



**INVITATION FOR BID
IFB 16-1930DC
TARA 20 FORCE MAIN
PARALLEL TO LENA ROAD**

Manatee County, a political subdivision of the State of Florida, (hereinafter "Owner") will receive sealed bids from individuals, corporations, partnerships, and other legal entities organized under the laws of the State of Florida or authorized to conduct business in the State of Florida.

NON-MANDATORY INFORMATION CONFERENCE

In order to ensure all prospective bidders have sufficient information and understanding of Owner's needs, an Information Conference will be held at: 9:30 AM on October 12, 2016 at the **Manatee County Administration Building, 1112 Manatee Avenue West, Purchasing Conference Room, Suite 803, Bradenton, Florida 34205.** Attendance is not mandatory, but is highly encouraged.

DEADLINE FOR CLARIFICATION REQUESTS: **5:00 PM on October 17, 2016**
Reference Bid Article A.06

BID OPENING TIME AND DATE DUE: **3:00 PM on November 8, 2016**

FOR INFORMATION CONTACT:

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Manatee County Financial Management Department
Purchasing Division

AUTHORIZED FOR RELEASE: 

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SECTION A
INFORMATION TO BIDDERS

A.01 OPENING LOCATION

Sealed bids will be **publicly opened** at the **Manatee County Purchasing Division, 1112 Manatee Avenue West, Suite 803, Bradenton, Florida 34205** in the presence of Owner officials at the time and date stated, or soon thereafter. All bidders or their representatives are invited to attend the sealed bid opening.

Any bids received after the stated time and date will not be considered. It shall be the sole responsibility of the bidder to have their bid **delivered to the Manatee County Purchasing Division** for receipt on or before the stated time and date. Bidder shall be solely and strictly responsible for its timely delivery to the Purchasing Division. Bids delayed by mail, courier, or bids delayed for any other reason, shall not be considered, shall not be opened at the public opening, and arrangements shall be made for their return at the bidder's request and expense.

A.02 SEALED & MARKED

Bids shall be submitted in **triplicate, one original (marked Original) and two copy/copies (marked Copy)** of your **signed bid** shall be submitted in one **sealed** package, clearly marked on the outside **"Sealed Bid #16-1930DC Tara 20 Force Main"** along with your company name.

For your convenience, a mailing label is provided with this Invitation for Bid (IFB) package. Or, you may address the package as follows:

Manatee County Purchasing Division
1112 Manatee Avenue West, Suite 803
Bradenton, Florida 34205
Sealed Bid #16-1930DC Tara 20 Force Main

All blank spaces on the bid form must be filled in as noted with amounts extended and totaled and no changes shall be made in the wording of the forms or in the items thereupon. In the event a change is made in your submittal, the bidder shall write its initials by the change. Any bid may be rejected which contains any omissions, alterations, irregularities of any kind, or which shall in any manner fail to conform to the requirements of this IFB.

A bid made by an individual, either in his/her own or proper person or under a trade or firm name, shall be executed under the individual's signature. If made by a partnership, the bid shall be executed by two or more of the general partners. If made by a corporation, the bid shall be executed by its President or other legally authorized corporate officer or agent.

A.03 SECURING BID DOCUMENTS

IFB's and related documents are available on <http://www.mymanatee.org/purchasing> for download in a portable document format (.PDF) file by clicking on "Bids and Proposals" from the Purchasing Division's web page. You may view and print these files using Adobe Reader software. If necessary, you may download a free copy of Adobe Reader from the link provided on the "Bids and Proposals" page.

Additionally, Manatee County collaborates with the Manatee Chamber of Commerce by announcing solicitation opportunities to the Chamber which are then passed to its members.

Manatee County may also use DemandStar to distribute bids. On the DemandStar website, <http://www.DemandStar.com>, click on the tab titled "My DemandStar" for more information regarding this service. Participation in the DemandStar system is not a requirement for doing business with Manatee County.

Complete copies of the IFB and all related documents are available for public inspection at the Manatee County Purchasing Division, 1112 Manatee Avenue West, Suite 803, Bradenton, FL 34205, or by calling (941) 749-3014. Appointments are encouraged. Documents are available between the hours of 9:00 AM and 4:00 PM Monday through Friday, with the exception of holidays. A complete set of the IFB documents must be used in preparing bids. Owner assumes no responsibility for errors and misinterpretations resulting from the use of incomplete sets of bid documents.

A.04 EXAMINATION OF BID DOCUMENTS AND SITE(S)

It is the responsibility of each bidder before submitting a bid, to (a) examine the IFB documents thoroughly; (b) visit the Project Site(s) to become familiar with local conditions that may affect cost, progress, performance, or furnishing of the Work; (c) consider federal, state, and local codes, laws, and regulations that may affect costs, progress, performance, or furnishing of the Work; (d) study and carefully correlate bidder's observations with the IFB documents; and (e) notify Owner of all conflicts, errors, or discrepancies in the IFB documents.

Each bidder may, at bidder's own expense, make or obtain any additional examinations, investigations, explorations, tests and studies, and obtain any additional information and data which pertain to the physical conditions at or contiguous to the Project Site(s) or otherwise which may affect cost, progress, performance or furnishing of the Work and which bidder deems necessary to determine his bid for performing and furnishing the Work in accordance with the time, price and other terms and conditions of the IFB documents. Owner will provide each bidder access to the site(s) to conduct such explorations and tests.

Bidder shall fill all holes, clean up and restore the Project Site(s) to its former condition upon completion of such explorations. The lands upon which the Work is to be performed, rights-of-way and easements for access thereto, and other lands designated for use by successful bidder in performing the Work are identified in the IFB documents.

All additional lands and access thereto required for temporary construction facilities or storage of materials and equipment are to be provided by successful bidder. Easements for permanent structures or permanent changes in existing structures are to be obtained and paid for by Owner unless otherwise provided in the IFB documents.

Inspection of the Project Site(s) is **a prerequisite** to be considered for award of this bid. Prior to submitting a bid, each bidder shall examine the Project Site(s) and all conditions thereon fully familiarizing themselves with the full scope of the Work. Failure to become familiar with Project Site conditions will in no way relieve the successful bidder from the necessity of furnishing any materials or performing any Work that is required to complete the Project in accordance with the Project Plans and Specifications. Bidder shall acknowledge inspection of the Project Site(s) on his/her signed, submitted Bid Form.

A.05 MODIFICATION OF BID DOCUMENTS

If a bidder wishes to recommend changes to the IFB documents, the bidder shall furnish, in writing, data and information necessary to aid Owner in evaluating the request to modify the IFB documents. Owner is not obligated to make any changes to the IFB documents. Unless an addendum is issued, the IFB documents shall remain unaltered. **Bidders must fully comply with the IFB documents in their entirety.**

A.06 CLARIFICATION & ADDENDA

Each bidder shall examine all IFB documents and shall judge all matters relating to their adequacy and accuracy. Any inquiries, suggestions or requests concerning interpretation, clarification or additional information pertaining to this IFB shall be made through the Manatee County Purchasing Division. Owner shall not be responsible for oral interpretations given by any Owner employee, representative, or others.

insert time AM on insert date shall be the deadline to submit to the Purchasing Division, in writing, all inquiries, suggestions, or requests concerning interpretation, clarification or additional information pertaining to this IFB.

This deadline has been established to maintain fair treatment of all potential bidders, while maintaining progression of the Work.

If any addenda are issued to this IFB, Owner will post the documents on the Purchasing Division's web page at <http://www.mymanatee.org/purchasing>, and then by clicking on "Bids and Proposals". If the original solicitation was broadcast via DemandStar, the addenda will also be broadcast on the DemandStar distribution system to "Planholders" on this web service.

The issuance of a written addendum is the only official method whereby interpretation, clarification or additional information can be given.

It shall be the **responsibility of each bidder, prior to submitting a bid**, to contact the Purchasing Division (see contact information on the cover page) to **determine if any addenda were issued** and to make such addenda a part of their bid.

A.07 CONFIDENTIALITY OF SECURITY RELATED RECORDS

(a) Pursuant to Florida Statutes § 119.071(3), the following records (hereinafter referred to collectively as “the Confidential Security Records”) are confidential and exempt from the disclosure requirements of Florida Statutes § 119.07(1):

1. A Security System Plan or portion thereof for any property owned by or leased to the County or any privately owned or leased property held by the County.
2. Building plans, blueprints, schematic drawings, and diagrams, including draft, preliminary, and final formats, which depict the internal layout and structural elements of a building, arena, stadium, water treatment facility, or other structure owned or operated by the County.
3. Building plans, blueprints, schematic drawings, and diagrams, including draft, preliminary, and final formats, which depict the internal layout or structural elements of an attractions and recreation facility, entertainment or resort complex, industrial complex, retail and service development, office development, or hotel or motel development in the possession of, submitted to the County.

(b) Contractor/Vendor agrees that it shall not, as a result of a public records request or for any other reason disclose the contents of, or release or provide copies of the Confidential Security Records to any other party absent the express written authorization of the County’s Property Management Director or to comply with a court order requiring such release or disclosure. To the extent Contractor/Vendor receives a request for such records, it shall immediately contact the County’s designated Contract Manager who shall coordinate the County’s response to the request. Notwithstanding the foregoing, the Contractor/Vendor may

1. Disclose or release Security System Plans to:
 - (A) The property owner or leaseholder; or
 - (B) Another state or federal agency to prevent, detect, guard against, respond to, investigate, or manage the consequences of any attempted or actual act of terrorism, or to prosecute those persons who are responsible for such attempts or acts.
2. Disclose or release building plans, blueprints, schematic drawings, and diagrams, including draft, preliminary, and final formats, which depict the internal layout and structural elements of a building, arena, stadium, water treatment facility, or other structure owned or operated by the County:
 - (A) To another governmental entity if disclosure is necessary for the

receiving entity to perform its duties and responsibilities;

(B) To a licensed architect, engineer, or contractor who is performing work on or related to the building, arena, stadium, water treatment facility, or other structure owned or operated by the County and is contractually bound by the Contractor/Vendor to comply with this Article/Section; or

(C) Upon a showing of good cause before a court of competent jurisdiction.

(c) For purposes of this Article/Section, the term "Security System Plan" includes all:

1. Records, information, photographs, audio and visual presentations, schematic diagrams, surveys, recommendations, or consultations or portions thereof relating directly to the physical security of the facility or revealing security systems;
2. Threat assessments conducted by any agency or any private entity;
3. Threat response plans;
4. Emergency evacuation plans;
5. Sheltering arrangements; or
6. Manuals for security personnel, emergency equipment, or security training.

A.08 LOBBYING

After the issuance of any IFB, prospective bidders or their agents, representatives or persons acting at the request of such bidder shall not contact, communicate with or discuss any matter relating to the IFB with any officer, agent or employee of Manatee County other than the Purchasing Official or the contact identified in this IFB, pursuant to the Manatee County Code of Laws. This prohibition includes copying such persons on all written communication, including email correspondence. This requirement begins with the issuance of an IFB and ends upon execution of the final Agreement or when the IFB has been cancelled. Violators of this prohibition shall be subject to sanctions as provided in the Manatee County Code of Laws.

A.09 UNBALANCED BIDDING PROHIBITED

Owner recognizes that large and/or complex projects will often result in a variety of methods, sources, and prices. However, where in the opinion of Owner such variation does not appear to be justified, given bid requirements and industry and market conditions, the bid will be presumed to be unbalanced. Examples of unbalanced bids will include:

- a. Bids showing omissions, alterations of form, additions not specified, or required conditional or unauthorized alternate bids.
- b. Bids quoting prices that substantially deviate, either higher or lower, from those included in the bids of competitive bidders for the same line item unit costs.
- c. Bids where the unit costs offered are in excess of or below reasonable cost analysis values.

In the event Owner determines that a bid is presumed unbalanced, it will request the opportunity to and reserves the right to, review all source quotes, bids, price lists, letters of intent, etc., which the bidder obtained and upon which the bidder relied upon to develop its bid. Owner reserves the right to reject as nonresponsive any presumptive unbalanced bids where the bidder is unable to demonstrate the validity and/or necessity of the unbalanced unit costs.

A.10 FRONT LOADING OF BID PRICING PROHIBITED

Prices offered for performance and/or acquisition activities which occur early in the Project Schedule, such as mobilization; clearing and grubbing; or maintenance of traffic; that are substantially higher than pricing of competitive bidders within the same portion of the Project Schedule, will be presumed to be front loaded. Front loaded bids could reasonably appear to be an attempt to obtain unjustified early payments creating a risk of insufficient incentive for the bidder to complete the Work or otherwise creating an appearance of an undercapitalized bidder.

In the event Owner determines that a bid is presumed to be front loaded, it will request the opportunity to, and reserves the right to, review all source quotes, bids, price lists, letters of intent, etc., which the bidder obtained and upon which the bidder relied upon to develop the pricing or acquisition timing for these bid items. Owner reserves the right to reject as nonresponsive any presumptive front loaded bids where the bidder is unable to demonstrate the validity and/or necessity of the front loaded costs.

A.11 WITHDRAWAL OF BIDS

Bidders may withdraw bids as follows:

- a. Mistakes discovered before the public bid opening may be withdrawn by written notice from the bidder submitting the bid. This request must be received in the Purchasing Division prior to the time set for delivery and opening of the bids. A copy of the request shall be retained and the unopened bid returned to the bidder; or
- b. After the bids are opened or a selection has been determined, but before an Agreement is signed, a bidder alleging a material mistake of fact may be permitted to withdraw their bid if:
 1. The mistake is clearly evident in the solicitation document; or
 2. Bidder submits evidence which clearly and convincingly demonstrates that a mistake was made. Request to withdraw a bid must be in writing and approved by the Purchasing Official.

A.12 IRREVOCABLE OFFER

Any bid may be withdrawn up until the time and date set for opening of the bid. Any bid not so withdrawn shall, upon opening, constitute an irrevocable offer for a period of ninety (90) days to sell to Manatee County the goods or services set forth in the attached IFB until one or more of the bids have been duly accepted by Owner.

A.13 BID EXPENSES

All expenses for making bids to Owner are to be borne by the bidder.

A.14 RESERVED RIGHTS

Owner reserves the right to accept or reject any and/or all bids, to waive irregularities and technicalities, and to request resubmission. Also, Owner reserves the right to accept all or any part of the bid and to increase or decrease quantities to meet additional or reduced requirements of Owner. Any sole response received by the first submission date may or may not be rejected by Owner depending on available competition and current needs of Owner. For all items combined, the bid of the lowest, responsive, responsible bidder will be accepted, unless all bids are rejected.

The lowest, responsible bidder shall mean that bidder who makes the lowest bid to sell goods and/or services of a quality which meets or exceeds the quality of goods and/or services set forth in the IFB documents or otherwise required by Owner.

To be responsive, a bidder shall submit a bid which conforms in all material respects to the requirements set forth in the IFB.

To be a responsible bidder, the bidder shall have the capability in all respects to perform fully the bid requirements, and the tenacity, perseverance, experience, integrity, reliability, capacity, facilities, equipment, and credit which will assure good faith performance.

Also, Owner reserves the right to make such investigation as it deems necessary to determine the ability of any bidder to furnish the service requested. Information Owner deems necessary to make this determination shall be provided by the bidder. Such information may include, but shall not be limited to current financial statements, verification of availability of equipment and personnel, and past performance records.

A.15 APPLICABLE LAWS

Bidder must be authorized to transact business in the State of Florida. All applicable laws and regulations of the State of Florida and ordinances and regulations of Manatee County will apply to any resulting Agreement. Any involvement with the Manatee County Purchasing Division shall be in accordance with the Manatee County Purchasing Ordinance as amended.

A.16 COLLUSION

By submitting a bid to this IFB, bidder certifies that it has not divulged, discussed or compared its bid with any other bidder, and has not colluded with any other bidder or parties to this bid whatsoever. Also, bidder certifies, and in the case of a joint bid each party thereto certifies as to their own organization, that in connection with this bid:

- a. any prices and/or cost data submitted have been arrived at independently, without consultation, communication, or agreement, for the purpose of restricting

competition, as to any matter relating to such prices and/or cost data, with any other bidder or with any competitor;

- b. any prices and/or cost data quoted for this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder, prior to the scheduled opening, directly or indirectly to any other bidder or to any competitor;
- c. no attempt has been made or will be made by the bidder to induce any other person or firm to submit or not to submit a bid for the purpose of restricting competition;
- d. the only person or persons interested in this bid, principal or principals is/are named therein and that no person other than therein mentioned has any interest in this bid or in the resulting Agreement to be entered into; and
- e. no person or agency has been employed or retained to solicit or secure the resulting Agreement upon an agreement or understanding or a commission, percentage, brokerage, or contingent fee except bona fide employees or established commercial agencies maintained by bidder for purpose of doing business.

A.17 CODE OF ETHICS

With respect to this bid, if any bidder violates, directly or indirectly, the ethics provisions of the Manatee County Procurement Ordinance and/or Florida criminal or civil laws related to public procurement, including but not limited to Chapter 112, Part III, Code of Ethics for Public Officers and Employees, Florida Statutes, such bidder will be disqualified from eligibility to perform the Work described in this IFB, and may also be disqualified from furnishing future goods or services to, and from submitting any future bids to supply goods or services to, Manatee County.

By submitting a bid, the bidder represents to Owner that all statements made and materials submitted are truthful, with no relevant facts withheld. If a bidder is determined to have been untruthful in their bid or any related presentation, such bidder will be disqualified from eligibility to perform the Work described in this IFB, and may also be disqualified from furnishing future goods or services to, and from submitting any future bids to supply goods or services to, Manatee County.

A.18 PUBLIC CONTRACTING AND ENVIRONMENTAL CRIMES

A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime, as that term is defined in Section 287.133, Florida Statutes, may not submit a bid to provide any goods or services to a public entity; may not submit a bid with a public entity for the construction or repair of a public building or public work; may not submit bids on leases of real property to a public entity; may not be awarded or perform Work as a contractor, supplier, Subcontractor, or consultant under an agreement with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, Florida

Statutes, for CATEGORY TWO for a period of thirty-six (36) months following the date of being placed on the convicted list.

In addition, the Manatee County Code of Laws prohibits the award of any bid to any person or entity who/which has, within the past five (5) years, been convicted of, or admitted to in court or sworn to under oath, a public entity crime or of any environmental law that, in the reasonable opinion of the Purchasing Official, establishes reasonable grounds to believe the person or business entity will not conduct business in a responsible matter.

To ensure compliance with the foregoing, the Code requires all persons or entities desiring to do business with Owner to execute and file with the Purchasing Official an affidavit, executed under the pain and penalties of perjury, confirming that person, entity and any person(s) affiliated with the entity, does not have such a record and is therefore eligible to seek and be awarded business with Owner. In the case of a business entity other than a partnership or a corporation, such affidavit shall be executed by an authorized agent of the entity. In the case of a partnership, such affidavit shall be executed by the general partner(s). A Public Contracting and Environmental Crimes Certification form is attached herein for this purpose.

A.19 SCRUTINIZED COMPANIES

Florida Statutes § 287.135, as amended from time to time, may contain limitations on the part of a company to conduct business with the County. Submission of a response to this solicitation shall be subject to all procedural requirements contained within that statute including the submission of any required certification of eligibility to contract with the County. It shall be the responsibility of the company responding to this solicitation to concurrently review the current version of the statute and ensure it is compliant. To the extent a certification is required, it shall be provided on the form located at **Attachment E** *Vendor Certification Regarding Scrutinized Companies Lists*.

A.20 BID FORMS

Bids must be submitted on the provided forms, although additional pages may be attached. **Bidders must fully complete all pages of the Bid Forms. Bid Forms must be executed by an authorized signatory who has the legal authority to make the bid and bind the company. Bidders must fully comply with all requirements of this IFB in its entirety.** Failure to comply shall result in bidder being deemed nonresponsive.

A.21 AGREEMENT FORMS

The Agreement resulting from the Acceptance of a bid shall be in the form of the Agreement stated in this IFB, which is attached herein.

A written notice confirming award or recommendation thereof will be forwarded to the successful bidder accompanied by the required number of unsigned counterparts of the Agreement. Within ten (10) days thereafter, successful bidder shall sign and deliver the required number of counterparts of the Agreement with any other required documents

to Owner. (Note: Agreement must be approved in accordance with Chapter 2-26 of the Manatee County Code of Laws and the Administrative Standards and Procedures Manual approved by the County Administrator).

A.22 **LEGAL NAME**

Bids shall clearly indicate the legal name, address and telephone number of the bidder on the Bid Form. Bid Forms shall be signed above the typed or printed name and title of the signer. The signer must have the authority to bind the bidder to the submitted bid.

When bidder is a partnership, the Bid Form shall be signed in the name of the firm and by all partners required under the terms of the partnership agreement. When a corporation is a bidder, the authorized corporate officers shall sign.

Bidders who are corporations or limited partnerships shall provide a certified copy of their permit to transact business in the State of Florida, preferably along with the Bid Form, or within forty-eight (48) hours after request by Owner.

When submitting a bid as a joint venture, it must have filed paper documents with the Division of Profession's Construction Industry Licensing Board prior to submitting a bid.

A.23 **DISCOUNTS**

Any and all discounts must be incorporated in the prices contained in the bid and not shown separately. The prices indicated on the Bid Form shall be the prices used in determining award.

A.24 **TAXES**

Manatee County is exempt from Federal Excise and State Sales Taxes. (F.E.T. Cert. No. 59-78-0089K; Florida Sales Tax Exempt Cert. No. 85-8012622206C-6); therefore, the bidder is prohibited from delineating a separate line item in his bid for any sales or service taxes. Nothing herein shall affect the bidder's normal tax liability.

The Contractor shall be responsible for the payment of taxes of any kind and character, including, but not limited to sales, consumer, use, and other similar taxes payable on account of the work performed and materials furnished under the award in accordance with the laws and Regulations of the place of the project which are applicable during the performance of the work. Nothing herein shall affect the bidder's normal tax liability.

A.25 **DESCRIPTIVE INFORMATION**

Unless otherwise specifically provided in the IFB documents, all equipment, materials and articles provided shall be new and of the most suitable grade for the purpose intended. Unless otherwise specifically provided in the IFB documents, reference to any equipment, material, article or patented process, by trade name, brand name, make or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition.

A.26 AUTHORIZED PRODUCT REPRESENTATION

The bidder, by virtue of submitting the name and specifications of a manufacturer's product, will be required to furnish the named manufacturer's product. Failure to perform accordingly may, in Owner's sole discretion, be deemed a material breach of the resulting Agreement, and shall constitute grounds for Owner's immediate termination of the resulting Agreement.

