mechanical or compression joint pipe and fittings with restraining devices.
- B. Restrained pipe joints that achieve restraint by incorporating cut out sections in the wall of the pipe shall have a minimum wall thickness at the point of cut out that corresponds with the minimum specified wall thickness for the rest of the pipe.
- C. The minimum number of restrained joints required for resisting forces at fittings and changes in direction of pipe shall be determined from the length of restrained pipe on each side of fittings and changes in direction necessary to develop adequate resisting friction with the soil. This shall be determined in accordance with the requirements of the Ductile Iron Pipe Research Association: Thrust Restraint Design for Ductile Iron Pipe.

3.05 PIPE THRUST BLOCKS

- A. Concrete thrust blocks are not an acceptable alternative to restrained joints. Concrete thrust blocks may only be used on a case-by-case basis as approved by the Engineer.

3.06 CLEANING AND FLUSHING

- A. The pipe shall be thoroughly cleaned of all foreign matter before installation. It is the Contractor's responsibility to insure cleanliness of the pipe during installation and backfilling. At the conclusion of the work, the Contractor shall thoroughly clean the entire pipe by flushing with water or other materials which may have entered during the construction period. Debris cleaned from the lines shall be removed from the lowest outlet. If, after this cleaning, obstructions remain, they shall be removed. After the pipe is cleaned, the Engineer will examine the pipe for leaks. If defective pipes or joints are discovered at this time, they shall be repaired by the Contractor.
- B. The method required for use is the passage of a sufficient number of "pigs" through the pipeline to affect the cleaning of the system.
- C. Passage of the cleaning "pigs" through the system shall be constantly monitored, controlled. Pigs entered into the system shall be individually parked and identified so that their exiting from the system can be confirmed.
- D. The Contractor must demonstrate to the satisfaction of the proper authority(s) that this work will be performed by experienced and knowledgeable supervision and personnel who have properly, safely and effectively provided for the cleaning of comparable systems in other applications. These personnel will be required to provide acceptable procedures prior to the work being initiated, that will clearly illustrate they are capable and have the means on hand to resolve potential or real problems that may occur with the cleaning pigs in the system. The Contractor shall provide evidence of qualification by providing copies of his/her state certification or license to perform such work as herein describe. Such documentation shall be included as part of the submittal process.
- E. Report Completion: The Contractor shall provide a written report upon completion of line cleaning to outline and detail information acquired during the cleaning process about the system or to confirm existing information.
- F. Cost of pigging the pipelines shall be included in the unit price for furnishing and installing the pipe and fittings. No additional cost for pigging will be allowed.

3.07 PRESSURE AND LEAKAGE TESTS

- A. Hydrostatic pressure and leakage test shall conform to AWWA C600, with the exception that the Contractor shall furnish all gauges, meters, pressure pumps and other equipment needed to test the line.
- B. The pressure required for the field hydrostatic pressure test shall be minimum 150 psi. The Contractor shall provide temporary plugs and blocking necessary to maintain the required test pressure. Corporation cocks at least 3/4 inches in

diameter, pipe riser and angle globe valves shall be provided at each pipe dead-end in order to bleed air from the line. Duration of pressure test shall be at least two (2) hours. The cost of these items shall be included as a part of testing and is included in the cost to furnish and install pipe and fittings.

- C. The leakage test shall be a concurrent test, at the maximum operating pressure as determined by the Engineer, with the pressure test and shall be not less than two hours in duration. All leaks evident at the surface shall be repaired and leakage eliminated regardless of total leakage as shown by test. Lines which fail to meet tests shall be repaired and retested as necessary until test requirements are complied with. Defective materials, pipes, valves, and accessories shall be removed and replaced. The pipe lines shall be tested in such sections as may be directed by the Engineer by shutting valves or installing temporary plugs as required. The pipe shall be filled with water, all air removed, and the test pressure maintained in the pipe for the entire test period by means of a force pump to be furnished by the Contractor. Accurate means shall be provided for measuring the water required at this pressure. The amount of water required is a measure of the leakage.
- D. The amount of leakage which will be permitted shall be in accordance with AWWA C600 for all pressure lines.
- E. The Contractor must submit their plan for testing to the Engineer for review at least fourteen (14) days before starting the test. The Contractor shall remove and adequately dispose of all blocking material and equipment after completion and acceptance of the field hydrostatic test, unless otherwise directed by the Engineer. Any damage to the pipe coating shall be repaired by the Contractor. Lines shall be totally free and clean prior to final acceptance.

3.08 DISINFECTING

- A. Before being placed in service, all potable water pipelines shall be chlorinated in accordance with AWWA C651, "Standard Procedure for Disinfecting Water Mains." The procedure shall be approved by the Engineer. The location of the chlorination and sampling points will be determined by the Engineer in the field. Taps for chlorination and sampling shall be uncovered and backfilled by the Contractor as required.
- B. The general procedure for chlorination shall be first to flush all dirty or discolored water from the lines, and then introduce chlorine in approved dosages through a tap at one end, while water is being withdrawn at the other end of the line. The chlorine solution shall remain in the pipeline for at least 24 hours.
- C. Following the chlorination period, all treated water shall be flushed from the lines at their extremities and replaced with water from the distribution system. Bacteriological sampling and analysis of the replacement water shall then be made by the Engineer in full accordance with AWWA C651. The Contractor will be required to re-chlorinate, if necessary. The line shall not be placed in service until the requirements of the Florida Department of Environmental Protection are met.
- D. Special disinfecting procedures shall be used in connections to existing mains, and where the method outlined above is not practical.

- E. The Contractor shall make all arrangements necessary with the Florida Department of Environmental Protection for the collection and examination of samples of water from disinfected water mains. These samples shall be examined for compliance with State requirements. Sampling shall be made daily and continuously until two successive examinations are found satisfactory. If unsatisfactory, the line shall be flushed and disinfected again. The cost of sampling, flushing and disinfecting shall be included in the contract price and no additional charge shall be made to the Owner for this work.
- F. Repairs and touch-up shall be performed in accordance with the manufacture's recommended repair and touch-up procedures.
- G. All field cut ends shall be repaired and sealed prior to the installation.

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SECTION 15100

VALVES AND APPURTENANCES

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Furnish labor, materials, equipment, and incidentals required for operation of all valves and appurtenances as shown on the Drawings and as specified herein.
- B. The equipment shall include the following:
 - 1. Air Release Valves
 - 2. Backflow Prevention Assembly
 - 3. Ball Valves
 - 4. Butterfly Valves
 - 5. Check Valves
 - 6. Detector Tape
 - 7. Fire Hydrants
 - 8. Flexible Connectors
 - 9. Gate Valves
 - 10. Gate Valves (Wheel Style)
 - 11. Link Seals and Wall Sleeves
 - 12. Plug Valves
 - 13. Pressure Gauge Assembly
 - 14. Retainer Glands
 - 15. Strainers
 - 16. Service Connections
 - 17. Tapping Sleeves
 - 18. Unions
 - 19. Valve Boxes
 - 20. Pipe Couplings

1.02 RELATED SECTIONS

- A. Section 02221 – Trenching, Bedding, and Backfill for Pipe
- B. Section 15010 – Testing Piping Systems
- C. Section 15062 – Ductile Iron Pipe and Fittings

1.03 REFERENCES

- A. ANSI/AWWA C900 - Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 in. through 12 in. (100 mm through 300 mm), for Water Transmission and Distribution.

- B. ANSI/AWWA C905 - Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 14 in. through 48 in. (350 mm through 1200 mm), for Water Transmission and Distribution.
- C. ANSI/AWWA C906 – AWWA C906 Polyethylene (PE) Pressure Pipe & Fittings - 4 Inch Through 63 Inch for Water Distribution
- D. Manufactures Standardization Society (MSS) for the Valve and Fitting Industry
- E. Other references as stated below.

1.04 QUALIFICATIONS

- A. Valves and appurtenances shall be products of well-established reputable firms who are fully experienced, and qualified in the manufacture of the particular equipment to be furnished in the business of manufacturing of the specific product for a minimum of ten (10) years. The equipment shall be designed, constructed, and installed in accordance with the best practices and methods and shall comply with these specifications, as applicable.

1.05 SUBMITTALS

- A. Within 30 days after contract execution, submit a list of valves to be furnished, with the names of suppliers, and the date of delivery.
- B. Complete shop drawings of all valves and appurtenances shall be submitted in accordance with the requirements of Section 01340.

1.06 TOOLS

- A. Special tools, handles, or wrenches, if required for normal operation and maintenance of the specified valves, shall be supplied with the equipment furnished.

1.07 SUBSTITUTIONS

- A. Substitutions are not permitted unless otherwise stated.
- B. All valves and appurtenances shall be of the size of the valve being replaced and all similar valves shall be from one manufacturer.
- C. Valves and appurtenances shall have the name of the manufacturer and the working pressure for which they are designed cast in raised letters upon some appropriate part of the body.

PART 2 - PRODUCTS

2.01 AIR RELEASE VALVES

- A. Sewer Force Main Air Release Valves – System shall be a combination of one sewage air release valve and one sewage air/vacuum valve with dual isolation plug valves.

Valve bodies and covers shall be of ductile iron construction in accordance with ASTM A536. All internal parts shall be of stainless steel, ASTM A240 - Type 304 and ASTM A276 - Type 303. The venting orifice shall be 5/16" in diameter with stainless steel seat. The inlet openings shall be a minimum of 2" NPT screwed connection for both valves. The valves shall be fully capable of operation in sewage force main. Both valves shall include a back-flushing feature for periodic cleaning of the internal mechanism. The overall height shall not exceed 22 inches. Valves shall be manufactured by Val-Matic Corporation or approved equal.

- B. Water Main Air Release Valves – Valve body and cover shall be of ductile iron construction, per ASTM A536. All internal parts shall be of stainless steel, ASTM A240 – Type 304 for the float, and ASTM A296 – Type 316 for the linkage. The venting orifice shall be 3/16" diameter with brass seat. The inlet opening shall be a 2" NPT screwed connection. The overall height shall not exceed 13 inches. Valves shall be manufactured by Valve and Primer Corporation, model number APCO 200A, or approved equal.

2.02 BACKFLOW PREVENTION ASSEMBLY

- A. The assembly shall conform to the latest revision of ANSI/AWWA C510 and shall be capable of withstanding a working pressure of at least 150 psi without damage to working parts or impairment of function. It shall consist of two internally loaded, independently operating check valves, located between two tightly closing resilient-seated shut off valves, with four properly placed resilient-seated test cocks.

2.03 BALL VALVES

A. Stainless Steel Ball Valves

1. Ball valve shall be tight closing, shaft-mounted complying with Fed. Spec. WW-V-35, Type II, Class C, Style 3. Valve design shall eliminate metal-to-metal contact or wedging in the sealing action. Design pressure rating shall be greater than 150 psi.
2. Valve body shall be one- or two-piece stainless steel ASTM A351. Ball shall be stainless steel ASTM A276. Seat ring shall be reinforced TFE.
3. Valve shall have a stainless steel 1/4 turn lever arm. Ends shall be threaded. Ball valve shall be Figure No. T-580-S6-R-66 as manufactured by Nibco, Inc. or equal.

B. PVC Ball Valves

1. Ball valves 2" and smaller for potable water service shall be schedule 80 NIBCO Model D.

2.04 BUTTERFLY VALVES

- A. Butterfly valves and operators shall conform to the latest revision of ANSI/AWWA C504 standard for rubber-seated butterfly valves. Valves shall be Class 150 A or B, and shall be Mueller, Pratt, Clow, DeZurik, or approved equal.

2.05 CHECK VALVES

A. AIR CUSHIONED SWING CHECK VALVES (3-INCH AND LARGER)

1. Unless otherwise indicated or specified, check valves 3-inches and larger shall be air cushioned swing check with outside lever and weight and a totally enclosed side mounted external air cushion. Valves shall have ductile flanged ends faced and drilled in accordance with ANSI Standard. Check Valves shall have ductile iron bodies, having integral flanges with the following components of stainless steel: body ring, disc ring, clapper hinge shaft, hinge shaft key, clapper spacers, disc stud, disc stud nut and bushing, disc retaining washer and cotter pin. The hinge pin shall extend outside the ductile iron body through lubricated stainless steel bushings and outside packed glands on each side of the valve. Each bushing shall be provided with a buttonhead grease fitting. Stainless steel shall be at least 18-8 nickel-chromium content. Check valves shall be tested at the factory and shall be drip tight under a hydrostatic pressure of 200 psi applied to the downstream side of the disc. A certified test report shall be furnished with each valve.
2. Valves shall be APCO Series 6000, G.A. Industries or approved equal.

B. SWING CHECK VALVES (2-1/2-INCH AND SMALLER) FOR LIQUID SERVICE

1. Swing check valves for steam, water, oil, or gas in sizes 2-1/2-inch and smaller shall be suitable for a steam pressure of 150 psi and a cold water pressure of 300 psi. They shall have screwed ends, unless otherwise shown, and screwed caps.
2. The valve body and cap shall be of bronze to ASTM B 61 with threaded ends to ANSI/ASME Bl.20.1.
3. Valves for steam service shall have bronze discs, and for cold water, oil, and gas service replaceable composition discs.
4. The hinge pins shall be of bronze or stainless steel.
5. Suppliers or Equal
 - a. Crane Company.
 - b. Milwaukee Valve Company.
 - c. Stockham Valves and Fittings.
 - d. Val-Matic.
 - e. APCO.

C. PVC CHECK VALVES (2-1/2-INCH AND SMALLER)

1. Check valves shall be swing check type or ball check type manufactured from PVC compounds. Swing check valves shall be furnished with teflon seats, teflon seals and flanged end connections. Ball check valves shall be furnished with viton seats, viton seals and threaded ends.
2. Ball check valves shall be provided on piping less than 3-inches in diameter.

- Ball check valves shall be true union type.
3. Swing check valves shall be provided on piping 3-inches in diameter and larger.
 4. Suppliers, or Equal
 - a. Asahi-America.
 - b. Harrington Industrial Plastics, Inc.
 - c. Nibco, Inc. (GS Chemtrol).

2.06 DETECTOR TAPE

- A. Detector tape shall be 3" wide, blue tape for water mains, green tape for force mains, with a metallized foil core laminated between 2 layers of plastic film. The words "CAUTION WATER LINE BURIED BELOW" or "CAUTION FORCE MAIN BURIED BELOW" shall be printed at 30" intervals along the tape. Tape shall be placed 18" below grade above all PVC mains and services, or as recommended by manufacturer. Non-metallic tape shall be used above ductile iron pipe.

2.07 FIRE HYDRANTS

- A. Fire hydrants shall have a minimum 5 1/4" valve opening and shall open against the pressure and close with the flow. Hydrants shall be American, model number B-84-B or as approved by the utility Owner. Hydrants shall meet or exceed the requirements of the latest editions of ANSI/AWWA C502 or C503 and shall comply with Factory Mutual Research Corporation and Underwriters Laboratories UL246 Standard.
- B. Three blue reflective pavement markers shall be provided in the center of the nearest lanes of road pavement adjacent to all fire hydrant locations.
- C. Hydrants maintained by the municipality shall be painted in accordance with local standards. Hydrants privately maintained shall be painted yellow. All painting shall be in accordance with Owner standards.

2.08 FLEXIBLE CONNECTORS

- A. Body and follower flange shall be iron. Bolt circle sizes and spacing shall conform to ASA 125 flange. Gasket shall be Nitrile (Buna-N) per ASTM D2000. Cross and tee bolts shall conform to ANSI A21.11. Coupling adapters shall be Smith-Blair or approved equal flexible connector
- B. Flexible connectors or rubber expansion joints shall be spool type containing elastomers woven with nylon fabric and nylon tire core cord reinforced with wire.
- C. Elastomers shall be nitrile (BUNA-N) unless otherwise depicted on the Drawings.
- D. All elastomers design for exterior applications shall have a factory applied UV coating.

- E. Backing plates and hardware shall be 316L stainless steel.
- F. Flexible connectors shall be manufactured by Proco series 230 or Approved Equal.

2.09 GATE VALVES

- A. Gate valves shall be ductile iron body, fully resilient seat, bronze mounted non-rising stem, double disc, rated at 350 psi working pressure and conforming to the latest revision of ANSI/AWWA C509. Exposed valves shall be outside screw and yoke type. Gate valves shall be Mueller, Clow, American Darling, or approved equal.

2.10 GATE VALVES (WHEEL STYLE)

- A. Exposed wheel gate valves, unless otherwise specified or approved, shall be ductile iron body, bronze-mounted, double disc type, with ductile flanged ends, and shall conform to the AWWA Standard Specification for Gate Valves for Ordinary Water Works Service, Designation C500. Exposed valves shall be outside screw and yoke type.
- B. Face-to-face dimension shall conform to ANSI Standard Face-to-Face and End-to-End Dimensions of Ferrous Valves, (ANSI B16.10) for ductile iron valves.
- C. Bronze gate rings shall be fitted into grooves of dovetail or similar shape in the gates. For grooves or other shapes, the rings shall be firmly attached to the gates with bronze rivets.
- D. Gate valves shall have a resilient rubber-seated ring or wedge, permanently bonded to the wedge disc, and complying with AWWA C509.
- E. Stuffing box follower bolts shall be of steel, and the nuts shall be of bronze.
- F. The design of the valves shall be such as to permit packing the valves without undue leakage while they are wide open and in service. O-ring stuffing boxes may be used.
- G. Chain wheel operators shall be furnished with the valves. Such operators shall be designed with adequate strength for the valves with which they are supplied and shall provide for easy operation of the valve. Chains for valve operators shall be stainless steel. Gate valves shall be as manufactured by the Mueller Company, Clow Valve Company, or equal.
- H. Where required, gate valves shall be provided with a box, cast in the slab, and a box cover. The depth of the valve box shall not be less than the slab thickness. Box cover opening shall be for valve wheel. The floor box and cover shall be equal to those manufactured by Rodney Hunt Machine Company or Clow Corporation.
- I. Gate valves for diesel fuel service shall have API approval. Bodies shall be ductile iron.

2.11 LINK SEALS AND WALL SLEEVES

- A. The pipe-to-wall penetration closures shall be "Link-Seal" as manufactured by

Thunderline Corp., Belleville, MI 48111. Seals shall be modular mechanical type, consisting of interlocking synthetic rubber links shaped to fill continuously the annular space between the pipe and wall opening. Links shall be loosely assembled with bolts to form a continuous rubber belt around the pipe with a pressure plate under each bolt head and nut. Seals shall be installed such that bolt heads are facing the inside of the structure and shall be accessible from grade without the need for excavation. After the seal assembly is positioned in the wall sleeve, tightening of the bolts shall cause the rubber sealing elements to expand and provide an absolutely water-tight seal between the pipe and wall opening. The seal shall be constructed so as to provide electrical insulation between the pipe and wall, thus reducing chances of cathodic reaction between these two members.

- B. Contractor shall determine the required inside diameter of each individual wall sleeve before ordering, fabricating, or installing. The inside diameter of each wall sleeve shall be sized as recommended by the manufacturer to fit the pipe and Link-Seal to assure a water-tight joint.
- C. Wall sleeve shall be specially designed to mate with the Link-Seal. The wall sleeve shall be heavy wall welded or seamless steel pipe. The sleeve shall have a full-circle continuously-welded water stop plate on the sleeve O.D. which acts as the sleeve anchor and water stop. Wall sleeve shall be model WS by Thunderline Corp.

2.12 PLUG VALVES

- A. Plug valves shall be non-lubricated eccentric type with resilient faced plugs and shall be furnished with end connections as shown on the plans. Flanged valves shall be faced and drilled in conformance with ANSI B16.1 Class 125 standard. Mechanical joint ends shall be in conformance with AWWA C111. Bell ends shall be in conformance with AWWA C100 Class B.
- B. Unless otherwise specified on the plans, port areas for all valves shall be min. 80% of full pipe area.
- C. Valve bodies shall be of ASTM A536 Grade 65-45-12 ductile iron in compliance with AWWA Standard C517. All exposed nuts, bolts, springs, washers, etc. shall be zinc plated. Resilient plug facings shall be Neoprene or Buna-N, on a single piece plug. The plug shall be of sufficient construction so that no strengthening member is required opposite the face.
- D. Valves shall be furnished with corrosion resistant seats which comply with AWWA Standard C507 Section 7 paragraph 7.2 and with AWWA Standard C504 Section 3.5. The seat shall be in the body only. Seat ring shall be adjustable and replaceable.
- E. Valves shall be furnished with replaceable, sleeve-type bearings in the upper and lower journals. These bearings shall comply with AWWA Standard C507 Section 8 paragraphs 8.1, 8.3 and 8.5 and with AWWA Standard C504 Section 3.6.
- F. Valve shaft seals or packing shall be adjustable and replaceable without removing the valve from service or interrupting service with flow in either direction. Shaft seals shall comply with AWWA Standard C507 Section 10 and with AWWA C507

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- G. Valve pressure ratings shall be as follows and shall be established by hydrostatic tests as specified by ANSI Standard B16.1. Pressure ratings shall be 175 psi for valves through 12", 150 psi for valves in sizes 14" through 36" and 125 psi for valves in sizes 42" through 54". Valves shall be capable of providing drip-tight shutoff up to the full valve rating with pressure in either direction.
- H. All valves 8 inches and larger shall be equipped with gear actuators with hand wheels. All gearing shall be enclosed and suitable for running in oil, with seals provided on all shafts to prevent entry of dirt and water into the actuator. All shaft bearings shall be furnished with permanently lubricated bronze bearing bushings. Actuator shall clearly indicate valve position. An adjustable stop shall be provided. Construction of actuator housing shall be cast iron or steel.
- I. Plug valves installed such that actuators are 6 feet or more above the floor shall have chain-wheels and chains provided.
- J. For plug valves with extended shafts and actuators, the actuators shall be mounted on floor stands where indicated on the Drawings or shall have removable hand-wheels where floor stands are not called for. Six inch sleeves shall be provided for extended shafts in all floors. Where necessary, covers shall be provided. Shafts shall be of adequate strength to operate the valve. Floor stands and covers, where called for, shall be cast iron. Floor stands shall be equipped with valve position indicators and a lock for the hand-wheel.
- K. All plug valves shall be installed so that the direction of flow through the valve is in accordance with the manufacturer's recommendations.
- L. Valves and actuators shall be as manufactured by DeZurik.

2.13 PRESSURE GAUGE ASSEMBLY

- A. Pressure gauge shall be direct-mounted with a minimum 4-1/2 inch diameter dial with a clear glass crystal window constructed to the following standards:
 - 1. Accuracy – 1% full scale grade A ASME B40, 100
 - 2. Weather Protection – Dry Case International Protection Rating (IP) IP54
 - 3. Fill - Glycerin filled, hermetically sealed IP65
 - 4. Case type – Open front 304 stainless steel case
 - 5. Dial – Aluminum dial, brushed aluminum background, black figures and graduations.
 - 6. Bourdon Tube and Socket – 316L/316L Stainless steel
 - 7. Scale and range – As depicted on Drawings.
 - 8. Manufacture – ISO 9001 registered.
 - 9. Pressure gauge shall be manufactured by Ashcroft Type 1009 or approved shown as indicated on the Contract Drawings.
- B. All pressure gauges for wastewater applications shall be mounted to a Pressure Sensor.

1. Pressure Sensors shall be of the wafer type, designed to fit between standard ANSI B16.1 Class125/ANSI B16.5 Class 150 pipeline flanges. The face-to-face of the entire sensor shall be no longer than specifications for butterfly valves - MSS-SP67.
 2. Pressure Sensors shall be flow through design with a nitrile (BUNA-N) elastomer sensing ring around the full circumference. There shall be no dead ends or crevices, and flow passage shall make the sensor self-cleaning.
 3. The sensing ring shall have a cavity behind the ring filled with ethylene glycol fluid to transfer pressure to the gauge.
 4. Pressure Sensor shall be manufactured by Dwyer or approved equal as shown on the Contract Drawings.
- C. Pressure gauge assembly shall include ½" brass fittings, ball valves, snubbers or gauge guards as depicted on the Drawings. Pressure gauges and sensors shall be rated for vacuum conditions and negative pressures.

2.14 RETAINER GLANDS

- A. Retainer glands shall conform to the latest revision of ANSI/AWWA C111/A21.11. All glands shall be manufactured from ductile iron as listed by Underwriters Laboratories for 250 psi minimum water pressure rating, manufactured by Clow Corporation, EBAA Iron, or approved equal.

2.15 STRAINERS

- A. Strainers shall be of the "Y" type, shall have bronze bodies with a removable bronze screen, and shall be as manufactured by Watts Regulator Company, Lawrence, MA.

2.16 SERVICE CONNECTIONS

- A. Service saddles shall be ductile iron, epoxy or nylon coated, with double stainless steel straps, or a single wide strap. Saddles shall conform to the latest revisions of ANSI/AWWA C111/21.11 and ASTM A588.
- B. Service lines shall be polyethylene (PE) tubing as described in ANSI/AWWA C901, latest revision, with a working pressure of 200 psi (DR 9). Pipe joints shall be of the compression type, with totally confined grip seal and coupling nut. Polyethylene shall be extruded from PE 3408 high molecular weight materials and must conform to ASTM D2737.
- C. Corporation stops shall be manufactured of brass alloy in accordance with ASTM B62 with threaded ends and shall be Ford or approved equal.
- D. Meter stops shall be the 90 degree lockwing type and shall be of bronze construction in accordance with ASTM B62. Meter stops shall be closed button design, with a resilient "O" ring, sealed against external leakage at the top. Stops shall be equipped with a meter coupling nut on the outlet side, as manufactured by Mueller, Ford or approved equal.

2.17 TAPPING SLEEVES

- A. Tapping sleeves shall be ductile iron or stainless steel, mechanical or joint, as stated on the Drawings, manufactured by Clow, or approved equal.

2.18 UNIONS

- A. Unions on ferrous pipe, 2-inch diameter and smaller, shall be 150 lb malleable iron, and zinc-coated. Unions on water piping, 2-1/2 inch diameter and larger, shall be 125 lb pound flange pattern, and zinc-coated. Gaskets for flanged unions shall be of the best quality fiber or plastic. Unions shall not be concealed in walls, ceilings, or partitions.

2.19 VALVE BOXES

- A. Valve boxes for water mains and sewer force mains shall be by U.S. Foundry Model marked "W" or "S", respectively.
- B. Valve boxes for blow-off assembly shall be U.S. Foundry Model 7630 (No. 3) or approved equal.

2.20 PIPE COUPLINGS

- A. Pipe couplings shall be style 38 all 316L stainless steel by Piping Specialties Dresser, Inc.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Valves and appurtenances shall be installed in the locations shown, true to alignment and rigidly supported. Any damage to the above items shall be repaired to the satisfaction of the Engineer before they are installed.
- B. Install floor boxes, brackets, extension rods, guides, and the various types of operators and appurtenances that are in masonry floors or walls and install concrete inserts for hangers and supports as soon as forms are erected and before concrete is poured. Before setting these items, the Contractor shall check all plans and figures having direct bearing on the locations of the valves and appurtenances, and he shall be responsible for the proper location of these items during the construction of the structures.
- C. Flanged joints shall be made with stainless steel bolts, nuts, and washers. Mechanical joints shall be made with mild corrosion-resistant alloy steel bolts and nuts. All exposed bolts shall be painted the same color as the pipe. All buried bolts and nuts shall be heavily coated with two (2) coats of bituminous paint.
- D. Prior to assembly of split couplings, the grooves and other parts shall be thoroughly cleaned. The ends of the pipes and the outsides of the gaskets shall be moderately coated with petroleum jelly, cup grease, soft soap or graphite paste, and the gasket

shall be slipped over one pipe end. After the other pipe has been brought to the correct position, the gasket shall be centered properly over the pipe ends with the lips against the pipes. The housing sections shall then be placed. After the bolts have been inserted, the nuts shall be tightened until the housing sections are firmly in contact, metal-to-metal, without excessive bolt tension.

- E. Prior to the installation of sleeve-type couplings, the pipe ends shall be cleaned thoroughly. Soapy water may be used as a gasket lubricant. A follower and gasket, in that order, shall be slipped over each pipe to a distance of about 6 inches from the end, and the middle ring shall be placed on the already laid pipe end until it is properly centered over the joint. The other pipe end shall be inserted into the middle pipe already laid. The gaskets and followers shall then be pressed evenly and firmly into the middle ring flares. After the bolts have been inserted and all nuts have been made up fingertight, diametrically opposite nuts shall be progressively and uniformly tightened all around the joint, preferably by use of a torque wrench of the appropriate size and torque for the bolts.

3.02 SHOP PAINTING

- A. Ferrous surfaces of valves and appurtenances shall receive an exterior coating of rust-inhibitive primer. Interior coatings shall be the manufacturer's standard except that valves for potable water lines shall be coated with paints approved by EPA, FDA, and AWWA for potable water service. All pipe connection openings shall be capped after shop painting to prevent the entry of foreign matter prior to installation.

3.03 FIELD PAINTING

- A. All above ground valves and appurtenances shall be painted in accordance with Section 15062.

3.04 INSPECTION AND TESTING

- A. Completed pipe shall be subjected to hydrostatic pressure test per Section 15010. All leaks shall be repaired and lines retested until approved by the Owner.

END OF SECTION

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APPENDIX “A” – REPORT OF GEOTECHNICAL INVESTIGATION

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UNIVERSAL ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Threshold Inspection Services
Environmental Sciences • Construction Materials Testing

Offices In:

- Atlanta
- Daytona Beach
- DeBary
- Ft. Myers
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- Ocala
- Orlando
- Palm Coast
- Panama City
- Pensacola
- Rockledge
- Sarasota
- St. Augustine
- Tampa
- West Palm Beach

November 7, 2012

Mr. David Frodsham
Calvin, Giordano & Associates
560 Village Boulevard, Suite 340
West Palm Beach, Florida 33409

Reference: Geotechnical Exploration Services
Surfside Bulkhead Improvements
Surfside, Miami-Dade County, Florida
UES Project No. 0630.1200076
UES Report No. 12165

Dear Mr. Frodsham:

Universal Engineering Sciences, Inc. (UES) has completed a subsurface exploration for the above referenced project in Miami-Dade County, Florida. The completed services were conducted in general accordance with authorized UES Opportunity No. 0630.1012.00007. These completed services were performed in accordance with generally accepted soil and foundation engineering practices. No other warranty, expressed or implied, is made.

PROJECT DESCRIPTION

The project consists of planning and design of several bulkhead replacements in Surfside, Miami-Dade County, Florida. A general location map of the project area appears in Appendix A: Site Location Map. The bulkhead locations that are to be included in this geotechnical study are as follows:

- Bulkhead #1: Carlyle Avenue & 88th Street
- Bulkhead #2: Froude Avenue & 88th Street
- Bulkhead #5: End of 88th Street on Isle of Biscayne
- Bulkhead #6: Irving Avenue & Bay Drive
- Bulkhead #7: 90th Street & Bay Drive
- Bulkhead #8: 92nd Street & Bay Drive
- Bulkhead #9: 93rd Street & Bay Drive
- Bulkhead #10: 94th Street & Bay Drive
- Bulkhead #11: 95th Street & Bay Drive
- Bulkhead #12: Surfside Park

FIELD EXPLORATION

UES drilled a total of ten (10) Standard Penetration Test borings (B-1, B-2, B-5, B-6, B-7, B-9, B-10, B-11, B-12A, and B-12B) for Bulkhead Nos. 1, 2, 5, 6, 7, 9, 10, 11, and 12, respectively. Bulkhead Nos. 8 and 10 were not drilled due to conflict with utilities and obstructions. The approximate locations of the soil borings are presented in Appendix B. Boring Location Map.

The SPT borings were advanced to the depths of 15 to 25 feet below existing grade using the rotary wash method; samples were collected while performing the SPT at regular intervals. We completed the SPT in general accordance with ASTM D-1586 guidelines, with continuous sampling from 1 to 10 feet, and then at 5-foot sampling intervals. The SPT test consists of driving a standard split-barrel sampler (split-spoon) into the subsurface using a 140-pound hammer free-falling 30 inches. The number of hammer blows required to drive the sampler 12 inches, after first seating it 6 inches, is designated the penetration resistance, or SPT-N value. This value is used as an index to soil strength and consistency.

Samples collected during the SPT were placed in clean sample containers and transported to our laboratory where they were visually classified by a member of our geotechnical engineering staff in accordance with ASTM D-2488. These soil samples will be held in our laboratory for your inspection for 90 days, after which time they will be discarded unless we are otherwise notified.

LABORATORY TESTING

The soil samples recovered from the soil test borings were returned to the laboratory where a member of our geotechnical staff visually classified them, reviewed the field descriptions, and selected a representative sample for laboratory test.

Tests were performed to aid in classifying the soils and to help evaluate the general engineering characteristics of the site soils. The tests performed included six (6) No. 200 wash analyses and moisture content determination. See Appendix B: Boring Logs, Key to Boring Logs, for further data and explanations.

FINDINGS

SURFACE CONDITIONS

We reviewed U.S.G.S. topographic quadrangle maps and the USDA Soil Conservation Service Soil Survey of Miami-Dade County for relevant information about the site. Based on the 1996 Soil Survey for Miami-Dade County, Florida, as prepared by the US Department of Agriculture, Natural Resources Conservation Service (NRCS), the predominant soil type at the site is Urban land.



Urban land is in areas where more than 85 percent of the surface is covered by shopping centers, parking lots, streets, sidewalks, airports, large buildings, houses, and other structures. The natural soil cannot be observed. The soils in open areas, mostly lawns, vacant lots, playgrounds, and parks, are mainly Udorthents.

SUBSURFACE CONDITIONS

The results of our field exploration together with pertinent information obtained from the test borings, such as soil descriptions, and groundwater levels are shown on the boring logs included in Appendix B. The soil descriptions are based on visual classifications completed by a member of our geotechnical staff. The stratification lines shown on the boring logs represent the approximate boundaries between soil layers, and may not depict exact stratification. The actual soil strata boundaries are often more transitional than depicted. A generalized profile of the soils found at our boring locations is presented in Table 1: General Soil Profile.

TABLE 1: GENERAL SOIL PROFILE	
Typical Depth Below Grade (Feet)	Soil Description
0 – 9	Very loose to medium dense, brown to gray sand with rocks and shell fragments, sand with silt, silty sand, and peat [SP, SP-SM, SM, PT]
9 – 25*	Very loose to dense, gray silty sand, silty sandy limestone, and sandy limestone [SM, GM, GP]
* Boring Termination depth	

A notable feature found in the general soil profile was the presence of peat layer at borings B-1 from 6 to 9 feet below existing grade, B-5 from 4.5 to 9 feet below existing grade, and B-9 from 6 to 7 feet below grade. Groundwater was measured at a depth of approximately 1 foot below land surface in the test borings.



SOIL PARAMETERS

Table 2 presents the recommended soil parameters for the boring locations.

TABLE 2: RECOMMENDED SOIL DESIGN PARAMETERS								
Layer Depth (Feet)	SPT "N" Range	Phi	c (PSF)	k _a	k _p	K _o	Unit Weight (PCF)	
							Saturated	Submerged
0 – 9	2 – 15	28	0	0.36	2.77	0.53	100	38
9 – 25	6 – 47	30	0	0.33	3	0.5	115	53

LIMITATIONS

Our field exploration found unsuitable materials (i.e., peat) at the time of occurrence at borings B-1 from 6 to 9 feet below existing grade, B-5 from 4.5 to 9 feet below existing grade, and B-9 from 6 to 7 feet below grade. The test borings completed for this report were widely spaced and are not considered sufficient for reliably detecting the presence of isolated, anomalous surface or subsurface conditions, or reliably estimating unsuitable or suitable material quantities. Accordingly, UES does not recommend relying on our boring information to negate the presence of anomalous materials or for estimation of material quantities. Therefore, UES will not be responsible for any extrapolation or use of our data by others beyond the purpose(s) for which it is applicable or intended.

During the early stages of most construction projects, geotechnical issues not addressed in this report may arise. Because of the natural limitations inherent in working with the subsurface, it is not possible for a geotechnical engineer to predict and address all possible problems. An ASFE publication, "Important Information About Your Geotechnical Engineering Report" appears in Appendix C, and will help explain the nature of geotechnical issues.

Further, we present documents in Appendix C: Constraints and Restrictions, to bring to your attention the potential concerns and the basic limitations of a typical geotechnical report.




We appreciate the opportunity to have worked with you on this project and look forward to a continued association. Please contact us if you have any questions, or if we may further assist you as your plans proceed.

Respectfully submitted,
UNIVERSAL ENGINEERING SCIENCES, INC.
Certificate of Authorization No. 549


Allan G. Abubakar, P.E.

Project Engineer
Florida Professional Engineer No. 69952


Peter G. Read, P.E.

Regional Manager
Florida Professional Engineer No. 35604

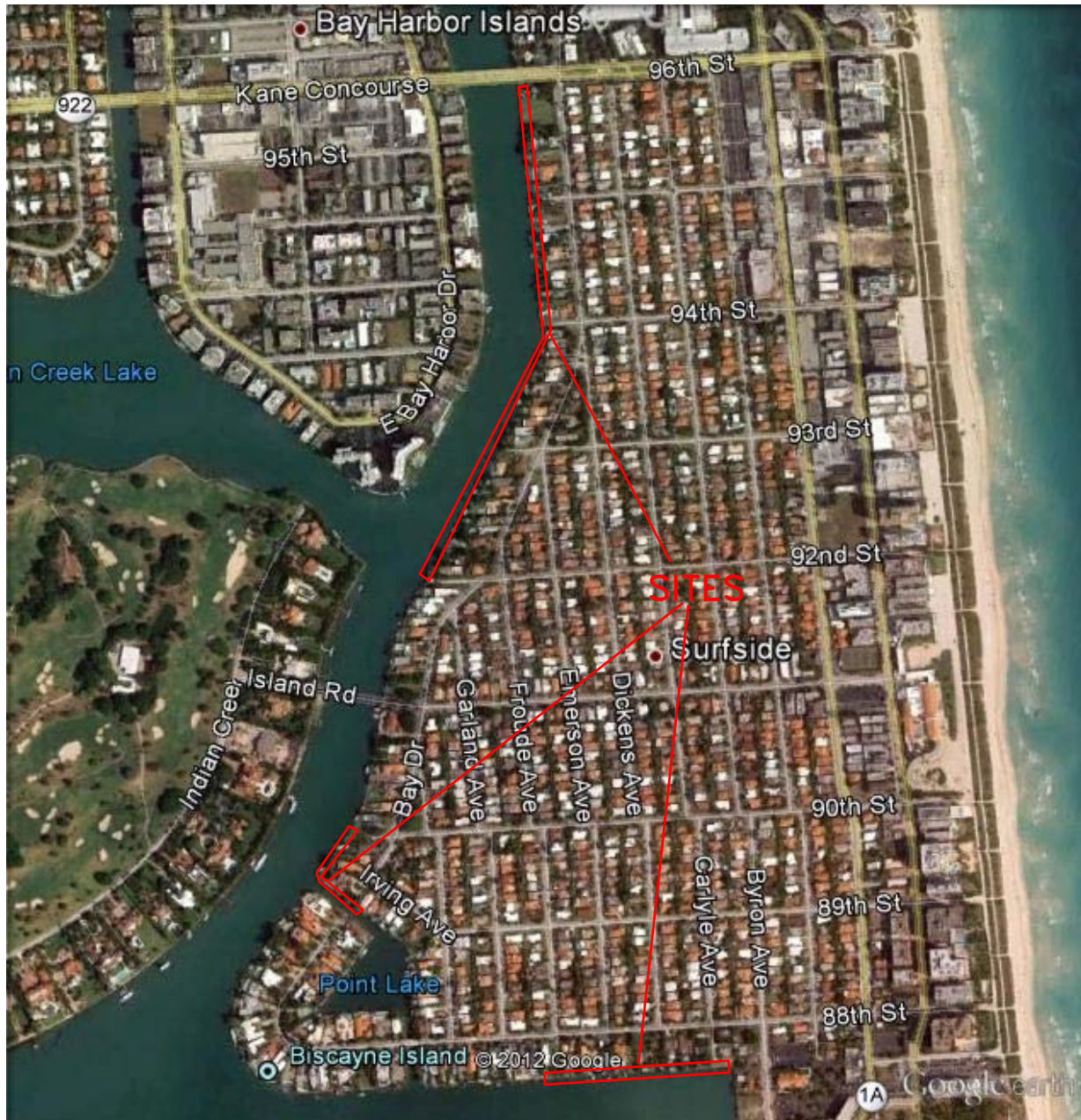
11/7/2012

Enclosures: Appendix A: Site Location Map
Appendix B: Boring Location Map
Boring Logs
Appendix C: Important Information About Your Geotechnical
Engineering Report
Constraints and Restrictions
Appendix D: General Conditions

Dist: Client (4)







#7



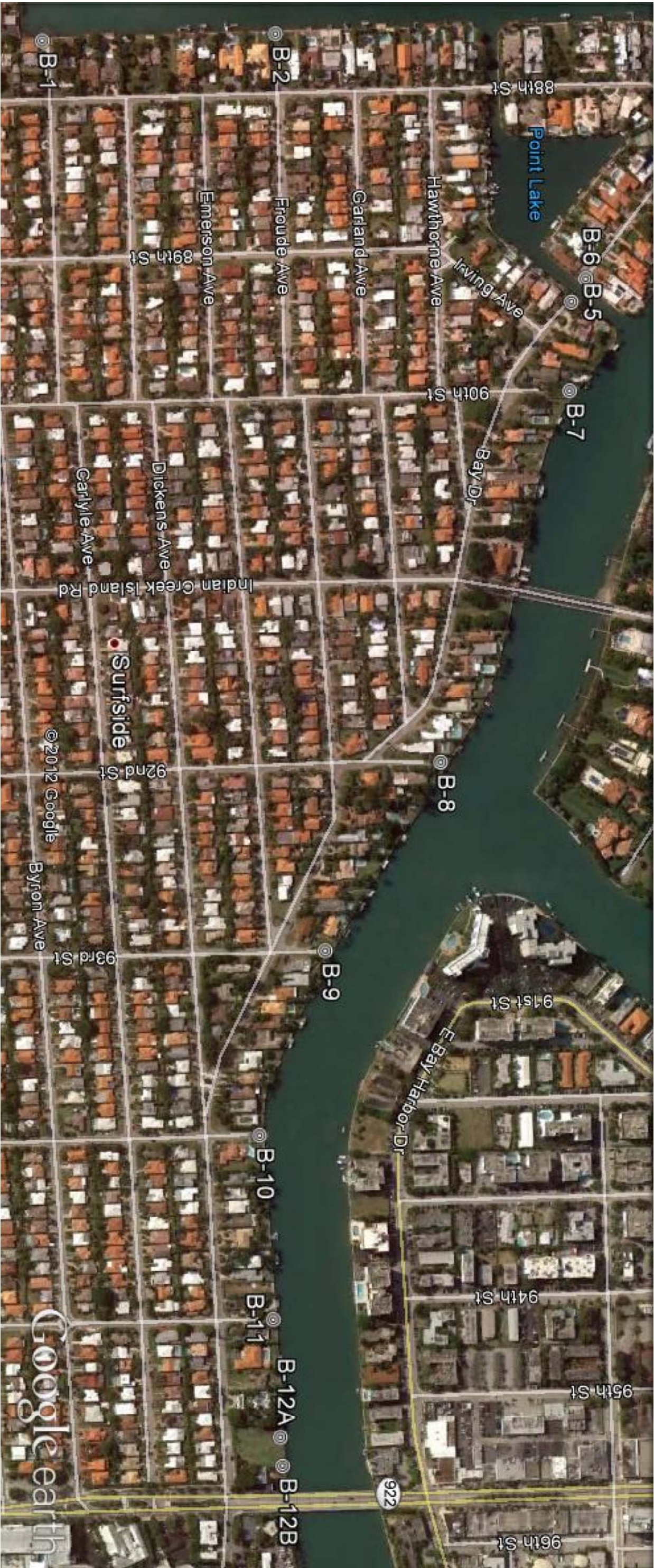
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ENGINEERING SCIENCES

GEOTECHNICAL EXPLORATION SERVICES
BULKHEAD IMPROVEMENTS
SURFSIDE, MIAMI-DADE COUNTY, FLORIDA

SITE LOCATION MAP

DRAWN BY: A.G.A.	DATE: 11/02/12	CHECKED BY: P.G.R.	DATE: 11/02/12
SCALE: AS SHOWN	PROJECT NO: 0630.1200060	REPORT NO: 12165	PAGE NO: A-1





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GEOTECHNICAL EXPLORATION SERVICES
BULKHEAD IMPROVEMENTS
SURFSIDE, MIAMI-DADE COUNTY, FLORIDA

BORING LOCATION PLAN

DRAWN BY:	A.G.A.	DATE:	11/06/12	CHECKED BY:	P.G.R.	DATE:	11/06/12
SCALE:	NTS	PROJECT NO:	0630.1200076	REPORT NO:	12165	PAGE NO:	B-2



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 0630.1200076

REPORT NO.: 12165

PAGE: B-2

PROJECT: Surfside Bulkhead Improvements
Miami
Miami, Florida

BORING DESIGNATION: **B-1**
SECTION: TOWNSHIP:

SHEET: **1 of 1**
RANGE:

CLIENT: Calvin, Giordano & Associates, Inc.

G.S. ELEVATION (ft):

DATE STARTED: 10/31/12

LOCATION: See Location Plan

WATER TABLE (ft): 1.3

DATE FINISHED: 10/31/12

REMARKS:

DATE OF READING: 10/31/12

DRILLED BY: UES (Lake Worth)

EST. W.S.W.T. (ft): 0

TYPE OF SAMPLING: SPT

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT./ DAY)	ORG. CONT. (%)
									LL	PI		
0				▽		Topsoil						
				▽		Limerock (Fill)						
		6-5-5	10		loose						
		4-4-3	7									
						Very loose, gray sand with shell fragments [SP]						
5		1-2-1	3									
		1-1-1	2			Very loose, brown peat [PT]						
		1-1-1	2									
						Very loose, gray silty sand [SM]						
10		2-2-2	4				37	33				
						Medium dense, gray limestone [GP]						
15		10-12-16	28									
						SPT Soil Boring Terminated at 15 Feet.						



PAGE: B-3

TYPE OF SAMPLING: SPT

[illegible]



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 0630.1200076

REPORT NO.: 12165

PAGE: B-4

PROJECT: Surfside Bulkhead Improvements
Miami
Miami, Florida

BORING DESIGNATION: **B-5**
SECTION: TOWNSHIP:

SHEET: **1 of 1**
RANGE:

CLIENT: Calvin, Giordano & Associates, Inc.

G.S. ELEVATION (ft):

DATE STARTED: 10/31/12

LOCATION: See Location Plan

WATER TABLE (ft): 1.7

DATE FINISHED: 10/31/12

REMARKS:

DATE OF READING: 10/31/12

DRILLED BY: UES (Lake Worth)

EST. W.S.W.T. (ft): 0

TYPE OF SAMPLING: SPT

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT./ DAY)	ORG. CONT. (%)
									LL	PI		
0				▽		Topsoil						
		4-4-3	7	▽		Loose, brown sand with silt and shell fragments [SP-SM]	9	24				
		4-2-3	5									
5		1-1-2	3			Very loose, brown peat [PT]						
		1-2-2	4									
		1-2-1	3									
10		2-2-2	4			Very loose, gray sand with shell fragments and trace organics [SP]						
						Dense, light gray sandy limestone [GP]						
15		20-21-28	49			SPT Soil Boring Terminated at 15 Feet.						



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 0630.1200076

REPORT NO.: 12165

PAGE: B-5

PROJECT: Surfside Bulkhead Improvements
Miami
Miami, Florida

BORING DESIGNATION: **B-6**
SECTION: TOWNSHIP:

SHEET: **1 of 1**
RANGE:

CLIENT: Calvin, Giordano & Associates, Inc.

G.S. ELEVATION (ft):

DATE STARTED: 10/30/12

LOCATION: See Location Plan

WATER TABLE (ft): 1.8

DATE FINISHED: 10/30/12

REMARKS:

DATE OF READING: 10/30/12

DRILLED BY: UES (Lake Worth)

EST. W.S.W.T. (ft): 0

TYPE OF SAMPLING: SPT

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT./ DAY)	ORG. CONT. (%)
									LL	PI		
0				▽		Topsoil						
		1-1-1	2	▽		Very loose, brown sand with shell fragments [SP]						
		2-2-2	4									
5		3-2-2	4			Very loose, gray sand with shell fragments [SP]						
		1-1-1	2			Very loose, brown sand with shell fragments and trace organics [SP]						
		1-1-1	2									
10		1-2-1	3									
						Dense, light gray silty sandy limestone [GM]						
15		15-20-19	39				15	29				
						SPT Soil Boring Terminated at 15 Feet.						



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 0630.1200076

REPORT NO.: 12165

PAGE: B-6

PROJECT: Surfside Bulkhead Improvements
Miami
Miami, Florida

BORING DESIGNATION: **B-7**
SECTION: TOWNSHIP:

SHEET: **1 of 1**
RANGE:

CLIENT: Calvin, Giordano & Associates, Inc.

G.S. ELEVATION (ft):

DATE STARTED: 10/30/12

LOCATION: See Location Plan

WATER TABLE (ft): 1.7

DATE FINISHED: 10/30/12

REMARKS:

DATE OF READING: 10/30/12

DRILLED BY: UES (Lake Worth)

EST. W.S.W.T. (ft): 0

TYPE OF SAMPLING: SPT

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT./ DAY)	ORG. CONT. (%)
									LL	PI		
0				▽		Topsoil						
		2-1-2	3	▽		Very loose, brown sand with shell fragments [SP]						
		2-2-1	3			Very loose, gray sand with shell fragments [SP]						
5		1-1-3	4			Very loose, gray silty sand with shell fragments and root [SM]						
		2-2-3	5			Loose, gray sand with shell fragments [SP]						
		2-2-3	5									
10		3-4-4	8									
						Medium dense, light gray sandy limestone [GP]						
15		2-11-17	28			SPT Soil Boring Terminated at 15 Feet.						



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 0630.1200076

REPORT NO.: 12165

PAGE: B-7

PROJECT: Surfside Bulkhead Improvements
Miami
Miami, Florida

BORING DESIGNATION: **B-9**
SECTION: TOWNSHIP:

SHEET: **1 of 1**
RANGE:

CLIENT: Calvin, Giordano & Associates, Inc.

G.S. ELEVATION (ft):

DATE STARTED: 10/30/12

LOCATION: See Location Plan

WATER TABLE (ft): 1.3

DATE FINISHED: 10/30/12

REMARKS:

DATE OF READING: 10/30/12

DRILLED BY: UES (Lake Worth)

EST. W.S.W.T. (ft): 0

TYPE OF SAMPLING: SPT

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT./ DAY)	ORG. CONT. (%)
									LL	PI		
0				▽		Topsoil						
		4-3-2	5	▼		Loose, brown sand with rocks [SP]						
		1-3-4	7			Loose, brown sand with shell fragments [SP]						
						Loose, gray sand with shell fragments [SP]						
5		2-3-2	5			Very loose, peat [PT]						
		1-2-2	4			Very loose, gray sand with shell fragments [SP]						
		2-2-2	4				5	33				
10		3-3-4	7									
						Medium dense, light gray sandy limestone [GP]						
15		21-12-15	27			SPT Soil Boring Terminated at 15 Feet.						



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 0630.1200076

REPORT NO.: 12165

PAGE: B-8

PROJECT: Surfside Bulkhead Improvements
Miami
Miami, Florida

BORING DESIGNATION: **B-11** SHEET: **1 of 1**
SECTION: TOWNSHIP: RANGE:

CLIENT: Calvin, Giordano & Associates, Inc.

G.S. ELEVATION (ft): DATE STARTED: 10/30/12

LOCATION: See Location Plan

WATER TABLE (ft): 1.1 DATE FINISHED: 10/30/12

REMARKS:

DATE OF READING: 10/30/12 DRILLED BY: UES (Lake Worth)

EST. W.S.W.T. (ft): 0 TYPE OF SAMPLING: SPT

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT./ DAY)	ORG. CONT. (%)
									LL	PI		
0				▽		Topsoil						
		1-2-2	4	▼		Very loose, brown sand with shell fragments [SP]						
		2-2-8	10									
5		3-3-3	6			Loose, gray sand with rock [SP]						
		4-4-3	7									
		3-3-3	6									
10		3-3-3	6									
		2-1-2	3									
15						SPT Soil Boring Terminated at 15 Feet.						



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 0630.1200076

REPORT NO.: 12165

PAGE: B-9

PROJECT: Surfside Bulkhead Improvements
Miami
Miami, Florida

BORING DESIGNATION: **B-12A** SHEET: **1 of 1**
SECTION: TOWNSHIP: RANGE:

CLIENT: Calvin, Giordano & Associates, Inc.

G.S. ELEVATION (ft): DATE STARTED: 10/29/12

LOCATION: See Location Plan

WATER TABLE (ft): 1.3 DATE FINISHED: 10/29/12

REMARKS:

DATE OF READING: 10/29/12 DRILLED BY: UES (Lake Worth)

EST. W.S.W.T. (ft): 0 TYPE OF SAMPLING: SPT

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT./ DAY)	ORG. CONT. (%)
									LL	PI		
0				▽		Topsoil						
				▼		Loose, brown sand with shell fragments [SP]						
		3-2-3	5									
		2-2-3	5									
5		4-4-8	12			Medium dense to very loose, gray sand with shell fragments						
		5-4-5	9									
		2-2-1	3									
10		1-1-2	3									
15		3-3-4	7									
20		6-7-6	13									
						Medium dense, light gray silty sandy limestone [GM]						
25		5-6-5	11				23	29				
						SPT Soil Boring Terminated at 25 Feet.						



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 0630.1200076

REPORT NO.: 12165

PAGE: B-10

PROJECT: Surfside Bulkhead Improvements
Miami
Miami, Florida

BORING DESIGNATION: **B-12B**
SECTION: TOWNSHIP:

SHEET: **1 of 1**
RANGE:

CLIENT: Calvin, Giordano & Associates, Inc.

G.S. ELEVATION (ft):

DATE STARTED: 10/29/12

LOCATION: See Location Plan

WATER TABLE (ft): 1.1

DATE FINISHED: 10/29/12

REMARKS:

DATE OF READING: 10/29/12

DRILLED BY: UES (Lake Worth)

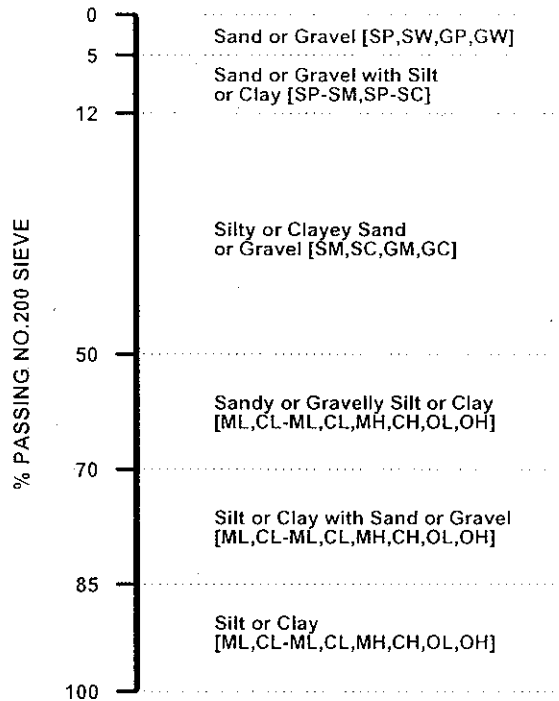
EST. W.S.W.T. (ft): 0

TYPE OF SAMPLING: SPT

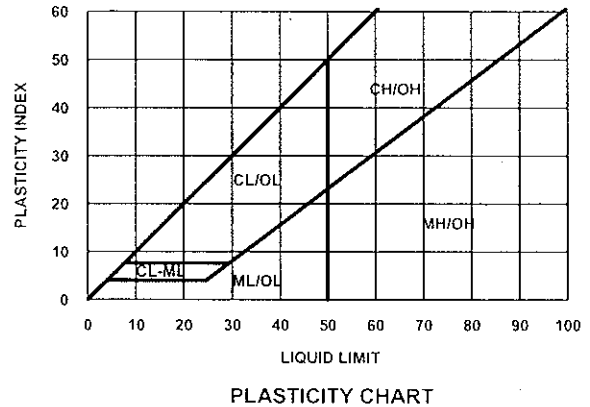
DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT./ DAY)	ORG. CONT. (%)
									LL	PI		
0				▽		Topsoil						
		4-4-4	8	▽		Loose to medium dense, brown sand with shell frangments [SP]						
		3-3-4	7									
5		3-5-6	11									
		8-7-8	15			Medium dense to loose, gray sand with shell frangments [SP]						
		5-5-6	11									
10		4-3-2	5									
15		2-3-4	7									
20		10-9-9	18									
25		7-8-8	16			Medium dense, light gray sandy limestone [GP]						
						SPT Soil Boring Terminated at 25 Feet.						

KEY TO BORING LOGS

SOIL CLASSIFICATION CHART*



**UNIVERSAL
ENGINEERING
SCIENCES, INC.**



GROUP NAME AND SYMBOL

COARSE GRAINED SOILS

	WELL-GRADED SANDS [SW]		WELL-GRADED GRAVELS [GW]
	POORLY-GRADED SANDS [SP]		POORLY-GRADED GRAVELS [GP]
	POORLY-GRADED SANDS WITH SILT [SP-SM]		POORLY-GRADED GRAVELS WITH SILT [GP-GM]
	POORLY-GRADED SANDS WITH CLAY [SP-SC]		POORLY-GRADED GRAVELS WITH CLAY [GP-GC]
	SILTY SANDS [SM]		SILTY GRAVELS [GM]
	CLAYEY SANDS [SC]		CLAYEY GRAVELS [GC]
	SILTY CLAYEY SANDS [SC-SM]		

FINE GRAINED SOILS

	INORGANIC SILTS SLIGHT PLASTICITY [ML]
	INORGANIC SILTY CLAY LOW PLASTICITY [CL-ML]
	INORGANIC CLAYS LOW TO MEDIUM PLASTICITY [CL]
	INORGANIC SILTS HIGH PLASTICITY [MH]
	INORGANIC CLAYS HIGH PLASTICITY [CH]

HIGHLY ORGANIC SOILS

	ORGANIC SILTS/CLAYS LOW PLASTICITY [OL]**
	ORGANIC SILTS/CLAYS MEDIUM TO HIGH PLASTICITY [OH]**
	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS [PT]**

RELATIVE DENSITY (SAND AND GRAVEL)

VERY LOOSE - 0 to 4 Blows/ft.
 LOOSE - 5 to 10 Blows/ft.
 MEDIUM DENSE - 11 to 30 Blows/ft.
 DENSE - 31 to 50 Blows/ft.
 VERY DENSE - more than 50 Blows/ft.

CONSISTENCY (SILT AND CLAY)

VERY SOFT - 0 to 2 Blows/ft.
 SOFT - 3 to 4 Blows/ft.
 FIRM - 5 to 8 Blows/ft.
 STIFF - 9 to 16 Blows/ft.
 VERY STIFF - 17 to 30 Blows/ft.
 HARD - more than 30 Blows/ft.

* IN ACCORDANCE WITH ASTM D 2487 - UNIFIED SOIL CLASSIFICATION SYSTEM.

** LOCALLY MAY BE KNOWN AS MUCK.

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

USCS LEGEND 10/02/07

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS



Important Information About Your Geotechnical Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

The following information is provided to help you manage your risks.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. No one except you should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you — should apply the report for any purpose or project except the one originally contemplated.*

Read the Full Report

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

A Geotechnical Engineering Report Is Based on A Unique Set of Project-Specific Factors

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,

- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical engineering report is based on conditions that existed at the time the study was performed. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ—sometimes significantly—from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are *Not* Final

Do not overrely on the construction recommendations included in your report. *Those recommendations are not final*, because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations only by observing actual

subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.*

A Geotechnical Engineering Report Is Subject to Misinterpretation

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure contractors have sufficient time to perform additional study.* Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that

have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations" many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform a *geoenvironmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, a number of mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; ***none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention.*** ***Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.***

Rely on Your ASFE-Member Geotechnical Engineer for Additional Assistance

Membership in ASFE/The Best People on Earth exposes geotechnical engineers to a wide array of risk management techniques that can be of genuine benefit for everyone involved with a construction project. Confer with you ASFE-member geotechnical engineer for more information.



8811 Colesville Road/Suite G106, Silver Spring, MD 20910

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UGER06045.0M

CONSTRAINTS AND RESTRICTIONS

WARRANTY

UES has prepared this report for our client for his exclusive use, in accordance with generally accepted soil and foundation engineering practices, and makes no other warranty either expressed or implied as to the professional advice provided in the report.

UNANTICIPATED SOIL CONDITIONS

The analysis and recommendations submitted in this report are based upon the data obtained from soil borings performed at the locations indicated on the Boring Location Plan. This report does not reflect any variations which may occur between these borings.

The nature and extent of variations between borings may not become known until excavation begins. If variations appear, we may have to re-evaluate our recommendations after performing on-site observations and noting the characteristics of any variations.

CHANGED CONDITIONS

We recommend that the specifications for the project require that the contractor immediately notify Universal Engineering Sciences, as well as the owner, when subsurface conditions are encountered that are different from those present in this report.

No claim by the contractor for any conditions differing from those anticipated in the plans, specifications, and those found in this report, should be allowed unless the contractor notifies the owner and UES of such changed conditions. Further, we recommend that all foundation work and site improvements be observed by a representative of UES to monitor field conditions and changes, to verify design assumptions and to evaluate and recommend any appropriate modifications to this report.

MISINTERPRETATION OF SOIL ENGINEERING REPORT

UES is responsible for the conclusions and opinions contained within this report based upon the data relating only to the specific project and location discussed herein. If the conclusions or recommendations based upon the data presented are made by others, those conclusions or recommendations are not the responsibility of UES.

CHANGED STRUCTURE OR LOCATION

This report was prepared in order to aid in the evaluation of this project and to assist the architect or engineer in the design of this project. If any changes in the design or location of the structure as outlined in this report are planned, or if any structures are included or added that are not discussed in the report, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and the conclusions modified or approved by UES.

USE OF REPORT BY BIDDERS

Bidders who are examining the report prior to submission of a bid are cautioned that this report was prepared as an aid to the designers of the project and it may affect actual construction operations. Bidders are urged to make their own soil borings, test pits, test caissons or other investigations to determine those conditions that may affect construction operations. UES cannot be responsible for any interpretations made from this report or the attached boring logs with regard to their adequacy in reflecting subsurface conditions which will affect construction operations.

STRATA CHANGES

Strata changes are indicated by a definite line on the boring logs which accompany this report. However, the actual change in the ground may be more gradual. Where changes occur between soil samples, the location of the change must necessarily be estimated using all available information and may not be shown at the exact depth.

OBSERVATIONS DURING DRILLING

Attempts are made to detect and/or identify occurrences during drilling and sampling, such as: water level, boulders, zones of lost circulation, relative ease or resistance to drilling progress, unusual sample recovery, variation of driving resistance, obstructions, etc.; however, lack of mention does not preclude their presence.

WATER LEVELS

Water level readings have been made in the drill holes during drilling and they indicate normally occurring conditions. Water levels may not have been stabilized at the last reading. This data has been reviewed and interpretations made in this report. However, it must be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall, temperature, tides, and other factors not evident at the time measurements were made and reported. Since the probability of such variations is anticipated, design drawings and specifications should accommodate such possibilities and construction planning should be based upon such assumptions of variations.

LOCATION OF BURIED OBJECTS

All users of this report are cautioned that there was no requirement for UES to attempt to locate any man-made buried objects during the course of this exploration and that no attempt was made by UES to locate any such buried objects. UES cannot be responsible for any buried man-made objects which are subsequently encountered during construction that are not discussed within the text of this report.

TIME

This report reflects the soil conditions at the time of investigation. If the report is not used in a reasonable amount of time, significant changes to the site may occur and additional reviews may be required.



Universal Engineering Sciences, Inc.
GENERAL CONDITIONS

SECTION 1: RESPONSIBILITIES

- 1.1 *Universal Engineering Sciences, Inc.*, heretofore referred to as the Consultant, has the responsibility for providing the services described under the Scope of Services section. The work is to be performed according to accepted standards of care and is to be completed in a timely manner. The term "Consultant" as used herein includes all of *Universal Engineering Sciences, Inc.*'s agents, employees, professional staff, and subcontractors.
- 1.2 The Client or a duly authorized representative is responsible for providing the Consultant with a clear understanding of the project nature and scope. The Client shall supply the Consultant with sufficient and adequate information, including, but not limited to, maps, site plans, reports, surveys and designs, to allow the Consultant to properly complete the specified services. The Client shall also communicate changes in the nature and scope of the project as soon as possible during performance of the work so that the changes can be incorporated into the work product.

SECTION 2: STANDARD OF CARE

- 2.1 Services performed by the Consultant under this Agreement are expected by the Client to be conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the Consultant's profession practicing contemporaneously under similar conditions in the locality of the project. No other warranty, express or implied, is made.
- 2.2 The Client recognizes that subsurface conditions may vary from those observed at locations where borings, surveys, or other explorations are made, and that site conditions may change with time. Data, interpretations, and recommendations by the Consultant will be based solely on information available to the Consultant at the time of service. The Consultant is responsible for those data, interpretations, and recommendations, but will not be responsible for other parties' interpretations or use of the information developed.

SECTION 3: SITE ACCESS AND SITE CONDITIONS

- 3.1 Client will grant or obtain free access to the site for all equipment and personnel necessary for the Consultant to perform the work set forth in this Agreement. The Client will notify any and all possessors of the project site that Client has granted Consultant free access to the site. The Consultant will take reasonable precautions to minimize damage to the site, but it is understood by Client that, in the normal course of work, some damage may occur, and the correction of such damage is not part of this Agreement unless so specified in the Proposal.
- 3.2 The Client is responsible for the accuracy of locations for all subterranean structures and utilities. The Consultant will take reasonable precautions to avoid known subterranean structures, and the Client waives any claim against Consultant, and agrees to defend, indemnify, and hold Consultant harmless from any claim or liability for injury or loss, including costs of defense, arising from damage done to subterranean structures and utilities not identified or accurately located. In addition, Client agrees to compensate Consultant for any time spent or expenses incurred by Consultant in defense of any such claim with compensation to be based upon Consultant's prevailing fee schedule and expense reimbursement policy.

SECTION 4: SAMPLE OWNERSHIP AND DISPOSAL

- 4.1 Soil or water samples obtained from the project during performance of the work shall remain the property of the Client.
- 4.2 The Consultant will dispose of or return to Client all remaining soils and rock samples 60 days after submission of report covering those samples. Further storage or transfer of samples can be made at Client's expense upon Client's prior written request.
- 4.3 Samples which are contaminated by petroleum products or other chemical waste will be returned to Client for treatment or disposal, consistent with all appropriate federal, state, or local regulations.

SECTION 5: BILLING AND PAYMENT

- 5.1 Consultant will submit invoices to Client monthly or upon completion of services. Invoices will show charges for different personnel and expense classifications.
- 5.2 Payment is due 30 days after presentation of invoice and is past due 31 days from invoice date. Client agrees to pay a finance charge of one and one-half percent (1 ½ %) per month, or the maximum rate allowed by law, on past due accounts.
- 5.3 If the Consultant incurs any expenses to collect overdue billings on invoices, the sums paid by the Consultant for reasonable attorneys' fees, court costs, Consultant's time, Consultant's expenses, and interest will be due and owing by the Client.

SECTION 6: OWNERSHIP OF DOCUMENTS

- 6.1 All reports, boring logs, field data, field notes, laboratory test data, calculations, estimates, and other documents prepared by the Consultant, as instruments of service, shall remain the property of the Consultant.
- 6.2 Client agrees that all reports and other work furnished to the Client or his agents, which are not paid for, will be returned upon demand and will not be used by the Client for any purpose.
- 6.3 The Consultant will retain all pertinent records relating to the services performed for a period of five years following submission of the report, during which period the records will be made available to the Client at all reasonable times.

SECTION 7: DISCOVERY OF UNANTICIPATED HAZARDOUS MATERIALS

- 7.1 Client warrants that a reasonable effort has been made to inform Consultant of known or suspected hazardous materials on or near the project site.
- 7.2 Under this agreement, the term hazardous materials include hazardous materials (40 CFR 172.01), hazardous wastes (40 CFR 261.2), hazardous substances (40 CFR 300.6), petroleum products, polychlorinated biphenyls, and asbestos.
- 7.3 Hazardous materials may exist at a site where there is no reason to believe they could or should be present. Consultant and Client agree that the

discovery of unanticipated hazardous materials constitutes a changed condition mandating a renegotiation of the scope of work. Consultant and Client also agree that the discovery of unanticipated hazardous materials may make it necessary for Consultant to take immediate measures to protect health and safety. Client agrees to compensate Consultant for any equipment decontamination or other costs incident to the discovery of unanticipated hazardous waste.

- 7.4 Consultant agrees to notify Client when unanticipated hazardous materials or suspected hazardous materials are encountered. Client agrees to make any disclosures required by law to the appropriate governing agencies. Client also agrees to hold Consultant harmless for any and all consequences of disclosures made by Consultant which are required by governing law. In the event the project site is not owned by Client, Client recognizes that it is the Client's responsibility to inform the property owner of the discovery of unanticipated hazardous materials or suspected hazardous materials.
- 7.5 Notwithstanding any other provision of the Agreement, Client waives any claim against Consultant, and to the maximum extent permitted by law, agrees to defend, indemnify, and save Consultant harmless from any claim, liability, and/or defense costs for injury or loss arising from Consultant's discovery of unanticipated hazardous materials or suspected hazardous materials including any costs created by delay of the project and any cost associated with possible reduction of the property's value. Client will be responsible for ultimate disposal of any samples secured by the Consultant which are found to be contaminated.

SECTION 8: RISK ALLOCATION

- 8.1 Client agrees that Consultant's liability for any damage on account of any error, omission or other professional negligence will be limited to a sum not to exceed \$50,000 or Consultant's fee, whichever is greater. Client agrees that the foregoing limits of liability extend to all of consultant's employees and professionals who perform any services for Client. If Client prefers to have higher limits on professional liability, Consultant agrees to increase the limits up to a maximum of \$1,000,000.00 upon Client's written request at the time of accepting our proposal provided that Client agrees to pay an additional consideration of four percent of the total fee, or \$400.00, whichever is greater. The additional charge for the higher liability limits is because of the greater risk assumed and is not strictly a charge for additional professional liability insurance.

SECTION 9: INSURANCE

- 9.1 The Consultant represents and warrants that it and its agents, staff and Consultants employed by it, is and are protected by worker's compensation insurance and that Consultant has such coverage under public liability and property damage insurance policies which the Consultant deems to be adequate. Certificates for all such policies of insurance shall be provided to Client upon request in writing. Within the limits and conditions of such insurance, Consultant agrees to indemnify and save Client harmless from and against loss, damage, or liability arising from negligent acts by Consultant, its agents, staff, and consultants employed by it. The Consultant shall not be responsible for any loss, damage or liability beyond the amounts, limits, and conditions of such insurance or the limits described in Section 8, whichever is less. The Client agrees to defend, indemnify and save Consultant harmless for loss, damage or liability arising from acts by Client, Client's agent, staff, and other consultants employed by Client.

SECTION 10: DISPUTE RESOLUTION

- 10.1 All claims, disputes, and other matters in controversy between Consultant and Client arising out of or in any way related to this Agreement will be submitted to alternative dispute resolution (ADR) such as mediation and/or arbitration, before and as a condition precedent to other remedies provided by law.
- 10.2 If a dispute at law arises related to the services provided under this Agreement and that dispute requires litigation instead of ADR as provided above, then:
- (a) the claim will be brought and tried in judicial jurisdiction of the court of the county where Consultant's principal place of business is located and Client waives the right to remove the action to any other county or judicial jurisdiction, and
 - (b) The prevailing party will be entitled to recovery of all reasonable costs incurred, including staff time, court costs, attorneys' fees, and other claim related expenses.

SECTION 11: TERMINATION

- 11.1 This agreement may be terminated by either party upon seven (7) days written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof. Such termination shall not be effective if that substantial failure has been remedied before expiration of the period specified in the written notice. In the event of termination, Consultant shall be paid for services performed to the termination notice date plus reasonable termination expenses.
- 11.2 In the event of termination, or suspension for more than three (3) months, prior to completion of all reports contemplated by the Agreement, Consultant may complete such analyses and records as are necessary to complete his files and may also complete a report on the services performed to the date of notice of termination or suspension. The expense of termination or suspension shall include all direct costs of Consultant in completing such analyses, records and reports.

SECTION 12: ASSIGNS

- 12.1 Neither the Client nor the Consultant may delegate, assign, sublet or transfer his duties or interest in this Agreement without the written consent of the other party.

SECTION 13. GOVERNING LAW AND SURVIVAL

- 13.1 The laws of the State of Florida will govern the validity of these Terms, their interpretation and performance.
- 13.2 If any of the provisions contained in this Agreement are held illegal, invalid, or unenforceable, the enforceability of the remaining provisions will not be impaired. Limitations of liability and indemnities will survive termination of this Agreement for any cause.

APPENDIX “B” – APPROVED PERMITS



DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
9900 SW 107th Avenue, Suite 203
Miami, FL 33176

REPLY TO
ATTENTION OF

November 5, 2020

Regulatory Division
South Permits Branch
Miami Permits Section
SAJ-2020-03213 (GP-LOB)

Hector Gomez
Town of Surfside
9293 Harding Avenue
Surfside, FL 33154

Dear Mr. Gomez:

Your application for a Department of the Army permit received on 10 August 2020, has been assigned number SAJ-2020-03213. A review of the information and drawings provided shows the proposed work will include the following: install a new sub-aqueous utility installation consisting of (1) 8-inch High Density Poly Ethylene (HDPE) water main 50-feet in length by horizontal directional drilling (HDD) 10-feet below the canal bottom. Bore pit locations would be located within uplands and no work is proposed within the canal. Turbidity containment devices such as turbidity screen, silt containment fence, straw bales, and earthen berms will be used within the staging area. The project would affect waters of the United States associated with Point Lake Canal in Biscayne Bay. The project site is located at Bay Drive and Irving Avenue in Section 34, Township 52 South, Range 42 East, in Surfside, Florida 33154 (Latitude: 25.87485°; Longitude: - 80.130611°).

Your project, as depicted on the enclosed drawings, is also authorized by Regional General Permit (GP) SAJ #14. This authorization is valid until **22 February 2023**. Please access the Corps' Jacksonville District Regulatory Division Internet page to view the special and general conditions for SAJ-#14, which apply specifically to this authorization. The Internet URL address is:

<http://www.saj.usace.army.mil/Missions/Regulatory.aspx>

Please be aware this Internet address is case sensitive; and, you will need to enter it exactly as it appears above. Once there you will need to click on "Source Book"; and, then click on "General Permits." Then you will need to click on the specific SAJ permit noted above. You must comply with all of the special and general conditions of the permit; and, any project-specific conditions noted below, or you may be subject to enforcement action. The following project-specific conditions are included with this authorization:

The following 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, FL 32232-0019.

The Permittee shall reference this permit number, **SAJ-2020-03213** (GP-LOB), on all submittals.

2. **As-Built Certification:** Within 60 days of completion of the work authorized by this permit, the permittee shall submit as-built drawings of the authorized work and a completed "As-Built Certification By Professional Engineer" form (Attachment) to the Corps. The as-built drawings shall be signed and sealed by a registered professional engineer and include the following:

- a. A plan view drawing of the location of the authorized work footprint, as shown on the permit drawings, with transparent overlay of the work as constructed in the same scale as the permit drawings on 8½-inch by 11-inch sheets. The plan view drawing should show all "earth disturbance," including wetland impacts and water management structures.

- b. A list of any deviations between the work authorized by this permit and the work as constructed. In the event that the completed work deviates, in any manner, from the authorized work, describe on the attached "As-Built Certification By Professional Engineer" 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 that the depiction and/or description of any deviations on the drawings and/or "As-Built Certification By Professional Engineer" form does not constitute approval of any deviations by the Corps.

- c. Include the Department of the Army permit number on all sheets submitted.
- 3. **Commencement Notice:** Within 10 days from the date of initiating the work authorized by this permit the Permittee shall submit a completed "Commencement Notification" Form (Attached).
- 4. **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 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.
- 5. **Manatee Conditions:** The Permittee shall comply with the "Standard Manatee Conditions for In-Water Work – 2011" (Attached).
- 6. **Posting of Permit:** The Permittee shall have available and maintain for review a copy of this permit and approved plans at the construction site.
- 7. **Agency Changes/Approvals:** Should any other agency require and/or approve changes to the work authorized or obligated by this permit, the Permittee is advised a re-verification to this permit instrument is required prior to initiation of those changes. It is the Permittee's responsibility to request a re-verification of this permit from the Miami Permits Section. The Corps reserves the right to fully evaluate, amend, and approve or deny the request for re-verification of this permit.
- 8. **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 the ground disturbing activities and construction work within the permit area, there are archaeological/cultural materials encountered which were

not the subject of a previous cultural resources assessment survey (and which shall include, but not be limited to: pottery, modified shell, flora, fauna, human remains, ceramics, stone tools or metal implements, dugout canoes, evidence of structures or any other physical remains that could be associated with Native American cultures or early colonial or American settlement), the Permittee shall immediately stop all work and ground-disturbing activities within a 100-meter diameter of the discovery and notify the Corps within the same business day (8 hours). The Corps shall then notify the Florida State Historic Preservation Officer (SHPO) and the appropriate Tribal Historic Preservation Officer(s) (THPO(s)) to assess the significance of the discovery and devise appropriate actions.

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, THPO(s), 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 Archeologist within the same business day (8-hours). The Corps shall then notify the appropriate SHPO and THPO(s). 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 State Archeologist and from the Corps.

9. **Project Drawings:** The project must be completed in accordance with the enclosed construction drawings (pages 1-7), date-stamped by the U.S. Army Corps of Engineers (Corps) on 3 August 2020, and the general and special conditions which are incorporated in, and made a part of, the permit.
10. **Turbidity Barriers:** In case a frac-out occurs during HDD activities, the Permittee shall install floating turbidity barriers with weighted skirts that extend to 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 until all suspended and erodible materials have been stabilized. Turbidity barriers shall be removed upon stabilization of the work area.