A.27 ROYALTIES AND PATENTS

The successful bidder shall pay all royalties and license fees for equipment or processes in conjunction with the equipment and/or services being furnished. Successful bidder shall defend all suits or claims for infringement of any patent, trademark or copyright, and shall save Owner harmless from loss on account thereof, including costs and attorney's fees.

A.28 AMERICANS WITH DISABILITIES ACT

Owner does not discriminate upon the basis of any individual's disability status. This non-discrimination policy involves every aspect of Owner's functions including one's access to, participation, employment, or treatment in its programs or activities. Anyone requiring **reasonable accommodation** for an Information Conference or Bid Opening should contact the person named on the cover page of this IFB document at least twenty-four (24) hours in advance of either activity.

A.29 EQUAL EMPLOYMENT OPPORTUNITY

In accordance with the provisions of Title VI of the Civil Rights Act of 1964 and Title 15, Part 8 of the Code of Federal Regulations, Owner hereby notifies all bidders that they will affirmatively ensure minority business enterprises will be afforded full opportunity to participate in response to this advertisement and will not be discriminated against on the grounds of race, color or national origin in consideration for bid award.

A.30 MBE/DBE

The State of Florida Office of Supplier Diversity provides the certification process and the database for identifying certified MBE/DBE firms. This service may be directly accessed at: <http://www.osd.dms.state.fl.us/iframe.htm>. If you have any questions regarding this State service, please contact their office at (850) 487-0915.

A.31 MATHEMATICAL ERRORS

Bid Forms without mathematical formulas:

In the event of multiplication/extension error(s), the unit price shall prevail. In the event of addition error(s) the extension totals will prevail. In the event the dollar amount for contract contingency is omitted, it will be added to the total price of the bid.

Bid Forms with mathematical formulas:

Interactive Bid Forms that contain mathematical formulas may be used for automating lengthy and complex bid forms. In the event these forms are used and a multiplication/extension error(s) is discovered, the unit price entered by the vendor shall

prevail. The vendor shall assume the responsibility and accuracy of the information input in the bid form and therefore shall verify that the calculations are correct before submitting their bid.

Regardless of which type of bid form is used, all bids shall be reviewed mathematically and corrected, if necessary, using these standards, prior to additional evaluation.

A.32 SUBCONTRACTORS

The successful bidder will obtain prior written approval from the County for any subcontractor(s) and the work they will perform. A subcontractor is defined as any entity performing work within the scope of the project who is not an employee of the successful bidder.

Bidders subcontracting any portion of the work shall include a list of subcontractors along with their bid. The list shall include: name and address of subcontractor, type of work to be performed and the percent of the contract amount to be subcontracted.

Prior to the employment of any person under this contract, the successful bidder shall utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of (a) all persons employed during the contract term by the successful bidder to perform employment duties within Florida and (b) all persons, including subcontractors, assigned by the successful bidder to perform work pursuant to the contract with Manatee County. For more information on this process, please refer to United States Citizenship and Immigration Service site at: <http://www.uscis.gov/>.

Only those individuals determined eligible to work within the United States shall be employed under this contract.

By submission of a bid in response to this IFB, the successful bidder commits that all employees and subcontractors will undergo e-verification before placement on this contract.

If County has reasonable objection to any subcontractor, the County may request the successful bidder to submit an acceptable substitute without an increase in contract sum or contract time.

If successful bidder declines to make any such substitution, the County may award the resulting agreement to the next lowest qualified bidder that proposes to use acceptable subcontractors, who County does not make written objection to. In the event the successful bidder declines to make any such substitution post award, the County may exercise its right to terminate the agreement.

The successful bidder shall maintain sole responsibility for the actions of its employees and subcontractors. New employees brought in after contract award shall follow the same requirement stated above for the life of the contract.

A.33 DISCLOSURE

Upon receipt, all inquiries and responses to inquiries related to this IFB become "Public Records", and shall be subject to public disclosure consistent with Florida Statutes, Chapter 119.

Bids become subject to disclosure thirty (30) days after the opening or if a notice of intent to award decision is made earlier than this time as provided by Florida Statutes § 119.071(1)(b). No announcement or review of the bid shall be conducted at the public bid opening.

Based on the above, Owner will receive bids at the time and date stated and will make public at the opening the names of the business entities of all that submitted a bid and any amount presented as a total offer without any verification of the mathematics or the completeness of the bid.

If Owner rejects all bids and concurrently notices its intent to reissue the solicitation, the rejected bids are exempt from public disclosure until such time as Owner provides notice of an intended decision concerning the reissued solicitation or until Owner withdraws the reissued solicitation. A bid is not exempt for longer than twelve (12) months after the initial notice rejecting all bids.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT OWNER'S CUSTODIAN OF PUBLIC RECORDS AT: (941) 742-5845, debbie.scaccianoce@mymanatee.org, Attn: Records Manager, 1112 Manatee Ave W., Bradenton, FL 34205.

Pursuant to Florida Statutes 119.0701, to the extent CONTRACTOR is performing services on behalf of the COUNTY, contractor must:

- a. Keep and maintain public records required by public agency to perform the service.
- b. Upon request from the public agency's custodian of public records, provide the public agency with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Florida Statutes, Chapter 119, or as otherwise provided by law.
- c. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the contractor does not transfer the records to the public agency.

- d. Upon completion of the contract, transfer, at no cost, to the public agency all public records in possession of contractor or keep and maintain public records required by the public agency to perform the service. If the contractor transfers all public records to the public agency upon completion of the contract, the contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the contractor keeps and maintains public records upon completion of the contract, the contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the public agency, upon request from public agency's custodian of public records, in a format that is compatible with the information technology systems of the public agency.

A.34 LOCAL PREFERENCE

Local business is defined as a business legally authorized to engage in the sale of the goods and/or services to be procured, and which certifies within its bid that for at least six (6) months prior to the announcement of the solicitation of bids it has maintained a physical place of business in Manatee, Desoto, Hardee, Hillsborough, Pinellas or Sarasota County with at least one full-time employee at that location.

Local preference shall not apply to the following categories of Agreements:

1. Purchases or Agreements which are funded, in whole or in part, by a governmental or other funding entity, where the terms and conditions of receipt of the funds prohibit the preference.
2. Any bid announcement which specifically provides that the general local preference policies set forth in this section are suspended due to the unique nature of the goods or services sought, the existence of an emergency as found by either the County Commission or County Administrator, or where such suspension is, in the opinion of the County Attorney, required by law.

To qualify for local preference under this section, **a local business must certify to Owner** by completing an **"Affidavit as to Local Business Form"**, which is available for download at www.mymanatee.org/vendor. Click on "Affidavit for Local Business" to access and print the form. Complete, notarize, and mail the notarized original to the following address: Manatee County Purchasing Division, 1112 Manatee Avenue West, Suite 803, Bradenton, FL 34205.

It is the responsibility of the bidder to ensure accuracy of the Affidavit as to Local Business and notify Owner of any changes affecting same.

A.35 VENDOR REGISTRATION

Registering your business with Manatee County will enhance our opportunities to identify sources for goods and services, plus identify local businesses. This information is used for soliciting quotations up to \$250,000.00 and for competitive solicitations of larger purchases.

Our staff can assist you with your registration as needed. Our office hours are 8:00 A.M. to 5:00 P.M., Monday through Friday on regular business days. Please call (941) 749-3014 if you wish to have a Purchasing staff member assist you.

Quick steps to registration: www.mymanatee.org/purchasing

A link to Vendor Registration is listed on the Purchasing Division's web page under "Register as a Vendor". Click on "Vendor Registration Form" for on-line input.

Registration is not mandatory; however, by taking the time to register, you are helping Owner to provide timely notification of quotation, bid and proposal opportunities to your business.

A.36 ENVIRONMENTAL SUSTAINABILITY

All bidders are encouraged to use as many environmentally preferable "green" products, materials, supplies, etc. as possible in order to promote a safe and healthy environment. Environmentally preferable are products or services that have a reduced adverse effect on the environment.

Bidders shall acknowledge whether or not their organization has an environmental sustainability initiative by checking the appropriate box on the bid form. In addition, the bidder shall submit a summary of their environmental sustainability initiative along with their bid. This information will be used as a determining factor in the award decision when all other evaluative factors, including local preference policies are otherwise equal.

A.37 ePAYABLES

Manatee County and Clerk of the Circuit Court have partnered to offer the ePayables program, which allows payments to be made to vendors via credit cards. The Clerk will issue a unique credit card number to each vendor; the card has a zero balance until payments have been authorized.

After goods are delivered or services rendered, vendors submit invoices to the remit to address on the purchase order according to the current process. When payments are authorized, an email notification is sent to the vendor. The email notification includes the invoice number(s), invoice date(s), and amount of payment. There is no cost for vendors to participate in this program; however, there may be a charge by the company that processes your credit card transactions.

If you are interested in participating in this program, please complete the ePayables Application attached herein and return the completed form via email to Ms. Lori Bryan, Supervisor at lori.bryan@manateeclerk.com.

NOTE: ANY OR ALL STATEMENTS CONTAINED IN THE FOLLOWING SECTIONS: SCOPE OF WORK, BID SUMMARY, CONSTRUCTION AGREEMENT FOR STIPULATED SUM, AND GENERAL CONDITIONS OF THE CONSTRUCTION AGREEMENT, WHICH VARY FROM THE INFORMATION TO BIDDERS, SHALL HAVE PRECEDENCE.

END OF SECTION A

SECTION B SCOPE OF WORK

B.01 SCOPE OF WORK

The Work primarily consists of the construction of approximately 8700 linear feet of 20 inch force main from State Road 70 to the existing 30" force main as specified, including up to 8,700 linear feet of fusible PVC DR 18 C905 pipe installed by directional drilling. (Refer to qualifications requirements specified in Specifications Section 02619 for Horizontal Directional Drilling).

B.02 COMPLETION OF WORK

The Work will be completed and ready for final inspection within the specified calendar days from the date the Contract Time commences to run. Two bids shall be considered, **Bid "A" based on 450 calendar days** and **Bid "B" based on 330 calendar days**. Owner has the sole authority to select the bid based on the completion time which is in the best interest of Owner. **Only one award shall be made.**

B.03 LIQUIDATED DAMAGES

If the successful bidder fails to achieve Substantial Completion of the Work within the Contract Time and as otherwise required by the Contract Documents, the Owner shall be entitled to retain or recover from the successful bidder, as liquidated damages and not as a penalty, the sum of **\$2,876** per calendar day, commencing upon the first day following expiration of the Contract Time and continuing until the actual date of Substantial Completion. Such liquidated damages are hereby agreed to be a reasonable estimate of damages the Owner will incur as a result of delayed completion of the Work. The Owner may deduct liquidated damages as described in this paragraph from any unpaid amounts then or thereafter due the successful bidder under this Agreement. Any liquidated damages not so deducted from any unpaid amounts due the successful bidder shall be payable to the Owner at the demand of the Owner, together with interest from the date of the demand at the maximum allowable rate.

B.04 CONTRACT CONTINGENCY WORK

Contract contingency is a monetary allowance used solely at Owner's discretion to handle unexpected conditions as required to satisfactorily complete the Work in accordance with the IFB documents. A Field Directive must be issued by an authorized Owner representative to authorize use of contract contingency funds.

The percentage for contract contingency is listed on the Bid Form. Bidder shall enter the dollar amount for contract contingency based on the percentage of the total base bid. The total contract award will include contract contingency.

Appropriate uses of contract contingency include increases to existing bid item quantities that do not change the initial scope of Work, which may be directed by staff; modification items not originally bid which were unforeseen yet necessary during the

Work to provide a safe, complete Project and that do not change the initial scope of Work; and unanticipated conflicts and/or design changes required during construction which are necessary to provide a safe, complete Project and that do not change the initial scope of Work.

Inappropriate uses of contract contingency include anything that changes the initial scope of Work, including the Contract Sum and Contract Time, and adding bid items not previously contemplated that change the initial scope of Work.

END OF SECTION B

SECTION C

BID SUMMARY

C.01 MINIMUM QUALIFICATIONS OF BIDDERS

No person who is not certified or registered as a **Underground Utility Contractor** pursuant to Chapter 489, Florida Statutes **or prequalified by the Florida Department of Transportation (FDOT) for Utility Work**, on the day the bid is submitted, and who has continuously held that certification or registration for a period of at least three (3) consecutive years immediately prior to the day the bid is submitted, may be qualified to bid on this Work. In the event that a bidder is a business organization, including a partnership, corporation, business trust or other legal entity as set forth in Section 489.119(2), Florida Statutes, then the bidder shall only be qualified to bid on this Work if: 1) the bidder (the business organization) is on the day the bid is submitted, and for at least three (3) consecutive years immediately prior to the day the bid is submitted has been, in continuous existence, properly licensed and registered as required by Florida law; and 2) the bidder, on the day the bid is submitted, has a certified or registered Qualifying Agent, as required by Section 489.119, Florida Statutes, and that Qualifying Agent has been the same Qualifying Agent of the bidder for a period of at least three (3) consecutive years immediately prior to the day the bid is submitted.

C.02 BASIS OF AWARD

Award shall be to the lowest, responsive, responsible bidder meeting specifications and having the lowest total offer for **Bid "A"**, or the lowest total offer for **Bid "B"**, for the requirements listed on the Bid Form for the Work as set forth in this IFB. Bid prices shall include costs for furnishing all labor, equipment and/or materials for the completion of the Work in accordance with and in the manner set forth and described in the IFB documents to Owner's satisfaction within the prescribed time.

Two schedules for completion of Work shall be considered. Each bid for completion by the specified stated time shall be offered as a separate "total offer". Owner has the sole authority to select the bid based on the completion time which is in the best interest of Owner. Only one award shall be made.

NOTE: Inspection of the site is a pre-requisite to be considered for award of this bid.

In evaluating bids, Owner shall consider the qualifications of the bidders; and if required, may also consider the qualifications of the Subcontractors, suppliers, and other persons and organizations proposed. Owner may also consider the operating costs, maintenance requirements, performance data and guarantees of major items of materials and equipment proposed for incorporation in the Work.

Whenever two or more bids are equal with respect to price, the bid received from a local business shall be given preference in award.

Whenever two or more bids are equal with respect to price, and all other evaluative factors are otherwise equal, including local preference policies, if the company provides documented environmentally preferable "green" products, materials, or supplies, they shall be given preference in award.

Whenever two or more bids which are equal with respect to price are received, and neither of these bids are from a local business, and neither of these bids provides documented “green” products, the award shall be determined by a chance drawing, coin toss, or similar tie-breaking method conducted by the Purchasing Division and open to the public.

END OF SECTION C

SECTION D

INSURANCE AND BONDING REQUIREMENTS

The successful bidder will not commence Work under the resulting Agreement until all insurance under this section, and such insurance coverage as might be required by Owner, has been obtained. The successful bidder shall obtain, and submit to the Purchasing Division within ten (10) calendar days from the date of notice of intent to award, at his expense, the following minimum amounts of insurance (inclusive of any amounts provided by an umbrella or excess policy):

Insurance / Bond Type	Required Limits
1. <input checked="" type="checkbox"/> Automobile Liability:	Bodily Injury and Property Damage, Owned/Non-Owned/Hired; Automobile included \$ <u>1,000,000</u> each occurrence <i>This policy shall contain severability of interests' provisions.</i>
2. <input checked="" type="checkbox"/> Commercial General Liability: (Occurrence Form - patterned after the current ISO form)	Bodily Injury and Property Damage \$ <u>1,000,000</u> single limit per occurrence; \$ <u>2,000,000</u> aggregate This shall include Premises and Operations; Independent Contractors; Products and Completed Operations and Contractual Liability. <i>This policy shall contain severability of interests' provisions.</i>
3. <input checked="" type="checkbox"/> Employer's Liability:	\$ <u>100,000</u> single limit per occurrence
4. <input checked="" type="checkbox"/> Worker's Compensation:	Statutory Limits of Chapter 440, Florida Statutes, and all Federal Government Statutory Limits & Requirements
5. <input type="checkbox"/> Other Insurance, as noted:	<p>a. <input type="checkbox"/> Aircraft Liability \$ _____ per occurrence Coverage shall be carried in limits of not less than \$5,000,000 each occurrence if applicable to the completion of the services under this Agreement.</p> <p>b. <input checked="" type="checkbox"/> Installation Floater If the resulting Agreement does not include construction of or additions to above ground building or structures, but does involve the installation of machinery or equipment, successful bidder shall provide an "Installation Floater" with the minimum amount of insurance to be 100% of the value of such addition(s), building(s), or structure(s).</p> <p>c. <input type="checkbox"/> Maritime Coverage (Jones Act) \$ _____ per occurrence Coverage shall be maintained where applicable to the completion of the Work.</p>
	d. <input type="checkbox"/> Pollution \$ _____ per occurrence

Insurance / Bond Type	Required Limits
	<p>e. <input type="checkbox"/> Professional Liability \$ _____ per claim and in the aggregate</p> <ul style="list-style-type: none"> • \$1,000,000 per claim and in the aggregate • \$2,000,000 per claim and in the aggregate <p>f. <input type="checkbox"/> Project Professional Liability \$ _____ per occurrence</p> <p>g. <input type="checkbox"/> Property Insurance \$ _____</p> <p>If the resulting Agreement includes construction of or additions to above ground buildings or structures, bidder shall provide “Builder’s Risk” insurance with the minimum amount of insurance to be 100% of the value of such addition(s), building(s), or structure(s).</p> <p><i>To the extent that property damage is covered by commercial insurance, Owner and successful bidder agree to waive all subrogation rights against each other, except such rights as they may have to the proceeds of such insurance. Successful bidder shall require a similar waiver of subrogation from each of its bidder personnel and sub-consultants, to include Special Consultants; successful bidder shall provide satisfactory written confirmation to Owner of these additional waivers.</i></p> <p>h. <input type="checkbox"/> U.S. Longshoreman’s and Harborworker’s Act Coverage shall be maintained where applicable to the completion of the Work.</p> <p>i. <input type="checkbox"/> Valuable Papers Insurance \$ _____ per occurrence</p> <p>j. <input type="checkbox"/> Watercraft \$ _____ per occurrence</p>
6. <input checked="" type="checkbox"/> Bid Bond:	<p>Bid bond shall be 5% of the total offer of the bid. Bid bond shall be submitted with the bid and shall include project name, location, and / or address and project number.</p> <p>In lieu of the bond, the contractor may file an alternative form of security in the amount of 5% of the total offer, in the form of a money order, a certified check, a cashier’s check, or an irrevocable letter of credit.</p>
7. <input checked="" type="checkbox"/> Payment and Performance Bond:	<p>Payment and Performance Bond shall be submitted by bidder for 100% of the award amount and shall be presented to Manatee County within ten (10) calendar days of issuance of the notice of intent to award.</p>

INSURANCE REQUIREMENTS

The amounts and types of insurance coverage shall conform to the minimum requirements set forth in this Exhibit, with the use of Insurance Services Office (ISO) forms and endorsements or their equivalents. If successful bidder has any self-insured retentions or deductibles under any of the listed minimum required coverage, successful bidder must identify on the certificate of insurance the nature and amount of such self-insured retentions or deductibles and provide satisfactory evidence of financial responsibility for such obligations. All self-insured retentions or deductibles will be successful bidder's sole responsibility.

Nothing herein shall in any manner create any liability of Owner in connection with any claim against the successful bidder for labor, services, or materials, or of Subcontractors; and nothing herein shall limit the liability of the successful bidder or successful bidder's sureties to Owner or to any workers, suppliers, material men or employees in relation to the resulting Agreement.

Builder's Risk Coverage. The successful bidder shall procure and maintain during the entire course of the Work a builder's risk policy, completed value form, insured to provide coverage on an all risk basis, including coverage for off-site stored materials and including coverage for theft. This coverage shall not be lapsed or cancelled because of partial Acceptance by the Owner prior to final Acceptance of the Project. Successful bidder shall recommend to Owner any additions to the Project Costs resulting from any casualty described in Article XII General Conditions of the Construction Agreement, including those costs, expenses and other charges (including normal and ordinary compensation to the successful bidder) necessary for reconstruction of the Project substantially in accordance with the Project Plans and Specifications. The nature, level and type of builder's risk coverage (including completed value or replacement cost coverage) shall be determined by Owner through insurers selected by successful bidder and approved by Owner.

Excess Policy or Umbrella. An excess policy or umbrella may be used to cover limits over and above Commercial General Liability.

Subcontractor's Public Liability and Property Damage Insurance. The successful bidder shall require each Subcontractor to procure and maintain during the term of the subcontract, insurance of the type specified above, or insure the activities of Subcontractors in its policy, as approved by Owner prior to performance of any services. The levels of coverage as set forth in the table above may be adjusted to require a reduced level of coverage consistent with the scope of Work to be provided by that particular Subcontractor. Any reduction in the levels of insurance coverage required by the successful bidder's standard form of subcontract shall be approved by the Owner.

Waiver of Subrogation. Owner and successful bidder waive against each other and the Owner's separate Vendors, Contractors, Design Consultants, Subcontractors agents and employees of each and all of them, all damages covered by property insurance provided herein, except such rights as they may have to the proceeds of such insurance. The successful bidder and Owner shall, where appropriate, require similar waivers of subrogation from the Owner's separate Vendors, Design Consultants and Subcontractors and shall require each of them to include similar waivers in their contracts.

Worker's Compensation Insurance. The successful bidder shall procure and maintain during the term of the Contract Documents, workers' compensation insurance for all its employees connected with the Work and shall require all Subcontractors similarly to provide workers' compensation insurance for all their employees unless such employees are covered by the protection afforded by successful bidder. Such insurance shall comply with the Florida Workers' Compensation Law. The successful bidder shall provide adequate insurance, satisfactory to Owner, for the protection of employees not otherwise protected.