11. **Notification of Unmarked Utilities:** No work shall be performed until after the permittee provides notification to the owner(s) or operator(s) of any marked utilities in the work area, unless the permittee is the same entity as the owner(s) or operator(s).

12. **Horizontal Directional Drilling (HDD):** Except as otherwise required by Special

Condition of this RGP, directional boring vaults, junction boxes, and/or pads will not be constructed within 50 feet of the top of the bank of waterways (rivers/streams). HDD pilot, entrance, and exit holes must be the minimum diameter necessary; and, must be set back from the waterway (river/stream) bank by a minimum of 50 feet. Excavated materials and drilling mud must be stockpiled on non-wetland areas, where available. Appropriate fabric must be placed beneath all materials stockpiled in wetlands. As part of any verification under this RGP, the permittee must submit a frac-out plan to the Corps for approval. No work shall commence prior to Corps approval of the frac-out plan. Further, the permittee shall submit a benthic survey for SAV, coral, and/or hardbottom habitat in areas where these resources could occur. In the event that any of these benthic resources are discovered within the proposed project footprint, the permittee must submit plans to avoid and minimize impacts to such resources as a result of frac-out based on consideration of geologic formation, boring depth, drilling mud pressure, and a pressure profile.

13. **Jacksonville District Programmatic Biological Opinion (JAXBO), November 2017, Project Design Criteria (PDCs):** Structures authorized under this permit must comply with all applicable PDCs, based on the permitted activity, as required by JAXBO. Please note that failure to comply with the applicable PDCs, where a take of listed species occurs, would constitute an unauthorized take, and noncompliance with this permit. The NMFS is the appropriate authority to enforce the terms and conditions of JAXBO. The most current version of JAXBO can be accessed at the Jacksonville District Regulatory Division internet webpage in the Endangered Species section of the Sourcebook located at:

<http://www.saj.usace.army.mil/Missions/Regulatory/SourceBook.aspx>

Note - JAXBO may be subject to revision at any time. The most recent version of these conditions must be utilized during the design and construction of the

permitted work. In accordance with the Endangered Species Act, and for those projects which do not comply with JAXBO, the Corps will seek individual consultation with the NMFS.

Note - some authorized activities may deviate from the PDCs. In cases, where the activity (i.e., structure dimensions, length, etc.) deviates from the PDCs, the permit drawings shall supersede the PDCs.

For each of the following authorized activities subject of this permit, the permittee shall adhere to the following PDCs, which are attached to, and made part of, this authorization/verification letter:

Activity 8 – Transmission and Utility Line Activities

14. **Sea Turtle and Smalltooth Sawfish Conditions:** The Permittee shall comply with National Marine Fisheries Service's "Sea Turtle and Smalltooth Sawfish Construction Conditions" dated March 23, 2006 (Attached).

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.

If you are unable to access the internet or require a hardcopy of any of the conditions, limitations, or expiration date for the above referenced NWP, please contact Luis O. Betancourt by telephone at (305) 779-6051.

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 http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_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.

Sincerely,

Luis O. Betancourt
Project Manager

Enclosures

General Conditions

Self-Certification Statement of Compliance

Permit Transfer Request

Site Plans dated by the Corps on 5 November 2020

Sea Turtle and Smalltooth Sawfish Conditions

Standard Manatee Conditions for In-Water Work – 2011

PDCs for Activity 8 – Transmission and Utility Line Activities

GENERAL CONDITIONS
33 CFR PART 320-330

1. The time limit for completing the work authorized ends on the **dates identified in the letter.**
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 or 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 in the space provided and forward a copy of the permit 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.
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.

SELF-CERTIFICATION STATEMENT OF COMPLIANCE

*Within sixty (60) days of completion of the authorized work, submit this form via electronic mail to saj-rd-enforcement@usace.army.mil (preferred, not to exceed 15MB) **or** by standard mail to U.S. Army Corps of Engineers, Enforcement Section, P.O. Box 4970, Jacksonville, FL 32232-0019.*

1. **Department of the Army Permit Number:** SAJ-2020-03213 (GP-LOB)

2. **Permittee Information:** Name: _____

Email: _____

Address: _____

Phone: _____

3. **Date Authorized Work Started:** _____ **Completed:** _____

4. **Contact to Schedule Inspection:** Name: _____

Email: _____

Phone: _____

5. **Description of Authorized Work (e.g. bank stabilization, fill placed within wetlands, docks, dredging, etc.):** _____

6. **Acreage or Square Feet of Impacts to Waters of the United States:** _____

7. **Describe Mitigation completed (if applicable):** _____

8. **Describe any Deviations from Permit (attach drawing(s) depicting the deviations):**

I certify that all work and mitigation (if applicable) was done in accordance with the limitations and conditions as described in the permit. Any deviations as described above are depicted on the attached drawing(s).

Signature of Permittee

Printed Name of Permittee; Date

COMMENCEMENT NOTIFICATION

*Within ten (10) days of initiating the authorized work, submit this form via electronic mail to saj-rd-enforcement@usace.army.mil (preferred, not to exceed 15 MB) **or** by standard mail to U.S. Army Corps of Engineers, Enforcement Section, P.O. Box 4970, Jacksonville, FL 32232-0019.*

1. Department of the Army Permit Number: SAJ-2020-03213 (GP-LOB)

2. Permittee Information:

Name: _____

Email: _____

Address: _____

Phone: _____

3. Construction Start Date: _____

4. Contact to Schedule Inspection:

Name: _____

Email: _____

Phone: _____

Signature of Permittee

Printed Name of Permittee

Date

DEPARTMENT OF THE ARMY PERMIT TRANSFER REQUEST

PERMIT NUMBER: SAJ-2020-03213 (GP-LOB)

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. Although the construction period for works authorized by Department of the Army permits is finite, the permit itself, with its limitations, does not expire.

To validate the transfer of this permit and the associated responsibilities associated with compliance with its terms and conditions, have the transferee sign and date below and mail to the U.S. Army Corps of Engineers, Enforcement Section, Post Office Box 4970, Jacksonville, FL 32232-0019 or by electronic mail at saj-rd-enforcement@usace.army.mil.

(TRANSFEREE-SIGNATURE)

(SUBDIVISION)

(DATE)

(LOT)

(BLOCK)

(NAME-PRINTED)

(STREET ADDRESS)

(MAILING ADDRESS)

(CITY, STATE, ZIP CODE)

PROJECT No: 19-3372
193372-COMR.dwg



1. RESPONSIBILITY FOR THE USE OF THESE PLANS FOR ANY PURPOSE PRIOR TO SECURING PERMITS FROM ALL AGENCIES HAVING JURISDICTION OVER THIS PROJECT WILL FALL SOLELY UPON THE USER.
2. AN ELECTRONIC CAD FILE WILL BE PROVIDED FOR SURVEY LAYOUT.

EXCEPTIONAL SOLUTIONS™

1800 Eller Drive, Suite 600, Fort Lauderdale, Florida 33316

Phone: 954.921.7781 • Fax: 954.921.8807
Certificate of Authorization 514

CURRENT REV No.:

NICHOLAS W. KANELDIS, P.E.
STATE OF FLORIDA PROFESSIONAL ENGINEER

CURRENT REV No.:

NICHOLAS W. KANELDIS, P.E.
STATE OF FLORIDA PROFESSIONAL ENGINEER

DATE: 05/18/20

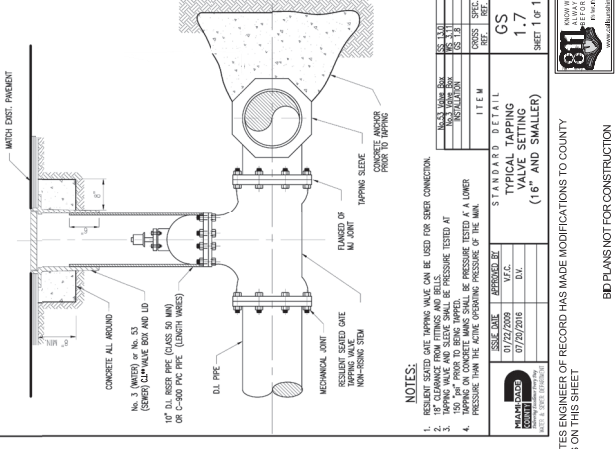
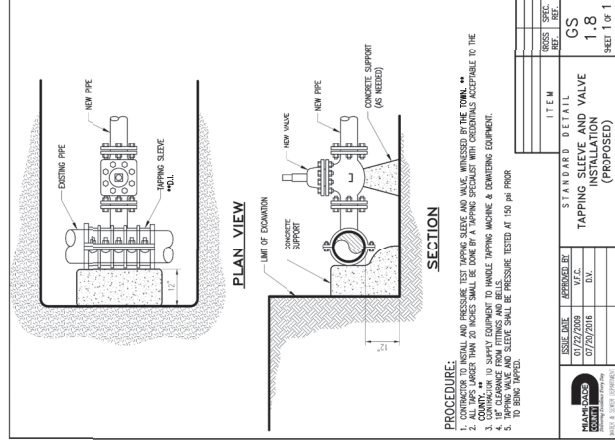
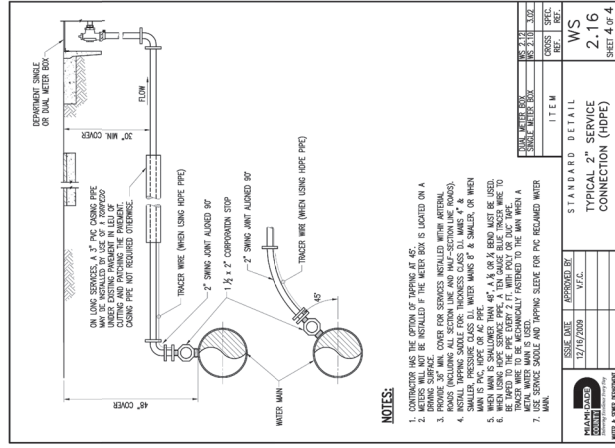
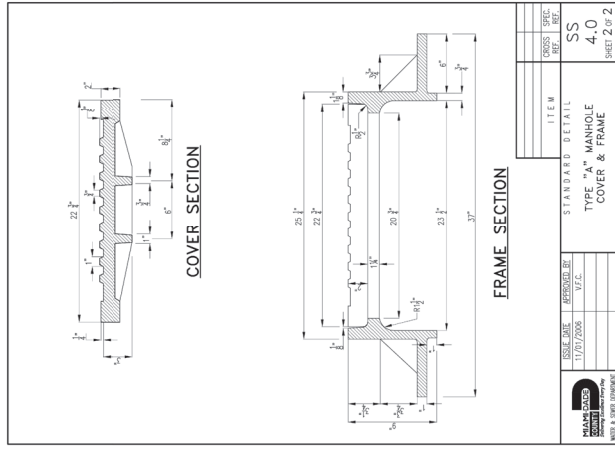
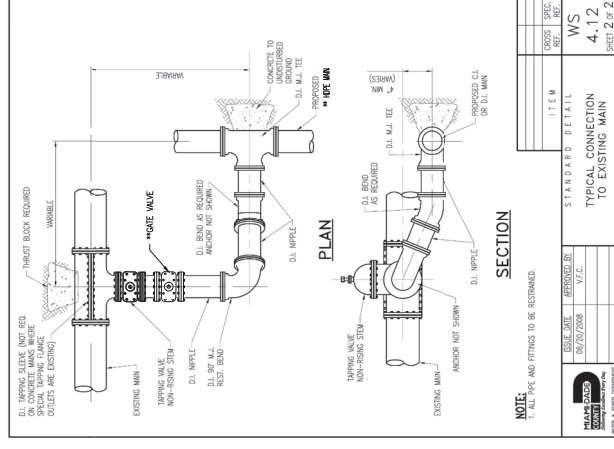
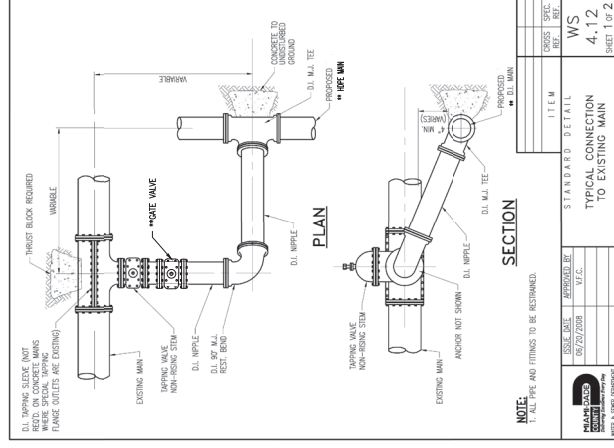
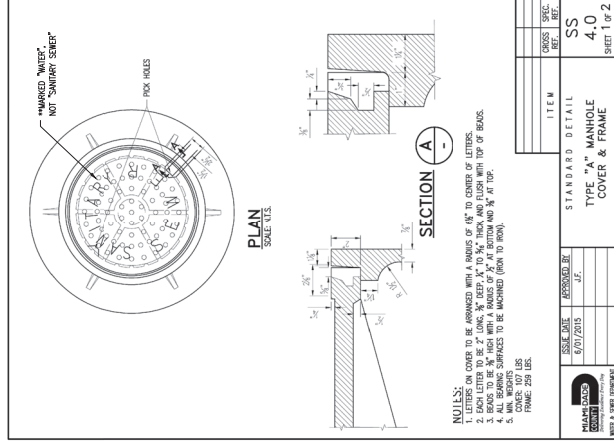
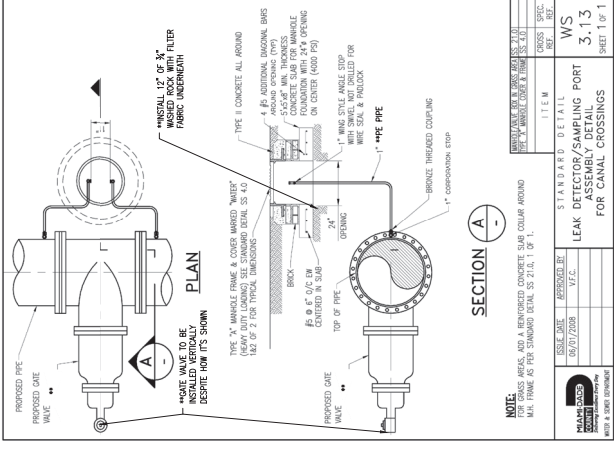
SHEET:

RESPONDING AGENCIES	DATE SUBMITTED	CON INITIALS	DATE APPROVED	PROJECT NUMBER
TOWN OF SURFSIDE ENGINEERING/PISTON-OF-WAY FORMER (BP CONTRACTOR)				
SOUTH FLORIDA WATER MANAGEMENT DISTRICT - DRAINWAYS (BP CONTRACTOR)				
MIAMI-DADE COUNTY DRAIN - WATER CONTROL SECTION (DRAINWAYS, BY CONTRACTOR)				
MIAMI-DADE COUNTY DRAIN - SPECIALTY ENGINEERING SECTION (WATER)	04/15/20	NMK	04/17/20	APP 576
MIAMI-DADE COUNTY DRAIN - SPECIALTY ENGINEERING SECTION (WATER)	04/17/20	NMK	04/17/20	APP 576
MIAMI-DADE COUNTY DRAIN - FIRE DEPARTMENT	04/17/20	NMK	04/17/20	M2000210770
FLORIDA DEPARTMENT OF HEALTH - MIAMI-DADE COUNTY	04/27/20	NMK	05/11/20	1400-001-0000

SAJ-2020 Town of Surfside (Sheet Page 1 of 7) 11/05/2020

ABBREVIATION LEGEND		LINE TYPE LEGEND		PROPOSED SYMBOL LEGEND		EXISTING SYMBOL LEGEND	
AR	AIR RELEASE VALVE	---	LOT LINE	●	AIR RELEASE VALVE	+	EXISTING SPOT ELEVATION (FT)
BE	BURIED ELECTRIC	---	SECTION LINE	⊙	BACTERIOLOGICAL SAMPLE POINT	+	QTY ANCHOR
BPP	BUTTERFLY PREVENTER	---	8" V. LINE	⊖	WATER METER	⊖	FPL MANHOLE
BV	BUTTERFLY VALVE	---	PROPERTY LINE	⊖	FIRE HYDRANT	⊖	CONC. LIGHT POLE
BM	BENCHMARK	---	CENTRELINE	⊖	FIRE DEPARTMENT CONNECTION	⊖	CONC. UTILITY POLE
BP	BOTTOM OF PIPE	---	WALL	⊖	SINGLE WATER SERVICE	⊖	CONC. SIGNAL POLE
BSP	BACTERIOLOGICAL SAMPLING POINT	---	EXIST. CHAIN LINK FENCE	⊖	DOUBLE WATER SERVICE	⊖	COMMUNICATION RISER
CA	CORROGATED ALUMINUM PIPE	---	PROPOSED CHAIN LINK FENCE	⊖	BACKFLOW PREVENTER	⊖	CABLE TV MANHOLE
CB	CATCH BASIN	---	EXISTING WOOD FENCE	⊖	DOUBLE DETECTOR CHECK VALVE	⊖	CABLE TV RISER
CI	CURB INLET	---	EXISTING POCKET FENCE	⊖	BLOWOFF	⊖	ELEC. MANHOLE
CP	CURB IRON PIPE	---	WATER MAIN TO BE REMOVED	⊖	REDUCER	⊖	FPL TRANSFORMER
CMP	CORROGATED METAL PIPE	---	WATER MAIN TO BE ROUTED IN PLACE	⊖	GATE VALVE	⊖	GAS METER
CO	CONCRETE	---	WATER MAIN PREVIOUSLY ARMORED	⊖	45° BEND	⊖	TRAFFIC CONTROL BOX
DE	DRAINAGE EASEMENT	---	EXISTING OVERHEAD ELECTRIC, CABLE TV, PHONE	⊖	TEE	⊖	GAS VALVE
DP	DUCTILE IRON PIPE	---	EXISTING WATER MAIN	⊖	CROSS	⊖	SEWER VALVE
E	EAST	---	EXISTING WATER SNIER	⊖	PLUG	⊖	WATER VALVE
EL	ELEVATION	---	EXISTING STORM MAIN	⊖	45° BEND	⊖	GATE VALVE
EX	EXIST	---	EXISTING FIRE MAIN	⊖	TEE	⊖	CLEANOUT
EXEL	EXISTING ELEVATION	---	EXISTING OVERHEAD POWER	⊖	CROSS	⊖	FIRE HYDRANT
FF EL	FINISHED FLOOR ELEVATION	---	EXISTING UNDERGROUND	⊖	PLUG	⊖	REDUCER
FI	FIRE HYDRANT	---	EXISTING NATURAL GAS	⊖	BLowOFF	⊖	IRRIGATION VALVE
GAU	GAUGED	---	EXISTING COMMUNICATION	⊖	VERTICAL BENDS	⊖	MANHOLE
GV	GATE VALVE	---	EXISTING CHILLER	⊖	SANITARY FLOW DIRECTION	⊖	BACKFLOW PREVENTOR
HORZ	HORIZONTAL	---	EXISTING OVERHEAD T&E	⊖	CLEAN OUT	⊖	CATCH BASIN
H.P.	HIGH POINT	---	EXISTING FUEL LINE	⊖	DOUBLE SANITARY LATERAL	⊖	GROUND/LANDSCAPING LIGHTING
IN	INVERT	---	EXISTING OVERHEAD ELECTRIC	⊖	CONNECT ID	⊖	SIGN
JB	JUNCTION BOX	---	EXISTING UNDERGROUND ELECTRIC	⊖	DRAINAGE FLOW	⊖	WATER METER
LF	LINEAR FEET	---	EXISTING UNKNOWN UTILITY	⊖	SPOT GRADE	⊖	MAILBOX
MAX	MAXIMUM	---	EXISTING OVERHEAD WRE	⊖	SIGN	⊖	LIGHT POLE
M	MANHOLE	---		⊖	CATCH BASIN	⊖	BENCH
MJ	MECHANICAL JOINT	---		⊖	MANHOLE	⊖	
N	NORTH	---		⊖	CLEANOUT	⊖	
NC	NOT INCLUDED	---		⊖	SLOTTED DRAIN	⊖	
NTS	NOT TO SCALE	---		⊖	STORM YARD DRAIN	⊖	
NOO	NATURAL GEODETIC VERTICAL DATUM	---		⊖	P5 STORM INLET	⊖	
OE	OVERHEAD ELECTRIC	---		⊖	P6 STORM INLET	⊖	
P&P	PERFORATED CORRUGATED ALUMINUM PIPE	---		⊖	EXPLANTION TRENCH	⊖	
PFB	POLLUTION RETENANT BAFFLE	---		⊖	HEADWALL	⊖	
PROPP	PROPOSED	---		⊖	METERED END - RCP	⊖	
PSI	POUNDS PER SQUARE INCH	---		⊖	METERED END - HPPE	⊖	
PV	PLUG VALVE	---		⊖	RAY BALES	⊖	
PVC	POLYVINYL CHLORIDE	---		⊖	POSS BGS W/ HWY BALES	⊖	
R	RADIUS	---		⊖	SILT BARRIER FENCE	⊖	
RCP	REINFORCED CONCRETE PIPE	---		⊖	THURBURY BARRIER	⊖	
RCW	RECLAIMED WATER	---		⊖		⊖	
RED	REDUCER	---		⊖		⊖	
R/W	RIGHT-OF-WAY	---		⊖		⊖	
S	SOUTH	---		⊖		⊖	
SN	SANITARY	---		⊖		⊖	
SB	SOIL BORING	---		⊖		⊖	
STA	STATION	---		⊖		⊖	
TB	TOP OF BANK	---		⊖		⊖	
TDP	TOP OF PIPE	---		⊖		⊖	
TYP	TYPICAL	---		⊖		⊖	
UE	UTILITY EASEMENT	---		⊖		⊖	
VERT	VERTICAL	---		⊖		⊖	
W	WEST	---		⊖		⊖	
WM	WATER MAIN	---		⊖		⊖	

[illegible]



Calvin, Giordano & Associates, Inc.
EXCEPTIONAL SOLUTIONSSM
1800 Eller Drive, Suite 600, Fort Lauderdale, Florida 33316
Phone: 954.921.7781 • Fax: 954.921.1007

POINT LAKE CANAL SUBAQUEOUS WATER
MAIN CROSSING TO BISCA YA ISLAND

GOING TO BISCAYNE
SURFSIDE, FLORIDA

GENERAL DETAILS

STATE OF FLORIDA PROFESSIONAL ENGINEER LICENSE No. 78636	AS SHOWN	PROJECT No 19-3372	G5



BD PLANS NOT FOR CONSTRUCTION
ELEVATIONS ARE IN MGD 1928

SCALE: AS SHOWN
PROJECT NO: 19-5372
DATE: 05/18/20

G6

SCALE: AS SHOWN
PROJECT NO: 19-5372
DATE: 05/18/20

GENERAL DETAILS

POINT LAKE CANAL SUBAQUEOUS WATER
MAIN CROSSING TO BISCAYA ISLAND

Calvin, Giordano & Associates, Inc.
FACULTY SOLUTIONS
10000 N. W. 11th Ave., Suite 100
Miami, FL 33150
Phone: 305.757.7700 • Fax: 305.757.7701
Certificate of Authorization 514



SURFSIDE, FLORIDA

ASPHALT AND CONCRETE DRIVEWAY DETAIL
SCALE: N.T.S.

CURRENT

SCALE: N.T.S.

CURRENT

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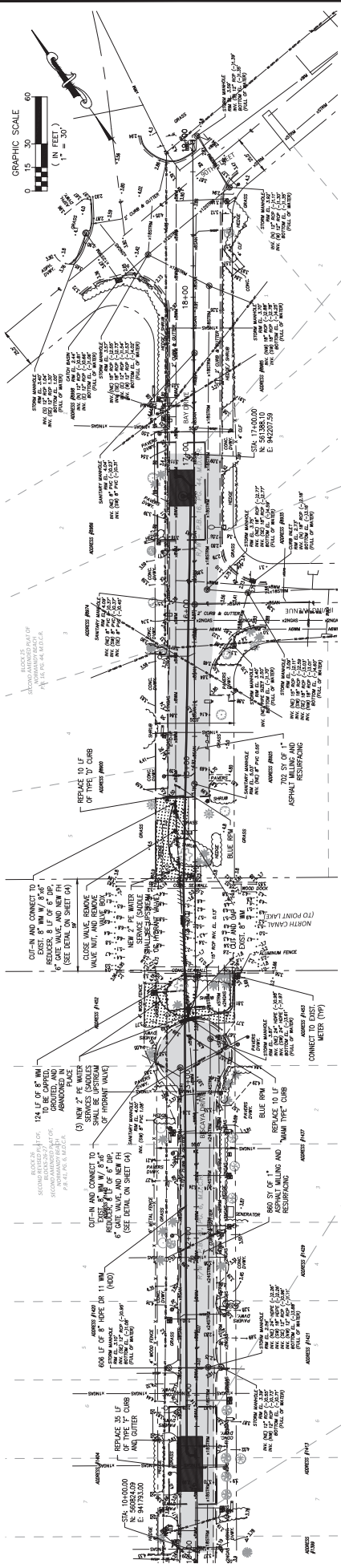
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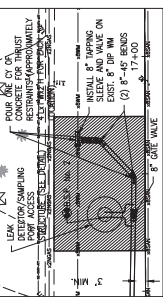
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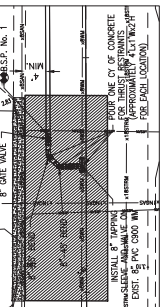
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PLAN
Scale: 1" = 30'

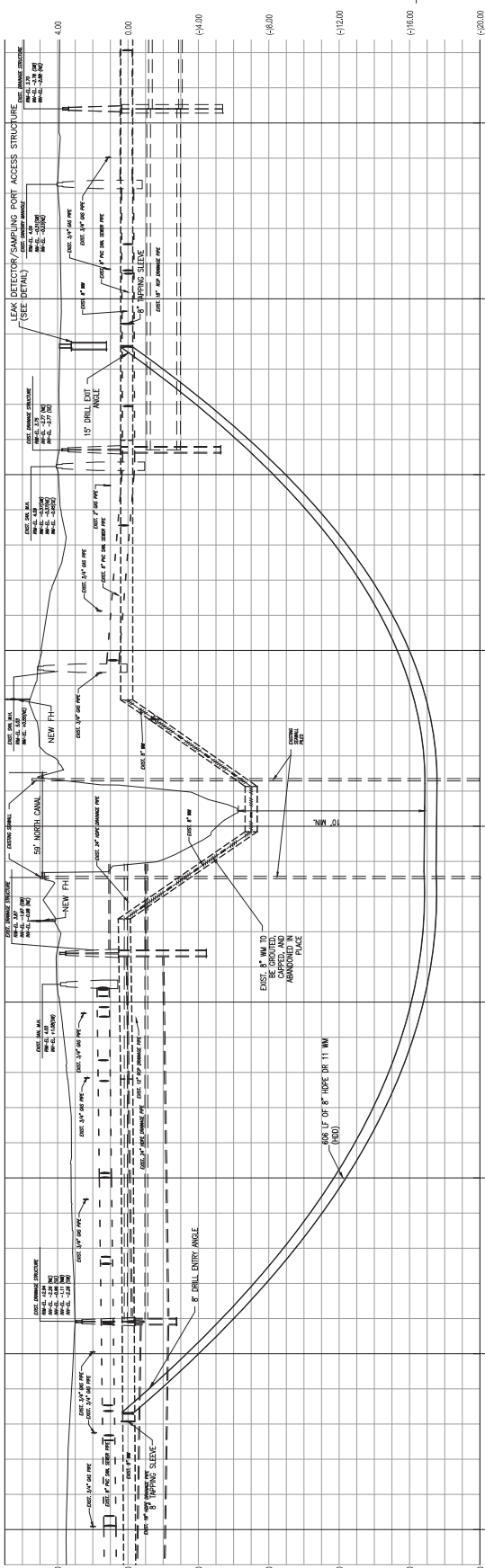


DRILL EXIT PIT
Scale: 1" = 10'



DRILL ENTRY PIT
Scale: 1" = 10'

- NOTES:
1. PIPE INSTALLED BY OPEN CUT SHALL BE DIP. ALL DIP SHALL BE ENCASED IN A POLYETHYLENE SLEEVE. SEE TECHNICAL SPECIFICATIONS FOR MORE DETAIL.
 2. CONCRETE THURST BLOCKS SHALL BE INSTALLED WHEN CUTTING IN AND CONNECTING TO EXISTING WATER MAIN. THIS INCLUDES FIRE HYDRANT ASSEMBLIES AND ANYWHERE ELSE SHOWN IN THE DETAILS.
 3. CONTRACTOR SHALL NAVIGATE AND PIPE BETWEEN WATER PILES AND KING PILES AT EACH SUMMIT.
 4. CONTRACTOR SHALL INSTALL AND MAINTAIN FILTER FABRIC ON ALL NEARBY INLETS AND TURBIDITY BARRIERS AT EACH SUMMIT.
 5. CONTRACTOR SHALL VERIFY ALL EXISTING UTILITY LOCATIONS AND ELEVATIONS PRIOR TO STAKING EQUIPMENT AND MATERIALS. NOTIFY OWNER OF ANY POTENTIAL CONTACTS WITHIN 24 HOURS OF DISCOVERY.
 6. EXISTING FURNISH MARKINGS SHALL BE REPLACED IN-HAND WITH THERMOPLASTIC PER THE TECHNICAL SPECIFICATIONS AND GENERAL NOTES ON SHEET C1.



PROFILE
Scale: 1" = 30'

- LEGEND
- 1" ASPHALT MILLING AND RESURFACING
 - CONCRETE RESTORATION
 - SID RESTORATION
 - DRILL PIT AREA/TRENCH RESTORATION
 - WATER MAIN TO BE CAPTED, GROUTED, AND ABANDONED IN PLACE
 - WATER MAIN PREVIOUSLY ABANDONED



BIO PLANS NOT FOR CONSTRUCTION
ELEVATIONS ARE IN NGVD 1989

SHEET		C1		
DATE	AS SHOWN			
PROJECT NO.		19-3372		
ENGINEERING PLAN				
POINT LAKE CANAL SUBAQUEOUS WATER MAIN CROSSING TO BISCAYA ISLAND				
SURFSIDE, FLORIDA				
Calvin, Giordano & Associates, Inc. EXCEPTIONAL SOLUTIONS 10000 W. 10th Avenue, Suite 100 Miami, FL 33156 Phone: (305) 555-1234 Fax: (305) 555-1235 Certificate of Authorization 514				
NO.	DATE	BY	CHKD.	APP'D.
1				

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



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, FL 33701

SEA TURTLE AND SMALLTOOTH SAWFISH CONSTRUCTION CONDITIONS

The permittee shall comply with the following protected species construction conditions:

- a. The permittee shall instruct all personnel associated with the project of the potential presence of these species and the need to avoid collisions with sea turtles and smalltooth sawfish. All construction personnel are responsible for observing water-related activities for the presence of these species.
- b. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing sea turtles or smalltooth sawfish, which are protected under the Endangered Species Act of 1973.
- c. Siltation barriers shall be made of material in which a sea turtle or smalltooth sawfish cannot become entangled, be properly secured, and be regularly monitored to avoid protected species entrapment. Barriers may not block sea turtle or smalltooth sawfish entry to or exit from designated critical habitat without prior agreement from the National Marine Fisheries Service's Protected Resources Division, St. Petersburg, Florida.
- d. All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will preferentially follow deep-water routes (e.g., marked channels) whenever possible.
- e. If a sea turtle or smalltooth sawfish is seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions shall be implemented to ensure its protection. These precautions shall include cessation of operation of any moving equipment closer than 50 feet of a sea turtle or smalltooth sawfish. Operation of any mechanical construction equipment shall cease immediately if a sea turtle or smalltooth sawfish is seen within a 50-ft radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition.
- f. Any collision with and/or injury to a sea turtle or smalltooth sawfish shall be reported immediately to the National Marine Fisheries Service's Protected Resources Division (727-824-5312) and the local authorized sea turtle stranding/rescue organization.
- g. Any special construction conditions, required of your specific project, outside these general conditions, if applicable, will be addressed in the primary consultation.

Revised: March 23, 2006

O:\forms\Sea Turtle and Smalltooth Sawfish Construction Conditions.doc



**U.S. Army Corps of Engineers Jacksonville District's Programmatic Biological
Opinion (JaxBO) Project Design Criteria (PDCs) for In-Water Activities**

November 20, 2017

- 1) **(AP.7.) Education and Observation:** The permittee must ensure that all personnel associated with the project are instructed about the potential presence of species protected under the ESA and the Marine Mammal Protection Act (MMPA). All on-site project personnel are responsible for observing water-related activities for the presence of protected species. All personnel shall be advised that there are civil and criminal penalties for harming, harassing, or killing ESA-listed species or marine mammals. To determine which species may be found in the project area, please review the relevant Protected Species List at:
http://sero.nmfs.noaa.gov/protected_resources/section_7/threatened_endangered/index.html
- 2) **(AP.8.) Reporting** of interactions with protected species:
 - a) Any collision(s) with and/or injury to any sea turtle, sawfish, whale, or sturgeon occurring during the construction of a project, shall be reported immediately to NMFS's Protected Resources Division (PRD) at (1-727-824-5312) or by email to takereport.nmfs@noaa.gov and SAJ-RD-Enforcement@usace.army.mil.
 - b) Smalltooth sawfish: Report sightings to 1-844-SAWFISH or email Sawfish@MyFWC.com
 - c) Sturgeon: Report dead sturgeon to 1-844-STURG 911 (1-844-788-7491) or email nmfs.ser.sturgeonnetwork@noaa.gov
 - d) Sea turtles and marine mammals: Report stranded, injured, or dead animals to 1-877-WHALE HELP (1-877-942-5343).
 - e) North Atlantic right whale: Report injured, dead, or entangled right whales to the USCG via VHF Channel 16.
- 3) **(AP.9.) Vessel Traffic and Construction Equipment:** All vessel operators must watch for and avoid collision with species protected under the ESA and MMPA. Vessel operators must avoid potential interactions with protected species and operate in accordance with the following protective measures:
 - a) *Construction Equipment:*
 - i) All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while operating in water depths where the draft of the vessel provides less than a 4-foot (ft) clearance from the bottom, and in all depths after a protected species has been observed in and has departed the area.
 - ii) All vessels will follow marked channels and/or routes using the maximum water depth whenever possible.
 - iii) Operation of any mechanical construction equipment, including vessels, shall cease immediately if a listed species is observed within a 50-ft radius of

construction equipment and shall not resume until the species has departed the area of its own volition.

- iv) If the detection of species is not possible during certain weather conditions (e.g., fog, rain, wind), then in-water operations will cease until weather conditions improve and detection is again feasible.

b) *All Vessels:*

- i) Sea turtles: Maintain a minimum distance of 150 ft.
- ii) North Atlantic right whale: Maintain a minimum 1,500-ft distance (500 yards).
- iii) Vessels 65 ft in length or longer must comply with the Right Whale Ship Strike Reduction Rule (50 CFR 224.105) which includes reducing speeds to 10 knots or less in Seasonal Management Areas (<http://www.fisheries.noaa.gov/pr/shipstrike/>).
- iv) Mariners shall check various communication media for general information regarding avoiding ship strikes and specific information regarding right whale sightings in the area. These include NOAA weather radio, USCG NAVTEX broadcasts, and Notices to Mariners.
- v) Marine mammals (i.e., dolphins, whales [other than North Atlantic right whales], and porpoises): Maintain a minimum distance of 300 ft.
- vi) When these animals are sighted while the vessel is underway (e.g., bow-riding), attempt to remain parallel to the animal's course. Avoid excessive speed or abrupt changes in direction until they have left the area.
- vii) Reduce speed to 10 knots or less when mother/calf pairs or groups of marine mammals are observed, when safety permits.

- 4) **(AP.10.) Turbidity Control Measures during Construction:** Turbidity must be monitored and controlled. Prior to initiating any of the work covered under this Opinion, the Permittee shall install turbidity curtains as described below. In some instances, the use of turbidity curtains may be waived by the USACE project manager if the project is deemed too minimal to generate turbidity (e.g., certain ATON installation, scientific survey device placement, marine debris removal) or if the current is too strong for the curtains to stay in place. Turbidity curtains specifications:

- a) Install floating turbidity barriers with weighted skirts that extend to within 1 ft of the bottom around all work areas that are in, or adjacent to, surface waters.
- b) Use these turbidity barriers throughout construction to control erosion and siltation and ensure that turbidity levels within the project area do not exceed background conditions.
- c) Position turbidity barriers in a way that does not block species' entry to or exit from designated critical habitat.
- d) Monitor and maintain turbidity barriers in place until the authorized work has been completed and the water quality in the project area has returned to background conditions.
- e) In the range of ESA-listed corals (St. Lucie Inlet, Martin County south to the Dry Tortugas and the U.S. Caribbean) and Johnson's seagrass (Turkey Creek/Palm

Bay south to central Biscayne Bay in the lagoon systems on the east coast of Florida):

- i) Projects that include upland earth moving (e.g., grading to install a building or parking lot associated with a dock and seawall project), must install sediment control barriers to prevent any upland sediments from reaching estuarine or marine waters.
 - ii) The turbidity curtain requirement cannot be waived for any project that moves or removes sediment (e.g., dredging, auger to create a pile, trenching to install a cableline). If turbidity curtains are not feasible in an area based on site conditions such as water current, high wave action, or stormy conditions, the project must undergo individual Section 7 consultation and is not covered under this Programmatic Opinion.
- 5) **(AP.11.) Entanglement:** All turbidity curtains and other in-water equipment must be properly secured with materials that reduce the risk of entanglement of marine species (described below). Turbidity curtains likewise must be made of materials that reduce the risk of entanglement of marine species.
- a) In-water lines (rope, chain, and cable, including the lines to secure turbidity curtains) must be stiff, taut, and non-looping. Examples of such lines are heavy metal chains or heavy cables that do not readily loop and tangle. Flexible in-water lines, such as nylon rope or any lines that could loop or tangle, must be enclosed in a plastic or rubber sleeve/tube to add rigidity and prevent the line from looping and tangling. In all instances, no excess line is allowed in the water.
 - b) Turbidity curtains and other in-water equipment must be placed in a manner that does not entrap species within the construction area or block access for them to navigate around the construction area.

Project Design Criteria (PDCs) specific to Activity 8 for Transmission and Utility Line Activities

- A8.1.** Activity 8 includes the installation, repair, replacement, and removal of support structures, footers, foundations, as well as the placement of riprap or concrete mat for pipeline protection. The USACE defines a “utility/transmission line” as any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose, and any cable, line, wire or optical fiber for the transmission for any purpose of electrical energy, telephone, telegraph messages, digital signal, Internet, and radio or television communication.
- A8.2.** Structures permanently placed on the waterbottom (e.g., foundations, piles, and footings) to support aerial transmission lines must total less than a 0.5 ac for all structures combined. Because permanent structures have the potential to interfere with or impede sea turtles from entering or exiting the beach, they cannot be placed on or near beaches used for sea turtle nesting.
- A8.3.** Subaqueous utility and transmission lines may be installed (including as part of a repair/replacement project) using horizontal directional drilling, if the drilling originates and terminates on the uplands (i.e., no in-water work). For subaqueous transmission lines installed, repaired, or replaced using horizontal directional drilling, the applicant must provide and follow a frac-out contingency plan in Appendix D or another plan with at a minimum the same level of information as is provided in the plan contained in Appendix D.
- A8.4.** Subaqueous utility and transmission lines may be installed (including as part of a repair/replacement project) by trenching. When excavating the trench, the bottom sediments may be temporarily sidecast into areas devoid of submerged aquatic vegetation and mangroves. Immediately upon completing the excavation and placing the transmission or utility line into the trench, the trench must be filled and the bottom contours must be restored to pre-construction conditions. The District Engineer may allow the trench to remain open and temporary sidecasting to continue after the excavation is complete, as long as the total time the trench is open and the material is sidecast during and after excavation does not exceed 180 days.
- A8.5.** New subaqueous transmission and utility lines shall not be placed on the sea floor (i.e., pinned or anchored and not buried) under this Opinion. Sections of existing buried lines may be repaired or replaced above the sea floor by pinning or anchoring the new section of line in place to ensure that it does not move and damage surrounding seagrasses, hardbottom, coral, or coral reef habitat.

A8.6. When repairing existing transmission or utility lines, riprap and articulated mats may be placed on subaqueous lines that are buried in trenches or on lines that are attached to the sea floor (in accordance with A8.5) to stabilize the line. Riprap and articulated mats may also be used to stabilize new subaqueous lines placed in high erosion areas. These stabilization materials are limited to the minimum amount necessary to stabilize and protect the lines existing lines (which may have been exposed by scouring) and cannot be placed on seagrasses, hardbottom, corals, or coral reef habitat.

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Mission:

To protect, promote & improve the health of all people in Florida through integrated state, county & community efforts.



Ron DeSantis
Governor

Scott A. Rivkees, MD
State Surgeon General

Vision: To be the Healthiest State in the Nation

May 10, 2020

Notification of Acceptance of Use of a General Permit

Permittee:

Town of Surfside.
Attn: Hector Gomez.
9293 Harding Avenue
Surfside, FL 33154
hgomez@townofsurfsidefl.gov

Permit Number: **134820-024-DSGP**
Date Issued: **May 10, 2020**
Expiration Date: **May 9, 2025**
Project Name: **SURFSIDE POINT LAKE CANAL
SUBAQUEOUS WATER MAIN CROSSING.**
WATER SUPPLIER: **TOWN OF SURFSIDE**
PWS: **4131424**
DRER: **2020-00211**

Dear Mr. Gomez:

On May 4, 2020 the Florida Department of Health received a "Notice of Intent to Use the General Permit for Construction of Water Main Extensions for PWSs" [DEP No. [62-555.900\(7\)](#)], under the provisions of Rule [62-4.530](#) and Chapter [62-555](#), Florida Administrative Code (F.A.C.). The proposed project consists of the installation of approx. 614 Linear Feet of 8-Inch High Density Polyethylene Pipe (HDPE) Water Main installed by horizontal directional drilling, 20 Linear Feet of 8-Inch Ductile Iron Pipe Water Main, 15 Linear Feet of 6-Inch Ductile Iron Pipe Water Main, and two (2) new fire hydrants in Biscayne Drive crossing the Point Lake Canal, Surfside, FL 33154.

Based upon the submitted Notice and accompanying documentation, this correspondence is being sent to advise that the Department does not object to the use of such general permit at this time. Please be advised that the permittee is required to abide by Rule [62-555.405, F.A.C.](#), all applicable rules in Chapters [62-4](#), [62-550](#), [62-555](#), F.A.C., and the General Conditions for All General Drinking Water Permits (found in [62-4.540, F.A.C.](#)).

The permittee shall comply with all sampling requirements specific to this project. These requirements are attached for review and implementation.

Pursuant to Rule [62-555.345, F.A.C.](#), the permittee shall submit a certification of construction completion [DEP Form No. [62-555.900\(9\)](#)] to the Department and obtain approval, or clearance, from the Department before placing any water main extension constructed under this general permit into operation for any purpose other than disinfection or testing for leaks.

Within 30 days after the sale or legal transfer of ownership of the permitted project that has not been cleared for service in total by the Department, both the permittee and the proposed Permittee shall sign and submit an application for transfer of the permit using Form [62-555.900\(8\), F.A.C.](#), with the appropriate fee. The permitted construction is not authorized past the 30-day period unless the permit has been transferred.

Permit Number: 134820-024-DSGP
Date Issued: 5/10/2020

This permit will expire five years from the date of issuance. If the project has been started and not completed by that time, a new permit must be obtained before the expiration date in order to continue work on the project, per Rule [62-4.030, F.A.C.](#)

Sincerely,



Samir Elmir, PE, PhD, CEHP
Florida Department of Health
in Miami-Dade County
Division of Environmental Health and Engineering

CC: Enrique Cuellar, P.E.; DRER, WE-Rev@miamidade.gov
Nicholas W. Kanelidis, P.E.; Calvin, Giordano & Associates, Inc.; nkanelidis@cgasolutions.com

A Civil Penalty May Be Incurred

if this project is placed into operation before obtaining a clearance from this office.

Requirements for clearance upon completion of projects are as follows:

1) Clearance Form

Submission of a fully completed Department of Environmental Protection (DEP) Form [62-555.900\(9\)](#) *Certification of Construction Completion and Request for Clearance to Place Permitted PWS Components into Operation.*

2) Record Drawings, if deviations were made

Submission of the portion of record drawings showing deviations from the DEP construction permit, including preliminary design report or drawings and specifications, if there are any deviations from said permit (Note that it is necessary to submit a copy of only the portion of record drawings showing deviations and not a complete set of record drawings.).

3) Bacteriological Results

Copies of satisfactory bacteriological analysis (a.k.a. Main Clearance), taken within sixty (60) days of completion of construction, from locations within the distribution system or water main extension to be cleared, in accordance with Rules [62-555.315\(6\)](#), [62-555.340](#), and [62-555.330](#), F.A.C. and American Water Works Association (AWWA) Standard C 651-92, as follows:

- Connection to an existing system
- The end point of the proposed addition
- Any water lines branching off a main extension
- Every 1,200 feet on straight runs of pipe

Each location shall be sampled on two consecutive days, with sample points and chlorine residual readings clearly indicated on the report. A sketch or description of all bacteriological sampling locations must also be provided.

4) Pressure Test Results

Copy of satisfactory pressure test results demonstrating compliance with AWWA Standard requirements.

e-Permitting

Search:

Go

**miamidade.gov**

Resident

Visitor

Business

Employee

**MUNICIPAL INSPECTION REQUIREMENTS AND RECORD 04/27/2020**

MUNICIPAL NO.2020-042588 FOLIO: 1422350060490

JOB SITE ADDRESS 9293 HARDING AVE

PROPOSED USE UTILITIES /REPLC WATERMAIN ROW

LEGAL ALTOS DEL MAR NO 5 PB 8-92 LOTS 10 TO 15 INC & N1/2 LOT 16

APPLICATION TYPE NEW 0 SQFT 1 UNITS 1 FLOORS

OWNER NAME TOWN OF SURFSIDE

CONTRACTOR

QUALIFIER

PERMIT TYPE MUNICIPAL BLDG

CATEGORIES 0110 WATER MAIN

DATE: 4/27/2020 PROCESS NUMBER: M2020010770 NEW *AMOUNT PAID 203.90

FIRE 23900 FIRE FEE 239.00 FIRE 1 WATER MAIN/SI 35.10

UBS1 1 BLDG 7.5% UPF 1.88 UPMU 1 UPFRONT FEE F 25.00

4/27/2020 14:30 BNZWEB1 182004271126 WEBIPAS 203.90

MUNICIPAL INSPECTION REQUIREMENTS AND RECORD 04/27/2020

MUNICIPAL NO.2020-042588 PROCESS NO. M2020010770 FOLIO: 1422350060490

JOB SITE ADDRESS 9293 HARDING AVE

PROPOSED USE UTILITIES /REPLC WATERMAIN ROW

REQUIRED INSPECTIONS INIT DATE

FIRE

0110 WATER MAIN

200 FIRE HYDRANTS

209 FIRE FINAL

MUNICIPAL INSPECTION REQUIREMENTS AND RECORD 04/27/2020

MUNICIPAL NO.2020-042588 PROCESS NO. M2020010770 FOLIO: 1422350060490

JOB SITE ADDRESS 9293 HARDING AVE

PROPOSED USE UTILITIES /REPLC WATERMAIN ROW

TO SCHEDULE A FIRE INSPECTION, PLEASE VISIT THE WEB AT
 WWW.MIAMIDADE.GOV/BUILDING OR WWW.MIAMIDADE.GOV/FIRE. YOU WILL
 NEED TO PROVIDE YOUR TEN DIGIT MUNICIPAL INSPECTION NUMBER AND
 INSPECTION TYPE. THE INSPECTION TYPE CAN BE FOUND ON YOUR
 INSPECTION REQUIREMENTS AND RECORDS CARD.

IF YOU HAVE ANY QUESTIONS OR CONCERNS REGARDING AN INSPECTION,
 SCHEDULING A PRELIMINARY INSPECTION, OR LOAD BANK TEST
 INSPECTION, PLEASE CALL FIRE PREVENTION AT 786-331-4800.

IF YOU HAVE ANY QUESTIONS OR CONCERNS REGARDING A PLAN REVIEW,
 PLEASE CALL FIRE ENGINEERING AT (786) 315-2771.

****BE ADVISED THIS IS NOT A PERMIT. PERMIT IS TO BE ISSUED BY
YOUR CORRESPONDING MUNICIPAL BUILDING DEPARTMENT.**

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This page was last edited on: February 23, 2004

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FLORIDA DEPARTMENT OF Environmental Protection

Southeast District Office
3301 Gun Club Road, MSC 7210-1
West Palm Beach, FL 33406
561-681-6600

Ron DeSantis
Governor

Jeanette Nuñez
Lt. Governor

Noah Valenstein
Secretary

August 27, 2020

Town of Surfside
c/o Hector Gomez
9293 Harding Ave
Surfside, FL 33154
Sent via e-mail: hgomez@townofsurfsidefl.gov

Re: File No.: 13-391544-001-EG
File Name: Bay Drive/Irving Avenue

Dear Hector Gomez:

On August 3, 2020, we received your notice of intent to use a General Permit (GP), pursuant to Rule 62-330.453, Florida Administrative Code (F.A.C.) to perform the installation of 606 ln. ft. of underground conduit, of which approximately 59 ln. ft. is under a canal, a Class III Waters Florida waterbody. The project is located near Bay Drive and Irving Avenue, Surfside (Section 34, Township 52 South, Range 42 East), in Miami-Dade County (Latitude N 25° 52' 29.33", Longitude W 80° 7' 50.18").

Your intent to use a general permit has been reviewed by Department staff for three types of authorizations: (1) regulatory authorization, (2) proprietary authorization (related to state-owned submerged lands), and (3) federal authorization. The authority for review and the outcomes of the reviews are listed below. Please read each section carefully.

Your project did not qualify for the federal authorization, therefore, additional authorization must be obtained prior to commencement of the proposed activity. This letter does not relieve you from the responsibility of obtaining other federal, state, or local authorizations that may be required for the activity. Please refer to the specific section(s) dealing with that portion of the review below for advice on how to proceed.

If you change the project from what you submitted, the authorization(s) granted may no longer be valid at the time of commencement of the project. Please contact us prior to beginning your project if you wish to make any changes.

If you have any questions regarding this matter, please contact Chloe Gossett at the letterhead address or at (561) 681-6674, Chloe.Gossett@FloridaDEP.gov.

1. Regulatory Review – APPROVED

Based on the forms, drawings, and documents submitted with your notice, it appears that the project meets the requirements for the General Permit under Rule 62-330.453, F.A.C. Any activities performed under a general permit are subject to general conditions required in Rule 62-330.405, F.A.C. (attached), and the specific conditions of Rule 62-330.453, F.A.C. (attached). Any deviations from these conditions may subject the permittee to enforcement action and possible penalties.

Please be advised that the construction phase of the GP must be completed within five years from the date the notice to use the GP was received by the Department. If you wish to continue this GP beyond the expiration date, you must notify the Department at least 30 days before its expiration.

Authority for review- Part IV of Chapter 373, F.S., Title 62, F.A.C. and in accordance with the operating agreements executed between the Department and the water management districts, as referenced in Chapter 62-113, F.A.C.

2. Proprietary Review – NOT REQUIRED

The activity does not appear to be located on sovereign submerged lands, and does not require further authorization under Chapter 253 of the Florida Statutes, or Chapters 18-20 or 18-21 of the Florida Administrative Code.

3. Federal Review - NOT APPROVED

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.

Additional Information

Please retain this general permit. The activities may be inspected by authorized state personnel in the future to ensure compliance with appropriate statutes and administrative codes. If the activities are not in compliance, you may be subject to penalties under Chapter 373, F.S., and Chapter 18-14, F.A.C.

NOTICE OF RIGHTS

This action is final and effective on the date filed with the Clerk of the Department unless a petition for an administrative hearing is timely filed under Sections 120.569 and 120.57, F.S., before the

deadline for filing a petition. On the filing of a timely and sufficient petition, this action will not be final and effective until a subsequent order of the Department. Because the administrative hearing process is designed to formulate final agency action, the hearing process may result in a modification of the agency action or even denial of the application.

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 21 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 21 days of publication of the notice or within 21 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 written notice of this action.

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.

EXECUTION AND CLERKING

Executed in West Palm Beach, Florida.

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION



Chloe Gossett
Environmental Specialist

Enclosures:

General Conditions for All General Permits, Ch. 62-330.405, F.A.C.
Specific General Permit Rule, Ch. 62-330.453, F.A.C.
Project drawings, 7 pages

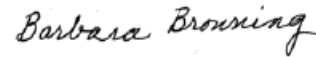
CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this document and all attachments were sent on the filing date below to the following listed persons:

FDEP – Jeff Meyer, Chloe Gossett
Nicholas Kanelidis, Calvin, Giordano & Associates, Inc., NKanelidis@cgasolutions.com
Lisa Spadafina, Miami-Dade County RER, spadaL2@miamidade.gov

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.



Clerk

August 27, 2020
Date

62-330.405 General Conditions for All General Permits

The following general permit conditions are binding upon the permittee and are enforceable under Chapter 373, F.S. These conditions do not apply to the general permit in Section 403.814(12), F.S.

(1) The general permit is valid only for the specific activity indicated. Any deviation from the specified activity and the conditions for undertaking that activity shall constitute a violation of the permit and may subject the permittee to enforcement action and revocation of the permit under Chapter 373, F.S.

(2) This general permit does not eliminate the necessity to obtain any required federal, state, local and special district authorizations prior to the start of any construction, alteration, operation, maintenance, removal or abandonment authorized by this permit.

(3) This general permit does not convey to the permittee or create in the permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in the general permit.

(4) The general permit does not relieve the permittee from liability and penalties when the permitted activity causes harm or injury to: human health or welfare; animal, plant or aquatic life; or property. It does not allow the permittee to cause pollution that violates state water quality standards.

(5) Section 253.77, F.S., provides that a person may not commence any excavation, construction, or other activity involving the use of state-owned or other lands of the state, the title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund without obtaining the required consent, lease, easement, or other form of authorization authorizing the proposed use. Therefore, the permittee is responsible for obtaining any necessary authorizations from the Board of Trustees prior to commencing activity on state-owned lands.

(6) The authorization to conduct activities under a general permit may be modified, suspended or revoked in accordance with Chapter 120, F.S., and Section 373.429, F.S.

(7) This permit shall not be transferred to a third party except pursuant to Rule 62-330.340, F.A.C. The permittee transferring the general permit shall remain liable for any corrective actions that may be required as a result of any permit violations prior to sale, conveyance, or other transfer of ownership or control of the permitted project, activity, or the real property at which the permitted project or activity is located.

(8) Upon reasonable notice to the permittee, Agency staff with proper identification shall have permission to enter, inspect, sample and test the permitted system to ensure conformity with the plans and specifications approved by the permit.

(9) The permittee shall maintain any permitted project or activity in accordance with the plans submitted to the Agency and authorized in this general permit.

(10) A permittee's right to conduct a specific activity under this general permit is authorized for a duration of five years.

(11) 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 implemented and maintained immediately prior to, during, and after construction as needed to stabilize all disturbed areas, including other measures specified in the permit to prevent adverse impacts to the water resources and adjacent lands. Erosion and sediment control measures shall be installed and maintained 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)*, available at www.dep.state.fl.us/water/wetlands/docs/erp/FLERosionSedimentManual_6_07.pdf, and the *Florida Stormwater Erosion and Sedimentation Control Inspector's Manual (Florida Department of Environmental Protection, Nonpoint Source Management Section, Tallahassee, Florida, July 2008)*, available at www.dep.state.fl.us/water/nonpoint/docs/erosion/erosion-inspectors-manual.pdf.

(12) Unless otherwise specified in the general permit, temporary vehicular access within wetlands during construction shall be performed using vehicles generating minimum ground pressure to minimize rutting and other environmental impacts. Within forested wetlands, the permittee shall choose alignments that minimize the destruction of mature wetland trees to the greatest extent practicable. When needed to prevent rutting or soil compaction, access vehicles shall be operated on wooden, composite, metal, or other non-earthen construction mats. In all cases, access in wetlands shall comply with the following:

(a) Access within forested wetlands shall not include the cutting or clearing of any native wetland tree having a diameter 4 inches or greater at breast height;

(b) The maximum width of the construction access area shall be limited to 15 feet;

(c) All mats shall be removed within 72 hours after the work commences; and

(d) Areas disturbed for access shall be restored to natural grades immediately after the maintenance or repair is completed.

(13) Barges or other work vessels used to conduct in-water activities shall be operated in a manner that prevents unauthorized dredging, water quality violations, and damage to submerged aquatic communities.

(14) The construction, alteration, or use of the authorized project shall not adversely impede navigation or create a navigational hazard in the water body.

(15) Except where specifically authorized in a general permit, activities must not:

(a) Impound or obstruct existing water flow, cause adverse impacts to existing surface water storage and conveyance capabilities, or otherwise cause adverse water quantity or flooding impacts to receiving water and adjacent lands;

(b) Cause an adverse impact to the maintenance of surface or ground water levels or surface water flows established pursuant to Section 373.042, F.S., or a Works of the District established pursuant to Section 373.086, F.S.; or

(16) 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.

(17) The activity must be capable, based on generally accepted engineering and scientific principles, of being performed and of functioning as proposed, and must comply with any applicable District special basin and geographic area criteria.

(18) The permittee shall comply with the following when performing work within waters accessible to federally- or state-listed aquatic species, such as manatees, marine turtles, smalltooth sawfish, and Gulf sturgeon:

(a) All vessels associated with the project shall operate at "Idle Speed/No Wake" at all times while in the work area and where the draft of the vessels provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.

(b) All deployed siltation or turbidity barriers shall be properly secured, monitored, and maintained to prevent entanglement or entrapment of listed species.

(c) All in-water activities, including vessel operation, must be shutdown if a listed species comes within 50 feet of the work area. Activities shall not resume until the animal(s) has moved beyond a 50-foot radius of the in-water work, or until 30 minutes elapses since the last sighting within 50 feet. Animals must not be herded away or harassed into leaving. All on-site project personnel are responsible for observing water-related activities for the presence of listed species.

(d) Any listed species that is killed or injured by work associated with activities performed shall be reported immediately to the Florida Fish and Wildlife Conservation Commission (FWC) Hotline at 1(888)404-3922 and ImperiledSpecies@myFWC.com.

(e) Whenever there is a spill or frac-out of drilling fluid into waters accessible to the above species during a directional drilling operation, the FWC shall be notified at imperiledspecies@myfwc.com with details of the event within 24 hours following detection of the spill or frac-out.

(19) The permittee shall hold and save the Agency harmless from any and all damages, claims, or liabilities which may arise by reason of the construction, alteration, operation, maintenance, removal, abandonment or use of any activity authorized by the general permit.

(20) The permittee shall immediately notify the Agency in writing of any submitted information that is discovered to be inaccurate.

Rulemaking Authority 373.026(7), 373.043, 373.118(1), 373.406(5), 373.4131, 373.414(9), 373.4145, 373.418,

403.805(1) FS. Law Implemented 373.044, 373.118(1), 373.129, 373.136, 373.406(5), 373.413, 373.4131, 373.414(9), 373.4145, 373.416, 373.422, 373.423, 373.429, 403.814(1) FS. History—New 10-3-95, Amended 10-1-07, Formerly 62-341.215, Amended 10-1-13.

62-330.453 General Permit for Installation, Maintenance, Repair, and Removal of Utility Lines.

(1) A general permit is granted for the installation, maintenance, repair, and removal of underground utility lines, cable, conduit, or pipeline transmitting electricity, communication signals, potable water, raw water, reclaimed water, domestic wastewater, propane gas or natural gas.

(2) For the purposes of this general permit:

(a) “Directional drilling” means the linear or curvilinear excavation of a tunnel or conduit, in any direction, through the use of drilling equipment that can change direction during excavation; this also includes borehole reaming and pulling following primary drilling.

(b) “Jack-and-bore” means the linear, primarily lateral excavation of a tunnel, typically between excavated subgrade pits, through use of drilling equipment and encasement which is advanced under mechanical force, and includes similar methods commonly termed as “microtunneling.”

(c) “Frac-out” means any release of drilling fluid or slurry which results in above-grade discharge of drilling fluid or slurry or significant loss of such fluid or slurry into the surrounding parent material.

(3) This general permit is limited as follows:

(a) No work occurs within Outstanding Florida Waters, Aquatic Preserves, or Class I waters.

(b) The installation of conduit or pipeline to drain wetlands or other surface waters is not authorized.

(c) Prior to work, existing pipelines shall be evacuated of substances which, if released, could result in a violation of state water quality standards.

(d) The maximum width of the disturbed corridor in wetlands shall not exceed 30 feet.

(e) The total area of forested wetland disturbance shall not exceed 0.5 acre per ten miles of cable, conduit, or pipeline.

(f) Minor above-grade improvements may be constructed in uplands under this general permit, but shall be limited to vents, valves, meter assemblies, relays, junction boxes, pads or similar structures that are directly connected to the utility line, do not create discharges, and which cumulatively comprise no more than 100 square feet of impervious surfaces per mile of utility line.

(g) Installation, maintenance, repair, and removal activities performed via trenching or methods other than directional drilling or jack-and-bore, are subject to the following special conditions:

1. The maximum width of the excavated trench shall not exceed eight feet, with temporary spoil storage banks not to exceed ten feet in width;

2. For a trench with a top width greater than three feet in herbaceous wetlands, the upper layer of the soil horizon shall initially be scraped and segregated into a spoil bank that is separated from the spoil bank resulting from the excavation of the trench for the utility line. The upper layer of the soil horizon shall be replaced as the last step of restored grades to facilitate natural revegetation;

3. Trenching in surface waters shall be limited to wetlands, artificial waters, and residential canal systems; and

4. Temporary spoil banks shall contain breaches that prevent impoundment or restriction of surface water flows;

(h) Installation, maintenance, repair, and removal conducted using directional drilling or jack-and-bore methods are subject to the following special conditions:

1. The maximum outside diameter of the cable, conduit or pipeline, including encasement, shall not exceed 30 inches.

2. A minimum depth of cover, equal to the greater of either five feet, or five times the maximum encased diameter of the utility line to be installed, shall be maintained between the top of the utility line and casing and the soil surface or submerged bottom of any wetland or waterbody being crossed.

3. All work areas associated with directional drilling or jack-and-bore activities, including entrance and

exit pits, drill rigs, tanks, pumps, drilling fluid mixing and settling pits, dewatering systems and staging areas for pipe, cables, and drill string, shall be located within uplands.

4. The use of drilling fluids shall not cause or contribute to a violation of state ground water quality criteria or standards, as defined in chapter 62-520, F.A.C.

5. The permittee shall, at least 48 hours prior to commencement of any directional drilling or jack-and-bore activities, submit to the agency the name, as registered with the Florida Department of State, and all-hours telephone contact information of all contractors responsible for drilling and for containment and cleanup in the event of a drilling fluid frac-out or spill.

6. The contractor shall, at all times during directional drilling activities, maintain appropriate equipment and materials in a readily-accessible location and condition, to effectively contain and clean up a drilling fluid frac-out or spill.

7. The permittee or the permittee's contractor shall, at all times during directional drilling activities, ensure that appropriately-trained personnel monitor downhole equipment position, drilling fluid circulation and pressures, and actively monitor the entire utility line route for surface frac-out of drilling fluids.

8. Drilling activities shall be discontinued and the drilling fluid or slurry shall be contained using appropriate methods as soon as possible, in the event of a drilling fluid frac-out or spill. Removal of drilling fluid or slurry from wetlands and other surface waters shall be initiated and completed in the most expeditious manner practicable. Removed drilling fluid shall be contained or disposed of in an appropriate upland location. Any frac-out or spill of drilling fluid into wetlands or other surface waters shall be reported to Agency staff within 24 hours following detection of the spill or frac-out.

(i) Utilities must be located a minimum of 14 feet below the authorized depth of a federal navigation channel.

Rulemaking Authority 373.026(7), 373.043, 373.118(1), 373.406(5), 373.4131, 373.414(9), 373.418, 403.805(1) FS. Law Implemented 373.118(1), 373.406(5), 373.413, 373.4131, 373.414(9), 373.416, 373.418, 403.814(1) FS. History—New 10-3-95, Formerly 62-341.453, Amended 10-1-13, 6-1-18.

POINT LAKE CANAL SUBAQUEOUS WATER MAIN CROSSING TO BISCAYA ISLAND

SURFSIDE, FLORIDA

File Name: \\FTLFS01\Project\Projects\2019\193372-Point Lake Canal Subaqueous Water Main Crossing To Biscaya Island\CADD Files\Drawings\193372-COVR.dwg - (Plotted by: Nicholas Kanelidis on Monday, May 18, 2020 9:23:57 AM)

Sheet Number	Sheet Title
G1	COVER SHEET
G2	LEGEND, ABBREVIATIONS AND GENERAL NOTES
G3	GENERAL NOTES AND SPECIFICATIONS
G4	GENERAL DETAILS
G5	GENERAL DETAILS
G6	GENERAL DETAILS
C1	ENGINEERING PLAN



LOCATION MAP
Scale: 1" = 200'

SEC: 34, TWN: 52S, RGE: 42E



Calvin, Giordano & Associates, Inc.

EXCEPTIONAL SOLUTIONSSM
1800 Eller Drive, Suite 600, Fort Lauderdale, Florida 33316
Phone: 954.921.7781 • Fax: 954.921.8807

Certificate of Authorization 514



This item has been digitally signed and sealed by
Nicholas W. Kanelidis, P.E. on the date adjacent to
the seal.
Printed copies of this document are not considered
signed and sealed, and the signature must be verified
on any electronic copies.

BENCHMARK:

THE ELEVATIONS SHOWN HEREON ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29) AND REFERENCED TO MIAMI-DADE COUNTY CONTROL POINT T-243. ELEVATION= 13.03' (NGVD29); BEING A "BENCH MARK DISK" SET ON EAST END OF NORTH CONCRETE GUARD RAIL OF BRIDGE OVER INDIAN CREEK; 21 FEET WEST OF WEST WALL OF GUARD HOUSE. SURFSIDE, FLORIDA.

BID PLANS NOT FOR CONSTRUCTION
ELEVATIONS ARE IN NGVD 1929



TOWN OFFICIALS











































































MAYOR: CHARLES W. BURKETT
VICE MAYOR: TINA PAUL
COMMISSIONERS: CHARLES KESL
ELIANA R. SALZHAUER
NELLY VELASQUEZ
TOWN MANAGER: GUILLERMO OLMEDILLO













































































NOTES:

- RESPONSIBILITY FOR THE USE OF THESE PLANS FOR ANY PURPOSE PRIOR TO SECURING PERMITS FROM ALL AGENCIES HAVING JURISDICTION OVER THIS PROJECT WILL FALL SOLELY UPON THE USER.
- AN ELECTRONIC CAD FILE WILL BE PROVIDED FOR SURVEY LAYOUT.

CURRENT REV No.: ---- - ----	NICHOLAS W. KANELIDIS, P.E. STATE OF FLORIDA PROFESSIONAL ENGINEER LICENSE No: 78536	DATE: 05/18/20	SHEET: G1
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ABBREVIATION LEGEND		LINE TYPE LEGEND		PROPOSED SYMBOL LEGEND		EXISTING SYMBOL LEGEND	
ARV	AIR RELEASE VALVE	---	LOT LINE		AIR RELEASE VALVE		EXISTING SPOT ELEVATION (FT)
BE	BURIED ELECTRIC	----	SECTION LINE		BACTERIOLOGICAL SAMPLE POINT		GUY ANCHOR
BFP	BACKFLOW PREVENTER	----	R/W LINE		WATER METER		FPL MANHOLE
BFV	BUTTERFLY VALVE	----	PROPERTY LINE		FIRE HYDRANT		CONC. LIGHT POLE
BM	BENCHMARK	----	CENTERLINE		FIRE DEPARTMENT CONNECTION		CONC. UTILITY POLE
BOP	BOTTOM OF PIPE	///	NAL		SINGLE WATER SERVICE		CONC. SIGNAL POLE
BSP	BACTERIOLOGICAL SAMPLING POINT	X	EXIST. CHAIN LINK FENCE		DOUBLE WATER SERVICE		COMMUNICATION MH
CAP	CORRUGATED ALUMINUM PIPE	----	GUARDRAIL		BACKFLOW PREVENTER		COMMUNICATION RISER
CB	CATCH BASIN	----	PROPOSED CHAIN LINK FENCE		DOUBLE DETECTOR CHECK VALVE		CABLE TV MANHOLE
CI	CURB INLET	----	EXISTING WOOD FENCE		BLOWOFF		CABLE TV RISER
CIP	CAST IRON PIPE	----	EXISTING PICKET FENCE		REDUCER		ELEC. HANDHOLE
CLF	CHAIN LINK FENCE	*****	WATER MAIN TO BE REMOVED		GATE VALVE		FPL TRANSFORMER
CMP	CORRUGATED METAL PIPE	////-srm-////	WATER MAIN TO BE GROUTED IN PLACE		45° BEND		GAS METER
CO	CLEANOUT	-----srm-----	WATER MAIN PREVIOUSLY ABANDONED		TEE		LIGHT POLE
CONC	CONCRETE	-----BE-CANV-AT-----	EXISTING UNDERGROUND ELECTRIC, CABLE TV, PHONE		CROSS		TRAFFIC CONTROL BOX
DE	DRAINAGE EASEMENT	-----sESAN-----	EXISTING SANITARY SEWER		PLUG		WOOD POWER POLE
DIP	DUCTILE IRON PIPE	-----sBMA-----	EXISTING WATER MAIN		BLOWOFF		GAS VALVE
E	EAST	-----sSTRM-----	EXISTING STORM SEWER		VERTICAL BENDS		SEWER VALVE
EL	ELEVATION	-----sFSM-----	EXISTING FORCE MAIN		SANITARY FLOW DIRECTION		WATER VALVE
EW	EDGE OF WATER	-----sAFRE-----	EXISTING FIRE MAIN		CLEAN OUT		GATE VALVE
EXIST	EXISTING	-----sRR-----	EXISTING IRRIGATION		SINGLE SANITARY LATERAL		CLEANOUT
EXFLT	EXFILTRATION	-----sOXY-----	EXISTING OXYGEN		DOUBLE SANITARY LATERAL		FIRE HYDRANT
FF EL	FINISHED FLOOR ELEVATION	-----sFEL-----	EXISTING UNDERGROUND POWER		CONFLICT ID		REDUCER
FF	FIRE HYDRANT	-----sFEL-----	EXISTING NATURAL GAS		DRAINAGE FLOW		IRRIGATION VALVE
FH	FORCE MAIN	-----sFEL-----	EXISTING CONDENSATION		SPOT GRADE		MANHOLE
FM	FORCE MAIN	-----sFEL-----	EXISTING BURIED FIBER OPTIC		SIGN		BACKFLOW PREVENTOR
GALV	GALVANIZED	-----sFEL-----	EXISTING OVERHEAD COMMUNICATION		CATCH BASIN		CATCH BASIN
GV	GATE VALVE	-----sFEL-----	EXISTING CHILLER		MANHOLE		GROUND/LANDSCAPING LIGHTING
HORZ	HORIZONTAL	-----sFEL-----	EXISTING OVERHEAD AT&T		CLEANOUT		SIGN
H.P.	HIGH POINT	-----sFEL-----	EXISTING FUEL LINE		SLOTTED DRAIN		WATER METER
INV	INVERT	-----sFEL-----	EXISTING OVERHEAD ELECTRIC		STORM YARD DRAIN		MALEBOX
JB	JUNCTION BOX	-----sFEL-----	EXISTING UNDERGROUND ELECTRIC		PS STORM INLET		LIGHT POLE
LF	LINEAR FEET	-----sFEL-----	EXISTING UNKNOWN UTILITY		PS STORM INLET		BENCH
MAX	MAXIMUM	-----sFEL-----	EXISTING OVERHEAD WIRE		EXFILTRATION TRENCH		
MH	MANHOLE				HEADWALL		
MIN	MINIMUM				MITERED END - RCP		
MJ	MECHANICAL JOINT				MITERED END - HDPE		
N	NORTH				HAY BALES		
NC	NOT INCLUDED				ROCK BAGS W/ HAY BALES		
NTS	NOT TO SCALE				SILT BARRIER FENCE		
NGVD	NATIONAL GEODETIC VERTICAL DATUM				TURBIDITY BARRIER		
OE	OVERHEAD ELECTRIC						
OCAP	PERFORATED CORRUGATED ALUMINUM PIPE						
PRB	POLLUTION RETARDANT BAFFLE						
PROP	PROPOSED						
PSI	POUNDS PER SQUARE INCH						
PV	PLUG VALVE						
PVC	POLYVINYL CHLORIDE						
R	RADIUS						
RCP	REINFORCED CONCRETE PIPE						
ROW	RECLAIMED WATER						
RED	REDUCER						
R/W	RIGHT-OF-WAY						
S	SOUTH						
SAN	SANITARY						
SB	SOIL BORING						
STA	STATION						
TOB	TOP OF BANK						
TOP	TOP OF PIPE						
TYP	TYPICAL						
UE	UTILITY EASEMENT						
VERT	VERTICAL						
W	WEST						
WM	WATER MAIN						

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CI	CURB INLET	----	EXISTING WOOD FENCE		BLOWOFF		CABLE TV RISER
CIP	CAST IRON PIPE	----	EXISTING PICKET FENCE		REDUCER		ELEC. HANDHOLE
CLF	CHAIN LINK FENCE	*****	WATER MAIN TO BE REMOVED		GATE VALVE		FPL TRANSFORMER
CMP	CORRUGATED METAL PIPE	////-srm-////	WATER MAIN TO BE GROUTED IN PLACE		45° BEND		GAS METER
CO	CLEANOUT	-----srm-----	WATER MAIN PREVIOUSLY ABANDONED		TEE		LIGHT POLE
CONC	CONCRETE	-----BE-CANV-AT-----	EXISTING UNDERGROUND ELECTRIC, CABLE TV, PHONE		CROSS		TRAFFIC CONTROL BOX
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EL	ELEVATION	-----sFSM-----	EXISTING FORCE MAIN		SANITARY FLOW DIRECTION		WATER VALVE
EW	EDGE OF WATER	-----sAFRE-----	EXISTING FIRE MAIN		CLEAN OUT		GATE VALVE
EXIST	EXISTING	-----sRR-----	EXISTING IRRIGATION		SINGLE SANITARY LATERAL		CLEANOUT
EXFLT	EXFILTRATION	-----sOXY-----	EXISTING OXYGEN		DOUBLE SANITARY LATERAL		FIRE HYDRANT
FF EL	FINISHED FLOOR ELEVATION	-----sFEL-----	EXISTING UNDERGROUND POWER		CONFLICT ID		REDUCER
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H.P.	HIGH POINT	-----sFEL-----	EXISTING FUEL LINE		SLOTTED DRAIN		WATER METER
INV	INVERT	-----sFEL-----	EXISTING OVERHEAD ELECTRIC		STORM YARD DRAIN		MALEBOX
JB	JUNCTION BOX	-----sFEL-----	EXISTING UNDERGROUND ELECTRIC		PS STORM INLET		LIGHT POLE
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PROPOSED SYMBOL LEGEND		EXISTING SYMBOL LEGEND	
	AIR RELEASE VALVE		EXISTING SPOT ELEVATION (FT)
	BACTERIOLOGICAL SAMPLE POINT		GUY ANCHOR
	WATER METER		FPL MANHOLE
	FIRE HYDRANT		CONC. LIGHT POLE
	FIRE DEPARTMENT CONNECTION		CONC. UTILITY POLE
	SINGLE WATER SERVICE		CONC. SIGNAL POLE
	DOUBLE WATER SERVICE		COMMUNICATION MH
	BACKFLOW PREVENTER		COMMUNICATION RISER
	DOUBLE DETECTOR CHECK VALVE		CABLE TV MANHOLE
	BLOWOFF		CABLE TV RISER
	REDUCER		ELEC. HANDHOLE
	GATE VALVE		FPL TRANSFORMER
	45° BEND		GAS METER
	TEE		LIGHT POLE
	CROSS		TRAFFIC CONTROL BOX
	PLUG		WOOD POWER POLE
	BLOWOFF		GAS VALVE
	VERTICAL BENDS		SEWER VALVE
	SANITARY FLOW DIRECTION		WATER VALVE
	CLEAN OUT		GATE VALVE
	SINGLE SANITARY LATERAL		CLEANOUT
	DOUBLE SANITARY LATERAL		FIRE HYDRANT
	CONFLICT ID		REDUCER
	DRAINAGE FLOW		IRRIGATION VALVE
	SPOT GRADE		MANHOLE
	SIGN		BACKFLOW PREVENTOR
	CATCH BASIN		CATCH BASIN
	MANHOLE		GROUND/LANDSCAPING LIGHTING
	CLEANOUT		SIGN
	SLOTTED DRAIN		WATER METER
	STORM YARD DRAIN		MAILBOX
	P5 STORM INLET		LIGHT POLE
	P6 STORM INLET		BENCH
	EXFILTRATION TRENCH		
	HEADWALL		
	MITERED END – RCP		
	MITERED END – HDPE		
	HAY BALES		
	ROCK BAGS W/ HAY BALES		
	SILT BARRIER FENCE		
	TURBIDITY BARRIER		

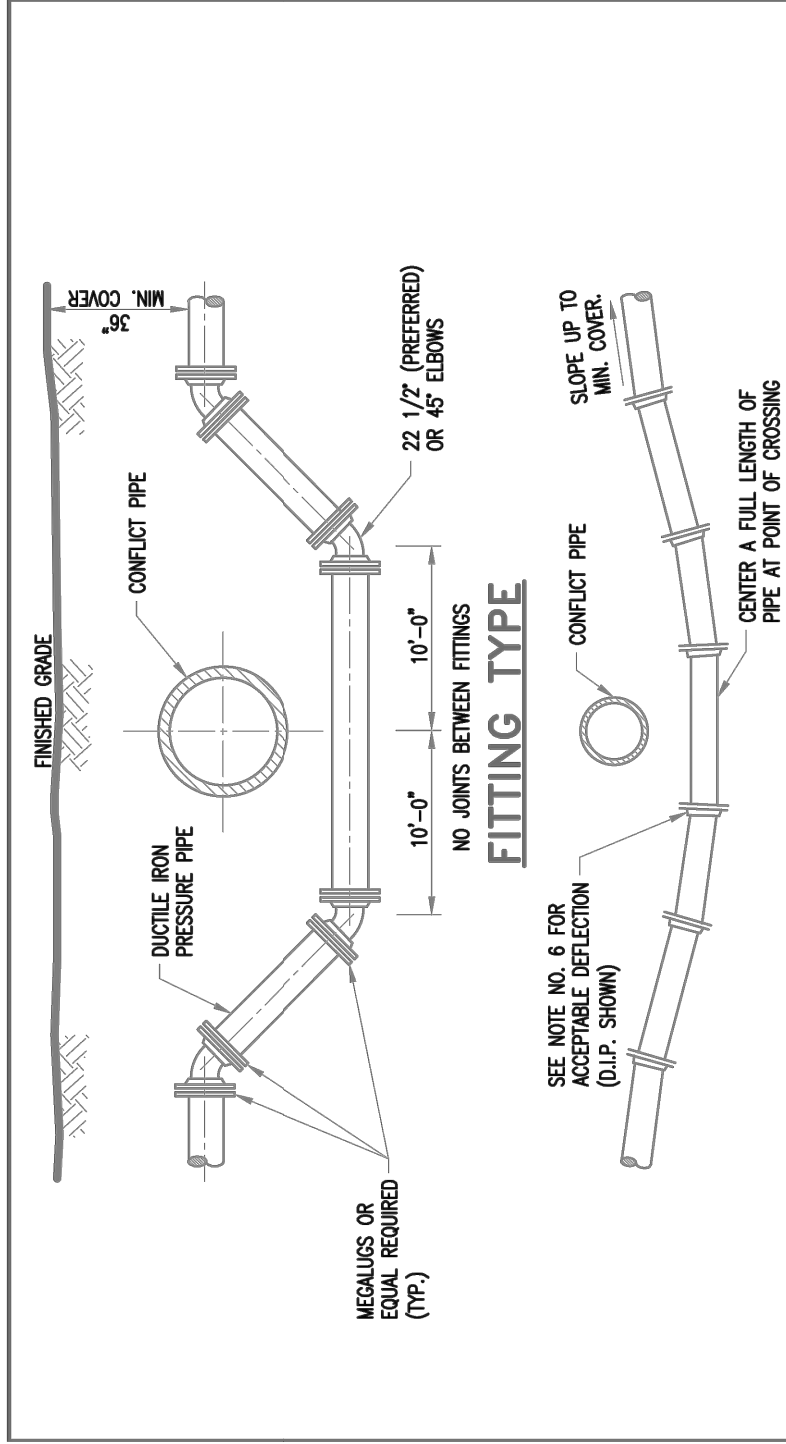
Calvin, Giordano & Associates, Inc.