By way of its submission of a bid hereto, bidder:

- a. Represents that bidder maintains, and will maintain during the term of any Agreement arising from this solicitation, all insurance coverage required herein from responsible companies duly authorized to do business under the laws of the State of Florida that hold a rating of "A-" or better by Best's Key Guide, latest edition, and are deemed acceptable to Owner as set forth in this solicitation.
- b. Agrees that insurance, as specified herein, shall remain in force and effect without interruption from the date of commencement of the Work throughout the duration of the Project, and shall remain in effect for at least two (2) years after the termination of the Contract Documents.
- c. Agrees that if the initial or any subsequently issued certificate of insurance expires prior to completion of the Work, successful bidder shall furnish to Owner renewal or replacement certificate(s) of insurance no later than ten (10) calendar days after the expiration date on the certificate. Failure of successful bidder to provide Owner with such renewal certificate(s) shall be considered justification for Owner to terminate any and all Agreements.
- d. Agrees that bidder and/or its insurance carrier shall provide thirty (30) days written notice to Owner of policy cancellation or non-renewal on the part of the insurance carrier or the successful bidder. Successful bidder shall also notify Owner, in a like manner, within twenty-four (24) hours after receipt, of any notices of expiration, cancellation, non-renewal or material change in coverage or limits received by successful bidder from its insurer and nothing contained herein shall relieve successful bidder of this requirement to provide notice. In the event of a reduction in the aggregate limit of any policy to be provided by successful bidder hereunder, successful bidder shall immediately take steps to have the aggregate limit reinstated to the full extent permitted under such policy.
- e. Agrees that failure of successful bidder to obtain and maintain proper amounts of insurance at all times as called for herein shall constitute a material breach of the resulting Agreement, which may result in immediate termination.
- f. Agrees that, should at any time the successful bidder not maintain the insurance coverage(s) required herein, Owner may terminate the Agreement or at its sole discretion shall be authorized to purchase such coverage(s) and charge successful bidder for such coverage(s) purchased. If successful bidder fails to reimburse Owner for such costs within thirty (30) days after demand, Owner has the right to offset these costs from any amount due successful bidder under this Agreement or any other agreement between Owner and successful bidder. Owner shall be under no obligation to purchase such insurance, nor shall it be responsible for the coverage(s) purchased or the insurance companies used. The decision of Owner to purchase such insurance coverage(s) shall in no way be construed to be a waiver of any of its rights under the Contract Documents.

- g. Agrees to provide, upon request, the entire and complete insurance policies required herein.
- h. The payment of deductibles for insurance required of the successful bidder by the Contract Documents shall be the sole responsibility of the successful bidder.

Certificate of Insurance Requirements:

- a. Certificates of insurance in duplicate evidencing the insurance coverage specified herein shall be filed with the Purchasing Division before operations are begun. The required certificates of insurance shall name the types of policy, policy number, date of expiration, amount of coverage, companies affording coverage, and also shall refer specifically to the bid number and title of the Project, and must read: For any and all work performed on behalf of Manatee County.
- b. **Additional Insured:** The Automobile Liability and Commercial General Liability policies provided by the successful bidder to meet the requirements of this IFB shall name Manatee County, Board of County Commissioners, as an additional insured as to the operations of the successful bidder under this IFB and shall contain severability of interests provisions.
- c. In order for the certificate of insurance to be accepted it **must** comply with the following:
 - 1. The "Certificate Holder" shall be:
**Manatee County
Board of County Commissioners
Bradenton, FL
IFB# 16-1930DC Tara 20 Force Main
For any and all work performed on behalf of Manatee County.**
 - 2. Certificate shall be mailed to:
**Manatee County Purchasing Division
1112 Manatee Avenue West, Suite 803
Bradenton, FL 34205
Attn: Deborah Carey-Reed, CPPB, Contracts Specialist**

BONDING REQUIREMENTS

Bid Bond/Certified Check. By submitting a bid to this IFB, the bidder agrees should the bidder's bid be accepted, **to execute the form of Agreement and present the same to Manatee County for approval within ten (10) calendar days after notice of intent to award.** The bidder further agrees that failure to execute and deliver said form of Agreement **within ten (10) calendar days** will result in damages to Manatee County and as guarantee of payment of same a bid bond/certified check shall be enclosed within the submitted sealed bid in the amount of five (5%) percent of the total amount of the bid. The bidder further agrees that in case the bidder fails to enter into an Agreement, as prescribed by Manatee County, the bid bond/certified check accompanying the bid shall be forfeited to Manatee County as agreed liquidated damages. If Owner enters into an Agreement with a bidder, or if Owner rejects any and/or all bids, accompanying bond will be promptly returned.

Payment and Performance Bonds. Prior to commencing Work, the successful bidder shall obtain, for the benefit of and directed to Owner, a Payment and Performance Bond satisfying the requirements of Section 255.05, Florida Statutes, covering the faithful performance by the successful bidder of its obligation under the Contract Documents, including but not limited to the construction of the Project on the Project Site and the payment and obligations arising thereunder, including all payments to Subcontractors, laborers, and materialmen. The surety selected by the successful bidder to provide the Payment and Performance Bond shall be approved by Owner prior to issuance of such Bond, which approval shall not be unreasonably withheld or delayed provided that surety is rated A- or better by Best's Key Guide, latest edition.

Failure to provide the required bonds on the prescribed form may result in successful bidder being deemed nonresponsive. Bonds must be in the form prescribed in Section 255.05, Florida Statutes, and must not contain notice, demand or other terms and conditions, including informal pre-claim meetings, not provided for in Section 255.05, Florida Statutes.

Surety of such bonds shall be in an amount equal to 100% of the Contract Price issued by a duly authorized and nationally recognized surety company, authorized to do business in the State of Florida, satisfactory to Owner. Surety shall be rated as "A-" or better by Best's Key Guide, latest edition. The attorney-in-fact who signs the bonds must file with the bonds, a certificate and effective dated copy of power-of-attorney. Payment and Performance Bonds shall be issued to Manatee County, a political subdivision of the State of Florida, **within ten (10) calendar days after notice of intent to award.**

In addition, pursuant to Section 255.05(1)(b), Florida Statutes, prior to commencing Work, the successful bidder shall be responsible and bear all costs associated to record the Payment and Performance Bond with the Manatee County Clerk of the Circuit Court. A certified copy of said recording shall be furnished to the Purchasing Division upon filing. Pursuant to Section 255.05(1)(b), Florida Statutes, Owner will make no payment to the successful bidder until the successful bidder has complied with this paragraph.

Furnishing Payment and Performance Bonds shall be requisite to execution of an Agreement with Owner. Said Payment and Performance Bonds will remain in force for the duration of the Agreement with the premiums paid by the successful bidder. Failure of the successful bidder to execute such Agreement and to supply the required bonds shall be just cause for cancellation of the award. Owner may then contract with the next lowest, responsive and responsible bidder or re-advertise this IFB. If another bidder is accepted, and notice given within ninety (90) days after the opening of the bids, this Acceptance shall bind the bidder as though they were originally the successful bidder.

Failure of Owner at any time to require performance by the successful bidder of any provisions set out in the resulting Agreement will in no way affect the right of Owner, thereafter, to enforce those provisions.

BIDDER'S INSURANCE STATEMENT

THE UNDERSIGNED hereto have read and understand the aforementioned insurance requirements of this IFB and note that the evidence of insurability shall be required within ten (10) days from the date of notice of intent to award.

Bidder Name: _____ Date: _____

Bidder's Signature: _____

Print Name: _____

Insurance Agency: _____

Agent Name: _____ Agent Phone: _____

Please return this completed and signed statement with your bid.

BID FORM
(Submit in Triplicate)

**For: IFB #16-1930DC
Tara 20 Force Main
Project No.: 6079881**

Total Offer (Bid "A"): \$
Based on a completion time of <u>450</u> calendar days
Total Offer (Bid "B"): \$
Based on a completion time of <u>330</u> calendar days

We, the undersigned, hereby declare that we have carefully reviewed the IFB Documents in their entirety and with full knowledge and understanding of the aforementioned herewith submit this bid, completely meeting each and every specification, term, and condition contained therein.

Two schedules for completion of the Work shall be considered. Each bid for completion by the specified stated time shall be offered as a separate "total offer". County has the sole authority to select the bid based on the completion time which is in the best interest of County. Only one award shall be made.

As bidder, we understand that the IFB documents, in its entirety, including but not limited to, all specifications, terms, and conditions shall be made a part of any resulting Agreement between Manatee County and the successful bidder. Failure to comply shall result in Agreement default, whereupon, the defaulting successful bidder shall be required to pay for any and all re-procurement costs, damages, and attorney fees as incurred by County, and agrees to forfeit his/her bid bond.

Communications concerning this bid shall be addressed as follows: **(Complete all fields)**

Bidder's Name: _____

Mailing Address: _____

Telephone: () _____ Fax: () _____

Email Address: _____

A bid bond, certified check, or cashier's check in the amount of 5% of the total bid offer is attached herein.

I, _____ on [date(s)] _____ attest that I have
visited the project site(s) to familiarize myself with the full scope of work required for the bid.

Acknowledge Addendum No. _____ Dated: _____	Acknowledge Addendum No. _____ Dated: _____
Acknowledge Addendum No. _____ Dated: _____	Acknowledge Addendum No. _____ Dated: _____
Acknowledge Addendum No. _____ Dated: _____	Acknowledge Addendum No. _____ Dated: _____

Authorized Signature(s): _____

Name and Title of Above Signer(s): _____

Date: _____

MAILING LABEL

Cut along the outside border and affix this label to your sealed bid envelope to identify it as a "Sealed Bid". Be sure to include the name of the company submitting the bid and the bid due date and time where requested.

MAILING LABEL TO AFFIX TO OUTSIDE OF SEALED BID PACKAGE:

BIDDER: _____

INVITATION FOR BID No. 16-1930DC

BID TITLE: TARA 20 FORCE MAIN

**MANATEE COUNTY PURCHASING
1112 MANATEE AVENUE WEST, SUITE 803
BRADENTON FL 34205**

DUE DATE/TIME:

BID FORM
(Submit In Triplicate)

IFB 16-1930DC

TARA 20 FORCE MAIN
PARRALLEL TO LENA ROAD

BID "A" 450 CALENDAR DAYS COMPLETION

	DESCRIPTION	EST QTY.	UNITS	BID PRICE PER UNIT (\$)	TOTAL BID PRICE (\$)
1.	20" DIP CL 350 Force Main (Direct Bury)	200	LF	-	-
1A	24" DIP CL 350 Force Main (Direct Bury)	80	LF	-	-
2.	20" PVC Force Main (C 905) (Direct Bury)	1,600	LF	-	-
3.	20" Fusible PVC (C905) Force Main (HDD) DR21	6,900	LF	-	-
4.	Pipe Restraints 20"	65	EA	-	-
4A	Pipe Restraints 24"	12	EA	-	-
4B	Pipe Restraints 20" for 20" PVC Bell Joint	18	EA	-	-
5.	30x20" Tapping Valve & Sleeve	1	EA	-	-
6.	20" Plug Valve	1	EA	-	-
7.	20' Gate Valve	13	EA	-	-
7A	24" Plug Valve	3	EA	-	-
8.	DI Fittings, Wastewater	18000	LB	-	-
9.	Connect to Exist. Force Main	4	EA	-	-
10.	Asphalt Road Restoration (Base & Resurface)	30	SY	-	-
11.	Asphalt Road Restoration (Mill & Resurface)	125	SY	-	-
12.	Curb & Gutter Replacement	45	LF	-	-
13.	HydroSeeding	11600	SY	-	-
14.	Sodding	1200	SY	-	-
15.	Air Release Valve Assembly incl. Manhole	4	EA	-	-
16.	Air Release Valve Assembly	3.00	EA	-	-
17.	Erosion Control	1	LS	-	-
18.	Traffic Control to FDOT Standards	1	LS	-	-
19.	Miscellaneous Concrete	20	CY	-	-
20.	Clearing and Grubbing	2	AC	-	-
21.	Soil Tracking Prevention Device	2	EA	-	-
22.	Staked Silt Fence	7,600	LF	-	-
23.	Crushed Shell for Temporary Road Base	120	TONS	-	-
24.	Sidewalk Restoration	40	SY	-	-
25.	Temporary Force Main Bypass	1	LS	-	-
26.	Mobilization	1	LS	-	-
27.	Miscellaneous Work & Clean Up	1	LS	-	-
	BASE BID (ITEMS 1 - 27)				\$ -
28.	Contingency	10% of Base Bid			\$ -
	BID "A" - TOTAL BID PRICE (ITEMS 1 - 28)				\$ -

Bidder: _____

Signature: _____

BID FORM
(Submit In Triplicate)

IFB 16-1930DC

TARA 20 FORCE MAIN
PARRALLEL TO LENA ROAD

BID "B" 330 CALENDAR DAYS COMPLETION

	DESCRIPTION	EST QTY.	UNITS	BID PRICE PER UNIT (\$)	TOTAL BID PRICE (\$)
1.	20" DIP CL 350 Force Main (Direct Bury)	200	LF	-	-
1A	24" DIP CL 350 Force Main (Direct Bury)	80	LF	-	-
2.	20" PVC Force Main (C 905) (Direct Bury)	1,600	LF	-	-
3.	20" Fusible PVC (C905) Force Main (HDD) DR21	6,900	LF	-	-
4.	Pipe Restraints 20"	65	EA	-	-
4A	Pipe Restraints 24"	12	EA	-	-
4B	Pipe Restraints 20" for 20" PVC Bell Joint	18	EA	-	-
5.	30x20" Tapping Valve & Sleeve	1	EA	-	-
6.	20" Plug Valve	1	EA	-	-
7.	20' Gate Valve	13	EA	-	-
7A	24" Plug Valve	3	EA	-	-
8.	DI Fittings, Wastewater	18000	LB	-	-
9.	Connect to Exist. Force Main	4	EA	-	-
10.	Asphalt Road Restoration (Base & Resurface)	30	SY	-	-
11.	Asphalt Road Restoration (Mill & Resurface)	125	SY	-	-
12.	Curb & Gutter Replacement	45	LF	-	-
13.	HydroSeeding	11600	SY	-	-
14.	Sodding	1200	SY	-	-
15.	Air Release Valve Assembly incl. Manhole	4	EA	-	-
16.	Air Release Valve Assembly	3.00	EA	-	-
17.	Erosion Control	1	LS	-	-
18.	Traffic Control to FDOT Standards	1	LS	-	-
19.	Miscellaneous Concrete	20	CY	-	-
20.	Clearing and Grubbing	2	AC	-	-
21.	Soil Tracking Prevention Device	2	EA	-	-
22.	Staked Silt Fence	7,600	LF	-	-
23.	Crushed Shell for Temporary Road Base	120	TONS	-	-
24.	Sidewalk Restoration	40	SY	-	-
25.	Temporary Force Main Bypass	1	LS	-	-
26.	Mobilization	1	LS	-	-
27.	Miscellaneous Work & Clean Up	1	LS	-	-
	BASE BID (ITEMS 1 - 27)				\$ -
28.	Contingency	10% of Base Bid			\$ -
	BID "B" - TOTAL BID PRICE (ITEMS 1 - 28)				\$ -

Bidder: _____

Signature: _____

ATTACHMENT A
BIDDER'S QUESTIONNAIRE
(Submit in Triplicate)

The bidder warrants the truth and accuracy of all statements and answers herein contained. (Attach additional pages if necessary.)

THIS QUESTIONNAIRE MUST BE COMPLETED AND SUBMITTED WITH YOUR BID

1. Contact Information:

FEIN #: _____
License #: _____
License Issued to: _____
Date License Issued (MM/DD/YR): _____
Company Name: _____
Physical Address: _____
City: _____ State of Incorporation: _____ Zip Code: _____
Phone Number: () _____ Fax Number: () _____
Email address: _____

2. Bidding as: an individual __; a partnership __; a corporation __; a joint venture __

3. If a partnership, list names and addresses of partners; if a corporation, list names of officers, directors, shareholders, and state of incorporation; if joint venture, list names and address of ventures' and the same if any venture are a corporation for each such corporation, partnership, or joint venture:

4. Bidder is authorized to do business in the State of Florida: ☐ Yes ☐ No

For how many years? _____

5. Your organization has been in business (under this firm's name) as a

Is this firm in bankruptcy? _____

6. Attach a list of projects where this specific type of Work was performed.

7. Is this firm currently contemplating or in litigation? Provide summary details.

BIDDER: _____

8. Have you ever been assessed liquidated damages under a contract during the past five (5) years? If so, state when, where (contact name, address and phone number) and why.

9. Have you ever failed to complete Work awarded to you? Or failed to complete projects within contract time? If so, state when, where (contact name, address, phone number) and why.

10. Have you ever been debarred or prohibited from providing a bid to a governmental entity? If yes, name the entity and describe the circumstances.

11. Will you subcontract any part of this Work? If so, describe which portion(s) and to whom.

12. Reference Specification Section 02619, ref. Article 1.04 Qualifications:

Pipe Manufacturer: _____

Boring Specialist w/5 year experience: _____

Contractor for pipe fusion shall have manufacturer certification or 5 years' experience: _____

Drilling Fluid Specialist shall have, if applicable, manufacturer certification or 5 years' experience. Attached documentation: _____

Horizontal drilling contractor: _____

Florida contracts reference:

1. _____

2. _____

BIDDER: _____

13. If any, list MBE/DBE (with Agreement amount) to be utilized:

14. What equipment do you own to accomplish this Work? (A listing may be attached)

15. What equipment will you purchase/rent for the Work? (Specify which)

16. List the following in connection with the surety which is providing the bond(s):

Surety's Name: _____

Address: _____

Name, address, phone number and email of surety's resident agent for service of process in Florida:

Agent's Name: _____

Address: _____

Phone: _____

Email: _____

BIDDER: _____

ATTACHMENT B
PUBLIC CONTRACTING AND ENVIRONMENTAL CRIMES CERTIFICATION

SWORN STATEMENT PURSUANT TO ARTICLE V,
MANATEE COUNTY PROCUREMENT CODE

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

This sworn statement is submitted to the Manatee County Board of County Commissioners by

[Print individual's name and title]

_____ for _____ [Print name of entity submitting sworn statement]

whose business address is _____

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

I understand that no person or entity shall be awarded or receive an Owner's Agreement for public improvements, procurement of goods or services (including professional services) or an Owner's lease, franchise, concession or management agreement, or shall receive a grant of Owner's monies unless such person or entity has submitted a written certification to Owner that it has not:

(1) been convicted of bribery or attempting to bribe a public officer or employee of Manatee County, the State of Florida, or any other public entity, including, but not limited to the Government of the United States, any state, or any local government authority in the United States, in that officer's or employee's official capacity; or

(2) been convicted of an agreement or collusion among bidders or prospective bidders in restraint of freedom of competition, by agreement to bid a fixed price, or otherwise; or

(3) been convicted of a violation of an environmental law that, in the sole opinion of Owner's Purchasing Official, reflects negatively upon the ability of the person or entity to conduct business in a responsible manner; or

(4) made an admission of guilt of such conduct described in items (1), (2) or (3) above, which is a matter of record, but has not been prosecuted for such conduct, or has made an admission of guilt of such conduct, which is a matter of record, pursuant to formal prosecution. An admission of guilt shall be construed to include a plea of nolo contendere; or

(5) where an officer, official, agent or employee of a business entity has been convicted of or has admitted guilt to any of the crimes set forth above on behalf of such an entity and pursuant to the direction or authorization of an official thereof (including the person committing the offense, if he is an official of the business entity), the business shall be chargeable with the conduct herein above set forth. A business entity shall be chargeable with the conduct of an affiliated entity, whether wholly owned, partially owned, or one which has common ownership or a common Board of Directors. For purposes of this Form, business entities are affiliated if, directly or indirectly, one business entity controls or has the power to control another business entity, or if an individual or group of individuals controls or has the power to control both entities. Indicia of control shall include, without limitation, interlocking management or ownership, identity of interests among family members, shared organization of a business entity following the ineligibility of a business entity under this Article, or using substantially the same management, ownership or principles as the ineligible entity.

ATTACHMENT B

PUBLIC CONTRACTING AND ENVIRONMENTAL CRIMES CERTIFICATION

(Continued)

Any person or entity who claims that this Article is inapplicable to him/her/it because a conviction or judgment has been reversed by a court of competent jurisdiction shall prove the same with documentation satisfactory to Owner's Purchasing Official. Upon presentation of such satisfactory proof, the person or entity shall be allowed to contract with Owner.

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR MANATEE COUNTY IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT ANY AGREEMENT OR BUSINESS TRANSACTION SHALL PROVIDE FOR SUSPENSION OF PAYMENTS, OR TERMINATION, OR BOTH, IF THE CONTRACTING OFFICER OR COUNTY ADMINISTRATOR DETERMINES THAT **SUCH PERSON OR ENTITY HAS MADE FALSE CERTIFICATION.**

[Signature]

STATE OF FLORIDA
COUNTY OF _____

Sworn to and subscribed before me this ____ day of _____, 20____ by _____

Personally known _____ OR Produced identification _____
[Type of identification]

Notary Public Signature My commission expires _____

[Print, type or stamp Commissioned name of Notary Public]

Signatory Requirement - In the case of a business entity other than a partnership or a corporation, this affidavit shall be executed by an authorized agent of the entity. In the case of a partnership, this affidavit shall be executed by the general partner(s). In the case of a corporation, this affidavit shall be executed by the corporate president.

ATTACHMENT C
SWORN STATEMENT
THE FLORIDA TRENCH SAFETY ACT

THIS FORM MUST BE SIGNED IN THE PRESENCE OF A NOTARY PUBLIC OR BY AN OFFICER AUTHORIZED TO ADMINISTER OATHS.

1. This Sworn Statement is submitted with IFB NO. 16-1930DC Tara 20 Force Main
2. This Sworn Statement is submitted by _____ whose business address is _____ and, if applicable, its Federal Employer Identification Number (FEIN) is _____. If the entity has no FEIN, include the Social Security Number of the individual signing this sworn statement _____.
3. Name of individual signing this Sworn Statement is: _____,
Whose relationship to the above entity is: _____.
4. The Trench Safety Standards that will be in effect during the construction of this project shall include, but are not limited to: Laws of Florida, Chapters 90-96, TRENCH SAFETY ACT, and OSHA RULES AND REGULATIONS 29 CFR 1926.650 Subpart P, effective October 1, 1990.
5. The undersigned assures that the entity will comply with the applicable Trench Safety Standards and agrees to indemnify and hold harmless Owner and Engineer, and any of their agents or employees from any claims arising from the failure to comply with said standard.
6. The undersigned has appropriated the following costs for compliance with the applicable standards:

Trench Safety Measure (Description)	Units of Measure (LF, SY)	Unit Quantity	Unit Cost	Extended Cost
a. _____	_____	_____	\$ _____	_____
b. _____	_____	_____	\$ _____	_____
c. _____	_____	_____	\$ _____	_____
d. _____	_____	_____	\$ _____	_____

7. The undersigned intends to comply with these standards by instituting the following procedures:

THE UNDERSIGNED, in submitting this bid, represents that they have reviewed and considered all available geotechnical information and made such other investigations and tests as they may deem necessary to adequately design the trench safety system(s) to be utilized on this project.

(AUTHORIZED SIGNATURE / TITLE)

SWORN to and subscribed before me this _____ day of _____, 20____.