EXCEPTIONAL SOLUTIONS®

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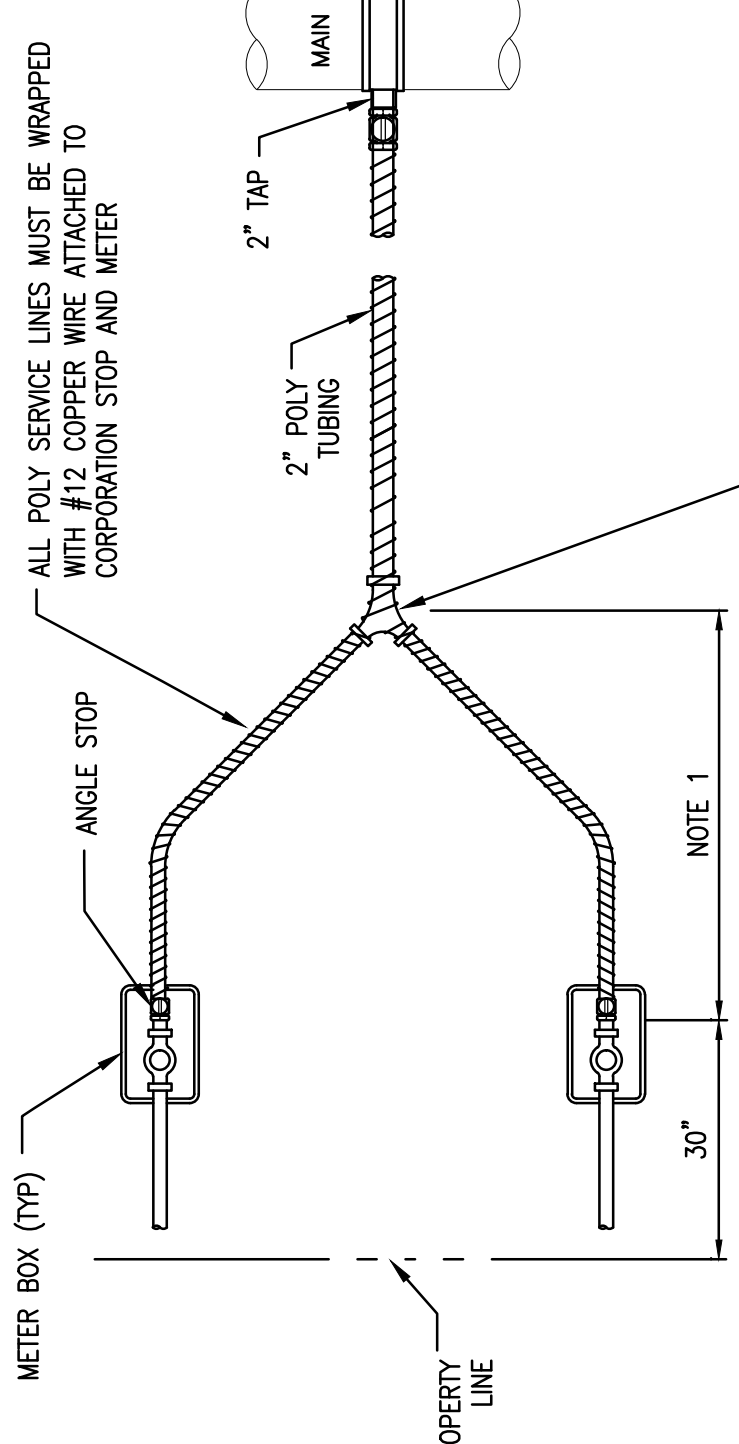
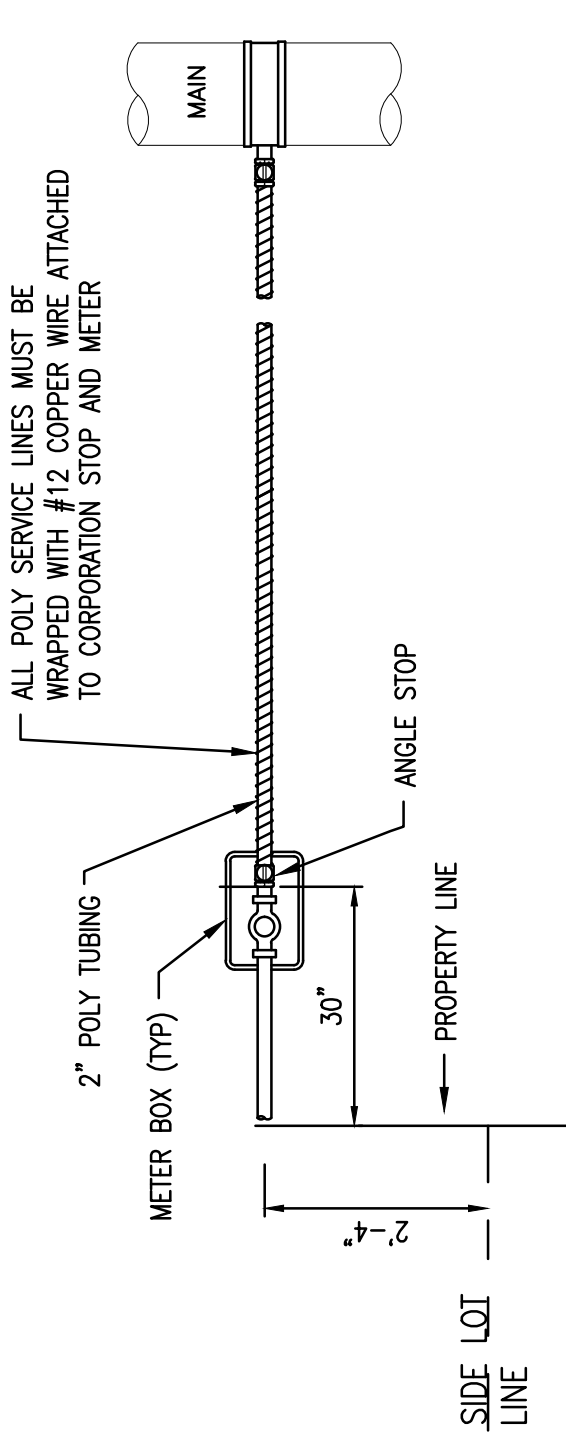
Certificate of Authorization 514

POINT LAKE CANAL SUBAQUEOUS WATER
MAIN CROSSING TO BISCAAYA ISLAND
SURF-SIDE, FLORIDA



- NOTES:**
- STORM SEWER, GRAVITY WASTEWATER AND RECLAIMED WATER MAIN CROSSING UNDER POTABLE WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF TWELVE (12) INCHES BETWEEN THE RING OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE. WHEN THE POTABLE WATER MAIN IS LARGER THAN THE STORM SEWER, GRAVITY WASTEWATER OR RECLAIMED WATER MAIN, THE MINIMUM VERTICAL DISTANCE SHALL BE INCREASED TO FIFTEEN (15) FEET. WHEN THE POTABLE WATER MAIN IS SMALLER THAN THE STORM SEWER, GRAVITY WASTEWATER OR RECLAIMED WATER MAIN, THE MINIMUM VERTICAL DISTANCE SHALL BE INCREASED TO FIFTEEN (15) FEET. WHEN THE POTABLE WATER MAIN IS THE SAME SIZE AS THE STORM SEWER, GRAVITY WASTEWATER OR RECLAIMED WATER MAIN, THE MINIMUM VERTICAL DISTANCE SHALL BE INCREASED TO FIFTEEN (15) FEET. WHEN THE POTABLE WATER MAIN IS LARGER THAN THE STORM SEWER, GRAVITY WASTEWATER OR RECLAIMED WATER MAIN, THE MINIMUM VERTICAL DISTANCE SHALL BE INCREASED TO FIFTEEN (15) FEET. WHEN THE POTABLE WATER MAIN IS SMALLER THAN THE STORM SEWER, GRAVITY WASTEWATER OR RECLAIMED WATER MAIN, THE MINIMUM VERTICAL DISTANCE SHALL BE INCREASED TO FIFTEEN (15) FEET. WHEN THE POTABLE WATER MAIN IS THE SAME SIZE AS THE STORM SEWER, GRAVITY WASTEWATER OR RECLAIMED WATER MAIN, THE MINIMUM VERTICAL DISTANCE SHALL BE INCREASED TO FIFTEEN (15) FEET.
 - WHENEVER POSSIBLE MAINTAIN MIN. TEN (10) FEET HORIZONTAL DISTANCE (WALL TO WALL) BETWEEN POTABLE WATER MAIN AND STORM SEWER, WASTEWATER MAIN OR FORCE MAIN (A MIN. 6" SEPARATION MAY BE APPROVED ON A CASE BY CASE BASIS). MAINTAIN MIN. THREE FEET HORIZONTAL DISTANCE (WALL TO WALL) BETWEEN RECLAIMED WATER MAIN AND POTABLE WATER MAIN, STORM SEWER, WASTEWATER MAIN OR FORCE MAIN.
 - FORCE MAIN CROSSING POTABLE WATER MAIN OR RECLAIMED WATER MAIN SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF TWELVE (12) INCHES BETWEEN THE CROWN OF THE FORCE MAIN AND OUTSIDE OF THE POTABLE WATER MAIN OR RECLAIMED WATER MAIN WITH THE POTABLE WATER MAIN OR RECLAIMED WATER MAIN CROSSING OVER THE FORCE MAIN.
 - FITTINGS SHALL BE RESTRAINED.
 - THE DEFLECTION TYPE CROSSING IS PREFERRED.
 - DO NOT EXCEED SIZE OF MANUFACTURER'S RECOMMENDED MAXIMUM JOINT DEFLECTION FOR DUCTILE IRON PIPE, PVC PIPE CURVATURE MAY ONLY BE ACCOMPLISHED BY INSTALLING APPROPRIATE BENDS.
 - POTABLE WATER SERVICE LINES SHALL CROSS OVER WASTEWATER MAINS WITH MIN. 12" VERTICAL SEPARATION. WHERE THIS MIN. SEPARATION LONG CASING CENTERED OVER THE CROSSING WITH MIN. 6" VERTICAL SEPARATION.
 - WASTEWATER MAINS, WATER MAINS, STORM PIPES AND OTHER UTILITY PIPES SHALL CROSS PERPENDICULAR WHENEVER POSSIBLE.

ISSUE DATE	APPROVED BY	STANDARD DETAIL	CROSS REF.	SPEC. REF.
07/20/2016	D.V.	POTABLE WATER MAIN/FORCE MAIN PRESSURE PIPE CONFLICT DETAIL	GS	1.1
SHEET 1 OF 1				



- NOTE:**
- KEEP WYE AS CLOSE AS POSSIBLE TO METER BOX.

WATER SERVICE LINE

SCALE: N.T.S.

NO	DATE	REVISION	BY	NO	DATE	REVISION	BY
1							

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Certificate of Authorization 514

POINT LAKE CANAL SUBAQUEOUS WATER MAIN CROSSING TO BISCAYA ISLAND

SURFSIDE, FLORIDA

GENERAL DETAILS

SCALE
AS SHOWN
PROJECT NO.
19-3372

SHEET

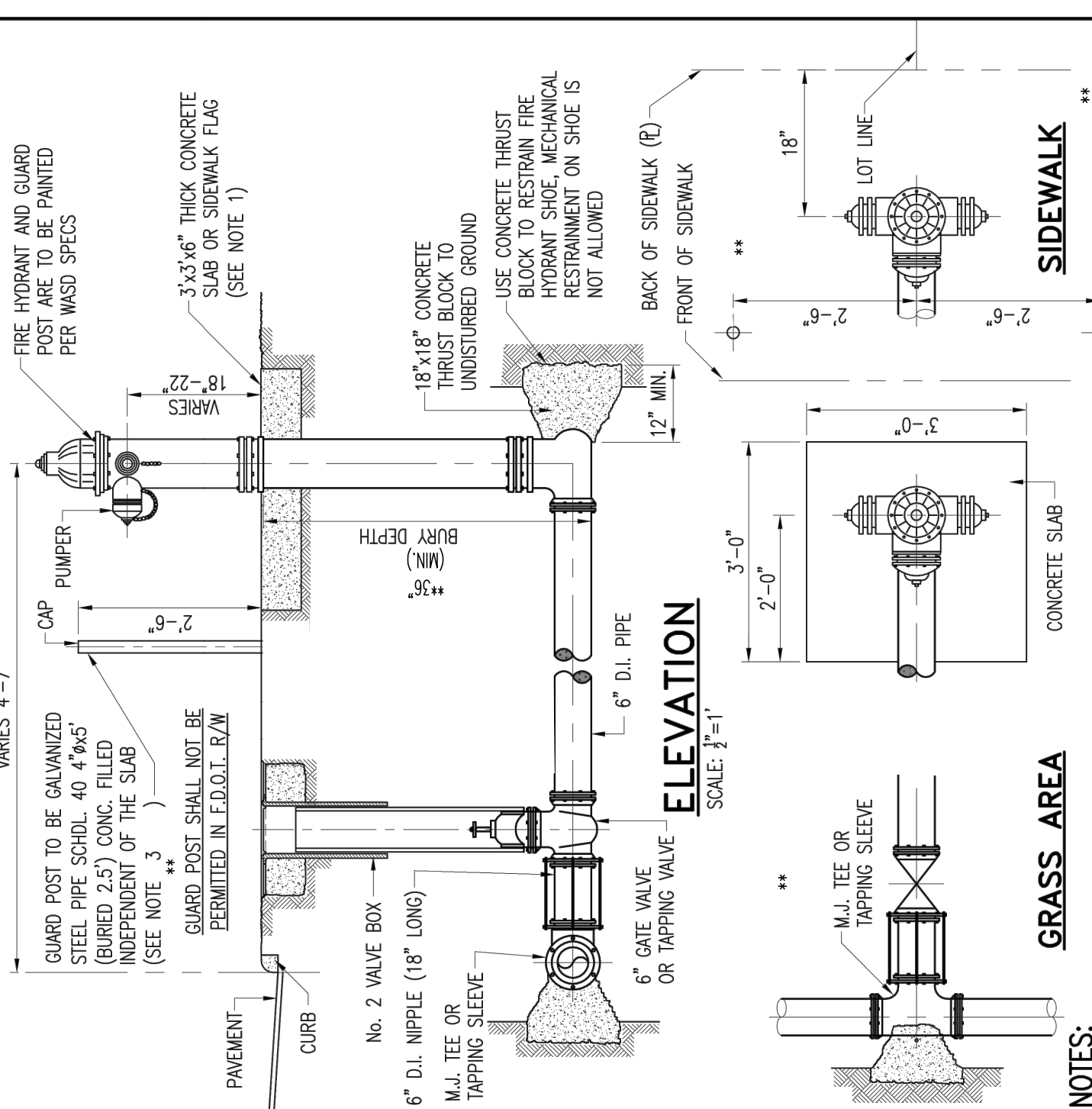
G4

THE FOLLOWING REQUIREMENTS SHALL APPLY TO ALL CASTINGS (OR FABRICATED MATERIALS) CONTAINED HEREIN:

- SUB-COMPONENTS OF ALL CASTINGS FROM THE SAME SUPPLIER SHALL BE INTERCHANGABLE.
- MATING SURFACES OF ALL CASTINGS SHALL BE MACHINED, WITH NO ROKING PERMITTED.
- ALL CASTINGS SHALL BE IN ACCORDANCE WITH ASTM-A48, AS MODIFIED HEREIN:
- ARTICLE 10.1.3.1. SHALL NOT APPLY, TIME LIMIT IS 4 HRS. MAXIMUM.
- NOTIFICATION TIME LIMIT IN ARTICLE 16.2 SHALL NOT APPLY.
- SUPPLIER SHALL PROVIDE CERTIFIED TEST RESULTS WITH EACH LOT OF CASTING SHIPPED. CERTIFICATION SHALL IDENTIFY LOT.

- MANUFACTURER'S NAME AND LOCATION (I.E. FOUNDRY AND COUNTRY OF ORIGIN) SHALL BE PERMANENTLY CAST ON THE BOTTOM OF ALL CAST COVERS AND LIDS.
- SUPPLIER OF FABRICATED ITEMS (I.E. NON-CAST ITEMS) SHALL PERMANENTLY MARK HIS NAME AND DATE OF MANUFACTURE ON MATERIAL, BY WELDING, STAMPING OR OTHER METHOD APPROVED BY THE DEPARTMENT.

ISSUE DATE	APPROVED BY	STANDARD DETAIL	CROSS REF.	SPEC. REF.
6/01/2015	J.F.	CASTING STANDARDS	WS	2.05
SHEET 1 OF 1				



- NOTES:**
- WHEN THE PORTION OF THE SIDEWALK IS WITHIN THE 4'-7" OFFSET, LOCATE FIRE HYDRANT 1" FROM FACE OF WALK, WITHIN GRASS AREA.
 - IN ALL OTHER CASES, CONTACT FIRE DEPARTMENT FOR FIRE HYDRANT LOCATION.
 - IN SIDEWALK LOCATE GUARD POSTS AT THE FACE OF THE PUMPER AND 2'-6" LEFT/RIGHT OF 1/2 OF THE FIRE HYDRANT.
 - FIRE HYDRANT SLAB AND GUARD POST CONCRETE WORK SHALL BE DIFFERENT POURS.
 - FIRE HYDRANTS SHALL NOT BE LOCATED WITHIN A RADIUS.

PERMIT NUMBER

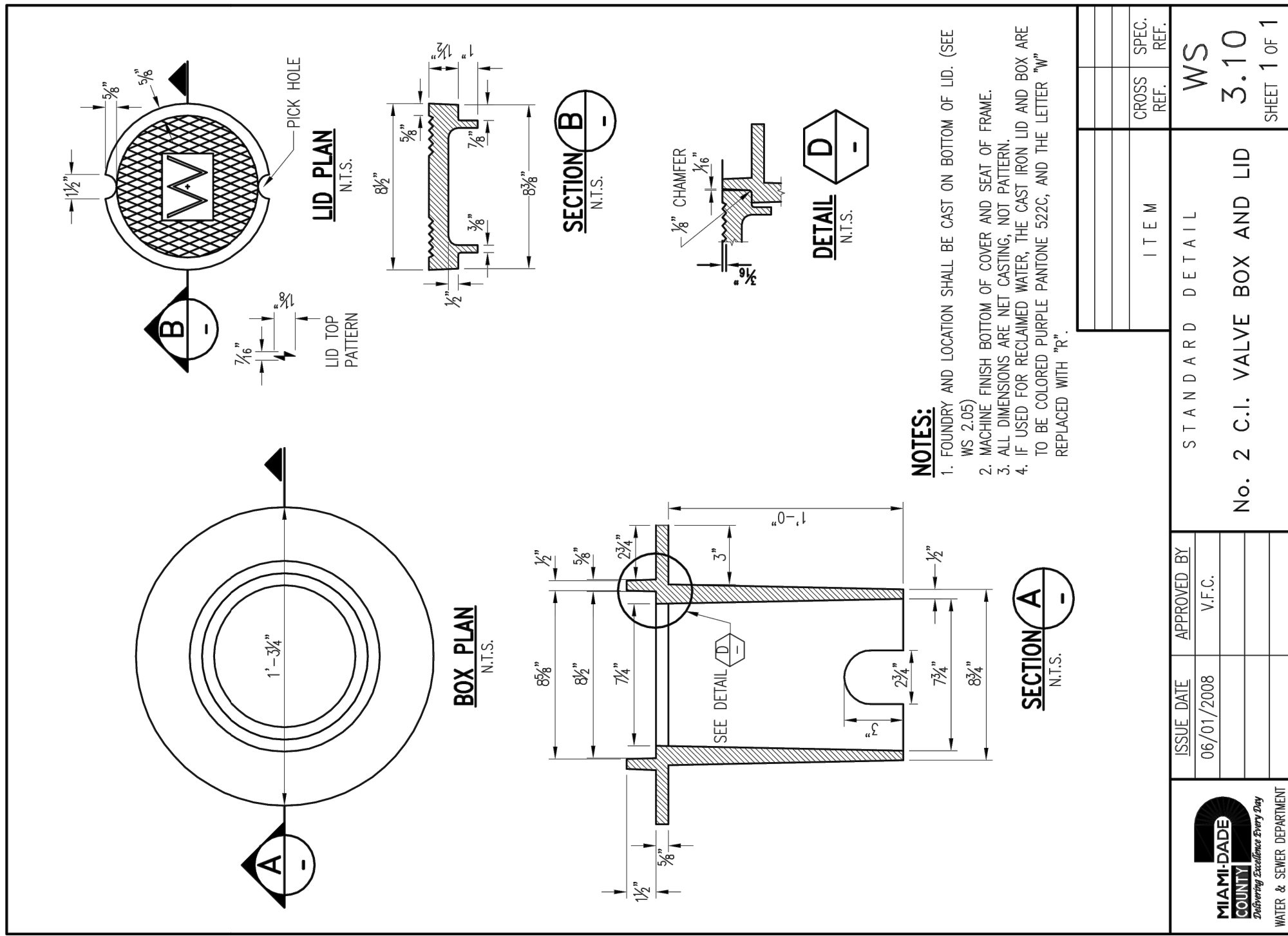
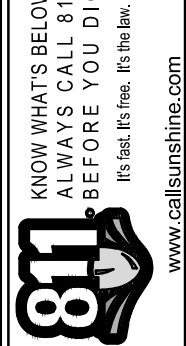
13-391544-001-EG

BID PLANS NOT FOR CONSTRUCTION
ELEVATIONS ARE IN NGVD 1929

STATE OF FLORIDA PROFESSIONAL ENGINEER
LICENSE No. 78536

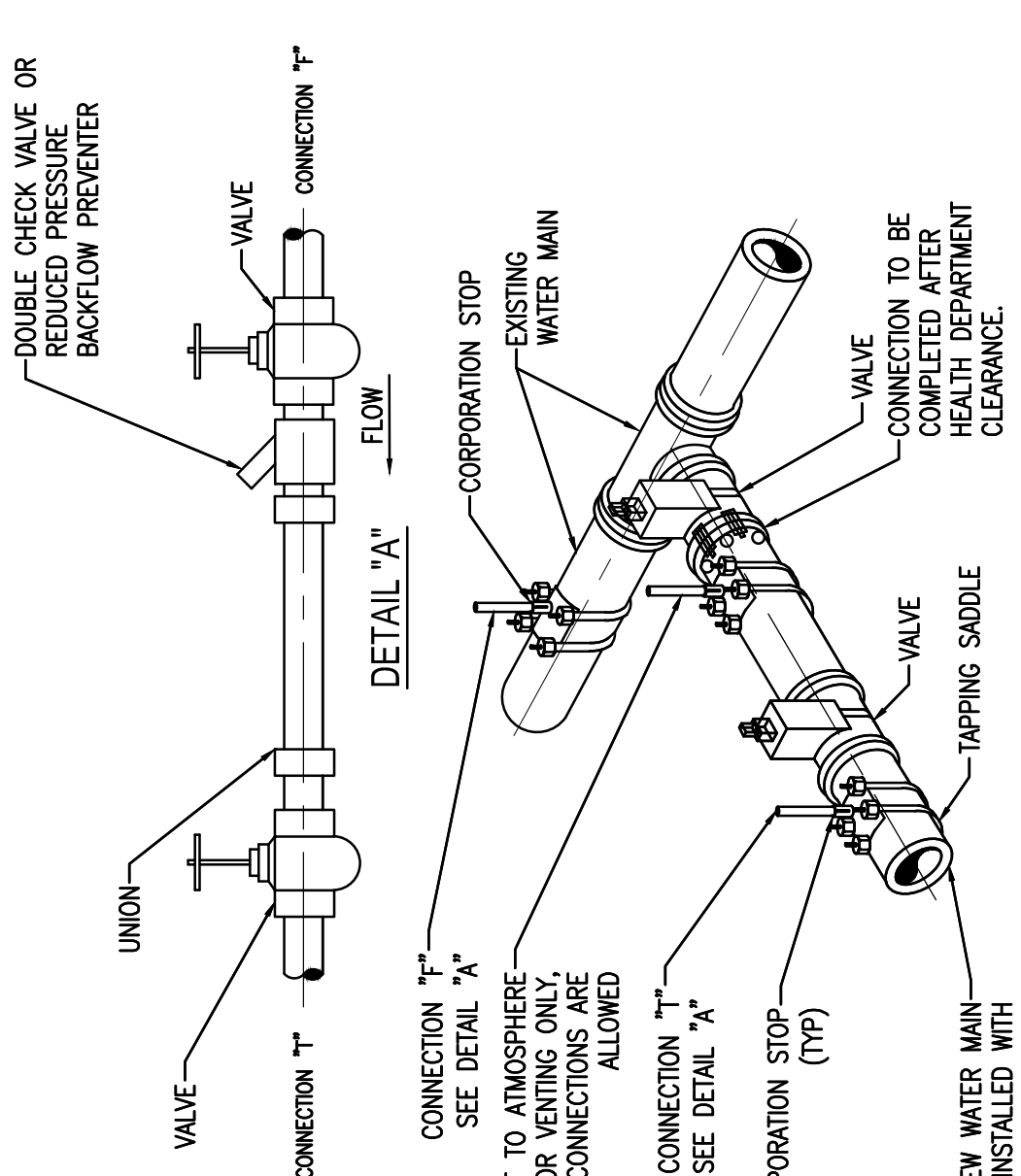
DATE: 05/18/20

**DENOTES ENGINEER OF RECORD HAS MADE MODIFICATIONS TO COUNTY DETAILS ON THIS SHEET



- NOTES:**
- FOUNDRY AND LOCATION SHALL BE CAST ON BOTTOM OF LID. (SEE WS 2.05)
 - MACHINE FINISH BOTTOM OF COVER AND SEAT OF FRAME.
 - CASTING SHALL BE MACHINED TO PROVIDE A 1/8" CHAMFER.
 - IF USED FOR RECLAIMED WATER, THE CAST IRON LID AND BOX ARE TO BE COLORED PURPLE PANTONE 522C, AND THE LETTER "W" REPLACED WITH "R".

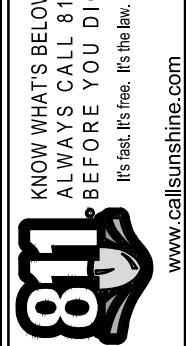
ISSUE DATE	APPROVED BY	STANDARD DETAIL	CROSS REF.	SPEC. REF.
06/01/2008	V.F.C.	No. 2 C.I. VALVE BOX AND LID	WS	3.10
SHEET 1 OF 1				



- NOTE:**
- REMOVE TEMPORARY CONNECTION AT CORPORATION STOP ON EXISTING MAIN AFTER FILLING AND FLUSHING OF NEW LINE.
 - DO NOT REMOVE TEMPORARY CONNECTION AT CORPORATION STOP ON NEW MAIN UNTIL ALL TESTING HAS BEEN COMPLETED BY HEALTH DEPARTMENT.
 - CLOSE CORPORATION STOPS AND PLUG/CAP WITH BRASS FITTINGS AFTER SAMPLING IS COMPLETED.

FILING AND FLUSHING CONNECTION

**DENOTES ENGINEER OF RECORD HAS MADE MODIFICATIONS TO COUNTY DETAILS ON THIS SHEET



STATE OF FLORIDA PROFESSIONAL ENGINEER
LICENSE No. 78536

DATE: 05/18/20

Permit Number

13-391544-001-EG

BID PLANS NOT FOR CONSTRUCTION
ELEVATIONS ARE IN NGVD 1929

STATE OF FLORIDA PROFESSIONAL ENGINEER
LICENSE No. 78536

DATE: 05/18/20

GENERAL DETAILS

POINT LAKE CANAL SUBAQUEOUS WATER MAIN CROSSING TO BISCAYA ISLAND

SURFSIDE, FLORIDA

Calvin, Giordano & Associates, Inc.
EXCEPTIONAL SOLUTIONSSM
1800 Eller Drive, Suite 600, Fort Lauderdale, Florida 33316
Phone: 954-921-1781 • Fax: 954-921-1887
Certificate of Authorization 514

NO	DATE	REVISION	BY	NO	DATE	REVISION	BY
1							

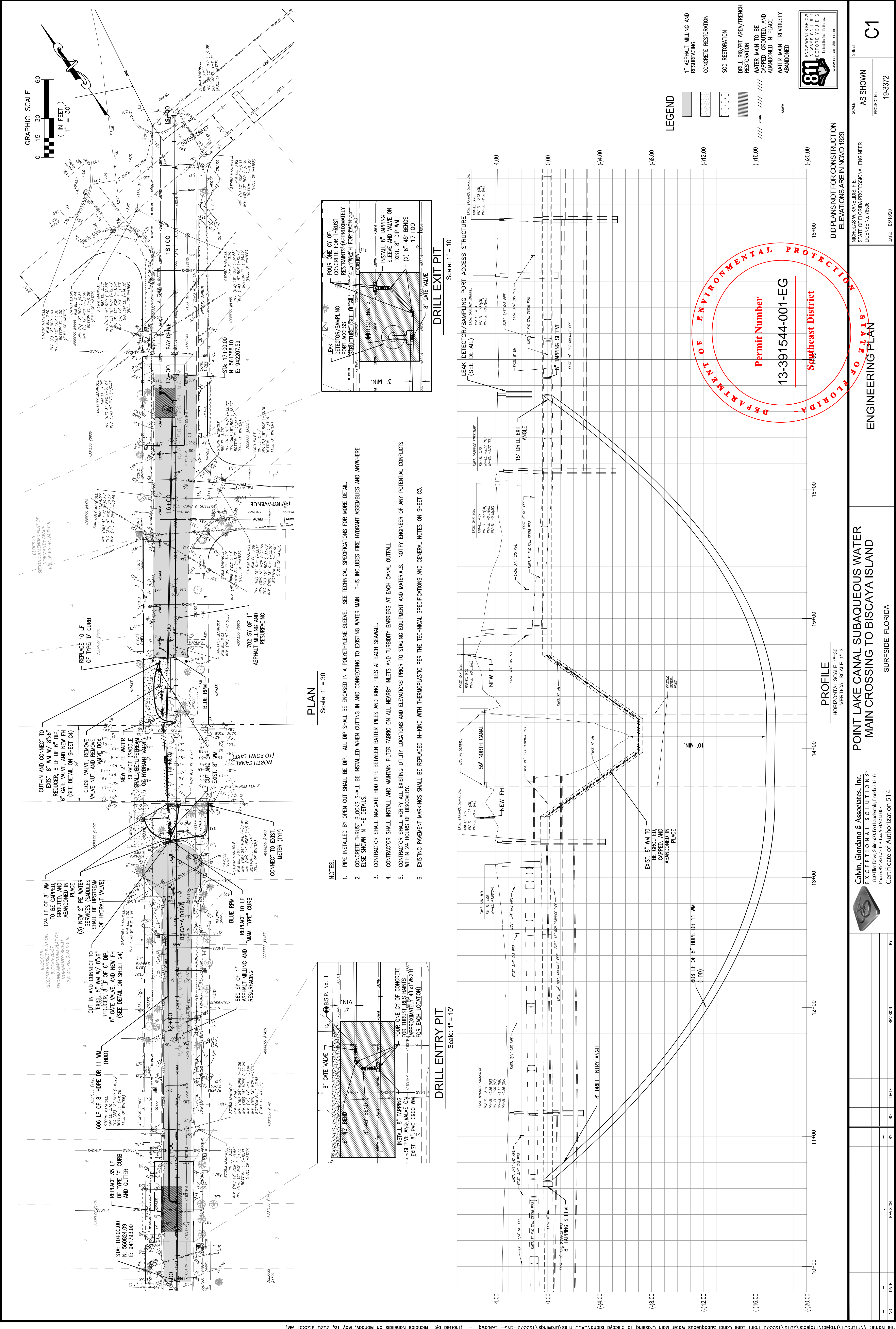
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NO	DATE	REVISION	BY	NO	DATE	REVISION	BY
1							





DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
9900 SW 107th Avenue, Suite 203
Miami, FL 33176

REPLY TO
ATTENTION OF

November 5, 2020

Regulatory Division
South Permits Branch
Miami Permits Section
SAJ-2020-03213 (GP-LOB)

Hector Gomez
Town of Surfside
9293 Harding Avenue
Surfside, FL 33154

Dear Mr. Gomez:

Your application for a Department of the Army permit received on 10 August 2020, has been assigned number SAJ-2020-03213. A review of the information and drawings provided shows the proposed work will include the following: install a new sub-aqueous utility installation consisting of (1) 8-inch High Density Poly Ethylene (HDPE) water main 50-feet in length by horizontal directional drilling (HDD) 10-feet below the canal bottom. Bore pit locations would be located within uplands and no work is proposed within the canal. Turbidity containment devices such as turbidity screen, silt containment fence, straw bales, and earthen berms will be used within the staging area. The project would affect waters of the United States associated with Point Lake Canal in Biscayne Bay. The project site is located at Bay Drive and Irving Avenue in Section 34, Township 52 South, Range 42 East, in Surfside, Florida 33154 (Latitude: 25.87485°; Longitude: - 80.130611°).

Your project, as depicted on the enclosed drawings, is also authorized by Regional General Permit (GP) SAJ #14. This authorization is valid until **22 February 2023**. Please access the Corps' Jacksonville District Regulatory Division Internet page to view the special and general conditions for SAJ-#14, which apply specifically to this authorization. The Internet URL address is:

<http://www.saj.usace.army.mil/Missions/Regulatory.aspx>

Please be aware this Internet address is case sensitive; and, you will need to enter it exactly as it appears above. Once there you will need to click on "Source Book"; and, then click on "General Permits." Then you will need to click on the specific SAJ permit noted above. You must comply with all of the special and general conditions of the permit; and, any project-specific conditions noted below, or you may be subject to enforcement action. The following project-specific conditions are included with this authorization:

The following 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, FL 32232-0019.

The Permittee shall reference this permit number, **SAJ-2020-03213** (GP-LOB), on all submittals.

2. **As-Built Certification:** Within 60 days of completion of the work authorized by this permit, the permittee shall submit as-built drawings of the authorized work and a completed "As-Built Certification By Professional Engineer" form (Attachment) to the Corps. The as-built drawings shall be signed and sealed by a registered professional engineer and include the following:

- a. A plan view drawing of the location of the authorized work footprint, as shown on the permit drawings, with transparent overlay of the work as constructed in the same scale as the permit drawings on 8½-inch by 11-inch sheets. The plan view drawing should show all "earth disturbance," including wetland impacts and water management structures.
 - b. A list of any deviations between the work authorized by this permit and the work as constructed. In the event that the completed work deviates, in any manner, from the authorized work, describe on the attached "As-Built Certification By Professional Engineer" 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 that the depiction and/or description of any deviations on the drawings and/or "As-Built Certification By Professional Engineer" form does not constitute approval of any deviations by the Corps.

- c. Include the Department of the Army permit number on all sheets submitted.
- 3. **Commencement Notice:** Within 10 days from the date of initiating the work authorized by this permit the Permittee shall submit a completed "Commencement Notification" Form (Attached).
- 4. **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 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.
- 5. **Manatee Conditions:** The Permittee shall comply with the "Standard Manatee Conditions for In-Water Work – 2011" (Attached).
- 6. **Posting of Permit:** The Permittee shall have available and maintain for review a copy of this permit and approved plans at the construction site.
- 7. **Agency Changes/Approvals:** Should any other agency require and/or approve changes to the work authorized or obligated by this permit, the Permittee is advised a re-verification to this permit instrument is required prior to initiation of those changes. It is the Permittee's responsibility to request a re-verification of this permit from the Miami Permits Section. The Corps reserves the right to fully evaluate, amend, and approve or deny the request for re-verification of this permit.
- 8. **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 the ground disturbing activities and construction work within the permit area, there are archaeological/cultural materials encountered which were

not the subject of a previous cultural resources assessment survey (and which shall include, but not be limited to: pottery, modified shell, flora, fauna, human remains, ceramics, stone tools or metal implements, dugout canoes, evidence of structures or any other physical remains that could be associated with Native American cultures or early colonial or American settlement), the Permittee shall immediately stop all work and ground-disturbing activities within a 100-meter diameter of the discovery and notify the Corps within the same business day (8 hours). The Corps shall then notify the Florida State Historic Preservation Officer (SHPO) and the appropriate Tribal Historic Preservation Officer(s) (THPO(s)) to assess the significance of the discovery and devise appropriate actions.

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, THPO(s), 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 Archeologist within the same business day (8-hours). The Corps shall then notify the appropriate SHPO and THPO(s). 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 State Archeologist and from the Corps.