(Impress official seal)

Notary Public, State of Florida: _____

My commission expires: _____



Angelina M. Colonnese

CLERK OF THE CIRCUIT COURT AND COMPTROLLER OF MANATEE COUNTY

1115 Manatee Avenue West, Bradenton, Florida 34205 - Phone (941) 749-1800 – Fax (941) 741-4082
P.O. Box 25400, Bradenton, Florida 34206 - www.manateeclerk.com

ATTACHMENT D: E PAYABLES APPLICATION

Company name_____

Contact person_____

Phone number_____

Email Address_____

FINANCE USE ONLY

Open orders: YES or NO

PEID _____

CREATE DATE _____

CONFIRMED WITH _____

Name and phone number

IFAS _____

BANK _____

INITIALS _____

Return completed form to:

Via email to: lori.bryan@manateeclerk.com

Via fax to: (941) 741-4011

Via mail:

PO Box 1000

Bradenton, FL 34206

Revised: September 30, 2015

“Pride in Service with a Vision to the Future”

Clerk of the Circuit Court – Clerk of Board of County Commissioners – County Comptroller – Auditor and Recorder

Attachment E
VENDOR CERTIFICATION REGARDING
SCRUTINIZED COMPANIES LISTS

I am agent authorized by the company responding to this solicitation to make the following certification: I hereby certify that the company has reviewed Florida Statutes § 287.135, and that after such review, the company is not prohibited by the terms of that statute from entering into an agreement with Manatee County for the commodities and/or services which are the subject of this solicitation. I further acknowledge that my submission of a false certification may subject me and/or my company to civil penalties, attorney's fees, and/or costs.

Vendor Name:_____

Vendor FEIN:_____

Address:_____

City:_____ State:_____ Zip:_____

Certified by:_____

Who is authorized to sign on behalf of the company listed above.

Authorized Signature:_____

Print
Name:_____

Title:_____

Date:_____

CONTRACT DOCUMENTS

FOR

Tara 20 Force Main Parallel to Lena Road
SR 70 to 41st Avenue East

PROJECT # 404-6079881

October 2016

PROJECT OWNER:

County of Manatee, Florida
c/o Manatee County Purchasing Division
1112 Manatee Avenue West
Bradenton, Florida 34205
(941) 748-4501

PREPARED BY:

Engineering Division
Manatee County Public Works Department
1022 26th Avenue East
Bradenton, Florida 34208
(941) 708-7450

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This specification includes by reference the Manatee County Utility Standards approved May 2015.

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01005 GENERAL REQUIREMENTS

PART 1 GENERAL

1.01 SCOPE AND INTENT

A. Description

The work to be done consists of the furnishing of all labor, materials and equipment, and the performance of all work included in this Contract.

B. Work Included

The Contractor shall furnish all labor, superintendence, materials, plant, power, light, heat, fuel, water, tools, appliances, equipment, supplies, shop drawings, working drawings and other means of construction necessary or proper for performing and completing the work. He shall obtain and pay for all required permits necessary for the work, other than those permits such as the DEP permit and railroad permit which may have already been obtained. He shall perform and complete the work in the manner best calculated to promote rapid construction consistent with safety of life and property and to the satisfaction of the County, and in strict accordance with the Contract Documents. The Contractor shall clean up the work and maintain it during and after construction, until accepted, and shall do all work and pay all incidental costs. He shall repair or restore all structures and property that may be damaged or disturbed during performance of the work.

The cost of incidental work described in these General Requirements, for which there are no specific Contract Items, shall be considered as part of the general cost of doing the work and shall be included in the prices for the various Contract Items. No additional payment will be made.

The Contractor shall be solely responsible for the adequacy of his workmanship, materials and equipment.

C. Public Utility Installations and Structures

Public utility installations and structures shall be understood to include all poles, tracks, pipes, wires, conduits, house service connections, vaults, manholes and all other appurtenances and facilities pertaining thereto.

The Contractor shall protect all installations and structures from damage during the work. Access across any buried public utility installation or structure shall be made only in such locations and by means approved by the County. All required protective devices and construction shall be provided by the Contractor at his expense. All existing public utilities damaged by the Contractor which are shown on the Plans or have been located in the field by the utility shall be repaired by the Contractor, at his expense, as approved by the County. No separate payment shall be made for such protection or repairs to public utility installations or structures.

Public utility installations or structures owned or controlled by the County or other governmental body, which are required by this contract to be removed, relocated, replaced

or rebuilt by the Contractor not identified in any separate bid item shall be considered as a part of the general cost of doing the work and shall be included in the prices bid for the various contract items. No separate payment shall be made.

Where public utility installations or structures owned or controlled by the County or other governmental body are encountered during the course of the work, and are not indicated on the Plans or in the Specifications, and when, in the opinion of the County, removal, relocation, replacement or rebuilding is necessary to complete the work under this Contract, such work shall be accomplished by the utility having jurisdiction, or such work may be ordered, in writing by the County, for the contractor to accomplish. If such work is accomplished by the utility having jurisdiction, it will be carried out expeditiously and the Contractor shall give full cooperation to permit the utility to complete the removal, relocation, replacement or rebuilding as required. If such work is accomplished by the Contractor, it will be in accordance with the General and Supplemental General Conditions.

The Contractor shall give written notice to County and other governmental utility departments and other owners of public utilities of the location of his proposed construction operations, at least forty-eight hours in advance of breaking ground in any area or on any unit of the work. This can be accomplished by making the appropriate contact with the "Sunshine State One-Call of Florida, Inc. Call Center ("Call Sunshine") and per all requirements provided for in the Florida Underground Facilities Damage Prevention and Safety Act (Florida Statutes, Title XXXIII, Chapter 556).

The maintenance, repair, removal, relocation or rebuilding of public utility installations and structures, when accomplished by the Contractor as herein provided, shall be done by methods approved by the County.

1.02 PLANS AND SPECIFICATIONS

A. Plans

When obtaining data and information from the Plans, figures shall be used in preference to scaled dimensions, and large scale drawings in preference to small scale drawings.

B. Copies Furnished to Contractor

The Contractor shall furnish each of the subcontractors, manufacturers, and material men such copies of the Contract Documents as may be required for their work. Additional copies of the Plans and Specifications, when requested, may be furnished to the Contractor at cost of reproduction.

C. Supplementary Drawings

When, in the opinion of the County, it becomes necessary to explain more fully the work to be done or to illustrate the work further or to show any changes which may be required, drawings known as Supplementary Drawings, with specifications pertaining thereto, will be prepared by the County and five paper prints thereof will be given to the Contractor.

D. Contractor to Check Plans and Data

The Contractor shall verify all dimensions, quantities and details shown on the Plans, Supplementary Drawings, Schedules, Specifications or other data received from the County, and shall notify him of all errors, omissions, conflicts, and discrepancies found

therein. Failure to discover or correct errors, conflicts or discrepancies shall not relieve the Contractor of full responsibility for unsatisfactory work, faulty construction or improper operation resulting therefrom nor from rectifying such conditions at his own expense. He will not be allowed to take advantage of any errors or omissions, as full instructions will be furnished by the County, should such errors or omissions be discovered. All schedules are given for the convenience of the County and the Contractor and are not guaranteed to be complete. The Contractor shall assume all responsibility for the making of estimates of the size, kind, and quality of materials and equipment included in work to be done under the Contract.

E. Specifications

The Technical Specifications consist of three parts: General, Products and Execution. The General Section contains General Requirements which govern the work. Products and Execution modify and supplement these by detailed requirements for the work and shall always govern whenever there appears to be a conflict.

F. Intent

All work called for in the Specifications applicable to this Contract, but not shown on the Plans in their present form, or vice versa, shall be of like effect as if shown or mentioned in both. Work not specified in either the Plans or in the Specifications, but involved in carrying out their intent or in the complete and proper execution of the work, is required and shall be performed by the Contractor as though it were specifically delineated or described.

The apparent silence of the Specifications as to any detail, or the apparent omission from them of a detailed description concerning any work to be done and materials to be furnished, shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of the best quality is to be used, and interpretation of these Specifications shall be made upon that basis.

The inclusion of the Related Requirements (or work specified elsewhere) in the General part of the specifications is only for the convenience of the Contractor, and shall not be interpreted as a complete list of related Specification Sections.

1.03 MATERIALS AND EQUIPMENT

A. Manufacturer

All transactions with the manufacturers or subcontractors shall be through the Contractor, unless the Contractor shall request, in writing to the County, that the manufacturer or subcontractor deal directly with the County. Any such transactions shall not in any way release the Contractor from his full responsibility under this Contract.

Any two or more pieces or material or equipment of the same kind, type or classification, and being used for identical types of services, shall be made by the same manufacturer.

B. Delivery

The Contractor shall deliver materials in ample quantities to insure the most speedy and uninterrupted progress of the work so as to complete the work within the allotted time. The Contractor shall also coordinate deliveries in order to avoid delay in, or impediment of, the progress of the work of any related Contractor.

C. Tools and Accessories

The Contractor shall, unless otherwise stated in the Contract Documents, furnish with each type, kind or size of equipment, one complete set of suitably marked high grade special tools and appliances which may be needed to adjust, operate, maintain or repair the equipment. Such tools and appliances shall be furnished in approved painted steel cases, properly labeled and equipped with good grade cylinder locks and duplicate keys.

Spare parts shall be furnished as specified.

Each piece of equipment shall be provided with a substantial nameplate, securely fastened in place and clearly inscribed with the manufacturer's name, year of manufacture, serial number, weight and principal rating data.

D. Installation of Equipment.

The Contractor shall have on hand sufficient proper equipment and machinery of ample capacity to facilitate the work and to handle all emergencies normally encountered in work of this character.

Equipment shall be erected in a neat and workmanlike manner on the foundations at the locations and elevations shown on the Plans, unless directed otherwise by the County during installation. All equipment shall be correctly aligned, leveled and adjusted for satisfactory operation and shall be installed so that proper and necessary connections can be made readily between the various units.

The Contractor shall furnish, install and protect all necessary anchor and attachment bolts and all other appurtenances needed for the installation of the devices included in the equipment specified. Anchor bolts shall be as approved by the County and made of ample size and strength for the purpose intended. Substantial templates and working drawings for installation shall be furnished.

The Contractor shall furnish all materials and labor for, and shall properly bed in non-shrink grout, each piece of equipment on its supporting base that rests on masonry foundations.

Grout shall completely fill the space between the equipment base and the foundation. All metal surfaces coming in contact with concrete or grout shall receive a coat of coal tar epoxy equal to Koppers 300M or provide a 1/32-inch neoprene gasket between the metal surface and the concrete or grout.

E. Service of Manufacturer's Engineer

The Contract prices for equipment shall include the cost of furnishing (as required by equipment specifications sections) a competent and experienced engineer or superintendent who shall represent the manufacturer and shall assist the Contractor, when required, to install, adjust, test and place in operation the equipment in conformity with the Contract Documents. After the equipment is placed in permanent operation by the County, such engineer or superintendent shall make all adjustments and tests required by the County to prove that such equipment is in proper and satisfactory operating condition, and shall instruct such personnel as may be designated by the County in the proper operation and maintenance of such equipment.

1.04 INSPECTION AND TESTING

A. General

Inspection and testing of materials will be performed by the County unless otherwise specified.

For tests specified to be made by the Contractor, the testing personnel shall make the necessary inspections and tests and the reports thereof shall be in such form as will facilitate checking to determine compliance with the Contract Documents. Three (3) copies of the reports shall be submitted and authoritative certification thereof must be furnished to the County as a prerequisite for the acceptance of any material or equipment.

If, in the making of any test of any material or equipment, it is ascertained by the County that the material or equipment does not comply with the Contract, the Contractor will be notified thereof and he will be directed to refrain from delivering said material or equipment, or to remove it promptly from the site or from the work and replace it with acceptable material, without cost to the County.

Tests of electrical and mechanical equipment and appliances shall be conducted in accordance with recognized test codes of the ANSI, ASME, or the IEEE, except as may otherwise be stated herein.

The Contractor shall be fully responsible for the proper operation of equipment during tests and instruction periods and shall neither have nor make any claim for damage which may occur to equipment prior to the time when the County formally takes over the operation thereof.

B. Costs

All inspection and testing of materials furnished under this Contract will be performed by the County or duly authorized inspection engineers or inspections bureaus without cost to the Contractor, unless otherwise expressly specified.

The cost of shop and field tests of equipment and of certain other tests specifically called for in the Contract Documents shall be borne by the Contractor and such costs shall be deemed to be included in the Contract price.

Materials and equipment submitted by the Contractor as the equivalent to those specifically named in the Contract may be tested by the County for compliance. The Contractor shall reimburse the County for the expenditures incurred in making such tests on materials and equipment which are rejected for non-compliance.

C. Inspections of Materials

The Contractor shall give notice in writing to the County, at least two weeks in advance of his intention to commence the manufacture or preparation of materials especially manufactured or prepared for use in or as part of the permanent construction. Such notice shall contain a request for inspection, the date of commencement and the expected date of completion of the manufacture or preparation of materials. Upon receipt of such notice, the County will arrange to have a representative present at such times during the manufacture as may be necessary to inspect the materials or he will notify the Contractor that the inspection will be made at a point other than the point of manufacture, or he will notify the

Contractor that inspection will be waived. The Contractor must comply with these provisions before shipping any material. Such inspection shall not release the Contractor from the responsibility for furnishing materials meeting the requirements of the Contract Documents.

D. Certificate of Manufacture

When inspection is waived or when the County so requires, the Contractor shall furnish to him authoritative evidence in the form of Certificates of Manufacture that the materials to be used in the work have been manufactured and tested in conformity with the Contract Documents. These certificates shall be notarized and shall include copies of the results of physical tests and chemical analyses, where necessary, that have been made directly on the product or on similar products of the manufacturer.

E. Shop Tests of Operating Equipment

Each piece of equipment for which pressure, duty, capacity, rating, efficiency, performance, function or special requirements are specified shall be tested in the shop of the maker in a manner which shall conclusively prove that its characteristics comply fully with the requirements of the Contract Documents. No such equipment shall be shipped to the work until the County notifies the Contractor, in writing, that the results of such tests are acceptable.

The cost of shop tests and of furnishing manufacturer's preliminary and shop test data of operating equipment shall be borne by the Contractor.

F. Preliminary Field Tests

As soon as conditions permit, the Contractor shall furnish all labor, materials, and instruments and shall make preliminary field tests of equipment. If the preliminary field tests disclose any equipment furnished under this Contract which does not comply with the requirements of the Contract Documents, the Contractor shall, prior to the acceptance tests, make all changes, adjustments and replacements required. The furnishing Contractor shall assist in the preliminary field tests as applicable.

G. Final Field Tests

Upon completion of the work and prior to final payment, all equipment and piping installed under this Contract shall be subjected to acceptance tests as specified or required to prove compliance with the Contract Documents.

The Contractor shall furnish labor, fuel, energy, water and all other materials, equipment and instruments necessary for all acceptance tests, at no additional cost to the County. The Supplier shall assist in the final field tests as applicable.

H. Failure of Tests

Any defects in the materials and equipment or their failure to meet the tests, guarantees or requirements of the Contract Documents shall be promptly corrected by the Contractor. The decision of the County as to whether or not the Contractor has fulfilled his obligations under the Contract shall be final and conclusive. If the Contractor fails to make these corrections or if the improved materials and equipment, when tested, shall again fail to meet the guarantees of specified requirements, the County, notwithstanding its partial payment for

work, and materials and equipment, may reject the materials and equipment and may order the Contractor to remove them from the site at his own expense.

In case the County rejects any materials and equipment, then the Contractor shall replace the rejected materials and equipment within a reasonable time. If he fails to do so, the County may, after the expiration of a period of thirty (30) calendar days after giving him notice in writing, proceed to replace such rejected materials and equipment, and the cost thereof shall be deducted from any compensation due or which may become due the Contractor under his Contract.

I. Final Inspection

During such final inspections, the work shall be clean and free from water. In no case will the final pay application be prepared until the Contractor has complied with all requirements set forth and the County has made his final inspection of the entire work and is satisfied that the entire work is properly and satisfactorily constructed in accordance with the requirements of the Contract Document.

1.05 TEMPORARY STRUCTURES

A. Temporary Fences

If, during the course of the work, it is necessary to remove or disturb any fence or part thereof, the Contractor shall, at his own expense, if so ordered by the County, provide a suitable temporary fence which shall be maintained until the permanent fence is replaced. The County shall be solely responsible for the determination of the necessity for providing a temporary fence and the type of temporary fence to be used.

1.06 TEMPORARY SERVICES

A. First Aid

The Contractor shall keep upon the site, at each location where work is in progress, a completely equipped first aid kit and shall provide ready access thereto at all times when people are employed on the work.

1.07 LINES AND GRADES

A. Grade

All work under this Contract shall be constructed in accordance with the lines and grades shown on the Plans, or as given by the County. The full responsibility for keeping alignment and grade shall rest upon the Contractor.

B. Safeguarding Marks

The Contractor shall safeguard all points, stakes, grade marks, monuments and bench marks made or established on the work, bear the cost of reestablishing them if disturbed, and bear the entire expense of rectifying work improperly installed due to not maintaining or protecting or removing without authorization such established points, stakes and marks.

The Contractor shall safeguard all existing and known property corners, monuments and marks adjacent to but not related to the work and, if required, shall bear the cost of reestablishing them if disturbed or destroyed.

C. Datum Plane

All elevations indicated or specified refer to the Mean Sea Level Datum of the NGVD 1929 Datum and/or NAVD 1988.

1.08 ADJACENT STRUCTURES AND LANDSCAPING

A. Responsibility

The Contractor shall also be entirely responsible and liable for all damage or injury as a result of his operations to all other adjacent public and private property, structures of any kind and appurtenances thereto met with during the progress of the work. The cost of protection, replacement in their original locations and conditions or payment of damages for injuries to such adjacent public and private property and structures affected by the work, whether or not shown on the Plans, and the removal, relocation and reconstruction of such items called for on the Plans or specified shall be included in the various Contract Items and no separate payments will be made therefore. Where such public and private property, structures of any kind and appurtenances thereto are not shown on the Plans and when, in the opinion of the County, additional work is deemed necessary to avoid interference with the work, payment therefore will be made as provided for in the General Conditions.

Contractor is expressly advised that the protection of buildings, structures, tunnels, tanks, pipelines, etc. and related work adjacent and in the vicinity of his operations, wherever they may be, is solely his responsibility. Conditional inspection of buildings or structures in the immediate vicinity of the project which may reasonably be expected to be affected by the Work shall be performed by and be the responsibility of the Contractor.

Contractor shall, before starting operations, make an examination of the interior and exterior of the adjacent structures, buildings, facilities, etc., and record by notes, measurements, photographs, etc., conditions which might be aggravated by open excavation and construction. Repairs or replacement of all conditions disturbed by the construction shall be made to the satisfaction of the County. This does not preclude conforming to the requirements of the insurance underwriters. Copies of surveys, photographs, reports, etc., shall be given to the County.

Prior to the beginning of any excavations, the Contractor shall advise the County of all buildings or structures on which he intends to perform work or which performance of the project work will affect.

B. Protection of Trees

1. All trees and shrubs shall be adequately protected by the Contractor with boxes and otherwise and in accordance with ordinances governing the protection of trees. No excavated materials shall be placed so as to injure such trees or shrubs. Trees or shrubs destroyed by negligence of the Contractor or his employees shall be replaced by him with new stock of similar size and age, at the proper season and at the sole expense of the Contractor.

2. Beneath trees or other surface structures, where possible, pipelines may be built in short tunnels, backfilled with excavated materials, except as otherwise specified, or the trees or structures carefully supported and protected from damage.
3. The County may order the Contractor, for the convenience of the County, to remove trees along the line or trench excavation. If so ordered, the County will obtain any permits required for removal of trees. Such tree removal ordered shall be paid for under the appropriate Contract Items.

C. Lawn Areas

Lawn areas shall be left in as good condition as before the starting of the work. Where sod is to be removed, it shall be carefully removed, and later replaced, or the area where sod has been removed shall be restored with new sod.

D. Restoration of Fences

Any fence, or part thereof, that is damaged or removed during the course of the work shall be replaced or repaired by the Contractor and shall be left in as good a condition as before the starting of the work. The manner in which the fence is repaired or replaced and the materials used in such work shall be subject to the approval of the County. The cost of all labor, materials, equipment, and work for the replacement or repair of any fence shall be deemed included in the appropriate Contract Item or items, or if no specific Item is provided therefore, as part of the overhead cost of the work, and no additional payment will be made therefore.

1.09 PROTECTION OF WORK AND PUBLIC

A. Barriers and Lights

During the prosecution of the work, the Contractor shall put up and maintain at all times such barriers and lights as will effectually prevent accidents. The Contractor shall provide suitable barricades, red lights, "danger" or "caution" or "street closed" signs and watchmen at all places where the work causes obstructions to the normal traffic or constitutes in any way a hazard to the public, in accordance with state and local requirements.

B. Smoke Prevention

A strict compliance with ordinances regulating the production and emission of smoke will be required. No open fires will be permitted.

C. Noise

The Contractor shall eliminate noise to as great an extent as practicable at all times. Air compressing plants shall be equipped with silencers and the exhaust of all engines or other power equipment shall be provided with mufflers. In the vicinity of hospitals and schools, special care shall be used to avoid noise or other nuisances. The Contractor shall strictly observe all local regulations and ordinances covering noise control.

D. Access to Public Services

Neither the materials excavated nor the materials or plant used in the construction of the work shall be so placed as to prevent free access to all fire hydrants, valves or manholes.

E. Dust prevention

The Contractor shall prevent dust nuisance from his operations or from traffic by keeping the roads and/or construction areas sprinkled with water at all times.

1.10 CUTTING AND PATCHING

The Contractor shall do all cutting, fitting or patching of his portion of the work that may be required to make the several parts thereof join and coordinate in a manner satisfactory to the County and in accordance with the Plans and Specifications. The work must be done by competent workmen skilled in the trade required by the restoration.

1.11 CLEANING

A. During Construction

During construction of the work, the Contractor shall, at all times, keep the site of the work and adjacent premises as free from material, debris and rubbish as is practicable and shall remove the same from any portion of the site if, in the opinion of the County, such material, debris, or rubbish constitutes a nuisance or is objectionable. The Contractor shall remove from the site all of his surplus materials and temporary structures when no further need therefore develops.

B. Final Cleaning

At the conclusion of the work, all equipment, tools, temporary structures and materials belonging to the Contractor shall be promptly taken away, and he shall remove and promptly dispose of all water, dirt, rubbish or any other foreign substances.

The Contractor shall thoroughly clean all equipment and materials installed by him and shall deliver such materials and equipment undamaged in a bright, clean, polished and new operating condition.

1.12 MISCELLANEOUS

A. Protection Against Siltation and Bank Erosion

1. The Contractor shall arrange his operations to minimize siltation and bank erosion on construction sites and on existing or proposed water courses and drainage ditches.
2. The Contractor, at his own expense, shall remove any siltation deposits and correct any erosion problems as directed by the County which results from his construction operations.

B. Protection of Wetland Areas

The Contractor shall properly dispose of all surplus material, including soil, in accordance with Local, State and Federal regulations. Under no circumstances shall surplus material be disposed of in wetland areas as defined by the Florida Department of Environmental Protection or Southwest Florida Water Management District.

C. Existing Facilities

The work shall be so conducted to maintain existing facilities in operation insofar as is possible. Requirements and schedules of operations for maintaining existing facilities in service during construction shall be as described in the Special Provisions.

D. Use of Chemicals

All chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant, or of other classification, must show approval of either EPA or USDA. Use of all such chemicals and disposal of residues shall be in strict conformance with instructions.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01010 SUMMARY OF WORK

PART 1 GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS/REQUIREMENTS INCLUDED

- A. The work included in this contract consists of the construction of approximately 8700 linear feet of 20 inch force main from SR 70 to the existing 30" force main as shown on the plans, including up to 8,700 LF of fusible PVC DR 18 C905 pipe installed by directional drilling, other pipe and fittings, restraints, ductile iron fittings, dewatering, valves, clearing and grubbing, surface restoration, and all associated labor, equipment, and materials. Most of the work shall be installed in a 20 foot wide easement on private property and access to this site is limited. A geotechnical report and FDEP permits have been acquired for the project area. Fusible PVC requires specialist expertise, refer to Specification 01030 Special Project Procedures. REFER TO qualifications required in specifications section 02619 for Horizontal Directional Drilling.
- B. The Contractor shall furnish all shop drawings, working drawings, labor, materials, equipment, tools, services and incidentals necessary to complete all work required by these Specifications and as shown on the Contract Drawings.
- C. The Contractor shall perform the work complete, in place and ready for continuous service and shall include any repairs, replacements, and/or restoration required as a result of damages caused prior to acceptance by the County.
- D. The Contractor shall furnish and install all materials, equipment and labor which is reasonably and properly inferable and necessary for the proper completion of the work, whether specifically indicated in the Contract Documents or not.

1.02 CONTRACTS

Construct all the Work under a single contract.

1.03 WORK SEQUENCE

- A. All work done under this Contract shall be done with a minimum of inconvenience to the users of the system or facility. The Contractor shall coordinate his work with private property owners such that existing utility services are maintained to all users to the maximum extent possible.
- B. The Contractor shall, if necessary and feasible, construct the work in stages to accommodate the County's use of the premises during the construction period; coordinate the construction schedule and operations with the County's Representative.
- C. The Contractor shall, where feasible, construct the Work in stages to provide for public convenience and not close off public use of any facility until completion of construction to provide alternative usage.

1.04 CONSTRUCTION AREAS

- A. The Contractor shall: Limit his use of the construction areas for work and for storage, to allow for:

1. Work by other Contractors.
2. County's Use.
3. Public Use.

- B. Coordinate use of work site under direction of County's Representative.
- C. Assume full responsibility for the protection and safekeeping of products under this Contract, stored on the site.
- D. Move any stored products under the Contractor's control, which interfere with operations of the County or separate contractor.
- E. Obtain and pay for the use of additional storage of work areas needed for Contractor operations.

1.05 COUNTY OCCUPANCY

- A. It is assumed that portions of the Work will be completed prior to completion of the entire Work. Upon completion of construction of each individual facility, including testing, if the County, at its sole discretion, desires to accept the individual facility, the Contractor will be issued a dated certificate of completion and acceptance for each individual facility. The County will assume ownership and begin operation of the individual facility on that date and the three-year guaranty period shall commence on that date. The County has the option of not accepting the entire work as a whole until it is completed, tested and approved by the County.

1.06 PARTIAL COUNTY OCCUPANCY

The Contractor shall schedule his operations for completion of portions of the Work, as designated, for the County's occupancy prior to substantial completion of the entire work.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01015 CONTROL OF WORK

PART 1 GENERAL

1.01 WORK PROGRESS

The Contractor shall furnish personnel and equipment which will be efficient, appropriate and adequately sized 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 Contract. If at any time such personnel appears to the County to be inefficient, inappropriate, or insufficient for securing the quality of work required 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 County 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 PRIVATE LAND

The Contractor shall not enter or occupy private land outside of easements, except by permission of the affected property owner.

1.03 WORK LOCATIONS

Work shall be located substantially as indicated on the drawings, but the County 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 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 his own expense, provide suitable and safe bridges and other crossings for accommodating travel by pedestrians and workmen. Bridges provided for access to private property during construction shall be removed when no longer required. If the excavation becomes a hazard, or if it excessively restricts traffic at any point, the County may require special construction procedures such as limiting the length of open trench, prohibiting stacking excavated material in the street and requiring that the trench 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 barricaded and well lighted at all times when construction is not in progress.

1.05 DISTRIBUTION SYSTEMS AND SERVICES

- A. The Contractor shall avoid interruptions to water, telephone, cable TV, sewer, gas, or other related utility services. He shall notify the County and the appropriate agency well in advance of any requirement for dewatering, isolating, or relocating a section of a utility, so that necessary arrangements may be made.
- B. If it appears that utility service will be interrupted for an extended period, the County may order the Contractor to provide temporary service lines at the Contractor's expense.

Inconvenience of the users shall be kept to the minimum, consistent with existing conditions. The safety and integrity of the systems are of prime importance in scheduling work.

1.06 PROTECTION AND RELOCATION OF EXISTING STRUCTURES AND UTILITIES

- A. The Contractor shall assume full responsibility for the protection of all buildings, structures and utilities, public or private, including poles, signs, services to building utilities, gas pipes, water pipes, hydrants, sewers, drains and electric and telephone cables and other similar facilities, whether or not they are shown on the Drawings. The Contractor shall carefully support and protect all such structures and utilities from injury of any kind. Any damage resulting from the Contractor's operation shall be repaired by the Contractor at his expense.
- B. The Contractor shall bear full responsibility for obtaining locations of all underground structures and utilities (including existing water services, drain lines and sewers). Services to buildings shall be maintained and all costs or charges resulting from damage thereto shall be paid by the Contractor.
- C. Protection and temporary removal and replacement of existing utilities and structures as described in this Section shall be a part of the work under the Contract and all costs in connection therewith shall be included in the unit prices established in the Bid.
- D. If, in the opinion of the County, permanent relocation of a utility owned by the County is required, he may direct the Contractor, in writing, to perform the work. Work so ordered will be paid for at the Contract unit prices, if applicable, or as extra work as classified in the General Conditions. If relocation of a privately owned utility is required, the County will notify the utility to perform the work as expeditiously as possible. The Contractor shall fully cooperate with the County and utility and shall have no claim for delay due to such relocation. The Contractor shall notify public utility companies in writing at least 48 hours (excluding Saturdays, Sundays and legal holidays) before excavating near their utilities.

1.07 TEST PITS

Test pits for the purpose of locating underground pipeline or structures in advance of the construction shall be excavated and backfilled by the Contractor immediately after the utility location and the surface shall be restored in a manner equal or better than the original condition. No separate payment will be made.

1.08 CARE AND PROTECTION OF PROPERTY

- A. The Contractor shall be responsible for the preservation of all public and private property and shall use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work on the part of the Contractor, such property shall be restored by the Contractor, at his expense, to a condition equal or better to that existing before the damage was done, or he shall make good the damage in another manner acceptable to the County.
- B. All sidewalks which are disturbed by the Contractor's operations shall be restored to their original or better condition by the use of similar or comparable materials. All curbing shall be restored in a condition equal to the original construction and in accordance with the best modern practice.
- C. Along the location of this work, all fences, walks, bushes, trees, shrubbery and other

physical features shall be protected and restored in a thoroughly workmanlike manner unless otherwise shown on the drawings. Fences and other features removed by the Contractor shall be replaced in the location indicated by the County as soon as conditions permit. All grass areas beyond the limits of construction which have been damaged by the Contractor shall be regraded and sodded to equal or exceed original conditions.

- D. Trees close to the work which drawings do not specify to be removed, shall be boxed or otherwise protected against injury. The Contractor shall trim all branches that are liable to damage because of his operations, but in no case shall any tree be cut or removed without prior notification to the County. All injuries to bark, trunk, limbs and roots of trees shall be repaired by dressing, cutting and painting according to approved methods, using only approved tools and materials.
- E. The protection, removal and replacement of existing physical features along the line of work shall be a part of the work under the Contract and all costs in connection therewith shall be included in the unit and/or lump sum prices established under the items in the Bid.

1.09 MAINTENANCE OF TRAFFIC

- A. Open pits, trenches, unpaved streets, debris, or other obstructions due to construction that will prevent the normal flow of traffic during an extended construction stoppage, for any reason, shall be minimized. In the event an extended construction stoppage is found to be necessary, Contractor shall, at his own expense, provide normal traffic flow during extended construction stoppage. Extended stoppage will be defined by the County.
- B. All excavated material shall be placed so that vehicular and pedestrian traffic may be maintained at all times. If the Contractor's operations cause traffic hazards, he shall repair the road surface, provide temporary roadways, erect wheel guards or fences, or take other safety measures which are satisfactory to the County.
- C. Any changes to the traffic pattern require a Traffic Control Plan as detailed in section 01570 of this specification..

1.10 WATER FOR CONSTRUCTION PURPOSES

- A. In locations where public water supply is available, the Contractor may purchase water for all construction purposes.
- B. The Contractor shall be responsible for paying for all water tap fees incurred for the purpose of obtaining a potable water service or temporary use meter.

1.11 MAINTENANCE OF FLOW

The Contractor shall at his own cost, provide for the flow of sewers, drains and water courses interrupted during the progress of the work and shall immediately cart away and remove all offensive matter. The entire procedure of maintaining existing flow shall be fully discussed with the County well in advance of the interruption of any flow.

1.12 CLEANUP

During the course of the work, the Contractor shall keep the site of his operations in as clean and neat a condition as is possible. He shall dispose of all residue resulting from the construction work and at the conclusion of the work, he shall remove and haul away any

surplus excavation, broken pavement, lumber, equipment, temporary structures and any other refuse remaining from the construction operations and shall leave the entire site of the work in a neat and orderly condition.

1.13 COOPERATION WITHIN THIS CONTRACT

- A. All firms or person 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 County.

1.14 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. All structures shall be protected in a manner approved by the County. Should any of the floors or other parts of the structures become heaved, cracked, or otherwise damaged, all such damaged portions of the work shall be completely repaired and made good by the Contractor, at his own expense and to the satisfaction of the County. If, in the final inspection of the work, any defects, faults, or omissions are found, the Contractor shall cause the same to be repaired or removed and replaced by proper materials and workmanship without extra compensation for the materials and labor required. Further, the Contractor shall be fully responsible for the satisfactory maintenance and repair of the construction and other work undertaken herein, for at least the warranty period described in the Contract.
- C. Further, the Contractor shall take all necessary precautions 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 County.

1.15 CONSTRUCTION WITHIN RIGHT-OF-WAY

Where pipe lines are installed within FDOT right-of-way, all excavation backfill and compaction for the purpose of reconstructing roadways and/or adjacent slopes contiguous thereto shall be in accordance with FDOT or Manatee County Standards and Specifications, whichever is applicable. Contractor shall satisfy the authorized representative of the FDOT with respect to proper safety procedures, construction methods, required permitting, etc., within the FDOT right-of-way.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01030 SPECIAL PROJECT PROCEDURES

PART 1 GENERAL

1.01 PERMITS

Upon notice of award, the Contractor shall immediately apply for all applicable permits not previously obtained by the County to do the work from the appropriate governmental agency or agencies. No work shall commence until all applicable permits have been obtained and copies delivered to the County. The costs for obtaining all permits shall be borne by the Contractor.

1.02 CONNECTIONS TO EXISTING SYSTEM

The Contractor shall perform all work necessary to locate, excavate and prepare for connections to the existing systems all as shown on the Drawings or where directed by the County. The cost for this work and for the actual connection shall be included in the price bid for the project and shall not result in any additional cost to the County. The termination point for each contract shall be as shown on the Contract Drawings.

1.03 RELOCATIONS

The Contractor shall be responsible for the coordination of the relocation of structures, including but not limited to light poles, power poles, signs, sign poles, fences, piping, conduits and drains that interfere with the positioning of the work as set out on the Drawings. No relocation of the items under this Contract shall be done without approval from the County.

1.04 EXISTING UNDERGROUND PIPING, STRUCTURES AND UTILITIES

- A. The attention of the Contractor is drawn to the fact that during excavation, the possibility exists of the Contractor encountering various utility lines not shown on the Drawings. The Contractor shall exercise extreme care before and during excavation to locate and flag these lines as to avoid damage to the existing lines.
- B. It is the responsibility of the Contractor to ensure that all utility or other poles, the stability of which may be endangered by the close proximity of excavation, are temporarily stayed in position while work proceeds in the vicinity of the pole and that the utility or other companies concerned be given reasonable advance notice.
- C. The existing utility locations are shown without express or implied representation, assurance, or guarantee that they are complete or correct or that they represent a true picture of underground piping to be encountered. The Contractor shall be responsible for notifying the various utility companies to locate their respective utilities in advance of construction in conformance with all requirements provided for in the Florida Underground Facilities Damage Prevention and Safety Act (Florida Statutes, Title XXXIII, Chapter 556).
- D. The existing piping and utilities that interfere with new construction shall be rerouted as shown, specified, or required. Before any piping and utilities not shown on the Drawings are disturbed, the Contractor shall notify the County and shall provide suggestions on how best to resolve the issue.

- E. The Contractor shall exercise care in any excavation to locate all existing piping and utilities. All utilities which do not interfere with complete work shall be carefully protected against damage. Any existing utilities damaged in any way by the Contractor shall be restored or replaced by the Contractor at his expense as directed by the County.
- F. It is intended that wherever existing utilities such as water, sewer, gas, telephone, electrical, or other 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 in the Drawings. However, when in the opinion of the County this procedure is not feasible, he may direct the use of fittings for a utilities crossing as detailed on the Drawings. No deflections will be allowed in gravity sanitary sewer lines or in existing storm sewer lines.

1.05 SUSPENSION OF WORK DUE TO WEATHER

Refer to FDOT Standards and Specifications Book, Section 8.

1.06 HURRICANE PREPAREDNESS PLAN

- A. Within 30 days of the date of Notice to Proceed, the Contractor shall submit to the County a Hurricane Preparedness Plan. The plan should outline the necessary measures which the Contractor proposes to perform at no additional cost to the County in case of a hurricane warning.
- B. In the event of inclement weather, or whenever County shall direct, Contractor shall insure that he and his Subcontractors shall carefully protect work and materials against damage or injury from the weather. If, in the opinion of the County, any portion of work or materials is damaged due to the failure on the part of the Contractor or Subcontractors to protect the work, such work and materials shall be removed and replaced at the expense of the Contractor.

1.07 POWER SUPPLY

Electricity as may be required for construction and permanent power supply shall be secured and purchased by the Contractor.

1.08 SALVAGE

Any existing equipment or material, including, but not limited to, valves, pipes, fittings, couplings, etc., which is removed or replaced as a result of construction under this project may be designated as salvage by the County and if so shall be protected for a reasonable time until picked up by the County. Any equipment or material not worthy of salvaging, as directed by the County, shall be disposed of by the Contractor at no additional cost.

1.09 DEWATERING

- A. The Contractor shall do all groundwater pumping necessary to prevent flotation of any part of the work during construction operations with his own equipment.
- B. The Contractor shall pump out water and wastewater which may seep or leak into the excavations for the duration of the Contract and with his own equipment. He shall dispose of this water in an appropriate manner.

1.10 ADDITIONAL PROVISIONS

- A. Before commencing work on any of the existing pipelines, structures or equipment, the Contractor shall notify the County, in writing, at least 10 calendar days in advance of the date he proposes to commence such work.
- B. The Contractor shall provide, at his own expense, all necessary temporary facilities for access to and for protection of, all existing facilities. The County's personnel must have ready access at all times to the existing facilities. The Contractor is responsible for all damage to existing structures, equipment and facilities caused by his construction operations and must repair all such damage when and as ordered by the County.

1.11 CONSTRUCTION CONDITIONS

The Contractor shall strictly adhere to the specific requirements of the governmental unit(s) and/or agency(ies) having jurisdiction over the work. Wherever there is a difference in the requirements of a jurisdictional body and these Specifications, the more stringent shall apply.

1.12 PUBLIC NUISANCE

- A. The Contractor shall not create a public nuisance including but not limited to encroachment on adjacent lands, flooding of adjacent lands, excessive noise or dust.
- B. Sound levels must meet Manatee County Ordinance #87-34, (which amends Ordinance 81-3, The Manatee County Noise Control Ordinance). Sound levels in excess of such ordinance are sufficient cause to have the work halted until equipment can be quieted to these levels. Work stoppage by the County for excessive noise shall not relieve the Contractor of the other portions of this specification.
- C. No extra charge may be made for time lost due to work stoppage resulting from the creation of a public nuisance.

1.13 WARRANTIES

- A. All material supplied under these Specifications shall be warranted by the Contractor and the manufacturers for a period of three (3) years. Warranty period shall commence on the date of County acceptance.
- B. The material shall be warranted to be free from defects in workmanship, design and materials. If any part of the system should fail during the warranty period, it shall be replaced at no expense to the County. All material and installation costs shall be 100% borne by the Contractor.
- C. The manufacturer's warranty period shall run concurrently with the Contractor's warranty or guarantee period. No exception to this provision shall be allowed. The Contractor shall be responsible for obtaining warranties from each of the respective suppliers or manufacturers for all the material specified under these contract specifications,
- D. In the event that the manufacturer is unwilling to provide a three-year warranty commencing at the time of County acceptance, the Contractor shall obtain from the manufacturer a four (4) year warranty starting at the time of equipment delivery to the job site. This four-year

warranty shall not relieve the Contractor of the three-year warranty starting at the time of County acceptance of the equipment.

1.14 FUEL STORAGE & FILLING

- A. If the contractor is storing fuel on site, or doing his own fuel filling of portable equipment (other than hand-held equipment), he is responsible for any required response, clean-up or reporting required, at no additional cost to the county.
- B. The Contractor shall prepare and submit a fuel storage / spill abatement plan prior to start of construction if required.

PART 2 PRODUCTS

2.01 FUSIBLE PVC

- A. Fusible PVC pipe and accessories shall meet the requirements of specification section 02622 and AWWA Standard C-900 or C-905, Polyvinyl Chloride (PVC) Pipe, as appropriate. All requirements indicated in paragraphs 2.01.A.1 & 2 apply to the applicable size pipe except that the pipe shall be extruded with plain ends. The ends shall be square to the pipe and free of any bevel or chamfer.
- B. Where fusible PVC pipe is joined to fusible PVC pipe, it shall be by thermal butt fusion. Thermal fusion shall be accomplished in accordance with the written instructions of the pipe manufacturer and fusion equipment supplier. The installer of the thermal butt fused PE pipe shall have received training in heat fusion pipe joining methods and shall have had experience in performing this type of work.
- C. Horizontal directional drilled fusible PVC pipe shall be installed in a manner not to exceed the manufacturer's recommended bending radius or recommended safe pulling force.

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01045 CUTTING AND PATCHING

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. The Contractor shall be responsible for all cutting, fitting and patching, including excavation and backfill, 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. Provide penetrations of non-structural surfaces for installation of piping and electrical conduit.

PART 2 PRODUCTS

2.01 MATERIALS

Comply with specifications and standards for each specific product involved.

PART 3 EXECUTION

3.01 INSPECTION

- A. Inspect existing conditions of project, including elements subject to damage or to movement during cutting and patching.
- B. After uncovering work, inspect conditions affecting installation of products, or performance of work.
- C. Report unsatisfactory or questionable conditions to County. Do not proceed with work until County has provided further instructions.

3.02 PREPARATION

- A. Provide adequate temporary support as necessary to assure structural value to 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 excavating and backfilling by methods which will prevent settlement or damage to other work.

- C. Fit and adjust products to provide a finished installation to comply with specified products, functions, tolerances and finishes.
- D. Restore work which has been cut or removed; install new products to provide completed work in accordance with the requirements of the Contract Documents.
- E. Replace surfaces airtight to pipes, sleeves, ducts, conduit and other penetrations through surfaces.
- F. Refinish entire surfaces as necessary to provide an even finish to match adjacent finishes.

END OF SECTION

SECTION 01050 FIELD ENGINEERING AND SURVEYING

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. The Contractor shall provide and pay for field surveying service required for the project.
- B. The Contractor shall furnish and set all necessary stakes to establish the lines and grades as shown on the Contract Drawings and layout each portion of the Work of the Contract.

1.02 QUALIFICATION OF SURVEYOR AND ENGINEER

All construction staking shall be conducted by or under the supervision of a Florida Registered Professional Surveyor and Mapper. The Contractor shall be responsible for the layout of all such lines and grades, which will be subject to verification by the County.

1.03 SURVEY REFERENCE POINTS

- A. Existing basic horizontal and vertical control points for the Project are designated on the Contract Drawings.
- B. Locate and protect all survey monumentation, property corners and project control points prior to starting work and preserve all permanent reference points during construction. All costs associated with the replacement of all survey monumentation, property corners and project control points shall be borne by the Contractor.

Make no changes or relocations without prior written notice to County.

Report to County when any reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.

Require surveyor to replace project control points which may be lost or destroyed.

Establish replacements based on original survey control.

1.04 PROJECT SURVEY REQUIREMENTS

The Contractor shall establish temporary bench marks as needed, referenced to data established by survey control points.

1.05 RECORDS

The Contractor shall employ a Professional Engineer or Surveyor registered in the State of Florida to verify survey data and properly prepare record drawings per Section 01720.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01090 REFERENCE STANDARDS

PART 1 GENERAL

1.01 REQUIREMENTS

Abbreviations and acronyms used in Contract Documents to identify reference standards.

- A. Application: When a standard is specified by reference, comply with requirements and recommendations stated in that standard, except when requirements are modified by the Contract Documents, or applicable codes established stricter standards.
- B. Publication Date: The most recent publication in effect on the date of issue of Contract Documents, except when a specific publication date is specified.