9. **Project Drawings:** The project must be completed in accordance with the enclosed construction drawings (pages 1-7), date-stamped by the U.S. Army Corps of Engineers (Corps) on 3 August 2020, and the general and special conditions which are incorporated in, and made a part of, the permit.
10. **Turbidity Barriers:** In case a frac-out occurs during HDD activities, the Permittee shall install floating turbidity barriers with weighted skirts that extend to 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 until all suspended and erodible materials have been stabilized. Turbidity barriers shall be removed upon stabilization of the work area.

11. **Notification of Unmarked Utilities:** No work shall be performed until after the permittee provides notification to the owner(s) or operator(s) of any marked utilities in the work area, unless the permittee is the same entity as the owner(s) or operator(s).

12. **Horizontal Directional Drilling (HDD):** Except as otherwise required by Special

Condition of this RGP, directional boring vaults, junction boxes, and/or pads will not be constructed within 50 feet of the top of the bank of waterways (rivers/streams). HDD pilot, entrance, and exit holes must be the minimum diameter necessary; and, must be set back from the waterway (river/stream) bank by a minimum of 50 feet. Excavated materials and drilling mud must be stockpiled on non-wetland areas, where available. Appropriate fabric must be placed beneath all materials stockpiled in wetlands. As part of any verification under this RGP, the permittee must submit a frac-out plan to the Corps for approval. No work shall commence prior to Corps approval of the frac-out plan. Further, the permittee shall submit a benthic survey for SAV, coral, and/or hardbottom habitat in areas where these resources could occur. In the event that any of these benthic resources are discovered within the proposed project footprint, the permittee must submit plans to avoid and minimize impacts to such resources as a result of frac-out based on consideration of geologic formation, boring depth, drilling mud pressure, and a pressure profile.

13. **Jacksonville District Programmatic Biological Opinion (JAXBO), November 2017, Project Design Criteria (PDCs):** Structures authorized under this permit must comply with all applicable PDCs, based on the permitted activity, as required by JAXBO. Please note that failure to comply with the applicable PDCs, where a take of listed species occurs, would constitute an unauthorized take, and noncompliance with this permit. The NMFS is the appropriate authority to enforce the terms and conditions of JAXBO. The most current version of JAXBO can be accessed at the Jacksonville District Regulatory Division internet webpage in the Endangered Species section of the Sourcebook located at:

<http://www.saj.usace.army.mil/Missions/Regulatory/SourceBook.aspx>

Note - JAXBO may be subject to revision at any time. The most recent version of these conditions must be utilized during the design and construction of the

permitted work. In accordance with the Endangered Species Act, and for those projects which do not comply with JAXBO, the Corps will seek individual consultation with the NMFS.

Note - some authorized activities may deviate from the PDCs. In cases, where the activity (i.e., structure dimensions, length, etc.) deviates from the PDCs, the permit drawings shall supersede the PDCs.

For each of the following authorized activities subject of this permit, the permittee shall adhere to the following PDCs, which are attached to, and made part of, this authorization/verification letter:

Activity 8 – Transmission and Utility Line Activities

14. **Sea Turtle and Smalltooth Sawfish Conditions:** The Permittee shall comply with National Marine Fisheries Service's "Sea Turtle and Smalltooth Sawfish Construction Conditions" dated March 23, 2006 (Attached).

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.

If you are unable to access the internet or require a hardcopy of any of the conditions, limitations, or expiration date for the above referenced NWP, please contact Luis O. Betancourt by telephone at (305) 779-6051.

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 http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_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.

Sincerely,

Luis O. Betancourt
Project Manager

Enclosures

General Conditions

Self-Certification Statement of Compliance

Permit Transfer Request

Site Plans dated by the Corps on 5 November 2020

Sea Turtle and Smalltooth Sawfish Conditions

Standard Manatee Conditions for In-Water Work – 2011

PDCs for Activity 8 – Transmission and Utility Line Activities

GENERAL CONDITIONS
33 CFR PART 320-330

1. The time limit for completing the work authorized ends on the **dates identified in the letter.**
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 or 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 in the space provided and forward a copy of the permit 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.
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.

SELF-CERTIFICATION STATEMENT OF COMPLIANCE

*Within sixty (60) days of completion of the authorized work, submit this form via electronic mail to saj-rd-enforcement@usace.army.mil (preferred, not to exceed 15MB) **or** by standard mail to U.S. Army Corps of Engineers, Enforcement Section, P.O. Box 4970, Jacksonville, FL 32232-0019.*

1. **Department of the Army Permit Number:** SAJ-2020-03213 (GP-LOB)

2. **Permittee Information:** Name: _____

Email: _____

Address: _____

Phone: _____

3. **Date Authorized Work Started:** _____ **Completed:** _____

4. **Contact to Schedule Inspection:** Name: _____

Email: _____

Phone: _____

5. **Description of Authorized Work (e.g. bank stabilization, fill placed within wetlands, docks, dredging, etc.):** _____

6. **Acreage or Square Feet of Impacts to Waters of the United States:** _____

7. **Describe Mitigation completed (if applicable):** _____

8. **Describe any Deviations from Permit (attach drawing(s) depicting the deviations):**

I certify that all work and mitigation (if applicable) was done in accordance with the limitations and conditions as described in the permit. Any deviations as described above are depicted on the attached drawing(s).

Signature of Permittee

Printed Name of Permittee; Date

COMMENCEMENT NOTIFICATION

*Within ten (10) days of initiating the authorized work, submit this form via electronic mail to saj-rd-enforcement@usace.army.mil (preferred, not to exceed 15 MB) **or** by standard mail to U.S. Army Corps of Engineers, Enforcement Section, P.O. Box 4970, Jacksonville, FL 32232-0019.*

1. Department of the Army Permit Number: SAJ-2020-03213 (GP-LOB)

2. Permittee Information:

Name: _____

Email: _____

Address: _____

Phone: _____

3. Construction Start Date: _____

4. Contact to Schedule Inspection:

Name: _____

Email: _____

Phone: _____

Signature of Permittee

Printed Name of Permittee

Date

DEPARTMENT OF THE ARMY PERMIT TRANSFER REQUEST

PERMIT NUMBER: SAJ-2020-03213 (GP-LOB)

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. Although the construction period for works authorized by Department of the Army permits is finite, the permit itself, with its limitations, does not expire.

To validate the transfer of this permit and the associated responsibilities associated with compliance with its terms and conditions, have the transferee sign and date below and mail to the U.S. Army Corps of Engineers, Enforcement Section, Post Office Box 4970, Jacksonville, FL 32232-0019 or by electronic mail at saj-rd-enforcement@usace.army.mil.

(TRANSFEREE-SIGNATURE)

(SUBDIVISION)

(DATE)

(LOT)

(BLOCK)

(NAME-PRINTED)

(STREET ADDRESS)

(MAILING ADDRESS)

(CITY, STATE, ZIP CODE)

PROJECT No: 19-3372
193372-COMR.dwg



1. RESPONSIBILITY FOR THE USE OF THESE PLANS FOR ANY PURPOSE PRIOR TO SECURING PERMITS FROM ALL AGENCIES HAVING JURISDICTION OVER THIS PROJECT WILL FALL SOLELY UPON THE USER.
2. AN ELECTRONIC CAD FILE WILL BE PROVIDED FOR SURVEY LAYOUT.

EXCEPTIONAL SOLUTIONS™

1800 Eller Drive, Suite 600, Fort Lauderdale, Florida 33316

Phone: 954.921.7781 • Fax: 954.921.8807
Certificate of Authorization 514

CLIPRENT REV No. :

NICHOLAS W. KANELDIS, P.E.
STATE OF FLORIDA PROFESSIONAL ENGINEER

CLIPRENT REV No. :

NICHOLAS W. KANELDIS, P.E.
STATE OF FLORIDA PROFESSIONAL ENGINEER

DATE: 05/18/20

SHEET:

[illegible]

SAJ-2020 Town of Surfside (Sheet Page 1 of 7) 11/05/2020

ABBREVIATION LEGEND		LINE TYPE LEGEND		PROPOSED SYMBOL LEGEND		EXISTING SYMBOL LEGEND	
ARV	AIR RELEASE VALVE	---	LOT LINE	●	AIR RELEASE VALVE	+	EXISTING SPOT ELEVATION (FT)
BE	BURIED ELECTRIC	---	SECTION LINE	⊙	BACTERIOLOGICAL SAMPLE POINT	+	QTY ANCHOR
BPP	BUTTERFLY PREVENTER	---	S/W LINE	⊖	WATER METER	⊖	FPL MANHOLE
BV	BUTTERFLY VALVE	---	PROPERTY LINE	⊖	FIRE HYDRANT	⊖	CONC. LIGHT POLE
BM	BENCHMARK	---	CENTRELINE	⊖	FIRE DEPARTMENT CONNECTION	⊖	CONC. UTILITY POLE
BP	BOTTOM OF PIPE	---	WALL	⊖	SINGLE WATER SERVICE	⊖	CONC. SIGNAL POLE
BSP	BACTERIOLOGICAL SAMPLING POINT	---	EXIST. CHAIN LINK FENCE	⊖	DOUBLE WATER SERVICE	⊖	COMMUNICATION RISER
CA	CORROGATED ALUMINUM PIPE	---	PROPOSED CHAIN LINK FENCE	⊖	BACKFLOW PREVENTER	⊖	CABLE TV MANHOLE
CB	CATCH BASIN	---	EXISTING WOOD FENCE	⊖	DOUBLE DETECTOR CHECK VALVE	⊖	CABLE TV RISER
CI	CURB INLET	---	EXISTING POCKET FENCE	⊖	BLOWOFF	⊖	ELEC. MANHOLE
CP	CURB IRON PIPE	---	WATER MAIN TO BE REMOVED	⊖	REDUCER	⊖	FPL TRANSFORMER
CMP	CORROGATED METAL PIPE	---	WATER MAIN TO BE ROUTED IN PLACE	⊖	GATE VALVE	⊖	GAS METER
CO	CONCRETE	---	WATER MAIN PREVIOUSLY ARMORED	⊖	45° BEND	⊖	TRAFFIC CONTROL BOX
DE	DRAINAGE EASEMENT	---	EXISTING OVERHEAD ELECTRIC, CABLE TV, PHONE	⊖	TEE	⊖	GAS VALVE
DP	DUCTILE IRON PIPE	---	EXISTING WATER MAIN	⊖	CROSS	⊖	SEWER VALVE
E	EAST	---	EXISTING WATER SNIER	⊖	PLUG	⊖	WATER VALVE
EL	ELEVATION	---	EXISTING STORM MAIN	⊖	ISOLATION VALVE	⊖	GATE VALVE
EXST	EXISTING	---	EXISTING FIRE MAIN	⊖	BLOWOFF	⊖	CLEANOUT
EXST	EXISTING	---	EXISTING OVERHEAD POWER	⊖	VERTICAL BENDS	⊖	FIRE HYDRANT
FF EL	FINISHED FLOOR ELEVATION	---	EXISTING UNDERGROUND GAS	⊖	SANITARY FLOW DIRECTION	⊖	REDUCER
FI	FIRE HYDRANT	---	EXISTING COMMUNICATION	⊖	CLEAN OUT	⊖	IRRIGATION VALVE
FM	FORCE MAIN	---	EXISTING BURIED FIBER OPTIC	⊖	DOUBLE SANITARY LATERAL	⊖	MANHOLE
GAU	GAUZEHEAD	---	EXISTING CHILLER	⊖	CONNECT ID	⊖	BACKFLOW PREVENTOR
GV	GATE VALVE	---	EXISTING OVERHEAD T&E	⊖	DRAINAGE FLOW	⊖	CATCH BASIN
HORZ	HORIZONTAL	---	EXISTING FUEL LINE	⊖	SPOT GRAZE	⊖	GROUND/LANDSCAPING LIGHTING
H.P.	HIGH POINT	---	EXISTING OVERHEAD ELECTRIC	⊖	SIGN	⊖	SIGN
INBT	INVERT	---	EXISTING UNDERGROUND ELECTRIC	⊖	MANHOLE	⊖	WATER METER
J	JUNCTION BOX	---	EXISTING UNKNOWN UTILITY	⊖	CLEANOUT	⊖	MAILBOX
LF	LINEAR FEET	---	EXISTING OVERHEAD WIRE	⊖	SLOTTED DRAIN	⊖	LIGHT POLE
MAX	MANHOLE	---	EXISTING OVERHEAD WIRE	⊖	STORM WVD DRAIN	⊖	BENCH
MIN	MINIMUM	---	EXISTING OVERHEAD WIRE	⊖	P5 STORM INLET	⊖	
MJ	MECHANICAL JOINT	---	EXISTING OVERHEAD WIRE	⊖	P6 STORM INLET	⊖	
N	NORTH	---	EXISTING OVERHEAD WIRE	⊖	EXPLANATION TRENCH	⊖	
NC	NOT INCLUDED	---	EXISTING OVERHEAD WIRE	⊖	HEADWALL	⊖	
NTS	NOT TO SCALE	---	EXISTING OVERHEAD WIRE	⊖	METERED END - RCP	⊖	
NOO	NATURAL GEODETIC VERTICAL DATUM	---	EXISTING OVERHEAD WIRE	⊖	METERED END - HPPE	⊖	
OE	OVERHEAD ELECTRIC	---	EXISTING OVERHEAD WIRE	⊖	WAY BALES	⊖	
P&P	PERFORATED CORRUGATED ALUMINUM PIPE	---	EXISTING OVERHEAD WIRE	⊖	RCP BAGS W/ WAY BALES	⊖	
PFB	POLLUTION RETENANT BAFFLE	---	EXISTING OVERHEAD WIRE	⊖	SILT BARRIER FENCE	⊖	
PROPP	PROPOSED	---	EXISTING OVERHEAD WIRE	⊖	TURBIDITY BARRIER	⊖	
PSI	POUNDS PER SQUARE INCH	---	EXISTING OVERHEAD WIRE	⊖		⊖	
PV	PLUG VALVE	---	EXISTING OVERHEAD WIRE	⊖		⊖	
PVC	POLYVINYL CHLORIDE	---	EXISTING OVERHEAD WIRE	⊖		⊖	
R	RADIUS	---	EXISTING OVERHEAD WIRE	⊖		⊖	
RCP	REINFORCED CONCRETE PIPE	---	EXISTING OVERHEAD WIRE	⊖		⊖	
RCW	RECLAIMED WATER	---	EXISTING OVERHEAD WIRE	⊖		⊖	
RED	REDUCER	---	EXISTING OVERHEAD WIRE	⊖		⊖	
R/W	RIGHT-OF-WAY	---	EXISTING OVERHEAD WIRE	⊖		⊖	
S	SOUTH	---	EXISTING OVERHEAD WIRE	⊖		⊖	
SN	SANITARY	---	EXISTING OVERHEAD WIRE	⊖		⊖	
SB	SOIL BORING	---	EXISTING OVERHEAD WIRE	⊖		⊖	
STA	STATION	---	EXISTING OVERHEAD WIRE	⊖		⊖	
TB	TOP OF BANK	---	EXISTING OVERHEAD WIRE	⊖		⊖	
TDP	TOP OF PIPE	---	EXISTING OVERHEAD WIRE	⊖		⊖	
TYP	TYPICAL	---	EXISTING OVERHEAD WIRE	⊖		⊖	
UE	UTILITY EASEMENT	---	EXISTING OVERHEAD WIRE	⊖		⊖	
VERT	VERTICAL	---	EXISTING OVERHEAD WIRE	⊖		⊖	
W	WEST	---	EXISTING OVERHEAD WIRE	⊖		⊖	
WM	WATER MAIN	---	EXISTING OVERHEAD WIRE	⊖		⊖	

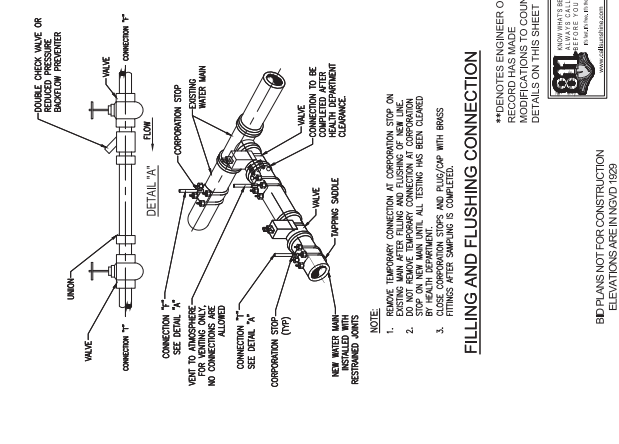
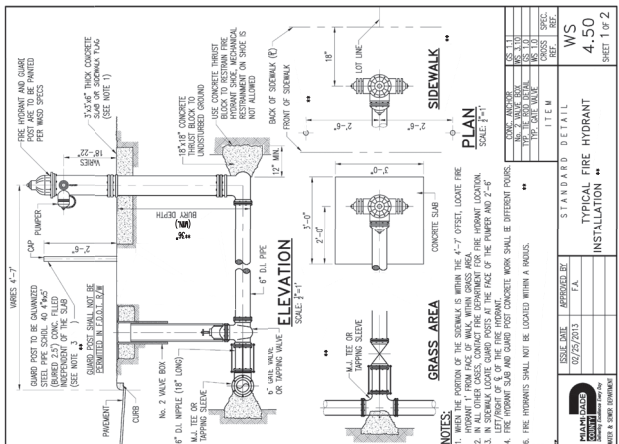
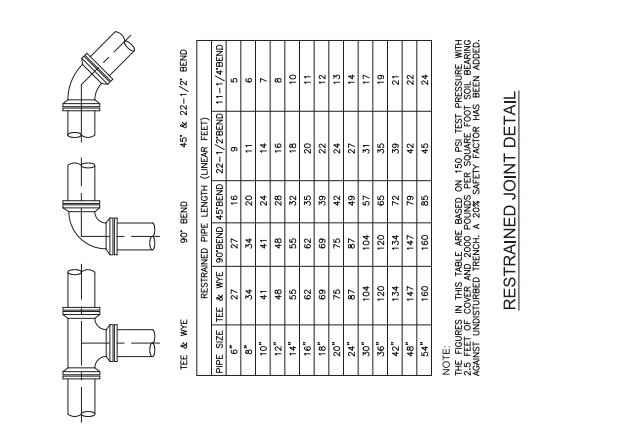
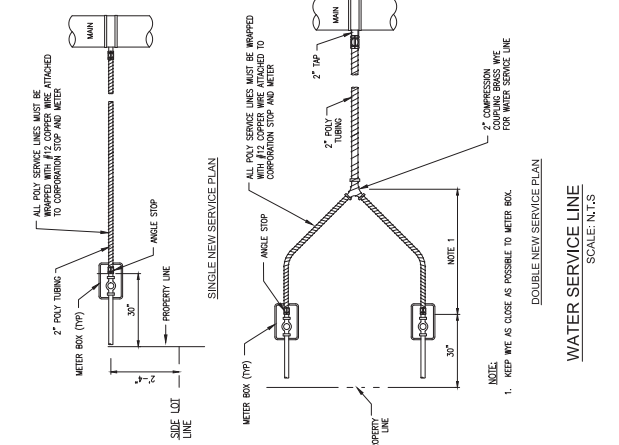
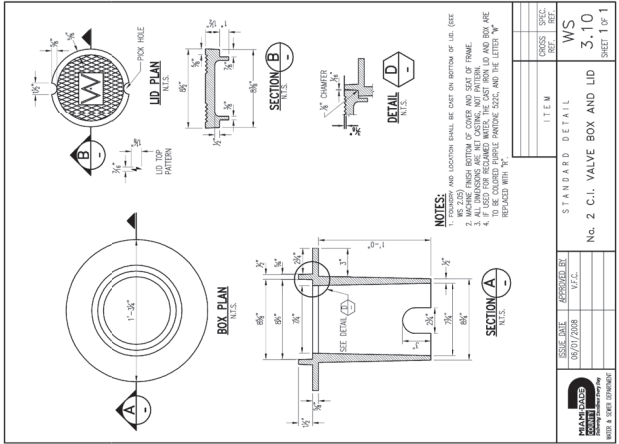
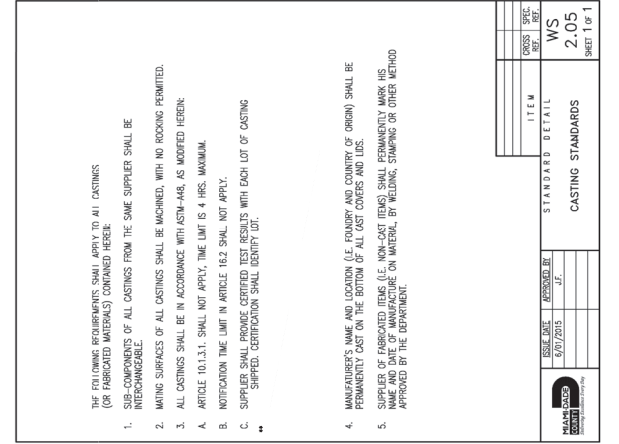
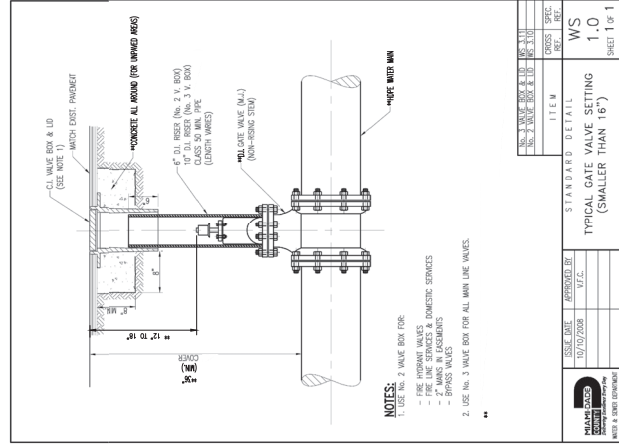
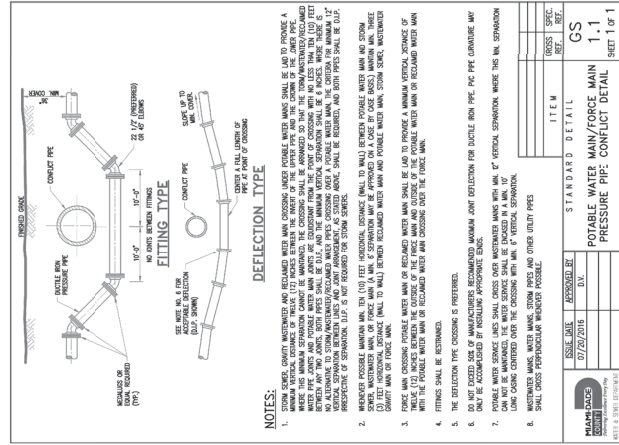
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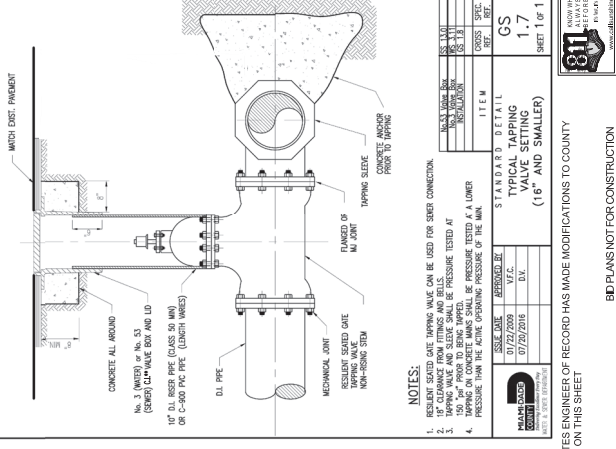
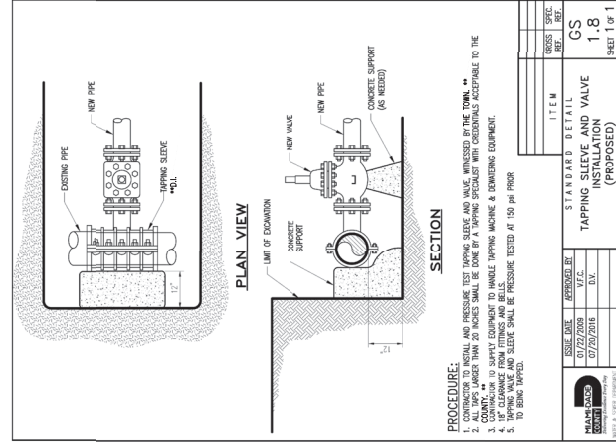
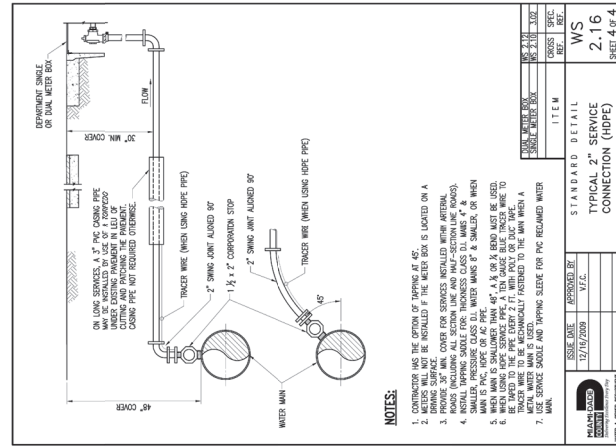
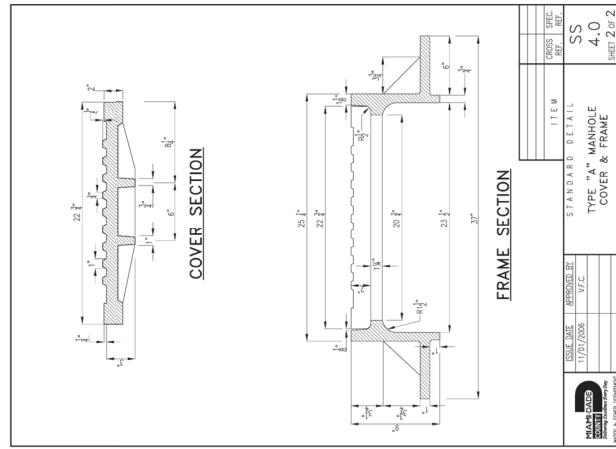
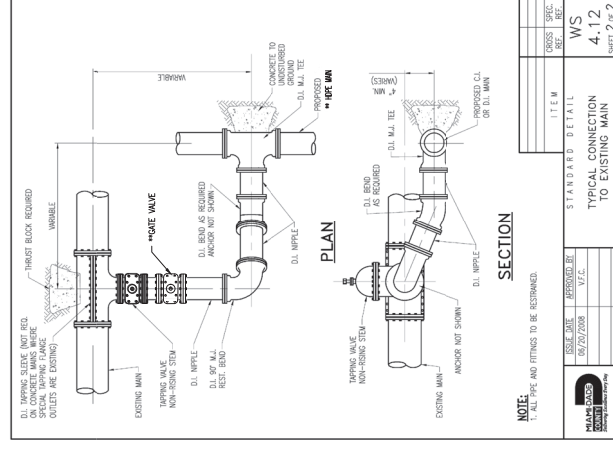
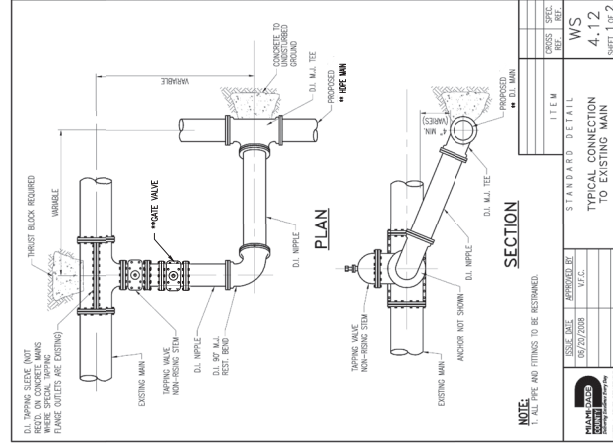
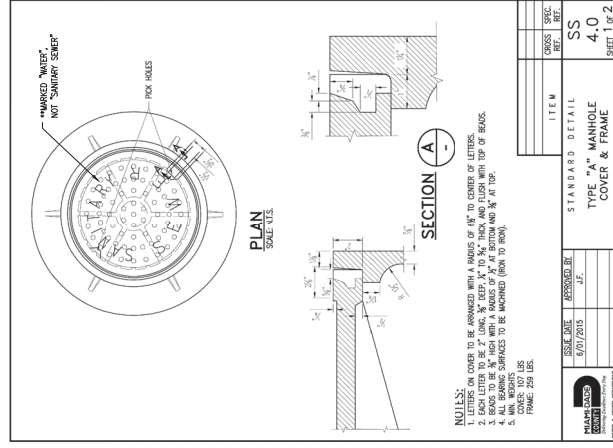
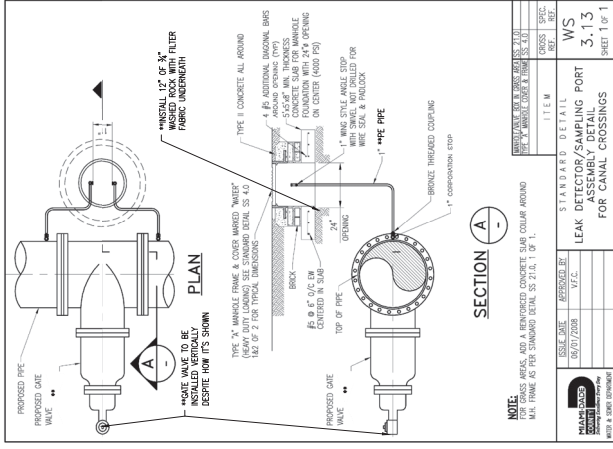
MINERAL SUBAQUEOUS WATER LEAKING TO BISCAYA ISLAND

SURFSIDE, FLORIDA

SAJ-2020 Town of Surfside (Sheet Page 3 of 7) 11/05/2020

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Calvin, Giordano & Associates, Inc.
EXCEPTIONAL SOLUTIONSSM
1800 Eller Drive, Suite 600, Fort Lauderdale, Florida 33316
Phone: 954.921.7781 • Fax: 954.921.0037

POINT LAKE CANAL SUBAQUEOUS WATER
MAIN CROSSING TO BISCAYA ISLAND

SING TO BISC
SURFSIDE, FLORIDA

GENERAL DETAILS

STATE OF FLORIDA PROFESSIONAL ENGINEER
 LICENSE No. 78836
 AS SHOWN
 PROJECT No. 19-3372
 G5

BD PLANS NOT FOR CONSTRUCTION
ELEVATIONS ARE IN NGVD 1929

811
KNOW WHAT'S BELOW
ALWAYS CALL 811
BEFORE YOU DIG
It's Not a Line, It's A Life.
www.call811online.com



BD PLANS NOT FOR CONSTRUCTION
ELEVATIONS ARE IN MGD 1928

SCALE: AS SHOWN
PROJECT NO: 19-5372
DATE: 05/18/20

G6

SCALE: AS SHOWN
PROJECT NO: 19-5372
DATE: 05/18/20

GENERAL DETAILS

POINT LAKE CANAL SUBAQUEOUS WATER
MAIN CROSSING TO BISCAYA ISLAND

SURFSIDE, FLORIDA

Calvin, Giordano & Associates, Inc.
FACILITIES SOLUTIONS
10000 N.W. 11th Avenue, Suite 100
Miami, FL 33150
Phone: 305.577.7777 • Fax: 305.577.7777
Certificate of Authorization 514

ASPHALT AND CONCRETE DRIVEWAY DETAIL
SCALE: N.T.S.

CURRENT

NO.	DATE	BY	NO.	DATE	BY
1			2		
3			4		
5			6		
7			8		
9			10		
11			12		

BRICK OR CONCRETE PAVEMENT DRIVEWAY SECTION
SCALE: N.T.S.

CURRENT

- NOTES:
- GENERAL:
A. ALL DRIVEWAY PAVEMENT SHALL BE SMOOTH, UNIFORM AND FREE FROM DEFECTS.
B. DURING CONSTRUCTION OF THE DRIVEWAY, THE WATER MAIN SHALL BE RE-CEASED TO THE BEST OF THE CONTRACTOR'S ABILITY.
C. MATERIALS:
1. BEDDING AND JOINT SAND SHALL BE CLEAN, NON-PLASTIC BEDDING SAND, MEETING THE REQUIREMENTS OF ASTM C 33 STANDARD SPECIFICATION FOR CONCRETE AGGREGATE.
2. BEDDING AND JOINT SAND MUST MEET THE GRANULAR REQUIREMENTS OF ASTM C 33 STANDARD SPECIFICATION FOR CONCRETE AGGREGATE.
3. SPREAD THE BEDDING MATERIAL EVENLY OVER THE BASE COURSE COVERED WITH GEOTEXTILE AND SPORED. THE THICKNESS OF THE BEDDING MATERIAL SHALL BE 1" MINIMUM AND 1 1/2" MAXIMUM. BUT SHALL NOT EXCEED 1 1/2" INCH. DO NOT DISTURB THE BEDDING MATERIAL UNTIL THE DRIVEWAY IS COMPLETELY SET.
4. BEDDING AND JOINT SAND SHALL BE PLACED IN 4" LAYERS, EACH LAYER SHALL BE COMPACTED TO A DENSITY OF 95% PER AASHTO T-99. DO NOT USE BEDDING MATERIAL TO FILL DEPRESSIONS IN THE BASE COURSE.
5. LAY PAVEMENT IN THE PATTERNING AS EACH DRIVEWAY CURRENTLY EXISTS.
 - AND MAXIMUM STRAIGHT PATTERN LINES.
3. TO VARY WITHIN THE PAVEMENT, ON AVERAGE, WILL BE BETWEEN 1/16" TO 1/8" INCH.
4. FILL THE GAPS AT THE EDGES WITH CUT OR EXIST PAVEMENT, MATCHING PATTERN OF EXISTING DRIVEWAY.
5. COMPACTING BEDDING AND JOINT SAND:
A. TOOT-POUNDER WITH 12-100 LB FREQUENCIES TO UNRAVE AND COMPACT PAVEMENT INTO BEDDING SAND.
B. VIBRATE THE PAVEMENT, SNEERING DRY JOINT SAND INTO THE BEDDING SAND, AND VIBRATE THE BEDDING SAND INTO THE BEDDING SAND.
C. AT THE END OF EACH DAY, ALL WORK WITHIN 3 FEET OF THE DRIVEWAY SHALL BE LEFT FULLY COMPACTED, WITH SAND-FILLED JOINTS.
D. SNEED OFF THE EXCESS SAND.
6. LEAVE A FINAL SURFACE ELEVATION OF BRICK PAVEMENT OF 1/8" TO 1/4" ABOVE FINISH GRADE. LEAVE A FINAL SURFACE ELEVATION OF CONCRETE PAVEMENT OF 1/4" TO 1/2" ABOVE FINISH GRADE. DO NOT PERMIT THE FINAL SURFACE OF PAVEMENT TO DEVIATE MORE THAN 1/8" INCH UNDER A 10 FOOT LONG STRONGHOLD, OR MORE THAN 1/8" INCH BETWEEN ADJACENT PAVEMENTS.

- NOTES:
- ALL EDGES OF THE EXISTING ASPHALT PAVEMENT WHERE RESURFACING WILL ABUT, SHALL BE SAWCUT IN STRAIGHT LINES PARALLEL TO OR PERPENDICULAR TO ADJACENT PAVEMENT.
2. IF THE DITCH IS FILLED TEMPORARILY, IT SHALL COVERED WITH A 2" THICK SP 9.5 ASPHALTIC PAVEMENT PATCH.

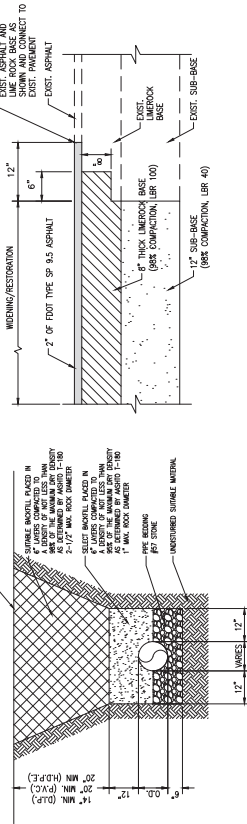
PAVEMENT RESTORATION
SCALE: N.T.S.

CURRENT

CONNECTION WITH EXISTING PAVEMENT
SCALE: N.T.S.

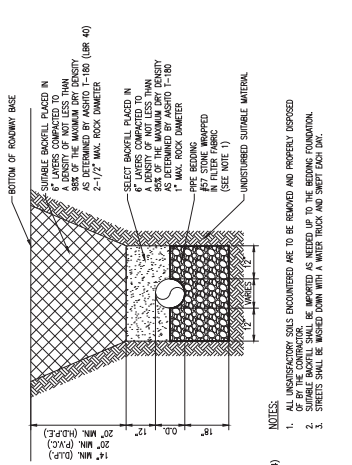
PIPE TRENCH IN SATISFACTORY SOILS
SCALE: N.T.S.

CURRENT



PIPE TRENCH IN UNSATISFACTORY SOILS
SCALE: N.T.S.

CURRENT



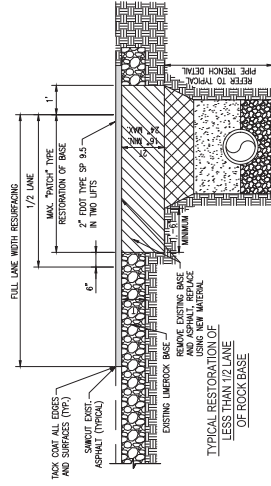
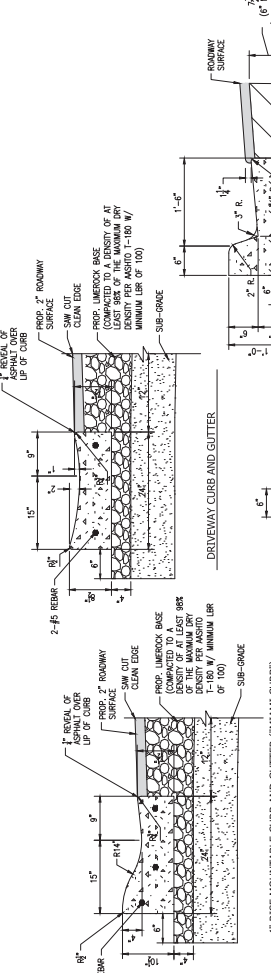
CONCRETE CURB DETAILS
SCALE: N.T.S.

CURRENT



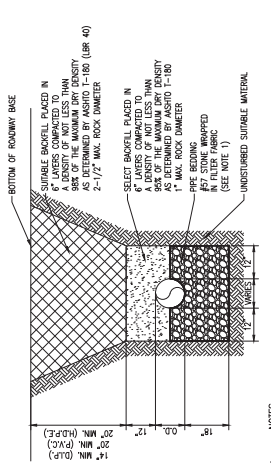
4" RISE MOUNTABLE CURB AND GUTTER (MIAMI CURB)
SCALE: N.T.S.