1.03 ABBREVIATIONS, NAMES AND ADDRESSES OR ORGANIZATIONS

Obtain copies of reference standards direct from publication source, when needed for proper performance of work, or when required for submittal by Contract Documents.

AA	Aluminum Association 818 Connecticut Avenue, N.W. Washington, DC 20006
AASHTO	American Association of State Highway and Transportation Officials 444 North Capital Street, N.W. Washington, DC 20001
ACI	American Concrete Institute Box 19150 Reford Station Detroit, MI 48219
AI	Asphalt Institute Asphalt Institute Building College Park, MD 20740
AISC	American Institute of Steel Construction 1221 Avenue of the Americas New York, NY 10020
ISI	American Iron and Steel Institute 1000 16th Street NW Washington, DC 20036
ANSI	American National Standards Institute 1430 Broadway New York, NY 10018
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers 1791 Tullie Circle, N.E. Atlanta, GA 30329

ASME	American Society of Mechanical Engineers 345 East 47th Street New York, NY 10017
ASTM	American Society for Testing and Materials 1916 Race Street Philadelphia, PA 19103
AWWA	American Water Works Association 6666 West Quincy Avenue Denver, CO 80235
AWS	American Welding Society 2501 N.W. 7th Street Miami, FL 33125
CRSI	Concrete Reinforcing Steel Institute 180 North LaSalle Street, Suite 2110 Chicago, IL 60601
FDEP	Florida Department of Environmental Protection 3900 Commonwealth Blvd. Tallahassee, Florida 32399
FDOT	Florida Department of Transportation Standards Specifications for Road and Bridge Construction Maps & Publication Sales - Mail Station 12 605 Suwannee St. Tallahassee, FL 32399-0450
FS	Federal Specification General Services Administration Specifications and Consumer Information Distribution Section (WFSIS) Washington Navy Yard, Bldg. 197 Washington, DC 20407
MCPW UTIL STD	Manatee County Utility Engineering 4410-B 66th St. W. Bradenton, FL 34210
MLSFA	Metal Lath/Steel Framing Association 221 North LaSalle Street Chicago, IL 60601
MMA	Monorail Manufacturer's Association 1326 Freeport Road Pittsburgh, PA 15238
NAAMM	National Association of Architectural Metal Manufacturers 221 North LaSalle Street Chicago, IL 60601
NEMA	National Electrical Manufacturer's Assoc.

2101 L Street N.W.
Washington, DC 20037

OHSA	Occupational Safety and Health Assoc. 5807 Breckenridge Pkwy., Suite A Tampa, FL 33610-4249
PCA	Portland Cement Association 5420 Old Orchard Road Skokie, IL 20076
PCI	Prestressed Concrete Institute 20 North Wacker Drive Chicago, IL 60606
SDI	Steel Door Institute 712 Lakewood Center North Cleveland, OH 44107
SMACNA	Sheet Metal and Air Conditioning Contractor's National Association 8224 Old Court House Road Vienna, VA 22180
SSPC	Steel Structures Painting Council 402 24 th Street, Suite 600 Pittsburgh, PA 15213
SWFWMD	Southwest Florida Water Management District 2379 Broad Street Brooksville, FL 34604-6899
UL	Underwriter's Laboratories, Inc. 333 Pfingston Road Northbrook, IL 60062

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01150 MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.01 SCOPE

- A. The scope of this section of the Contract Documents is to further define the items included in each Bid Item in the Bid Form section of the Contract Documents. Payment will be made based on the specified items included in the description in this section for each bid item.
- B. All contract prices included in the Bid Form section will be full compensation for all shop drawings, working drawings, labor, materials, tools, equipment and incidentals necessary to complete the construction as shown on the Drawings and/or as specified in the Contract Documents to be performed under this Contract. Actual quantities of each item bid on a unit price basis will be determined upon completion of the construction in the manner set up for each item in this section of the Specifications. Payment for all items listed in the Bid Form will constitute full compensation for all work shown and/or specified to be performed under this Contract.

1.02 ESTIMATED QUANTITIES

The quantities shown are approximate and are given only as a basis of calculation upon which the award of the Contract is to be made. The County does not assume any responsibility for the final quantities, nor shall the Contractor claim misunderstanding because of such estimate of quantities. Final payment will be made only for satisfactorily completed quantity of each item.

1.03 WORK OUTSIDE AUTHORIZED LIMITS

No payment will be made for work constructed outside the authorized limits of work.

1.04 MEASUREMENT STANDARDS

Unless otherwise specified for the particular items involved, all measurements of distance shall be taken horizontally or vertically.

1.05 AREA MEASUREMENTS

In the measurement of items to be paid for on the basis of area of finished work, the lengths and/or widths to be used in the calculations shall be the final dimensions measured along the surface of the completed work within the neat lines shown or designated.

1.06 LUMP SUM ITEMS

Where payment for items is shown to be paid for on a lump sum basis, no separate payment will be made for any item of work required to complete the lump sum items. Lump sum contracts shall be complete, tested and fully operable prior to request for final payment. Contractor may be required to provide a break-down of the lump sum totals.

1.07 UNIT PRICE ITEM

Separate payment will be made for the items of work described herein and listed on the Bid Form. Any related work not specifically listed, but required for satisfactory completion of the

work shall be considered to be included in the scope of the appropriate listed work items.

No separate payment will be made for the following items and the cost of such work shall be included in the applicable pay items of work. Final payments shall not be requested by the Contractor or made by the County until as-built (record) drawings have been submitted and approved by the County.

1. Shop Drawings, Working Drawings.
2. Clearing, grubbing and grading except as hereinafter specified.
3. Trench excavation, including necessary pavement removal and rock removal, except as otherwise specified.
4. Dewatering and disposal of surplus water.
5. Structural fill, backfill, and grading.
6. Replacement of unpaved roadways, and shrubbery plots.
7. Cleanup and miscellaneous work.
8. Foundation and borrow materials, except as hereinafter specified.
9. Testing and placing system in operation.
10. Any material and equipment required to be installed and utilized for the tests.
11. Pipe, structures, pavement replacement, asphalt and shell driveways and/or appurtenances included within the limits of lump sum work, unless otherwise shown.
12. Maintaining the existing quality of service during construction.
13. Maintaining or detouring of traffic.
14. Appurtenant work as required for a complete and operable system.
15. Seeding and hydromulching.
16. As-built Record Drawings.

BID ITEM 1 & 1A - DUCTILE IRON CL 350 FORCE MAIN (DIRECT BURY)

Payment for all work included in this Bid Item shall be made at the applicable Contract unit price bid per linear foot for furnishing and installing the listed diameter and class of epoxy lined ductile iron main (AWWA C-151, CL-350) pipe as shown on the Contract Drawings and where directed by the Project Representative. Measurement and Payment shall be made for the actual length of the listed diameter pipe installed and will represent full compensation for all labor, materials, excavation, including rock, 10 gage copper clad steel wire, detectable tape, dewatering, thrust blocking, restraints for sizes which there is no specific pay item, bedding, backfill, compaction, testing and equipment required to complete these Bid Items. No additional compensation will be made for excavation below the bottom of the pipe, for rock removal or bedding and backfill materials, or for repair of any trench settlement.

BID ITEM 2 - PVC (C-905) FORCE MAIN (DIRECT BURY)

Payment for all work included in this Bid Item shall be made at the applicable Contract unit price bid per linear foot for furnishing and installing the listed diameter of DR 18 PVC force main (AWWA C-900, CL-150 or C-905, CL-235) pipe and fittings as shown on the Contract Drawings and where directed by the Project Representative. Measurement and Payment shall be made for the actual length of the listed diameter pipe installed and will represent full compensation for all labor, materials, excavation, including rock, dewatering, stormwater and dewatering permits (to be acquired by the contractor), bedding, backfill, compaction, testing and equipment required to complete these Bid Items. No additional compensation shall be made for excavation below the bottom of the pipe, for rock removal or bedding and backfill material, or for repair of any trench settlement.

BID ITEM 3 - FUSIBLE PVC (C-905) FORCE MAIN (HDD)

Payment for all work included in this Bid Item shall be made at the applicable Contract unit price bid per linear foot for furnishing and installing the listed diameter of DR 21 Fusible PVC force main (AWWA C-900, CL-150 or C-905, CL-200) pipe as shown on the Contract Drawings and where directed by the Project Representative. Measurement and Payment shall be made for the actual length of the listed diameter pipe installed and will represent full compensation for all labor, materials, excavation, including rock, dewatering, stormwater and dewatering permits (to be acquired by the contractor), bedding, backfill, compaction, testing and equipment required to complete these Bid Items. No additional compensation shall be made for excavation below the bottom of the pipe, for rock removal or bedding and backfill material, or for repair of any trench settlement.

BID ITEM 4, 4A, 4B- PIPE RESTRAINTS

Payment for all work included in this Bid Item shall be made at the applicable Contract unit price bid per each restraint required to restrain the piping shown on the Contract Drawings. Measurement shall be based on each complete restraint furnished and installed except where specifically included in another pay item. Payment shall represent full compensation for all labor, material, equipment, excavation, including rock, bedding, backfill, compaction, and testing required to complete this Bid Item. This Bid Item includes the installation of restraints (EBAA Iron or equal) with **stainless steel rods and nuts and bolts on bell restraints**, used in restraining PVC and ductile iron pipe of the specified type acceptably furnished and installed as shown on the drawings and where directed by the Project Representative and in accordance with the pipe and restraint manufacturer's requirements. The work shall include, but is not limited to, all bolts, nuts, washers, gaskets, and all other related and necessary materials, work and equipment required or associated with this item

BID ITEM 5 - TAPPING VALVE AND SLEEVE

Payment for all work included in this Bid Item shall be at the applicable Contract unit price bid per each tapping sleeve including tapping valve for furnishing and installing the listed diameter tapping sleeve and tapping valve, box, cover and concrete pad as shown on the Contract Drawings. Prior to the tapping operation, the Contractor will contact the County as to the date and time of the proposed work. The tapping operation itself up to 12-inches in diameter will be performed by the County. All tapping operations larger than 12 inches in diameter shall be performed by the Contractor with the County's Representative present. Payment shall represent full compensation for all labor, material, excavation, including rock as necessary, bedding, backfill, compaction testing, disinfection and equipment required to complete these Bid Items.

BID ITEM 6, 7, 7A - GATE AND PLUG VALVES

Payment for all work included in this Bid Item shall be made at the applicable Contract unit price bid per each valve for furnishing and installing the listed type, diameter valve, box, cover and concrete pad as shown on the Contract Drawings and where directed by the Project Representative. Payment shall represent full compensation for all labor, material, excavation, including rock as necessary, bedding, backfill, compaction, testing and disinfection and equipment required to complete this Bid Item.

BID ITEM 8 - DUCTILE IRON FITTINGS, WASTEWATER

Payment for all work included in these Bid Items will be made at the applicable Contract unit price bid per pound for furnishing and installing each listed ductile iron fitting (epoxy lined) as shown on the Contract Drawings and where directed by the Project Representative. Payment will be made for each fitting installed and will represent full compensation for all labor, material, excavation, including rock, bedding, backfill, compaction, testing and equipment required to complete these Bid Items.

BID ITEM 9 - CONNECTION TO EXISTING FORCE MAIN

Payment for all work included under this Bid Item shall be made at the applicable Contract unit price bid per each connection for connecting the proposed force main to the existing force main at the locations shown on the Contract Drawings.

Payment shall represent full compensation for all labor, excavation, including rock as necessary, dewatering, pipe, bedding, materials, equipment, backfill, compaction, sheeting, testing, and bypass pumping of sewage. Also included shall be all other appurtenances and incidentals required or specified to complete the connection except valves and asphalt road restoration. No additional compensation will be made by the Owner for excavation performed below the bottom of the pipe, for rock removal or materials or for repair of any trench settlement. Measurement for all work under this Bid Item shall be per each connection.

The work shall include, but is not limited to, all connectors, restraints, fittings, adapters, gaskets, testing, removal and installation of thrust blocks, removal of existing pipe, temporary thrust blocks, plugs, caps, and all related and necessary materials, work and equipment required associated with this item.

BID ITEM 10 - ASPHALT ROAD RESTORATION (BASE & RESURFACE)

This Bid Item includes the construction of all roadway base, subgrade preparation, and finish course as specified acceptably furnished, installed, and tested to the limits shown on the drawings and where directed by the Project Representative. Measurement will be according to the square yards of pavement installed. Payment for all work under this Bid Item, shall be made at the applicable Contract unit price bid per square yard of roadway pavement restoration. Payment will include complete restoration of the roadway section in accordance with the applicable details on the Contract Drawings, but not less than 1-1/2 inches of FDOT Type III asphaltic concrete, the necessary base, subbase or compacted suitable excavation material, sawcutting and removal and disposal of existing roadway pavement, and disposal of excess and waste material, all in accordance with these Specifications.

The work shall include, but is not limited to, all requirements of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction and the Manatee County Transportation Department requirements for pavement repair.

BID ITEM 11 - ASPHALT ROAD RESTORATION (MILL & RESURFACE)

This Bid Item includes the milling and construction of a finish course of the specified type and thickness acceptably furnished, installed, and tested to the limits shown on the drawings and where directed by the Project Representative. Measurement will be according to the square yards of pavement milled and resurfaced. Payment for all work under this Bid Item shall be made at the applicable Contract unit price bid per square yard of roadway pavement

milled and resurfaced.

The work shall include, but is not limited to, all requirements of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction and the Manatee County Transportation Department requirements for paving.

BID ITEM 12 - CURB & GUTTER REPLACEMENT

Payment for all work included in this Bid Item will be made at the applicable Contract unit price bid per linear foot for removal of existing curb & gutter and for furnishing and placing the curb & gutter as shown on the Drawings and as directed by the Project Representative. Measurement will be per actual number of linear feet of curbing or gutter installed. Payment shall represent full compensation for removal and disposal of existing curb & gutter and all labor, material and equipment for compacting subgrade, forming, furnishing, placing the concrete, and finishing as specified and all incidentals necessary for completion of this Bid Item, ready for approval and acceptance by the County.

BID ITEM 13 - HYDROSEEDING

Payment for all work included in this Bid Item will be made at the applicable Contract unit price bid per square yard for furnishing, installing and maintaining hydroseeding as shown on the Contract Drawings or as directed by the Project Representative. Payment shall represent full compensation for all labor, materials, equipment, and incidentals necessary to complete the work, ready for approval and acceptance by the County. This pay item also includes all work required for watering, and re-hydroseeding as necessary to maintain prevention of erosion and sedimentation control, stormwater quality, establishment of grass cover, and restoration of disturbed areas as required by FDEP and NPDES permits. Hydroseed mix and procedures shall be in accordance with FDOT Specifications.

BID ITEM 14 - SODDING

Payment for all work included in this Bid Item will be made at the applicable Contract unit price bid per square yard for furnishing and installing sod as shown on the Contract Drawings and as required by the Project Representative. Payment shall represent full compensation for all labor, materials, watering, necessary equipment, and incidentals necessary to complete the work, ready for approval and acceptance by the County.

BID ITEM 15 - AIR RELEASE VALVE ASSEMBLY INCL. MANHOLE

Payment for work under this Bid Item shall be made at the Contract unit price bid for each air release valve assembly and manhole furnished and installed complete including frame and cover, fittings, adapters, restraints, valves, all protective coatings, sealing of lift holes, rainwater protector, and other components as shown on the Contract Drawings.

Measurement shall be for each ARV assembly with manhole installed complete and accepted. Excavation, including rock as necessary, bedding, backfill, dewatering, concrete, tracer wire, testing and any and all other items necessary for a completed system in accordance with the Contract Documents shall be included. Payment shall represent full compensation for all labor, materials, equipment and incidental items necessary to complete each ARV, ready for operation and approval by the Engineer and Owner. Temporary ARV's or ports furnished, installed, and used only during filling or draining piping shall be incidental to the work and no

separate payment shall be made

BID ITEM 16 - AIR RELEASE VALVE ASSEMBLY

Payment for work under this Bid Item shall be made at the Contract unit price bid for each air release valve assembly furnished and installed complete including fittings, adapters, restraints, valves, enclosure, all protective coatings, and other components as shown on the Contract Drawings.

Measurement shall be for each ARV assembly installed complete and accepted. Excavation, including rock as necessary, bedding, backfill, dewatering, concrete, tracer wire, testing, **stainless steel saddles with SS bolts**, and all other items necessary for a completed system in accordance with the Contract Documents shall be included. Payment shall represent full compensation for all labor, materials, equipment and incidental items necessary to complete each ARV, ready for operation and approval by the Engineer and Owner. Temporary ARV's or ports used only during filling or draining piping shall be incidental to the work and no separate payment shall be made.

BID ITEM 17 - EROSION CONTROL

Payment for all work included in this Bid Item shall be at the applicable Contract lump sum price bid for all erosion control work to meet federal, state, county, and local requirements, and as shown on the Contract Drawings, except silt fence. Payment shall represent full compensation for all labor, material, and equipment required to complete this Bid Item.

BID ITEM 18 - TRAFFIC CONTROL TO FDOT STANDARDS

Payment for all work included in this Bid Item will be made at the applicable Contract lump sum price bid for preparing and implementing all traffic control plans required by FDOT and the County, including supply of all traffic control devices, signs, flagmen, barricades, detours, temporary signal re-timing, temporary striping, traffic and safety barriers for excavation, and other measures. Traffic plans shall be subject to approval by the County and FDOT. Payment shall represent full compensation for and all labor, materials, equipment and incidentals necessary for completion of this Bid Item, ready for approval and acceptance by the Engineer/Owner.

BID ITEM 19 - MISCELLANEOUS CONCRETE

Payment for all work under this Bid Item shall be made at the applicable Contract unit price bid per cubic yard of concrete as shown on the Bid Form for furnishing, placing and installing the miscellaneous concrete, measured in place, within the lines and grades as shown on the Contract Drawings and as directed by the Project Representative. All concrete placed outside these lines and grades to fill unauthorized excavation and all concrete for replacing defective work shall be at the expense of the Contractor. Concrete specifically included under any other Bid Item will not be measured or paid for under this Bid Item.

Measurement for miscellaneous concrete shall be per actual cubic yard of concrete furnished, placed and installed as shown on the Contract Drawings or as ordered by the County in writing.

This Bid Item includes encasements, non-reinforced pipe cradles, and like work. Payment shall represent full compensation for all labor, materials, and equipment for mixing, placing, forming and curing of the concrete and all incidentals necessary to complete the concrete work, ready for approval and acceptance by the County.

BID ITEM 20 - CLEARING AND GRUBBING

Payment for all work included in this Bid Item shall be at the applicable Contract unit price bid for all clearing and grubbing work as shown on the Drawings or where directed by the Project Representative and shall meet federal, state, county, and local requirements. Measurement shall be per acre of land cleared and grubbed. Payment shall represent full compensation for all labor, material, and equipment required to complete this Bid Item. Clearing and Grubbing shall be performed in accordance with FDOT and County specifications.

BID ITEM 21 - SOIL TRACKING PREVENTION DEVICE

Payment for all work included in this Bid Item shall be at the applicable Contract unit price bid for each Soil Tracking Prevention Device (STPD) as shown on the Drawings or where directed by the Project Representative. This Bid Item includes the furnishing, installation, and removal after construction of a STPD to prevent soil tracking during construction. Payment for this item shall be full compensation for all labor, equipment, and materials to furnish, install, maintain, remove, and dispose each STPD, including preparation of a firm and unyielding subgrade, compaction, and all related tasks. Measurement will be per each STPD installed. Payment for all work under this Bid Item, shall be made at the applicable Contract unit price bid per each, after removal from the site. The STPD shall be constructed in accordance with FDOT Standard Index 106.

BID ITEM 22 - STAKED SILT FENCE

Payment for all work included in this Bid Item shall be at the applicable Contract unit price bid per linear foot of silt fence installed as shown on the Drawings or where directed by the Project Representative. This Bid Item includes the construction of staked silt fence as specified and acceptably furnished and installed and removed when no longer required. Measurement shall be according to the number of linear feet of staked silt fence installed and accepted.

BID ITEM 23 - CRUSHED SHELL FOR TEMPORARY ROAD BASE

This Bid Item includes the furnishing, installation and removal after construction of all temporary crushed shell for roadway base to maintain access during construction, as directed by the Project Representative. Payment for this item shall be full compensation for furnishing crushed shell meeting County specifications, installed where directed by the Project Representative, including removal and disposal after construction of the force main. Measurement will be according to the tons of crushed shell installed. Payment for all work under this Bid Item, shall be made at the applicable Contract unit price bid per ton of crushed shell installed, after removal from the site.

BID ITEM 24 - SIDEWALK RESTORATION

Payment for all work included in this Bid Item will be made at the applicable Contract unit price bid per square yard for removal and replacement of existing concrete or asphalt sidewalk as shown on the Drawings or where directed by the Project Representative. Measurement will be per actual number of square yards of sidewalk installed and must match or exceed existing thickness. Payment shall represent full compensation for removal and replacement of existing sidewalk, including but not limited to all labor, material and equipment for compacting subgrade, forming, furnishing, placing the concrete or asphalt, and finishing as specified and all incidentals necessary for completion of this Bid Item, ready for approval and acceptance by the Engineer/Owner.

BID ITEM 25 - TEMPORARY FORCE MAIN BYPASS

Payment for all work included in this Bid Item will be made at the applicable Contract lump sum price bid for providing temporary force main bypass facilities as shown on the Drawings including the handling & maintaining of wastewater flows during construction. This pay item includes coordination with County staff, HDPE pipe, F&I 20x18" tapping valve and sleeve (permanent), pumping and disposal of wastewater, provision and operation of tanker trucks, temporary fittings, connections, plugs, thrust blocks, restraints, and all other labor, equipment, and materials necessary to divert wastewater flows to allow construction to be performed and completed.

BID ITEM 26 - MOBILIZATION

Measurement and payment for this Bid Item shall include full compensation for the required 100 percent (100%) Performance Bond, 100 Percent (100%) Payment Bond, all required insurance for the project and the Contractor's mobilization and demobilization costs as shown in the Bid Form. Mobilization includes, but it not limited to: preparation and movement of personnel, equipment, supplies and incidentals such as safety and sanitary supplies/ facilities

Payment for mobilization shall not exceed 10 percent (10%) of the total Contract cost unless the Contractor can prove to the County that his actual mobilization cost exceeds 10 percent (10%).

Partial payments for this Bid Item will be made in accordance with the following schedule:

Percent of Original Contract Amount:	Percent Allowable Payment of Mobilization/Demobilization Bid Item Price:
5	25
10	35
25	45
50	50
75	75
100	100

These payments will be subject to the standard retainage provided in the Contract. Payment of the retainage will be made after completion of the work and demobilization.

BID ITEM 27 - MISCELLANEOUS WORK AND CLEANUP

Payment for all work included under this Bid Item shall be made at the Contract lump sum price

bid listed in the Bid Form and shall represent full compensation for all labor, materials and equipment required to perform all the work as shown on the Contract Drawings and specified herein and any other miscellaneous work not specifically included for payment under other Bid Items obviously necessary to complete the Contract. Partial payments will be based on the breakdown of the Bid Item in accordance with the Schedule of Values submitted by the Contractor and approved by the County. Payment shall also include full compensation for project photographs, as-built record drawings, project signs, rubbish and spoil removal, repair, replacement or relocation of all signs, walls, private irrigation systems and related items and any and all other items required to complete the project in accordance with Contract Documents.

BID ITEM 28 - CONTRACT CONTINGENCY

Payment for all work under this Bid Item shall be made only at the County's discretion. This Bid Item shall not exceed 10% of the Bidders Total Base Bid. The Bidder shall calculate and enter a dollar amount for this Bid Item.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01152 REQUESTS FOR PAYMENT

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

Submit Applications for Payment to the Project Manager or as directed at the preconstruction meeting, in accordance with the schedule established by Conditions of the Contract and Agreement between County and Contractor.

1.02 FORMAT AND DATA REQUIRED

- A. Submit payment requests in the form provided by the County with itemized data typed in accordance with the Bid Form.
- B. Provide construction photographs in accordance with Contract Documents.

1.03 SUBSTANTIATING DATA FOR PROGRESS PAYMENTS

- A. When the County requires substantiating data, Contractor shall submit suitable information with a cover letter.
- B. Submit one copy of data and cover letter for each copy of application.

1.04 PREPARATION OF APPLICATION FOR FINAL PAYMENT

Fill in application form as specified for progress payments.

1.05 SUBMITTAL PROCEDURE

- A. Submit applications for payment at the times stipulated in the Agreement.
- B. Number: Three (3) copies of each application; all signed and certified by the Contractor.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01153 CHANGE ORDER PROCEDURES

PART 1 GENERAL

1.01 DEFINITION

- A. Change Order: Change in contract scope, price or time that must be approved and executed by the Project Representative before it becomes effective.
- B. Administrative Change Adjustment: Minor change order under 10% of project cost or 20% time, does not have to be Board approved.
- C. Field Order: Change to contract quantity that does not require a change of price.

1.02 REQUIREMENTS INCLUDED

- A. The Contractor shall promptly implement change order procedures:
 - 1. Provide full written data required to evaluate changes.
 - 2. Maintain detailed records of work done on a time-and-material/force account basis.
 - 3. Provide full documentation to County on request.
- B. The Contractor shall designate a member of the Contractor's organization who:
 - 1. Is authorized to accept changes to the Work.
 - 2. Is responsible for informing others in the Contractor's employ of the authorized changes into the Work.

1.03 PRELIMINARY PROCEDURES

- A. Project Manager may initiate changes by submitting a Request to Contractor. Request will include:
 - 1. Detailed description of the change, products, costs and location of the change in the Project.
 - 2. Supplementary or revised Drawings and Specifications.
 - 3. The projected time extension for making the change.
 - 4. A specified period of time during which the requested price will be considered valid.
 - 5. Such request is for information only and is not an instruction to execute the changes, nor to stop work in progress.
- B. Contractor may initiate changes by submitting a written notice to the Project Manager, containing:
 - 1. Description of the proposed changes.
 - 2. Statement of the reason for making the changes.
 - 3. Statement of the effect on the Contract Sum and the Contract Time.
 - 4. Statement of the effect on the work of separate contractors.
 - 5. Documentation supporting any change in Contract Sum or Contract Time, as appropriate.

1.04 FIELD ORDER CHANGE

- A. In lieu of a Change Order, the Project Manager may issue a Field Order for the Contractor to proceed with additional work within the original intent of the Project.
- B. Field Order will describe changes in the work, with attachments of backup information to define details of the change.
- C. Contractor must sign and date the Field Order to indicate agreement with the terms therein.

1.05 DOCUMENTATION OF PROPOSALS AND CLAIMS

- A. Support each quotation for a lump sum proposal and for each unit price which has not previously been established, with sufficient substantiating data to allow the County to evaluate the quotation.
- B. On request, provide additional data to support time and cost computations:
 - 1. Labor required.
 - 2. Equipment required.
 - 3. Products required.
 - a. Recommended source of purchase and unit cost.
 - b. Quantities required.
 - 4. Taxes, insurance and bonds.
 - 5. Credit for work deleted from Contract, similarly documented.
 - 6. Overhead and profit.
 - 7. Justification for any change in Contract Time.
- C. Support each claim for additional costs and for work done on a time-and-material/force account basis, with documentation as required for a lump-sum proposal.
 - 1. Name of the County's authorized agent who ordered the work and date of the order.
 - 2. Date and time work was performed and by whom.
 - 3. Time record, summary of hours work and hourly rates paid.
 - 4. Receipts and invoices for:
 - a. Equipment used, listing dates and time of use.
 - b. Products used, listing of quantities.
 - c. Subcontracts.

1.06 PREPARATION OF CHANGE ORDERS

- A. Project Manager will prepare each Change Order.
- B. Change Order will describe changes in the Work, both additions and deletions, with attachments as necessary to define details of the change.
- C. Change Order will provide an accounting of the adjustment in the Contract Sum and in the Contract Time.

1.07 LUMP SUM/FIXED PRICE CHANGE ORDER

- A. Project Manager initiates the form, including a description of the changes involved and attachments based upon documents and proposals submitted by the Contractor, or requests from the County, or both.

- B. Once the form has been completed, all copies should be sent to Contractor for approval. After approval by Contractor, all copies should be sent to County for approval. The County will distribute executed copies after approval by the Board of County Commissioners.

1.08 UNIT PRICE CHANGE ORDER

- A. Contents of Change Orders will be based on, either:
 - 1. County's definition of the scope of the required changes.
 - 2. Contractor's Proposal for a change, as approved by the County.
 - 3. Survey of completed work.
- B. The amounts of the unit prices to be:
 - 1. Those stated in the Agreement.
 - 2. Those mutually agreed upon between County and Contractor.

1.09 TIME AND MATERIAL/FORCE ACCOUNT CHANGE ORDER/CONSTRUCTION CHANGE AUTHORIZATION

- A. At completion of the change, Contractor shall submit itemized accounting and supporting data as provided in the Article "Documentation of Proposals and Claims" of this Section.
- B. County will determine the allowable cost of such work, as provided in General Conditions and Supplementary Conditions.
- C. County will sign and date the Change Order to establish the change in Contract Sum and in Contract Time.
- D. County and Contractor will sign and date the Change Order to indicate their agreement therewith.

1.10 CORRELATION WITH CONTRACTOR'S SUBMITTALS

- A. Periodically revise Schedule of Values and Application for Payment forms to record each change as a separate item of work, and to record the adjusted Contract Sum.
- B. Periodically revise the Construction Schedule to reflect each change in Contract Time. Revise sub schedules to show changes for other items of work affected by the changes.
- C. Upon completion of work under a Change Order, enter pertinent changes in Record Documents.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01200 PROJECT MEETINGS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. The County shall schedule the pre-construction meeting, periodic progress meetings and special meetings, if required, throughout progress of work.
- B. Representatives of contractors, 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 ascertain that work is expedited consistent with Contract Documents and construction schedules.

1.02 PRE-CONSTRUCTION MEETING

- A. Attendance:
 - 1. County's Engineer.
 - 2. County's Project Manager
 - 3. Contractor.
 - 4. Resident Project Representative.
 - 5. Related Labor Contractor's Superintendent.
 - 6. Major Subcontractors.
 - 7. Major Suppliers.
 - 8. Others as appropriate.
- B. Suggested Agenda:
 - 1. Distribution and discussion of:
 - a. List of major subcontractors.
 - b. Projected Construction Schedules.
 - c. Coordination of Utilities
 - 2. Critical work sequencing.
 - 3. Project Coordination.
 - a. Designation of responsible personnel.
 - b. Emergency contact persons with phone numbers.
 - 4. Procedures and processing of:
 - a. Field decisions.
 - b. Submittals.
 - c. Change Orders.
 - d. Applications for Payment.
 - 5. Procedures for maintaining Record Documents.
 - 6. Use of premises:
 - a. Office, work and storage areas.
 - b. County's REQUIREMENTS.
 - 7. Temporary utilities.
 - 8. Housekeeping procedures.
 - 9. Liquidated damages.
 - 10. Equal Opportunity Requirements.
 - 11. Laboratory testing.
 - 12. Project / Job meetings: Progress meeting, other special topics as needed.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01310 CONSTRUCTION SCHEDULE & PROJECT RESTRAINTS

PART 1 GENERAL

1.01 GENERAL

- A. Construction under this contract must be coordinated with the County and accomplished in a logical order to maintain utilization and flow through existing facilities and public properties and rights-of-way and to allow construction to be completed within the time allowed by Contract Documents and in the manner set forth in the Contract.

1.02 CONSTRUCTION SCHEDULING GENERAL PROVISIONS

- A. No work shall be done between 7:00 p.m. and 7:00 a.m. nor on weekends or legal holidays without written permission of the County. However, emergency work may be done without prior permission.
- B. Night work may be established by the Contractor as regular procedure with the written permission of the County. Such permission, however, may be revoked at any time by the County if the Contractor fails to maintain adequate equipment and supervision for the proper execution and control of the work at night.
- C. Due to potential health hazards and requirements of the State of Florida and the U.S. Environmental Protection Agency, existing facilities must be maintained in operation.
- D. The Contractor shall be fully responsible for providing all temporary piping, plumbing, electrical hook-ups, lighting, temporary structure, or other materials, equipment and systems required to maintain the existing facility's operations. All details of temporary piping and temporary construction are not necessarily shown on the Drawings or covered in the Specifications. However, this does not relieve the Contractor of the responsibility to insure that construction will not interrupt proper facility operations.
- E. 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 in fulfilling the commitments of the Contractor's schedule.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. The Contractor shall submit a critical path schedule as described herein.
- B. The planning, scheduling, management and execution of the work is the sole responsibility of the Contractor. The progress schedule requirement is established to allow County to review Contractor's planning, scheduling, management and execution of the work; to assist County in evaluating work progress and make progress payments and to allow other contractors to cooperate and coordinate their activities with those of the Contractor.

2.02 FORM OF SCHEDULES

- A. Prepare schedules using the latest version of Microsoft Project, or other County approved

software, in the form of a horizontal bar chart diagram. The diagram shall be time-scaled and sequenced by work areas. Horizontal time scale shall identify the first work day of each week.

- B. Activities shall be at least as detailed as the Schedule of Values. Activity durations shall be in whole working days. In addition, man-days shall be shown for each activity or tabulated in an accompanying report.
- C. Diagrams shall be neat and legible and submitted on sheets at least 8-1/2 inches by 11 inches suitable for reproduction. Scale and spacing shall allow space for notations and future revisions.

2.03 CONTENT OF SCHEDULES

- A. Each monthly schedule shall be based on data as of the last day of the current pay period.
- B. Description for each activity shall be brief, but convey the scope of work described.
- C. Activities shall identify all items of work that must be accomplished to achieve substantial completion, such as items pertaining to Contractor's installation and testing activities; items pertaining to the approval of regulatory agencies; contractor's time required for submittals, fabrication and deliveries; the time required by County to review all submittals as set forth in the Contract Documents; items of work required of County to support pre-operational, startup and final testing; time required for the relocation of utilities. Activities shall also identify interface milestones with the work of other contractors performing work under separate contracts with County.
- D. Schedules shall show the complete sequence of construction by activities. Dates for beginning and completion of each activity shall be indicated as well as projected percentage of completion for each activity as of the first day of each month.
- E. Submittal schedule for shop drawing review, product data, and samples shall show the date of Contractor submittal and the date approved submittals will be required by the County, consistent with the time frames established in the Specifications.
- F. For Contract change orders granting time extensions, the impact on the Contract date(s) shall equal the calendar-day total time extension specified for the applicable work in the Contract change orders.
- G. For actual delays, add activities prior to each delayed activity on the appropriate critical path(s). Data on the added activities of this type shall portray all steps leading to the delay and shall further include the following: separate activity identification, activity description indicating cause of the delay, activity duration consistent with whichever set of dates below applies, the actual start and finish dates of the delay or, if the delay is not finished, the actual start date and estimated completion date.
- H. For potential delays, add an activity prior to each potentially delayed activity on the appropriate critical path(s). Data for added activities of this type shall include alternatives available to mitigate the delay including acceleration alternatives and further show the following: separate activity identification, activity description indicating cause of the potential delay and activity duration equal to zero work days.

2.04 SUPPORTING NARRATIVE

- A. Status and scheduling reports identified below shall contain a narrative to document the project status, to explain the basis of Contractor's determination of durations, describe the Contract conditions and restraints incorporated into the schedule and provide an analysis pertaining to potential problems and practical steps to mitigate them.
- B. The narrative shall specifically include:
 - 1. Actual completion dates for activities completed during the monthly report period and actual start dates for activities commenced during the monthly report period.
 - 2. Anticipated start dates for activities scheduled to commence during the following monthly report period.
 - 3. Changes in the duration of any activity and minor logic changes.
 - 4. The progress along the critical path in terms of days ahead or behind the Contract date.
 - 5. If the Monthly Status Report indicates an avoidable delay to the Contract completion date or interim completion dates as specified in the Agreement, Contractor shall identify the problem, cause and the activities affected and provide an explanation of the proposed corrective action to meet the milestone dates involved or to mitigate further delays.
 - 6. If the delay is thought to be unavoidable, the Contractor shall identify the problem, cause, duration, specific activities affected and restraints of each activity.
 - 7. The narrative shall also discuss all change order activities whether included or not in the revised/current schedule of legal status. Newly introduced change order work activities and the CPM path(s) that they affect, must be specifically identified. All change order work activities added to the schedule shall conform with the sequencing and Contract Time requirements of the applicable Change Order.
 - 8. Original Contract date(s) shall not be changed except by Contract change order. A revision need not be submitted when the foregoing situations arise unless required by County. Review of a report containing added activities will not be construed to be concurrence with the duration or restraints for such added activities; instead the corresponding data as ultimately incorporated into the applicable Contract change order shall govern.
 - 9. Should County require additional data, this information shall be supplied by Contractor within 10 calendar days.

2.05 SUBMITTALS

- A. Contractor shall submit estimated and preliminary progress schedules (as identified in the Terms and Conditions of the Contract and the General Conditions), monthly status reports, a start-up schedule and an as-built schedule report all as specified herein.
- B. All schedules, including estimated and preliminary schedules, shall be in conformance with the Contract Documents.
- C. The finalized progress schedule discussed in the Contract Documents shall be the first monthly status report and as such shall be in conformance with all applicable specifications contained herein.
- D. Monthly Status Report submittals shall include a time-scaled (days after notice to proceed) diagram showing all contract activities and supporting narrative. The initial detailed schedule shall use the notice to proceed as the start date. The finalized schedule, if

concurred with by County, shall be the work plan to be used by the contractor for planning, scheduling, managing and executing the work.

- E. The schedule diagram shall be formatted as above. The diagram shall include (1) all detailed activities included in the preliminary and estimated schedule submittals, (2) calendar days prior to substantial completion, (3) summary activities for the remaining days. The critical path activities shall be identified, including critical paths for interim dates, if possible.
- F. The Contractor shall submit progress schedules with each application for payment.

2.06 MONTHLY STATUS REPORTS

- A. Contractor shall submit detailed schedule status reports on a monthly basis with the Application for Payment. The first such status report shall be submitted with the first Application for Payment and include data as of the last day of the pay period. The Monthly Report shall include a "marked-up" copy of the latest detailed schedule of legal status and a supporting narrative including updated information as described above. The Monthly Report will be reviewed by County and Contractor at a monthly schedule meeting and Contractor will address County's comments on the subsequent monthly report. Monthly status reports shall be the basis for evaluating Contractor's progress.
- B. The "marked-up" diagram shall show, for the latest detailed schedule of legal status, percentages of completion for all activities, actual start and finish dates and remaining durations, as appropriate. Activities not previously included in the latest detailed schedule of legal status shall be added, except that contractual dates will not be changed except by change order. Review of a marked-up diagram by County will not be construed to constitute concurrence with the time frames, duration, or sequencing for such added activities; instead the corresponding data as ultimately incorporated into an appropriate change order shall govern.

2.07 STARTUP SCHEDULE

- A. At least 60 calendar days prior to the date of substantial completion, Contractor shall submit a time-scaled (days after notice to proceed) diagram detailing the work to take place in the period between 60 days prior to substantial completion, together with a supporting narrative. County shall have 10 calendar days after receipt of the submittal to respond. Upon receipt of County's comments, Contractor shall make the necessary revisions and submit the revised schedule within 10 calendar days. The resubmittal, if concurred with by County, shall be the Work Plan to be used by Contractor for planning, managing, scheduling and executing the remaining work leading to substantial completion.
- B. The time-scaled diagram shall use the latest schedule of legal status for those activities completed ahead of the last 60 calendar days prior to substantial completion and detailed activities for the remaining 60-day period within the time frames outlined in the latest schedule of legal status.
- C. Contractor will be required to continue the requirement for monthly reports, as outlined above. In preparing this report, Contractor must assure that the schedule is consistent with the progress noted in the startup schedule.

2.08 REVISIONS

- A. All revised Schedule Submittals shall be made in the same form and detail as the initial submittal and shall be accompanied by an explanation of the reasons for such revisions, all of which shall be subject to review and concurrence by County. The revision shall incorporate all previously made changes to reflect current as-built conditions. Minor changes to the approved submittal may be approved at monthly meetings; a minor change is not considered a revision in the context of this paragraph.
- B. A revised schedule submittal shall be submitted for review when required by County.

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01340 SHOP DRAWINGS, PROJECT DATA AND SAMPLES

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. The Contractor shall submit to the County for review and approval: working drawings, shop drawings, test reports and data on materials and equipment (hereinafter in this section called data), and material samples (hereinafter in this section 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 is to maintain an accurate updated submittal log and will bring this log to each scheduled progress meeting with the County. This log should include the following items:
 - 1. Submittal description and number assigned.
 - 2. Date to County.
 - 3. Date returned to Contractor (from County).
 - 4. Status of Submittal (No exceptions taken, returned for confirmation or resubmittal, 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. Projected date and required lead time so that product installation does not delay contact.
 - 10. Status of O&M manuals submitted.

1.03 CONTRACTOR'S RESPONSIBILITY

- A. It is the duty of the Contractor to check all drawings, data and samples prepared by or for him before submitting them to the County for review. Each and every copy of the Drawings and data shall bear Contractor's stamp showing that they have been so checked. Shop drawings submitted to the County without the 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 with Specifications and indicate all variances from the Specifications.
- C. The Contractor shall furnish the County 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. 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, by the County, with No Exceptions Taken or Approved As Noted.
- E. The Contractor shall submit to the County all drawings and schedules sufficiently in advance of construction requirements to provide no less than twenty-one (21) calendar days for checking and appropriate action from the time the County receives them.
- F. All material & product submittals, other than samples, may be transmitted electronically as a pdf file. All returns to the contractor will be as a pdf file only unless specifically requested otherwise.
- G. 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 completion of the review by County of the necessary Shop Drawings.

1.04 COUNTY'S REVIEW OF SHOP DRAWINGS AND WORKING DRAWINGS

- A. The County's review of drawings, data and samples submitted by the Contractor shall cover only general conformity to the Specifications, external connections and dimensions which affect the installation.
- B. The review of drawings and schedules shall 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 County, except as otherwise provided herein.
- C. If the drawings or schedules as submitted describe variations and show a departure from the Contract requirements which the County finds to be in the interest of the County and to be so minor as not to involve a change in Contract Price or time for performance, the County may return the reviewed drawings without noting any exception.
- D. When reviewed by the County, each of the Shop and Working Drawings shall be identified as having received such review being so stamped and dated. Shop Drawings stamped "REJECTED" and with required corrections shown shall be returned to the Contractor for correction and resubmittal.
- E. Resubmittals will be handled in the same manner as 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 County on previous submissions. The Contractor shall make any corrections required by the County.
- 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 County.
- G. The County shall review a submittal/resubmittal a maximum of three (3) times after which cost of review shall be borne by the Contractor. The cost of engineering shall be equal to the County's actual payroll cost.

- H. When the Shop and Working Drawings have been completed to the satisfaction of the County, the Contractor shall carry out the construction in accordance therewith and shall make no further changes therein except upon written instructions from the County.
- I. No partial submittals shall be reviewed. Incomplete submittals shall be returned to the Contractor and shall be considered not approved until resubmitted.

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, drawings, setting drawings, 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 the work of all trades involved, before they are submitted for review by the County and shall bear the Contractor's stamp of approval and original signature as evidence of such checking and coordination. Drawings or schedules submitted without this stamp of approval and original signature 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 the 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, he shall not be relieved of the responsibility of executing the work in accordance with the Contract, even though such drawings have been reviewed.
- E. Data on materials and equipment shall include, without limitation, materials and equipment lists, catalog 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 and address and telephone number of the manufacturer's representative and service company so that service and/or spare parts can be readily obtained.
- G. All manufacturers or equipment suppliers who proposed to furnish equipment or products shall submit an installation list to the County along with the required shop drawings. The

installation list shall include at least five installations where identical equipment has been installed and have been in operation for a period of at least one (1) year.

- H. Only the County will utilize the color "red" in marking shop drawing submittals.

1.06 WORKING DRAWINGS

- A. When used in the Contract Documents, the term "working drawings" shall be considered to mean the Contractor's fabrication and erection drawings for structures such as roof trusses, steelwork, precast concrete elements, bulkheads, support of open cut excavation, support of utilities, groundwater control systems, forming and false work; underpinning; and for such other work as may be required for construction of the project.
- B. Copies of working drawings as noted above, shall be submitted to the County where required by the Contract Documents or requested by the County and shall be submitted at least thirty (30) days (unless otherwise specified by the County) 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 County, 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. All risks of error are assumed by the Contractor; the County and Engineer shall not have responsibility therefor.

1.07 SAMPLES

- A. The Contractor shall furnish, for the review of the County, samples required by the Contract Documents or requested by the County. Samples shall be delivered to the County 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 reviewed by the County.
- 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 product.
 - 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 markings that will identify them under the finished schedules.)
 - 7. Reference specification paragraph.