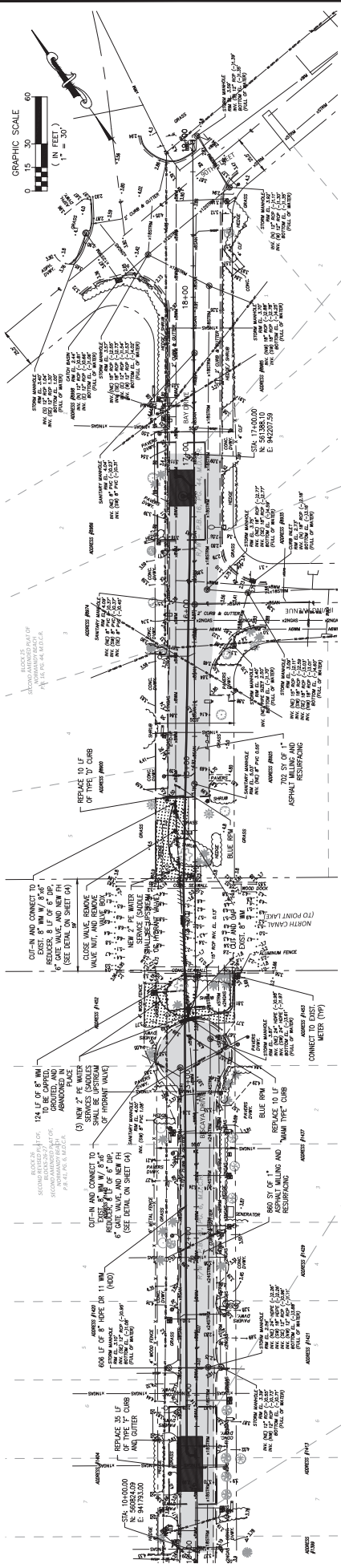
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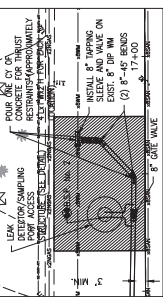
PIPE TRENCH IN UNSATISFACTORY SOILS
SCALE: N.T.S.

CURRENT



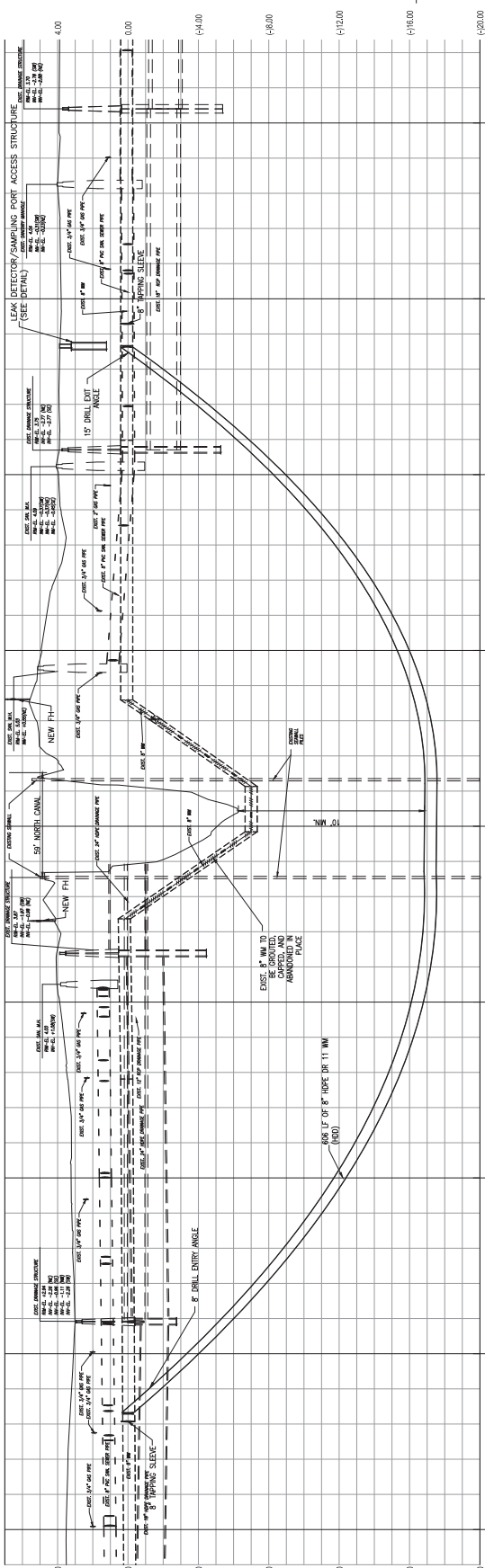


PLAN
Scale: 1" = 30'



DRILL ENTRY PIT
Scale: 1" = 10'

- NOTES:
1. PIPE INSTALLED BY OPEN CUT SHALL BE DIP. ALL DIP SHALL BE ENCASED IN A POLYETHYLENE SLEEVE. SEE TECHNICAL SPECIFICATIONS FOR MORE DETAIL.
 2. CONCRETE THURST BLOCKS SHALL BE INSTALLED WHEN CUTTING IN AND CONNECTING TO EXISTING WATER MAIN. THIS INCLUDES FIRE HYDRANT ASSEMBLIES AND ANYWHERE ELSE SHOWN IN THE DETAILS.
 3. CONTRACTOR SHALL NARRATE AND MAINTAIN FILTER FABRIC ON ALL NEARBY INLETS AND TURBIDITY BARRIERS AT EACH SUMMIT.
 4. CONTRACTOR SHALL VERIFY ALL EXISTING UTILITY LOCATIONS AND ELEVATIONS PRIOR TO STAKING EQUIPMENT AND MATERIALS. NOTIFY OWNER OF ANY POTENTIAL CONTACTS WITHIN 24 HOURS OF DISCOVERY.
 5. EXISTING PAVEMENT MARKINGS SHALL BE REPLACED IN-HAND WITH THERMOPLASTIC PER THE TECHNICAL SPECIFICATIONS AND GENERAL NOTES ON SHEET C1.



PROFILE
Scale: 1" = 30'

BIO PLANS NOT FOR CONSTRUCTION
ELEVATIONS ARE IN NGVD 1989

ENGINEERING PLAN		POINT LAKE CANAL SUBAQUEOUS WATER MAIN CROSSING TO BISCAYA ISLAND		SURFSIDE, FLORIDA	
Calvin, Giordano & Associates, Inc. EXCEPTIONAL SOLUTIONS 10000 W. 15th Ave., Suite 100 Miami, FL 33157 Phone: 305.442.7700 Fax: 305.442.7707 Certificate of Authorization 514		C1		19-3372	
DATE: 05/03/20		PROJECT NO:		SHEET	

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



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, FL 33701

SEA TURTLE AND SMALLTOOTH SAWFISH CONSTRUCTION CONDITIONS

The permittee shall comply with the following protected species construction conditions:

- a. The permittee shall instruct all personnel associated with the project of the potential presence of these species and the need to avoid collisions with sea turtles and smalltooth sawfish. All construction personnel are responsible for observing water-related activities for the presence of these species.
- b. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing sea turtles or smalltooth sawfish, which are protected under the Endangered Species Act of 1973.
- c. Siltation barriers shall be made of material in which a sea turtle or smalltooth sawfish cannot become entangled, be properly secured, and be regularly monitored to avoid protected species entrapment. Barriers may not block sea turtle or smalltooth sawfish entry to or exit from designated critical habitat without prior agreement from the National Marine Fisheries Service's Protected Resources Division, St. Petersburg, Florida.
- d. All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will preferentially follow deep-water routes (e.g., marked channels) whenever possible.
- e. If a sea turtle or smalltooth sawfish is seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions shall be implemented to ensure its protection. These precautions shall include cessation of operation of any moving equipment closer than 50 feet of a sea turtle or smalltooth sawfish. Operation of any mechanical construction equipment shall cease immediately if a sea turtle or smalltooth sawfish is seen within a 50-ft radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition.
- f. Any collision with and/or injury to a sea turtle or smalltooth sawfish shall be reported immediately to the National Marine Fisheries Service's Protected Resources Division (727-824-5312) and the local authorized sea turtle stranding/rescue organization.
- g. Any special construction conditions, required of your specific project, outside these general conditions, if applicable, will be addressed in the primary consultation.

Revised: March 23, 2006

O:\forms\Sea Turtle and Smalltooth Sawfish Construction Conditions.doc



**U.S. Army Corps of Engineers Jacksonville District's Programmatic Biological
Opinion (JaxBO) Project Design Criteria (PDCs) for In-Water Activities**

November 20, 2017

- 1) **(AP.7.) Education and Observation:** The permittee must ensure that all personnel associated with the project are instructed about the potential presence of species protected under the ESA and the Marine Mammal Protection Act (MMPA). All on-site project personnel are responsible for observing water-related activities for the presence of protected species. All personnel shall be advised that there are civil and criminal penalties for harming, harassing, or killing ESA-listed species or marine mammals. To determine which species may be found in the project area, please review the relevant Protected Species List at:
http://sero.nmfs.noaa.gov/protected_resources/section_7/threatened_endangered/index.html
- 2) **(AP.8.) Reporting** of interactions with protected species:
 - a) Any collision(s) with and/or injury to any sea turtle, sawfish, whale, or sturgeon occurring during the construction of a project, shall be reported immediately to NMFS's Protected Resources Division (PRD) at (1-727-824-5312) or by email to takereport.nmfs@noaa.gov and SAJ-RD-Enforcement@usace.army.mil.
 - b) Smalltooth sawfish: Report sightings to 1-844-SAWFISH or email Sawfish@MyFWC.com
 - c) Sturgeon: Report dead sturgeon to 1-844-STURG 911 (1-844-788-7491) or email nmfs.ser.sturgeonnetwork@noaa.gov
 - d) Sea turtles and marine mammals: Report stranded, injured, or dead animals to 1-877-WHALE HELP (1-877-942-5343).
 - e) North Atlantic right whale: Report injured, dead, or entangled right whales to the USCG via VHF Channel 16.
- 3) **(AP.9.) Vessel Traffic and Construction Equipment:** All vessel operators must watch for and avoid collision with species protected under the ESA and MMPA. Vessel operators must avoid potential interactions with protected species and operate in accordance with the following protective measures:
 - a) *Construction Equipment:*
 - i) All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while operating in water depths where the draft of the vessel provides less than a 4-foot (ft) clearance from the bottom, and in all depths after a protected species has been observed in and has departed the area.
 - ii) All vessels will follow marked channels and/or routes using the maximum water depth whenever possible.
 - iii) Operation of any mechanical construction equipment, including vessels, shall cease immediately if a listed species is observed within a 50-ft radius of

construction equipment and shall not resume until the species has departed the area of its own volition.

- iv) If the detection of species is not possible during certain weather conditions (e.g., fog, rain, wind), then in-water operations will cease until weather conditions improve and detection is again feasible.

b) *All Vessels:*

- i) Sea turtles: Maintain a minimum distance of 150 ft.
- ii) North Atlantic right whale: Maintain a minimum 1,500-ft distance (500 yards).
- iii) Vessels 65 ft in length or longer must comply with the Right Whale Ship Strike Reduction Rule (50 CFR 224.105) which includes reducing speeds to 10 knots or less in Seasonal Management Areas (<http://www.fisheries.noaa.gov/pr/shipstrike/>).
- iv) Mariners shall check various communication media for general information regarding avoiding ship strikes and specific information regarding right whale sightings in the area. These include NOAA weather radio, USCG NAVTEX broadcasts, and Notices to Mariners.
- v) Marine mammals (i.e., dolphins, whales [other than North Atlantic right whales], and porpoises): Maintain a minimum distance of 300 ft.
- vi) When these animals are sighted while the vessel is underway (e.g., bow-riding), attempt to remain parallel to the animal's course. Avoid excessive speed or abrupt changes in direction until they have left the area.
- vii) Reduce speed to 10 knots or less when mother/calf pairs or groups of marine mammals are observed, when safety permits.

- 4) **(AP.10.) Turbidity Control Measures during Construction:** Turbidity must be monitored and controlled. Prior to initiating any of the work covered under this Opinion, the Permittee shall install turbidity curtains as described below. In some instances, the use of turbidity curtains may be waived by the USACE project manager if the project is deemed too minimal to generate turbidity (e.g., certain ATON installation, scientific survey device placement, marine debris removal) or if the current is too strong for the curtains to stay in place. Turbidity curtains specifications:

- a) Install floating turbidity barriers with weighted skirts that extend to within 1 ft of the bottom around all work areas that are in, or adjacent to, surface waters.
- b) Use these turbidity barriers throughout construction to control erosion and siltation and ensure that turbidity levels within the project area do not exceed background conditions.
- c) Position turbidity barriers in a way that does not block species' entry to or exit from designated critical habitat.
- d) Monitor and maintain turbidity barriers in place until the authorized work has been completed and the water quality in the project area has returned to background conditions.
- e) In the range of ESA-listed corals (St. Lucie Inlet, Martin County south to the Dry Tortugas and the U.S. Caribbean) and Johnson's seagrass (Turkey Creek/Palm

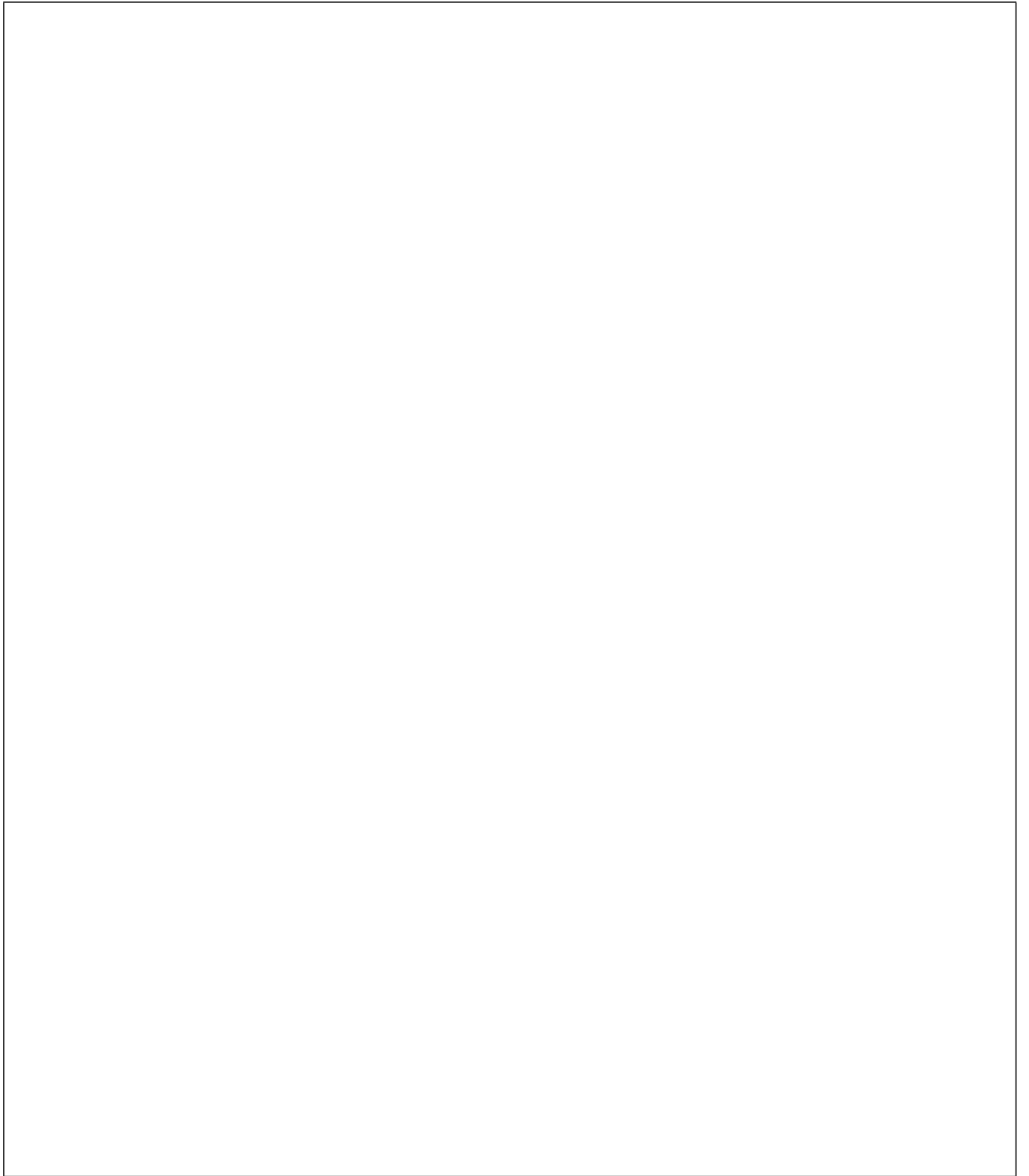
Bay south to central Biscayne Bay in the lagoon systems on the east coast of Florida):

- i) Projects that include upland earth moving (e.g., grading to install a building or parking lot associated with a dock and seawall project), must install sediment control barriers to prevent any upland sediments from reaching estuarine or marine waters.
 - ii) The turbidity curtain requirement cannot be waived for any project that moves or removes sediment (e.g., dredging, auger to create a pile, trenching to install a cableline). If turbidity curtains are not feasible in an area based on site conditions such as water current, high wave action, or stormy conditions, the project must undergo individual Section 7 consultation and is not covered under this Programmatic Opinion.
- 5) **(AP.11.) Entanglement:** All turbidity curtains and other in-water equipment must be properly secured with materials that reduce the risk of entanglement of marine species (described below). Turbidity curtains likewise must be made of materials that reduce the risk of entanglement of marine species.
- a) In-water lines (rope, chain, and cable, including the lines to secure turbidity curtains) must be stiff, taut, and non-looping. Examples of such lines are heavy metal chains or heavy cables that do not readily loop and tangle. Flexible in-water lines, such as nylon rope or any lines that could loop or tangle, must be enclosed in a plastic or rubber sleeve/tube to add rigidity and prevent the line from looping and tangling. In all instances, no excess line is allowed in the water.
 - b) Turbidity curtains and other in-water equipment must be placed in a manner that does not entrap species within the construction area or block access for them to navigate around the construction area.

Project Design Criteria (PDCs) specific to Activity 8 for Transmission and Utility Line Activities

- A8.1.** Activity 8 includes the installation, repair, replacement, and removal of support structures, footers, foundations, as well as the placement of riprap or concrete mat for pipeline protection. The USACE defines a “utility/transmission line” as any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose, and any cable, line, wire or optical fiber for the transmission for any purpose of electrical energy, telephone, telegraph messages, digital signal, Internet, and radio or television communication.
- A8.2.** Structures permanently placed on the waterbottom (e.g., foundations, piles, and footings) to support aerial transmission lines must total less than a 0.5 ac for all structures combined. Because permanent structures have the potential to interfere with or impede sea turtles from entering or exiting the beach, they cannot be placed on or near beaches used for sea turtle nesting.
- A8.3.** Subaqueous utility and transmission lines may be installed (including as part of a repair/replacement project) using horizontal directional drilling, if the drilling originates and terminates on the uplands (i.e., no in-water work). For subaqueous transmission lines installed, repaired, or replaced using horizontal directional drilling, the applicant must provide and follow a frac-out contingency plan in Appendix D or another plan with at a minimum the same level of information as is provided in the plan contained in Appendix D.
- A8.4.** Subaqueous utility and transmission lines may be installed (including as part of a repair/replacement project) by trenching. When excavating the trench, the bottom sediments may be temporarily sidecast into areas devoid of submerged aquatic vegetation and mangroves. Immediately upon completing the excavation and placing the transmission or utility line into the trench, the trench must be filled and the bottom contours must be restored to pre-construction conditions. The District Engineer may allow the trench to remain open and temporary sidecasting to continue after the excavation is complete, as long as the total time the trench is open and the material is sidecast during and after excavation does not exceed 180 days.
- A8.5.** New subaqueous transmission and utility lines shall not be placed on the sea floor (i.e., pinned or anchored and not buried) under this Opinion. Sections of existing buried lines may be repaired or replaced above the sea floor by pinning or anchoring the new section of line in place to ensure that it does not move and damage surrounding seagrasses, hardbottom, coral, or coral reef habitat.

A8.6. When repairing existing transmission or utility lines, riprap and articulated mats may be placed on subaqueous lines that are buried in trenches or on lines that are attached to the sea floor (in accordance with A8.5) to stabilize the line. Riprap and articulated mats may also be used to stabilize new subaqueous lines placed in high erosion areas. These stabilization materials are limited to the minimum amount necessary to stabilize and protect the lines existing lines (which may have been exposed by scouring) and cannot be placed on seagrasses, hardbottom, corals, or coral reef habitat.



POINT LAKE CANAL SUBAQUEOUS WATER MAIN CROSSING TO BISCAYA ISLAND

SURFSIDE, FLORIDA



LOCATION MAP

Scale: 1" = 200'

SEC: 34, TWN: 52S, RGE: 42E

Sheet Number	Sheet Title
G1	COVER SHEET
G2	LEGEND, ABBREVIATIONS AND GENERAL NOTES
G3	GENERAL NOTES AND SPECIFICATIONS
G4	GENERAL DETAILS
G5	GENERAL DETAILS
G6	GENERAL DETAILS
C1	ENGINEERING PLAN



TOWN OFFICIALS

MAYOR:	CHARLES W. BURKETT
VICE MAYOR:	TINA PAUL
COMMISSIONERS:	CHARLES KESL ELIANA R. SALZHAUER NELLY VELASQUEZ
TOWN MANAGER:	GUILLERMO OLMEDILLO

NOTES:

- RESPONSIBILITY FOR THE USE OF THESE PLANS FOR ANY PURPOSE PRIOR TO SECURING PERMITS FROM ALL AGENCIES HAVING JURISDICTION OVER THIS PROJECT WILL FALL SOLELY UPON THE USER.
- AN ELECTRONIC CAD FILE WILL BE PROVIDED FOR SURVEY LAYOUT.

BENCHMARK:

THE ELEVATIONS SHOWN HEREON ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29) AND REFERENCED TO MIAMI-DADE COUNTY CONTROL POINT T-243. ELEVATION= 13.03' (NGVD29). BEING A "BENCH MARK DISK" SET ON EAST END OF NORTH CONCRETE GUARD RAIL OF BRIDGE OVER INDIAN CREEK; 21 FEET WEST OF WEST WALL OF GUARD HOUSE. SURFSIDE, FLORIDA.

BID PLANS NOT FOR CONSTRUCTION
ELEVATIONS ARE IN NGVD 1929



CURRENT REV No.: ---- - ----
NICHOLAS W. KANELIDIS, P.E.
STATE OF FLORIDA PROFESSIONAL ENGINEER
LICENSE No: 78536

DATE: 11/05/20

SHEET:

G1



Calvin, Giordano & Associates, Inc.

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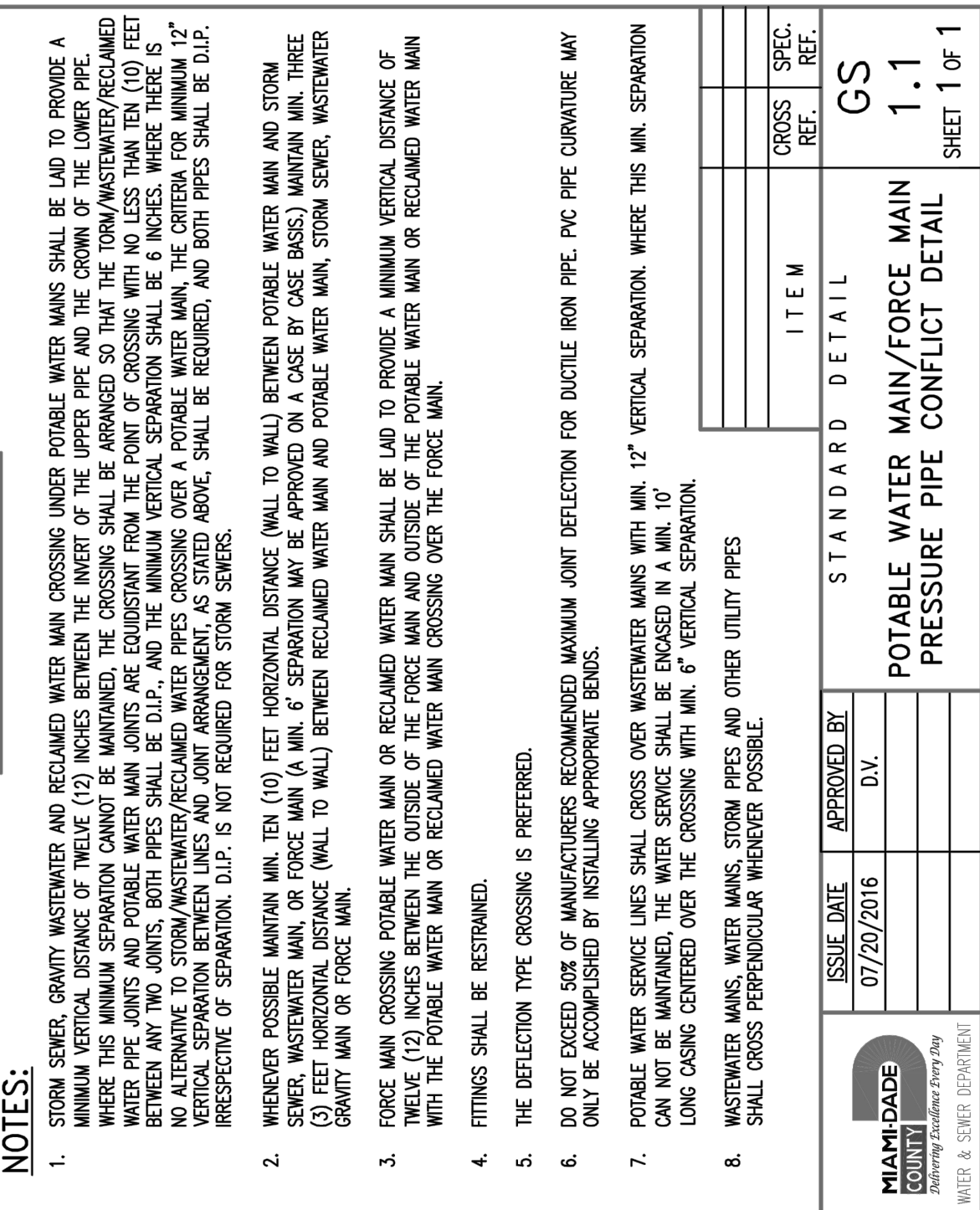
1800 Eller Drive, Suite 600, Fort Lauderdale, Florida 33316

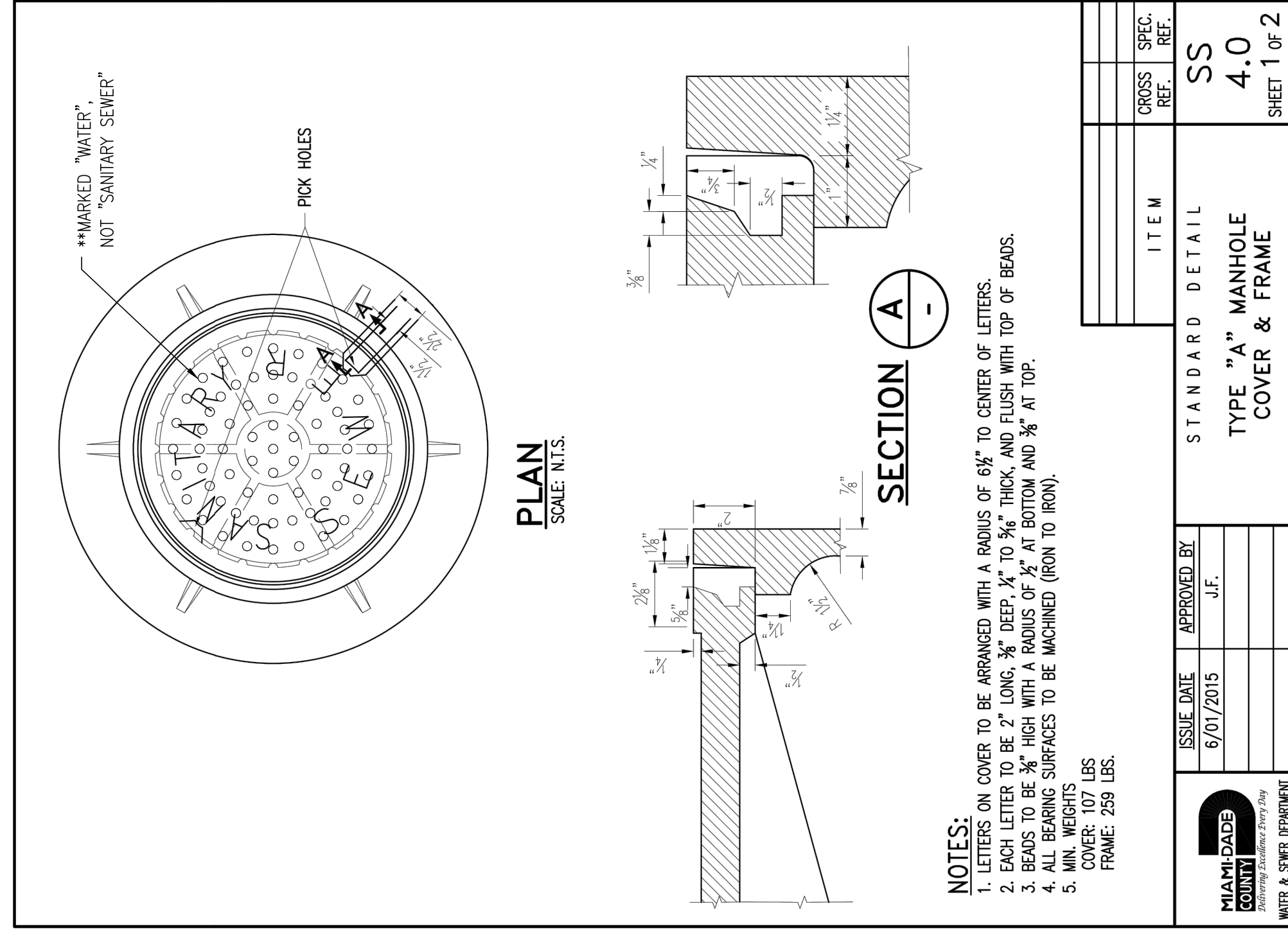
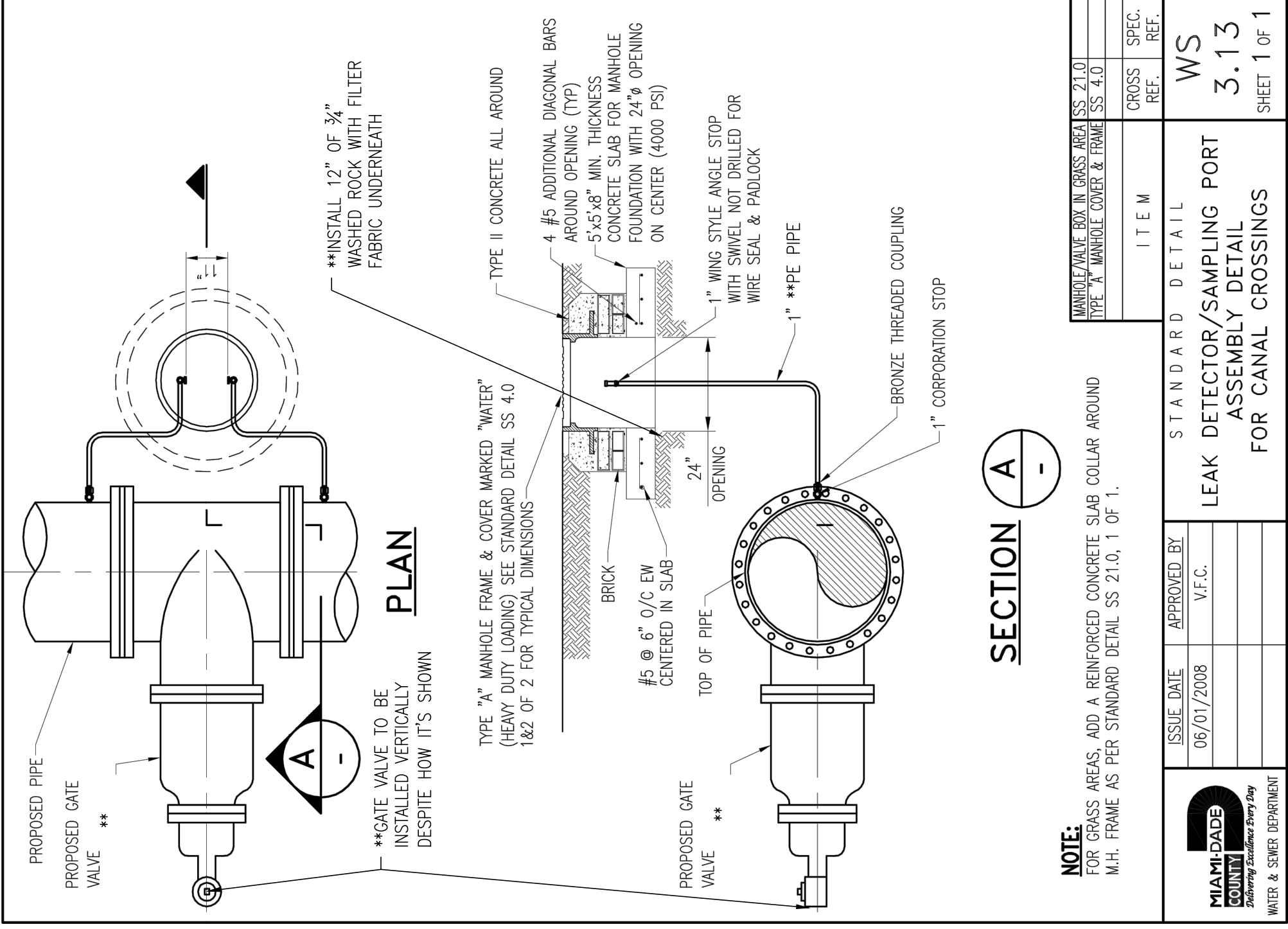
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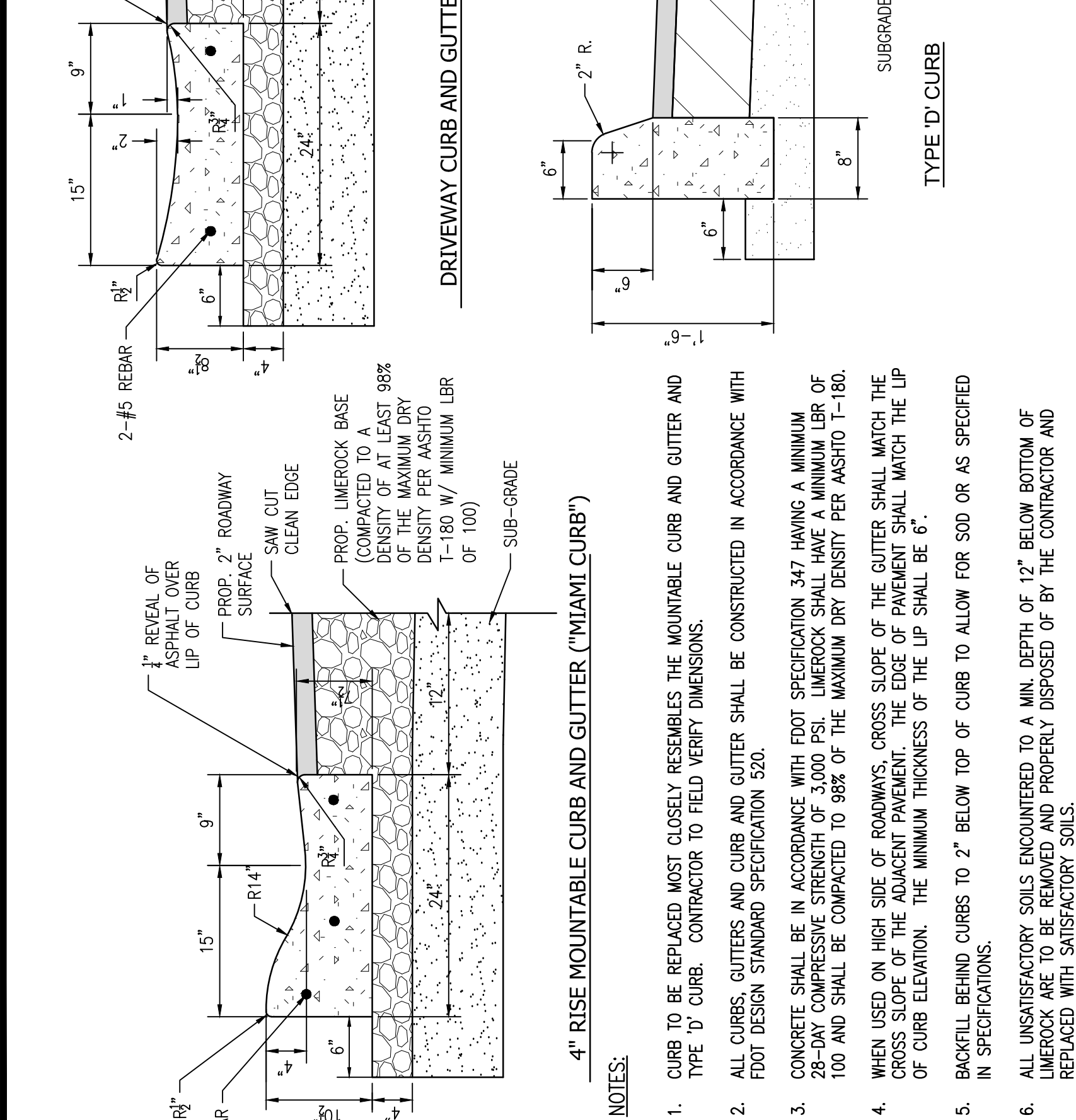
Certificate of Authorization 514

PERMITTING AGENCIES	DATE SUBMITTED	CCA INITIALS	DATE APPROVED	PERMIT NUMBER
TOWN OF SURFSIDE ENGINEERING/RIGHT-OF-WAY PERMIT (BY CONTRACTOR)	-	-	-	-
SOUTH FLORIDA WATER MANAGEMENT DISTRICT - DEWATERING (BY CONTRACTOR)	-	-	-	-
MIAMI-DADE COUNTY DRER - WATER CONTROL SECTION (DEWATERING, BY CONTRACTOR)	-	-	-	-
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION - GENERAL PERMIT	08/03/20	NWK	08/27/20	12-301544-001-E5
ARMY CORPS OF ENGINEERS - REGIONAL GENERAL PERMIT	08/03/20	NWK	11/05/20	54-2025-03013
MIAMI-DADE COUNTY WATER AND SEWER DEPARTMENT	04/15/20	NWK	04/17/20	APP 576
MIAMI-DADE COUNTY DRER - SPECIALTY ENGINEERING SECTION (WATER)	04/17/20	NWK	04/21/20	2020-INT-EXT-00211
MIAMI-DADE COUNTY DRER - FIRE DEPARTMENT	04/22/20	NWK	04/27/20	M2020010770
FLORIDA DEPARTMENT OF HEALTH - MIAMI-DADE COUNTY	04/27/20	NWK	05/11/20	134890-504-559P

NO	DATE	REVISION	BY	NO	DATE	REVISION	BY





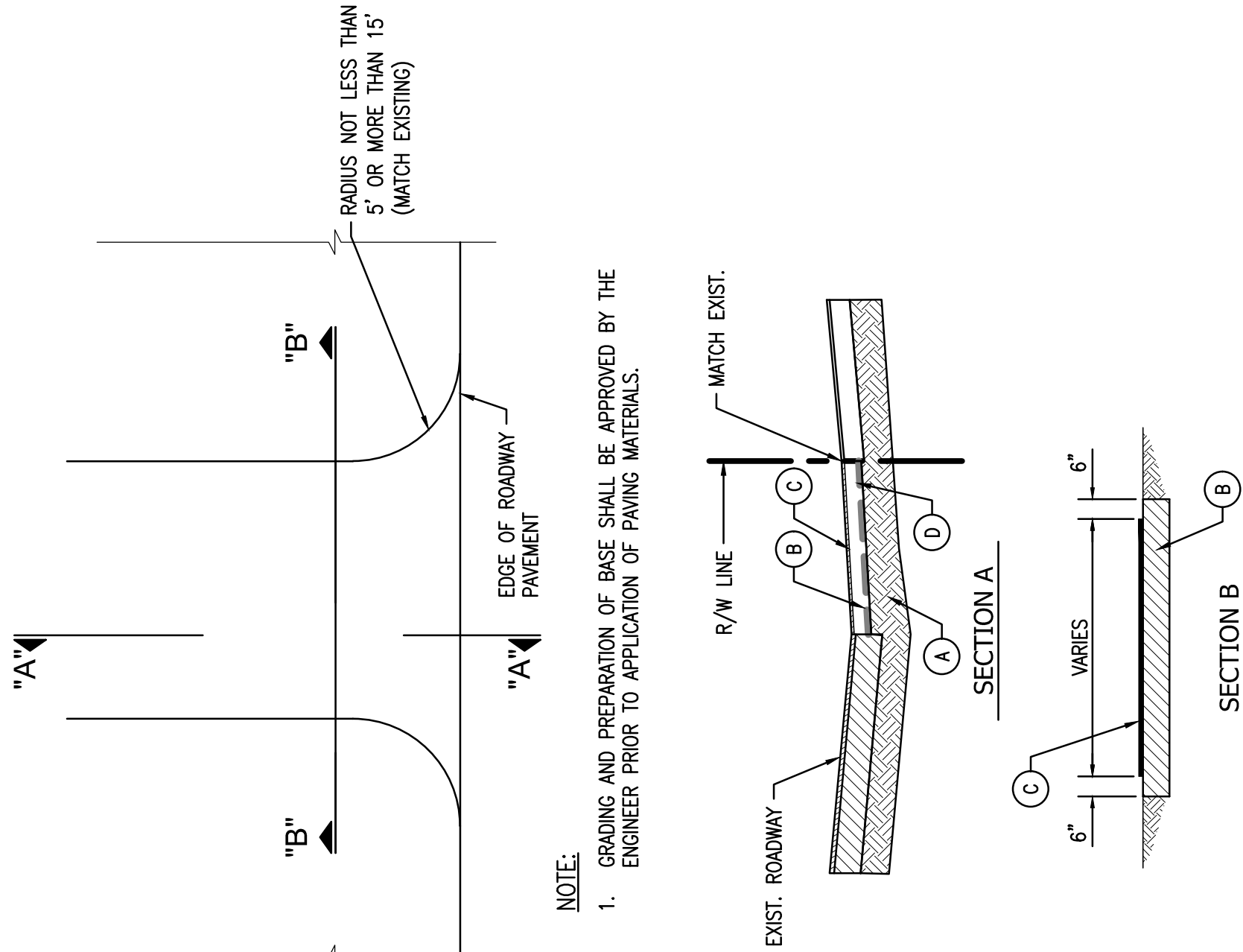


NOTES:

- CURB TO BE REPLACED MOST CLOSELY RESEMBLES THE MOUNTABLE CURB AND GUTTER AND TYPE 'D' CURB. CONTRACTOR TO FIELD VERY DIMENSIONS.
- ALL CURBS, GUTTERS AND CURB AND GUTTER SHALL BE CONSTRUCTED IN ACCORDANCE WITH FOOT DESIGN STANDARD SPECIFICATION 520.
- CONCRETE SHALL BE IN ACCORDANCE WITH FOOT SPECIFICATION 347 HAVING A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI. LIMEROCK SHALL HAVE A MINIMUM LBR OF 100 AND SHALL BE COMPACTED TO 98% OF THE MAXIMUM DRY DENSITY PER ASHTO T-180.
- WHEN USED ON HIGH SIDE OF ROADWAYS, CROSS SLOPE OF THE GUTTER SHALL MATCH THE CROSS SLOPE OF THE ADJACENT PAVEMENT. THE EDGE OF PAVEMENT SHALL MATCH THE LIP OF CURB ELEVATION. THE MINIMUM THICKNESS OF THE LIP SHALL BE 6".
- BACKFILL BEHIND CURBS TO 2" BELOW TOP OF CURB TO ALLOW FOR SOD OR AS SPECIFIED IN SPECIFICATIONS.
- ALL UNSATISFACTORY SOILS ENCOUNTERED TO A MIN. DEPTH OF 12" BELOW BOTTOM OF LIMEROCK ARE TO BE REMOVED AND PROPERLY DISPOSED OF BY THE CONTRACTOR AND REPLACED WITH SATISFACTORY SOILS.

CONCRETE CURB DETAILS
SCALE: N.T.S.

CURRENT




NOTES:

- CLEAN AND COMPACT SUBGRADE (98% COMPACTED)
- BASE COURSE (8" THICK AND LBR 100 MIN.) COMPACTED TO 98%
- SP-9.5 ASPHALTIC CONCRETE SURFACE COURSE:
2" THICK MIN. COMPACTED
- MIN. LIMEROCK BASE COURSE FOR ASPHALT DRIVEWAYS.
6" MIN. 3,000 PSI CONCRETE REINFORCED WITH 6"X6" 10/10 WELDED WIRE MESH FOR CONCRETE DRIVEWAYS.

ASPHALT AND CONCRETE DRIVEWAY DETAIL
SCALE: N.T.S.

CURRENT

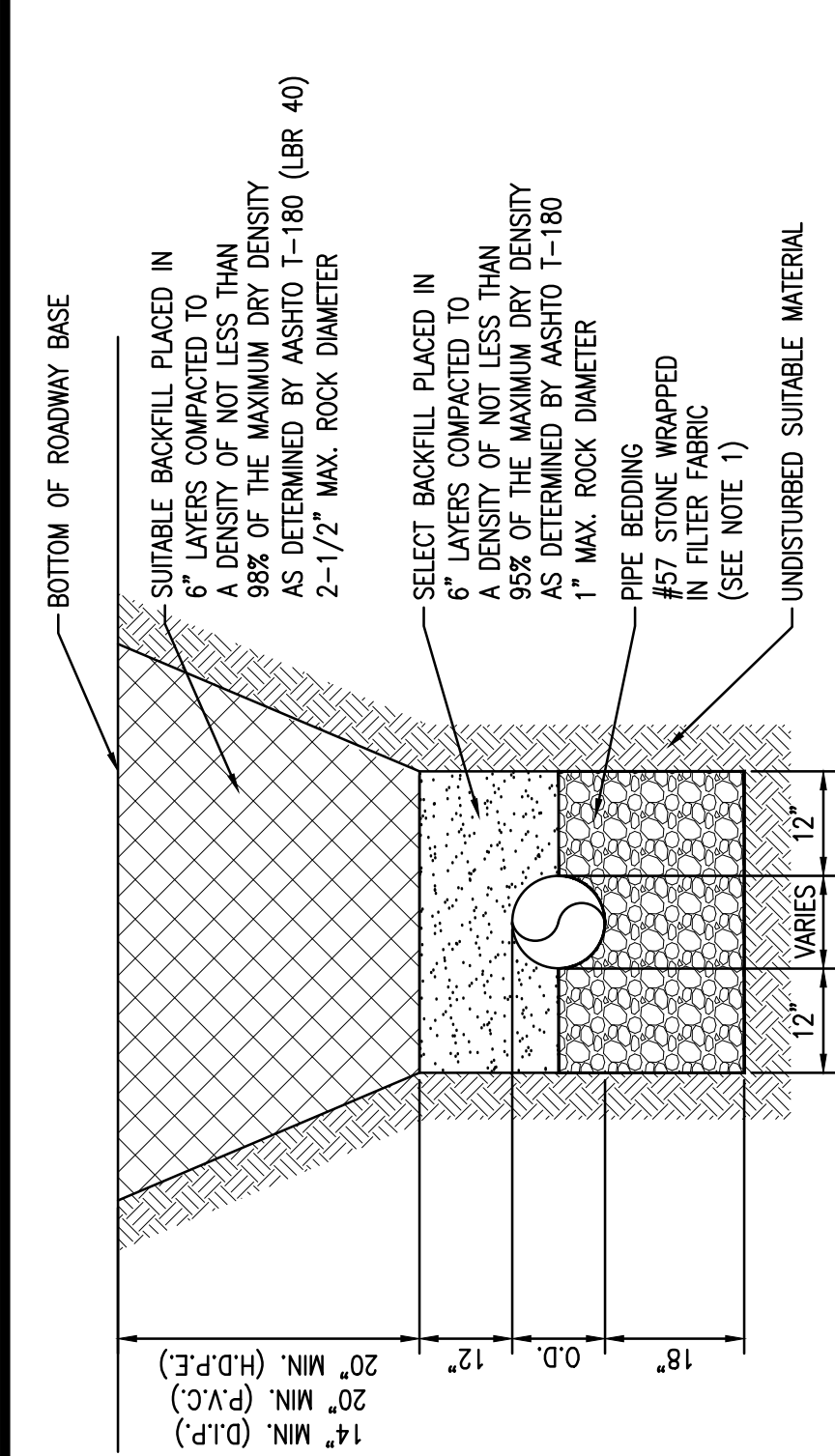
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Certificate of Authorization 514

POINT LAKE CANAL SUBAQUEOUS WATER
MAIN CROSSING TO BISCAYA ISLAND

SURFSIDE, FLORIDA

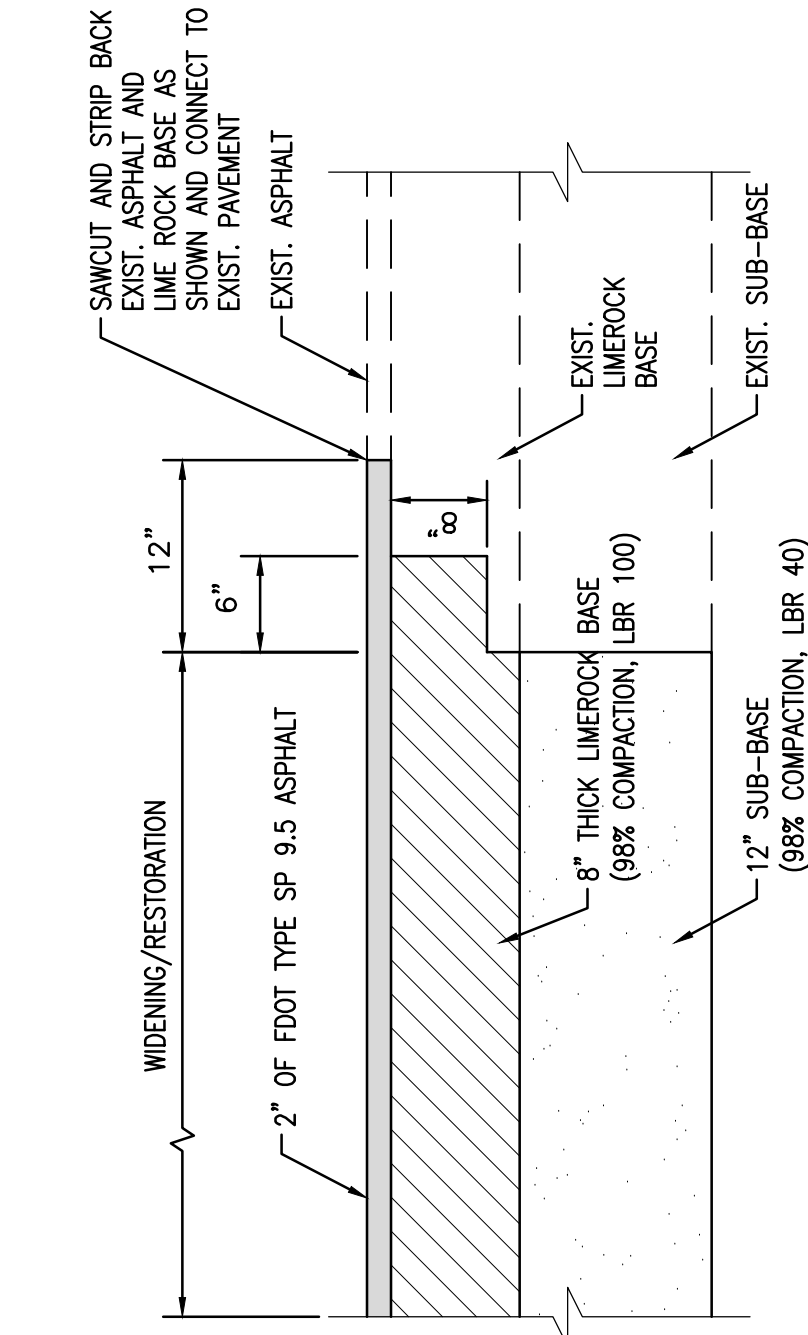


NOTES:

- ALL UNSATISFACTORY SOILS ENCOUNTERED ARE TO BE REMOVED AND PROPERLY DISPOSED OF BY THE CONTRACTOR.
- SUITABLE BACKFILL SHALL BE IMPORTED AS NEEDED UP TO THE BEDDING FOUNDATION.
- STREETS SHALL BE WASHED DOWN WITH A WATER TRUCK AND SWEEP EACH DAY.

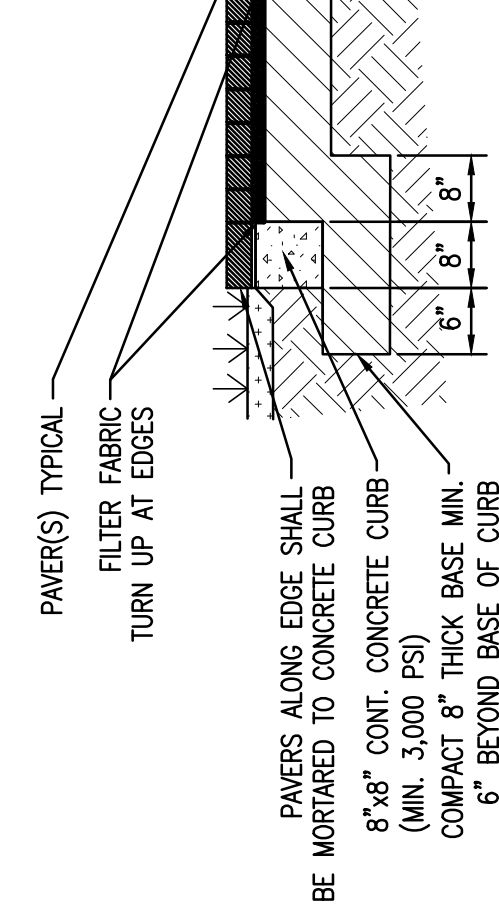
PIPE TRENCH IN UNSATISFACTORY SOILS
SCALE: N.T.S.

CURRENT



PIPE TRENCH IN SATISFACTORY SOILS
SCALE: N.T.S.

CURRENT

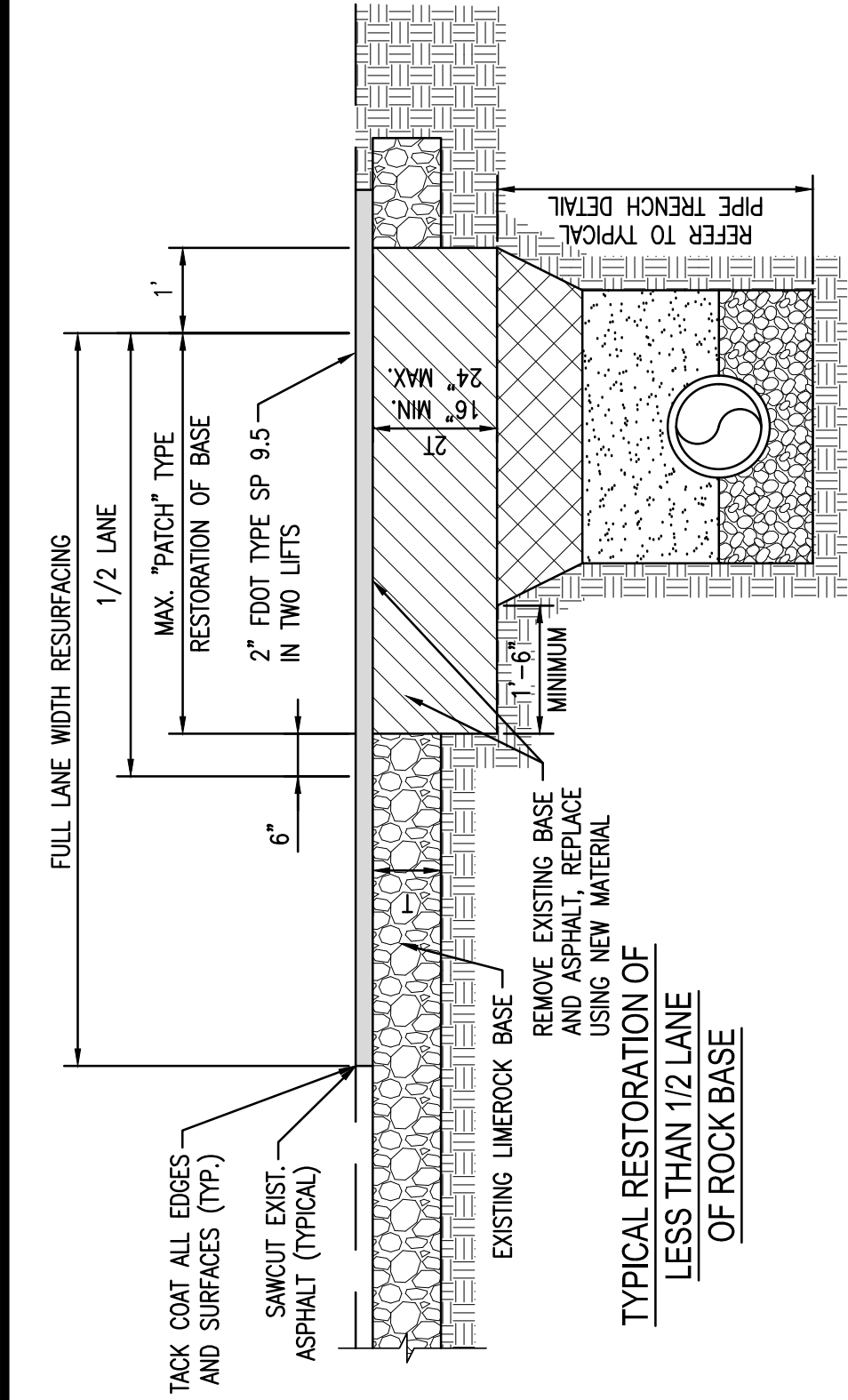


NOTES:

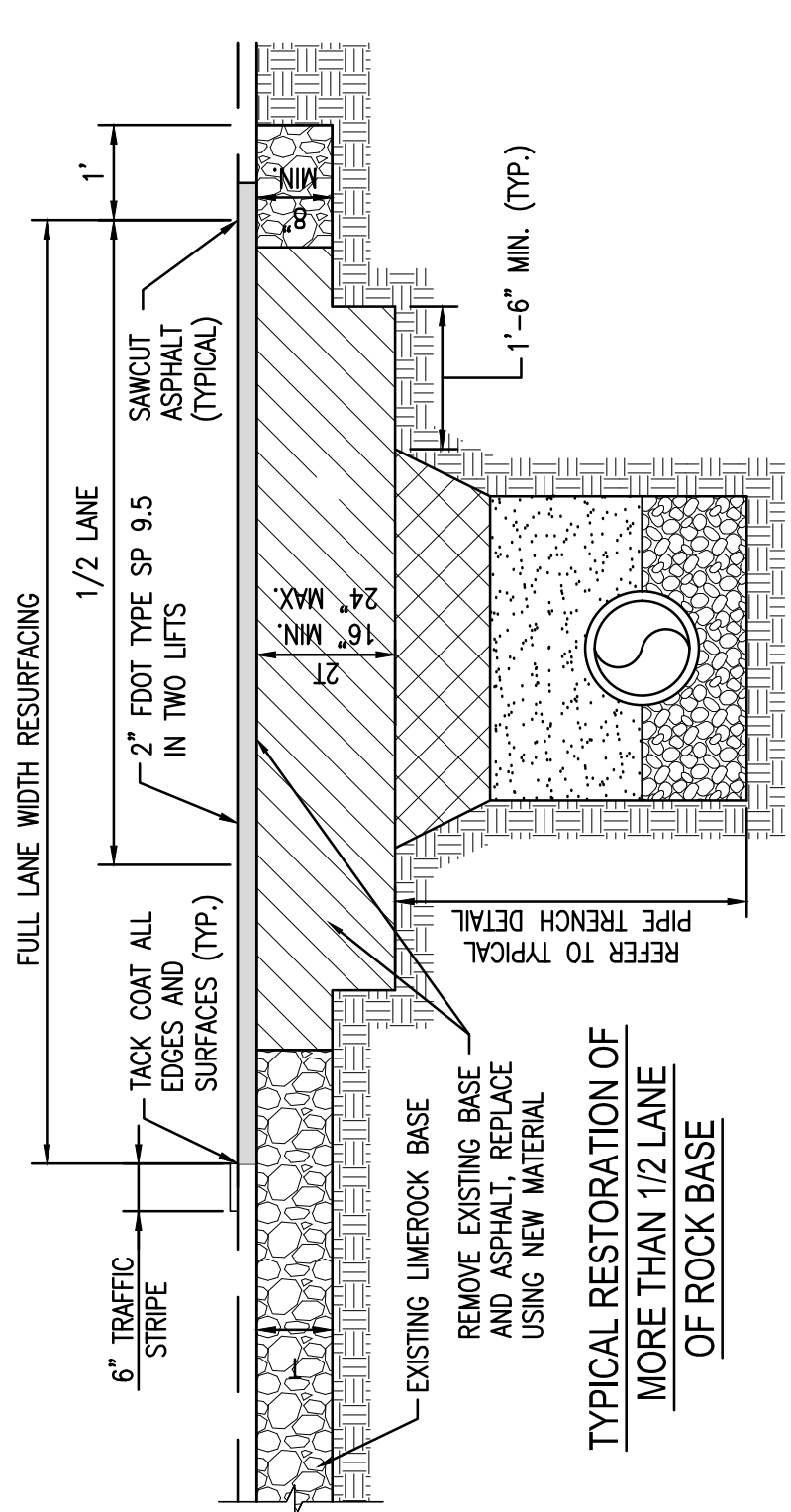
- GENERAL:
 - EXISTING BRICK PAVERS SHALL BE SAFELY REMOVED AND STORED DURING CONSTRUCTION OF THE WATER MAIN AND SHALL BE RE-USED FOR REPAIRS TO EXISTING DRIVEWAY. CONTRACTOR SHALL REPLACE TO EQUAL OR BETTER CONDITION.
- MATERIALS:
 - BEDDING AND JOINT SAND WILL BE CLEAN, NON-PLASTIC BEDDING SAND, FREE FROM DELETERIOUS OR FOREIGN MATTER, NATURAL OR MANUFACTURED FROM CRUSHED ROCK.
 - BEDDING AND JOINT SAND MUST MEET THE GRADING REQUIREMENTS OF ASTM C 33 STANDARD SPECIFICATION FOR CONCRETE AGGREGATE.
- INSTALLATION:
 - SPREAD THE BEDDING MATERIAL EVENLY OVER THE BASE COURSE COVERED WITH GEOSYNTHETIC AND SPORED. THE THICKNESS OF THE BEDDING MATERIAL SHALL BE AS SPECIFIED BY THE MANUFACTURER BUT SHALL NOT TO EXCEED 12" INCH. DO NOT DISTURB THE EXISTING BEDDING MATERIAL OR SUBGRADE. THE BEDDING MATERIAL SHALL BE BEDDING MATERIAL TO FILL AHEAD OF THE LAY BRICK PAVERS. DO NOT USE BEDDING MATERIAL TO FILL DEPRESSIONS IN THE BASE COURSE.
 - LAY PAVERS IN THE PATTERN(S) AS EACH DRIVEWAY CURRENTLY EXISTS

AND MAINTAIN STRAIGHT PATTERN LINES.

- JOINTS BETWEEN THE PAVERS, ON AVERAGE, WILL BE BETWEEN 1/16 TO 3/16 INCH WIDE.
- FILL THE GAPS AT THE EDGES WITH CUT OR EDGE PAVERS, MATCHING PATTERN OF EXISTING DRIVEWAY.
- COMPACTING BEDDING AND JOINT SAND:
 - USE A LOW AMPLITUDE VIBRATOR CAPABLE OF 5,000 FOOT-POUNDS WITH 7-100 HZ FREQUENCIES TO VIBRATE AND COMPACT PAVERS INTO BEDDING SAND.
 - VIBRATE THE PAVERS, SWEEPING DRY JOINT SAND INTO THE JOINTS AND VIBRATING, UNTIL THE JOINTS ARE FULL. DO NOT VIBRATE WITHIN 3 FEET OF THE UNRESTRAINED EDGES OF BRICK PAVERS.
 - AT THE END OF EACH DAY, ALL WORK WITHIN 3 FEET OF THE LAYING FACE MUST BE LEFT FULLY COMPACTED, WITH SAND-FILLED JOINTS.
 - SWEEP OFF THE EXCESS SAND.
 - LEAVE A FINAL SURFACE ELEVATION OF BRICK PAVERS OF 1/8 TO 1/4 INCH ABOVE ADJACENT DRAINAGE INLETS, HEADER CURBS, CONCRETE COLLARS, GUTTERS OR CHANNELS.
 - DO NOT PERMIT THE FINAL SURFACE OF PAVERS TO DEViate MORE THAN 3/8 INCH UNDER A 10 FOOT LONG STRAIGHTEDGE, OR MORE THAN 1/8 INCH BETWEEN ADJACENT PAVERS.

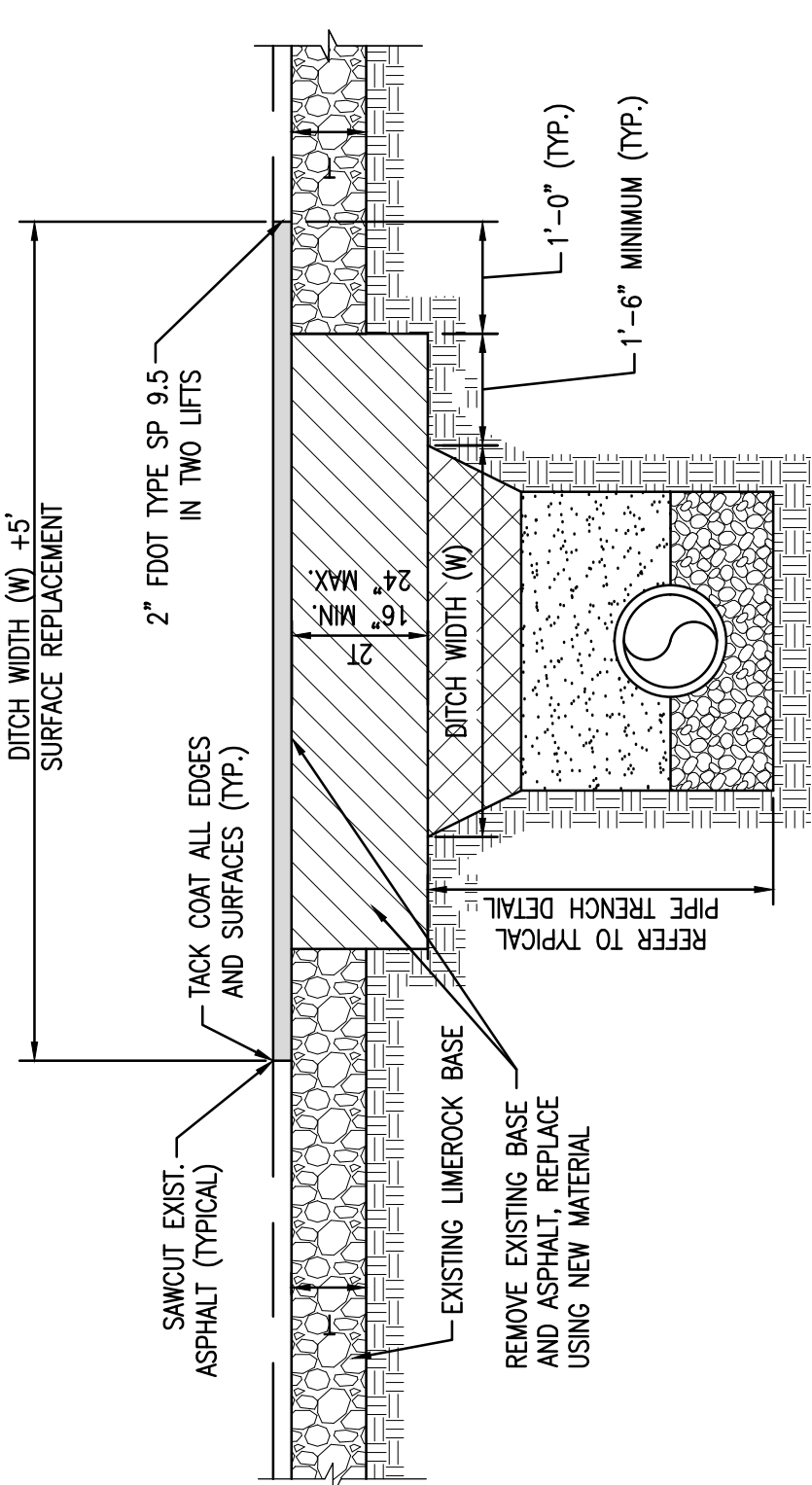


TYPICAL RESTORATION OF
LESS THAN 1/2 LANE
OF ROCK BASE



TYPICAL RESTORATION OF
MORE THAN 1/2 LANE
OF ROCK BASE

TRENCH WITH PAVEMENT RESTORATION LONGITUDINAL



TRENCH WITH PAVEMENT RESTORATION PERPENDICULAR

NOTES:

- ALL EDGES OF THE EXISTING ASPHALT PAVEMENT WHERE RESURFACING WILL ABUT, SHALL BE SAWCUT IN STRAIGHT LINES PARALLEL TO OR PERPENDICULAR TO ROADWAY, PRIOR TO RESURFACING.
- IF THE DITCH IS FILLED TEMPORARILY, IT SHALL COVERED WITH A 2" THICK SP 9.5 ASPHALTIC CONCRETE PATCH TO KEEP THE FILL MATERIAL FROM RAVELING, UNTIL REPLACED WITH A PERMANENT PAVEMENT PATCH.

PAVEMENT RESTORATION
SCALE: N.T.S.

CURRENT



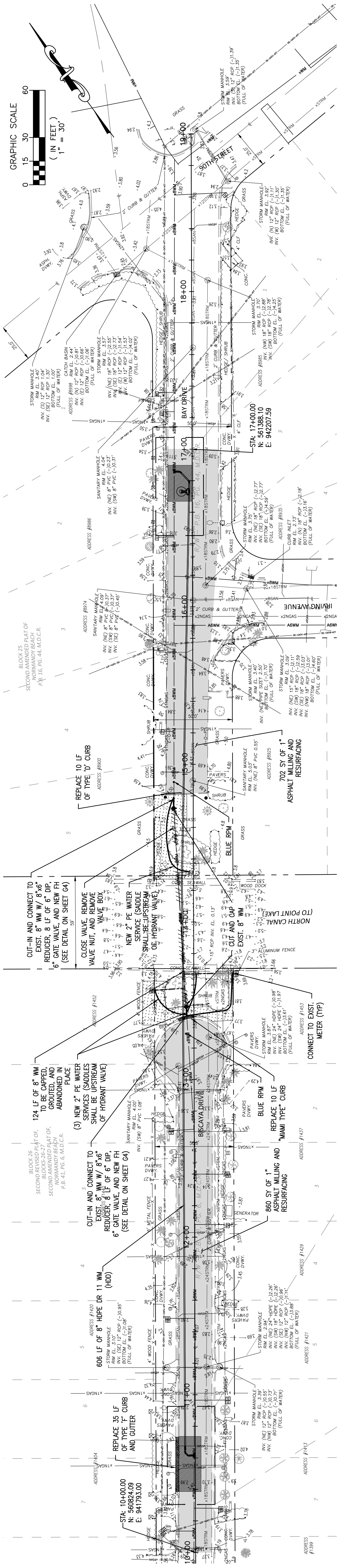
BID PLANS NOT FOR CONSTRUCTION
ELEVATIONS ARE IN NGVD 1929

SCALE	AS SHOWN
PROJECT NO.	19-3372

SHEET
G6

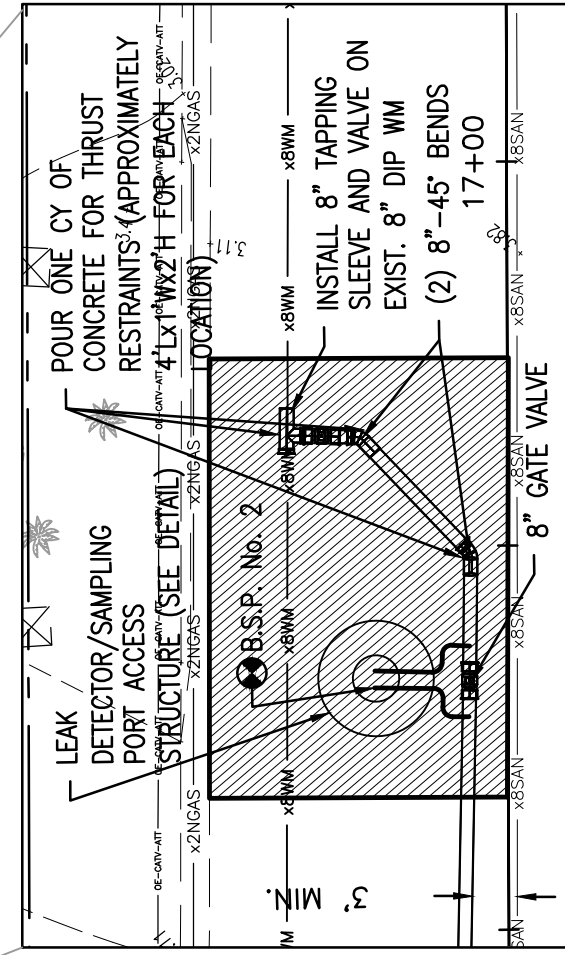
GENERAL DETAILS

NICHOLAS W. KANELIDIS, P.E.
STATE OF FLORIDA PROFESSIONAL ENGINEER
LICENSE NO. 78536
DATE: 11/06/20



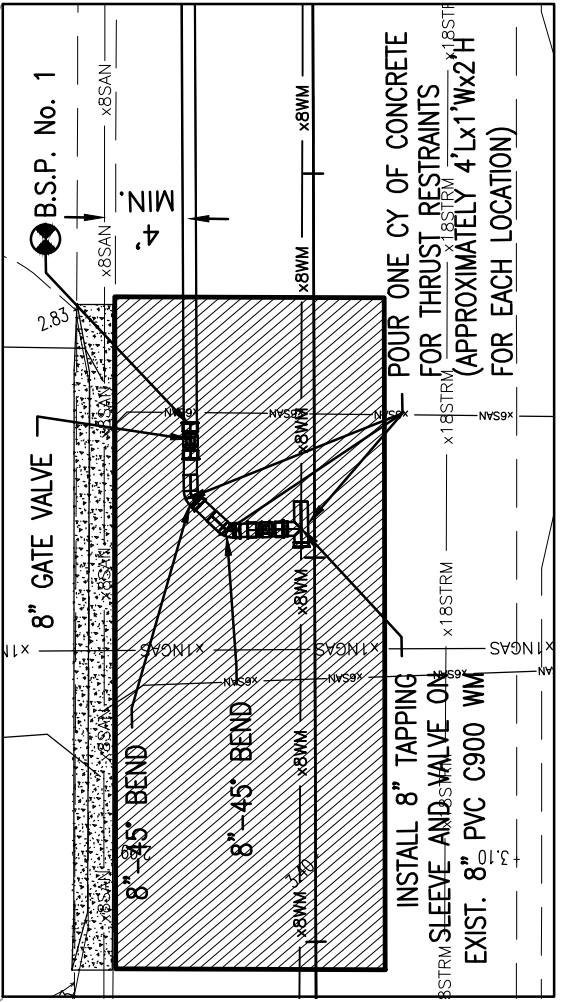
PLAN

Scale: 1" = 30'



DRILL ENTRY PIT

Scale: 1" = 10'



DRILL EXIT PIT

Scale: 1" = 10'

NOTES:

1. PIPE INSTALLED BY OPEN CUT SHALL BE DIP. ALL DIP SHALL BE ENCASED IN A POLYETHYLENE SLEEVE. SEE TECHNICAL SPECIFICATIONS FOR MORE DETAIL. ELSE SHOWN IN THE DETAILS.
2. CONTRACTOR SHALL NAVIGATE HDD PIPE BETWEEN BATTER PILES AND KING PILES AT EACH SEAWALL.
3. CONTRACTOR SHALL INSTALL AND MAINTAIN FILTER FABRIC ON ALL NEARBY INLETS AND TURBIDITY CONTAINMENT DEVICES SUCH AS TURBIDITY SCREENS, SILT CONTAINMENT FENCES, SYNTHETIC HAY BALES, AND BERMS SHALL BE USED AROUND THE CONTRACTOR'S STAGING AREA.
4. CONTRACTOR SHALL VERIFY ALL EXISTING UTILITY LOCATIONS AND ELEVATIONS PRIOR TO STAGING EQUIPMENT AND MATERIALS. NOTIFY ENGINEER OF ANY POTENTIAL CONFLICTS WITHIN 24 HOURS OF DISCOVERY.
5. EXISTING PAVEMENT MARKINGS SHALL BE REPLACED IN-KIND WITH THERMOPLASTIC PER THE TECHNICAL SPECIFICATIONS AND GENERAL NOTES ON SHEET G3.

- LEGEND
- 1" ASPHALT MILLING AND RESURFACING
 - CONCRETE RESTORATION
 - SOD RESTORATION
 - DRILL RIS/PIT AREA/TRENCH RESTORATION
 - WATER MAIN TO BE CAPPED, GROUTED, AND ABANDONED IN PLACE
 - WATER MAIN PREVIOUSLY ABANDONED



BID PLANS NOT FOR CONSTRUCTION
ELEVATIONS ARE IN NGVD 1929

ENGINEERING PLAN

POINT LAKE CANAL SUBAQUEOUS WATER
MAIN CROSSING TO BISCCAYA ISLAND

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NO	DATE	BY	NO	DATE	REVISION	BY
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AS SHOWN
PROJECT No.
19-3372

NICHOLAS W. KANELIDIS, P.E.
STATE OF FLORIDA PROFESSIONAL ENGINEER
LICENSE No. 78538
DATE: 11/06/20