- D. The Contractor shall prepare a transmittal letter in triplicate for each shipment of samples containing the information required above. He shall enclose a copy of this letter with the shipment and send a copy of this letter to the County. Review of a sample shall be only for the characteristics or use named in such and shall not be construed to change or modify any Contract requirements.
- E. Reviewed samples not destroyed in testing shall be sent to the County or stored at the site of the work. Reviewed 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 reviewed samples. If requested at the time of submission, samples which failed testing or were rejected shall be returned to the Contractor at his expense.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01370 SCHEDULE OF VALUES

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. The Contractor shall submit to the County a Schedule of Values allocated to the various portions of the work, within 10 days after date of Notice to Proceed.
- B. Upon request of the County, the Contractor shall support the values with data which will substantiate their correctness.
- C. The Schedule of Values shall be used only as the basis for the Contractor's Applications for Payment.

1.02 FORM AND CONTENT OF SCHEDULE OF VALUES

- A. Schedule of Values will be considered for approval by County upon Contractor's request. Identify schedule with:
 - 1. Title of Project and location.
 - 2. Project number.
 - 3. Name and address of Contractor.
 - 4. Contract designation.
 - 5. Date of submission.
- B. Schedule of Values shall list the installed value of the component parts of the work in sufficient detail to serve as a basis for computing values for progress payments during construction.
- C. Follow the table of contents for the Contract Document as the format for listing component items for structures:
 - 1. Identify each line item with the number and title of the respective major section of the specification.
 - 2. For each line item, list sub values of major products or operations under item.
- D. Follow the bid sheets included in this Contract Documents as the format for listing component items for pipe lines.
- E. The sum of all values listed in the schedule shall equal the total Contract sum.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01380 CONSTRUCTION PHOTOGRAPHS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. The Contractor shall employ a competent photographer to take construction record photographs or perform video, recording including furnishing all labor, materials, equipment and incidentals necessary to obtain photographs and/or video recordings of all construction areas.
- B. Preconstruction record information shall consist of video recordings on digital video disks (DVD).
- C. Construction progress information shall consist of photographs and digital photographs on a recordable compact disc (CD-R).

1.02 QUALIFICATIONS

- A. All photography shall be done by a competent camera operator who is fully experienced and qualified with the specified equipment.
- B. For the video recording, the audio portion should be done by a person qualified and knowledgeable in the specifics of the Contract, who shall speak with clarity and diction so as to be easily understood.

1.03 PROJECT PHOTOGRAPHS

- A. Provide one print of each photograph with each pay application.
- B. Provide one recordable compact disc with digital photographs with each pay application.
- C. Negatives:
 - 1. All negatives shall remain the property of photographer.
 - 2. The Contractor shall require that photographer maintain negatives or protected digital files for a period of two years from date of substantial completion of the project.
 - 3. Photographer shall agree to furnish additional prints to County at commercial rates applicable at time of purchase. Photographer shall also agree to participate as required in any litigation requiring the photographer as an expert witness.
- D. The Contractor shall pay all costs associated with the required photography and prints. Any parties requiring additional photography or prints shall pay the photographer directly.
- E. All project photographs shall be a single weight, color image. All finishes shall be smooth surface and glossy and all prints shall be 8 inches x 10 inches.
- F. Each print shall have clearly marked on the back, the name of the project, the orientation of view, the date and time of exposure, name and address of the photographer and the photographers numbered identification of exposure.
- G. All project photographs shall be taken from locations to adequately illustrate conditions prior

to construction, or conditions of construction and state of progress. The Contractor shall consult with the County at each period of photography for instructions concerning views required.

1.04 VIDEO RECORDINGS

- A. Video, recording shall be done along all routes that are scheduled for construction. Video, recording shall include full, recording of both sides of all streets and the entire width of easements plus 10 feet on each side on which construction is to be performed. All video recording shall be in full color.
- B. A complete view, in sufficient detail with audio description of the exact location shall be provided.
- C. The engineering plans shall be used as a reference for stationing in the audio portion of the recordings for easy location identification.
- D. Two complete sets of video recordings shall be delivered to the County on digital video disks (DVD) for the permanent and exclusive use of the County prior to the start of any construction on the project.
- E. All video recordings shall contain the name of the project, the date and time of the video, recording, the name and address of the photographer and any other identifying information required.
- F. Construction shall not start until preconstruction video recordings are completed, submitted and accepted by the County. In addition, no progress payments shall be made until the preconstruction video recordings are accepted by the County.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01410 TESTING AND TESTING LABORATORY SERVICES

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. County shall employ and pay for the services of an independent testing laboratory to perform testing specifically indicated on the Contract Documents or called out in the Specifications. County may elect to have materials and equipment tested for conformity with the Contract Documents at any time.
 - 1. Contractor shall cooperate fully with the laboratory to facilitate the execution of its required services.
 - 2. Employment of the laboratory shall in no way relieve the Contractor's obligations to perform the work of the Contract.

1.02 LIMITATIONS OF AUTHORITY OF TESTING LABORATORY

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

1.03 CONTRACTOR'S RESPONSIBILITIES

- A. Cooperate with laboratory personnel; provide access to Work and/or to Manufacturer's operations.
- B. Secure and deliver to the laboratory adequate quantities of representational samples of materials proposed to be used and which require testing.
- C. Provide to the laboratory the preliminary design mix proposed to be used for concrete, and other material mixes which require control by the testing laboratory.
- D. Materials and equipment used in the performance of work under this Contract are subject to inspection and testing at the point of manufacture or fabrication. Standard specifications for quality and workmanship are indicated in the Contract Documents. The County 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 Contract 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 County shall be allowed on account of such testing and certification.
- E. Furnish incidental labor and facilities:
 - 1. To provide access to work to be tested.
 - 2. To obtain and handle samples at the project site or at the source of the product to be tested.
 - 3. To facilitate inspections and tests.
 - 4. For storage and curing of test samples.

- F. Notify 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 due to insufficient notice, Contractor shall reimburse County for laboratory personnel and travel expenses incurred due to Contractor's negligence.
- G. 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 and as approved by the County.
- H. If the test results indicate the material or equipment complies with the Contract Documents, the County 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 shall 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.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01510 TEMPORARY AND PERMANENT UTILITIES

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

The Contractor shall be responsible for furnishing all requisite temporary utilities, i.e., power, water, sanitation, etc. The Contractor shall obtain and pay for all permits required as well as pay for all temporary usages. The Contractor shall remove all temporary facilities upon completion of work.

1.02 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 regulations.

PART 2 PRODUCTS

2.01 MATERIALS, GENERAL

Materials for temporary utilities may be "used". Materials for electrical utilities shall be adequate in capacity for the required usage, shall not create unsafe conditions and shall not violate requirements of applicable codes and standards.

2.02 TEMPORARY ELECTRICITY AND LIGHTING

Arrange with the applicable utility company for temporary power supply. Provide service required for temporary power and lighting and pay all costs for permits, service and for power used.

2.03 TEMPORARY WATER

- A. The Contractor shall arrange with Manatee County Utilities Customer Service office to provide water for construction purposes, i.e., meter, pay all costs for installation, maintenance and removal, and service charges for water used.
- B. The Contractor shall protect piping and fitting against freezing.

2.04 TEMPORARY SANITARY FACILITIES

- A. The Contractor shall provide sanitary facilities in compliance with all laws and regulations.
- B. The Contractor shall service, clean and maintain facilities and enclosures.

PART 3 EXECUTION

3.01 GENERAL

- A. The Contractor shall maintain and operate systems to assure continuous service.

- B. The Contractor shall modify and extend systems as work progress requires.

3.02 REMOVAL

- A. The Contractor shall completely remove temporary materials and equipment when their use is no longer required.
- B. The Contractor shall clean and repair damage caused by temporary installations or use of temporary facilities.

END OF SECTION

SECTION 01570 TRAFFIC REGULATION

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. The Contractor shall be responsible for providing safe and expeditious movement of traffic through construction zones. A construction zone is defined as the immediate areas of actual construction and all abutting areas which are used by the Contractor and which interfere with the driving or walking public.
- B. The Contractor shall remove temporary equipment and facilities when no longer required, restore grounds to original or to specified conditions.

1.02 TRAFFIC CONTROL

- A. The necessary traffic control shall include, but not be limited to, such items as proper construction warning signs, signals, lighting devices, markings, barricades, channelization and hand signaling devices. The Contractor shall be responsible for installation and maintenance of all devices and detour routes and signage for the duration of the construction period. The Contractor shall utilize the appropriate traffic plan from the FDOT Maintenance of Traffic Standards, Series 600 of the FDOT Roadway & Traffic Design Standards, Latest Edition.
- B. Should there be the necessity to close any portion of a roadway carrying vehicles or pedestrians the Contractor shall submit a Traffic Control Plan (TCP) at least 5 days before a partial or full day closure, and at least 8 days before a multi-day closure. TCP shall be submitted, along with a copy of their accreditation, by a certified IMSA or ATSA Traffic Control Specialist.
 - 1. At no time will more than one (1) lane of a roadway be closed to vehicles and pedestrians without an approved road closure from the County Transportation Department. With any such closings, adequate provision shall be made for the safe expeditious movement of each.
 - 2. All traffic control signs must be in place and inspected at least 1 day in advance of the closure. Multi-day closures notification signs shall be in place at least 3 days in advance of the closure. All signs must be covered when not in effect, and checked twice a day by the Worksite Traffic Supervisor when they are in effect.
- C. The Contractor shall be responsible for removal, relocation, or replacement of any traffic control device in the construction area which exists as part of the normal preconstruction traffic control scheme. Any such actions shall be performed by the Contractor under the supervision and in accordance with the instructions of the applicable highway department unless otherwise specified.
- D. The Contractor will consult with the County immediately on any vehicular or pedestrian safety or efficiency problem incurred as a result of construction of the project.
- E. The Contractor shall provide ready access to businesses and homes in the project area during construction. The Contractor shall be responsible for coordinating this work with affected homeowners.
- F. When conditions require the temporary installation of signs, pavement markings and traffic

barriers for the protection of workers and traffic, the entire array of such devices shall be depicted on working drawings for each separate stage of work. These drawings shall be submitted to the County for review and approval prior to commencement of work on the site.

- G. Precast concrete traffic barriers shall be placed adjacent to trenches and other excavations deeper than six inches below the adjacent pavement surface.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01580 PROJECT IDENTIFICATION AND SIGNS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Furnish, install and maintain County project identification signs.
- B. Remove signs on completion of construction.
- C. Allow no other signs to be displayed except for traffic control and safety.

1.02 PROJECT IDENTIFICATION SIGN (COUNTY)

- A. One painted sign, of not less than 32 square feet (3 square meters) area, with painted graphic content to include:
 - 1. Title of Project.
 - 2. Name of County.
 - 3. Names and titles of authorities as directed by County.
 - 4. Prime Contractor.
- B. Graphic design, style of lettering and colors: As approved by the County.
- C. Erect on the site at a lighted location of high public visibility, adjacent to main entrance to site, as approved by the County

1.03 INFORMATIONAL SIGNS

- A. Painted signs with painted lettering, or standard products.
 - 1. Size of signs and lettering: as required by regulatory agencies, or as appropriate to usage.
 - 2. Colors: as required by regulatory agencies, otherwise of uniform colors throughout project.
- B. Erect at appropriate locations to provide required information.

1.04 QUALITY ASSURANCE

- A. Sign Painter: Professional experience in type of work required.
- B. Finishes, Painting: Adequate to resist weathering and fading for scheduled construction period.

1.05 PUBLIC NOTIFICATION

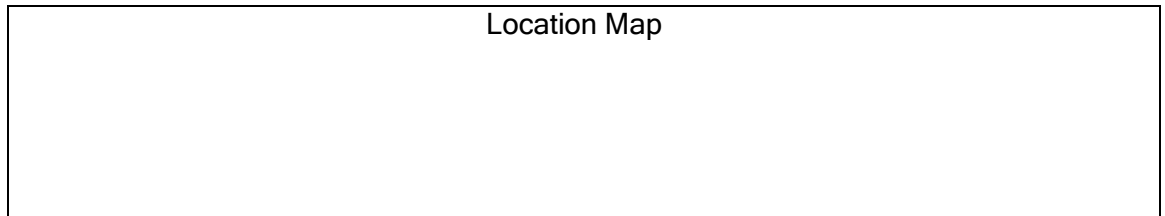
- A. Door Hangers: The Contractor shall generate and distribute door hangers to all residents who will be impacted by project construction.
 - 1. Residents impacted include anyone who resides inside, or within 500 feet of project limits of construction.

- B. Door Hangers shall be distributed prior to start of construction of the project. Hangers shall be affixed to doors of residents via elastic bands or tape.

EXAMPLE:

PLEASE PARDON THE INCONVENIENCE WHILE THE ROADWAY IS BEING
RECONSTRUCTED IN YOUR NEIGHBORHOOD

This project consists of utility improvements and the reconstruction of ??? Boulevard from U.S. ??? to ??? Street West. The project is expected to begin in August, 200X and be completed in July 200X.



WE HOPE TO KEEP ANY INCONVENIENCE TO A MINIMUM. HOWEVER, IF YOU
HAVE ANY PROBLEMS, PLEASE CONTACT THE FOLLOWING:

- | | | |
|----|-------------------------------|---------------------|
| A. | Contractor | Project Manager |
| | Contractor Address | PM Address |
| | Contractor Phone (Site Phone) | PM Phone No. & Ext. |
| B. | Project Inspector | |
| | Inspector Phone Number | |

AFTER HOURS EMERGENCY NUMBER - (941) 747-HELP
THANK YOU FOR YOUR UNDERSTANDING AND PATIENCE
MANATEE COUNTY GOVERNMENT - PROJECT MANAGEMENT DEPT.

PART 2 PRODUCTS

2.01 SIGN MATERIALS

- A. Structure and Framing: May be new or used, wood or metal, in sound condition structurally adequate to work and suitable for specified finish.
- B. Sign Surfaces: Exterior softwood plywood with medium density overlay, standard large sizes to minimize joints.
1. Thickness: As required by standards to span framing members, to provide even, smooth surface without waves or buckles.
- C. Rough Hardware: Galvanized.
- D. Paint: Exterior quality, as specified in the Contract Documents.

PART 3 EXECUTION

3.01 PROJECT IDENTIFICATION SIGN

- A. Paint exposed surface or supports, framing and surface material; one coat of primer and one coat of exterior paint.
- B. Paint graphics in styles, size and colors selected.

3.02 MAINTENANCE

The Contractor shall maintain signs and supports in a neat, clean condition; repair damages to structures, framing or sign.

3.03 REMOVAL

The Contractor shall remove signs, framing, supports and foundations at completion of project.

END OF SECTION

SECTION 01600 MATERIAL AND EQUIPMENT

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Material and equipment incorporated into the work:
1. Conform to applicable specifications and standards.
 2. Comply with size, make, type and quality specified, or as specifically approved in writing by the County.
 3. Manufactured and Fabricated Products:
 - a. Design, fabricate and assemble in accordance with the best engineering and shop practices.
 - b. Manufacture like parts of duplicate units to standard sizes and gages, to be interchangeable.
 - c. Two or more items of the same kind shall be identical and manufactured 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 specified.
 5. All material and equipment incorporated into the project shall be new.

1.02 MANUFACTURER'S INSTRUCTIONS

- A. When Contract Documents require that installation of work shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions to parties involved in the installation, including two copies to County. 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 accordance with such instructions and in conformity with specified requirements. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with County prior to proceeding. Do not proceed with work without clear instructions.

1.03 TRANSPORTATION AND HANDLING

- A. Arrange deliveries of products in accordance 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 on 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.

1.04 SUBSTITUTIONS AND PRODUCT OPTIONS

Contractor's Options:

1. For products specified only by reference standard, select any product meeting that standard.
2. For products specified by naming one or more products or manufacturers and "or equal", Contractor must submit a request for substitutions of any product or manufacturer not specifically named in a timely manner so as not to adversely affect the construction schedule.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01620 STORAGE AND PROTECTION

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

Provide secure storage and protection for products to be incorporated into the work and maintenance and protection for products after installation and until completion of Work.

1.02 STORAGE

- A. Store products immediately on delivery and protect until installed in the Work, in accord with manufacturer's instructions, with seals and labels intact and legible.
- B. Exterior Storage
 - 1. Provide substantial platform, blocking or skids to support fabricated products above ground to prevent soiling or staining.
 - a. Cover products, subject to discoloration or deterioration from exposure to the elements, with impervious sheet coverings. Provide adequate ventilation to avoid condensation.
 - b. Prevent mixing of refuse or chemically injurious materials or liquids.
- A. Arrange storage in manner to provide easy access for inspection.

1.03 MAINTENANCE OF STORAGE

- A. Maintain periodic system of inspection of stored products on scheduled basis to assure that:
 - 1. State of storage facilities is adequate to provide required conditions.
 - 2. Required environmental conditions are maintained on continuing basis.
 - 3. Surfaces of products exposed to elements are not adversely affected. Any weathering of products, coatings and finishes is not acceptable under requirements of these Contract Documents.
- B. Mechanical and electrical equipment which requires servicing during long term storage shall have complete manufacturer's instructions for servicing accompanying each item, with notice of enclosed instructions shown on exterior of package.
 - 1. Equipment shall not be shipped until approved by the County. 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 County.
 - 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 County 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. 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 insure that the equipment does not deteriorate from lack of use.
 - 5. Lubricants shall be changed upon completion of installation and as frequently as

- required, thereafter during the period between installation and acceptance.
6. 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 guaranty 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.

1.04 PROTECTION AFTER INSTALLATION

- A. Provide protection of installed products to prevent damage from subsequent operations. Remove when no longer needed, prior to completion of work.
- B. Control traffic to prevent damage to equipment and surfaces.
- C. Provide coverings to protect finished surfaces from damage.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01700 CONTRACT CLOSEOUT

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

Comply with requirements stated in Conditions of the Contract and in Specifications for administrative procedures in closing out the work.

1.02 SUBSTANTIAL COMPLETION

- A. The Contractor shall submit the following items when the Contractor considers the work to be substantially complete:
 - 1. A written notice that the work, or designated portion thereof, is substantially complete.
 - 2. A list of items to be completed or corrected.
- B. Within a reasonable time after receipt of such notice, the County shall make an inspection to determine the status of completion.
- C. Project record documents and operations and maintenance manuals must be submitted before the project shall be considered substantially complete.
- D. If the County determines that the work is not substantially complete:
 - 1. The County shall notify the Contractor in writing, stating the reasons.
 - 2. The Contractor shall remedy the deficiencies in the work and send a second written notice of substantial completion to the County.
 - 3. The County shall reinspect the work.
- E. When the County finds that the work is substantially complete:
 - 1. The Engineer shall prepare and deliver to the County a tentative Certificate of Substantial Completion (Manatee County Project Management Form PMD-8) with a tentative list of the items to be completed or corrected before final payment.
 - 2. The Engineer shall consider any objections made by the County as provided in Conditions of the Contract. When the Engineer considers the work substantially complete, he will execute and deliver to the County a definite Certificate of Substantial Completion (Manatee County Project Management Form PMD-8) with a revised tentative list of items to be completed or corrected.

1.03 FINAL INSPECTION

- A. When the Contractor considered the work to be complete, he shall submit written certification stating that:
 - 1. The Contract Documents have been reviewed.
 - 2. The work has been inspected for compliance with Contract Documents.
 - 3. The work has been completed in accordance with Contract Documents.
 - 4. The equipment and systems have been tested in the presence of the County's representative and are operational.
 - 5. The work is completed and ready for final inspection.

- B. The County shall make an inspection to verify the status of completion after receipt of such certification.
- C. If the County determines that the work is incomplete or defective:
 - 1. The County shall promptly notify the Contractor in writing, listing the incomplete or defective work.
 - 2. The Contractor shall take immediate steps to remedy the stated deficiencies and send a second written certification to County that the work is complete.
 - 3. The County shall reinspect the work.
- D. Upon finding the work to be acceptable under the Contract Documents, the County shall request the Contractor to make closeout submittals.
- E. For each additional inspection beyond a total of three (3) inspections for substantial and final completion due to the incompleteness of the work, the Contractor shall reimburse the County's fees.

1.04 CONTRACTOR'S CLOSEOUT SUBMITTALS TO COUNTY

- A. Project Record Documents (prior to substantial completion).
- B. Operation and maintenance manuals (prior to substantial completion).
- C. Warranties and Bonds.
- D. Evidence of Payment and Release of Liens: In accordance with requirements of General and Supplementary Conditions.
- E. Certification letter from Florida Department of Transportation and Manatee County Department of Transportation, as applicable.
- F. Certificate of Insurance for Products and Completed Operations.
- G. Final Reconciliation, Warranty Period Declaration, and Contractor's Affidavit (Manatee County Project Management Form PMD-9).

1.05 FINAL ADJUSTMENT OF ACCOUNTS

- A. Submit a final statement of accounting to the County.
- B. Statement shall reflect all adjustments to the Contract Sum:
 - 1. The original Contract Sum.
 - 2. Additions and deductions resulting from:
 - a. Previous Change Orders
 - b. Unit Prices
 - c. Penalties and Bonuses
 - d. Deductions for Liquidated Damages
 - e. Other Adjustments
 - 3. Total Contract Sum, as adjusted.
 - 4. Previous payments.

5. Sum remaining due.

- C. Project Management shall prepare a final Change Order, reflecting approved adjustments to the Contract Sum which were not previously made by Change Orders.

1.06 FINAL APPLICATION FOR PAYMENT

Contractor shall submit the final Application for Payment in accordance with procedures and requirements stated in the Conditions of the Contract.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01710 CLEANING

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

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

1.02 DISPOSAL REQUIREMENTS

Conduct cleaning and disposal operations to comply with all Federal, State and Local 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. Execute periodic cleaning to keep the work, the site and adjacent properties free from accumulation of waste materials, rubbish and wind-blown debris, resulting from construction operations.
- B. Provide on-site containers for the collection of waste materials, debris and rubbish.
- C. Remove waste materials, debris and rubbish from the site periodically and dispose of at legal disposal areas away from the site.

3.02 DUST CONTROL

- A. Clean interior spaces prior to the start of finish painting and continue cleaning on an as-needed basis until painting is finished.
- B. Schedule operations so that dust and other contaminants resulting from cleaning process will not fall on wet or newly-coated surfaces.

3.03 FINAL CLEANING

- A. Employ skilled workmen for final cleaning.
- B. Broom clean exterior paved surfaces; rake clean other surfaces of the grounds.

- C. Prior to final completion or County occupancy, Contractor shall conduct an inspection of sight-exposed interior and exterior surfaces and all work areas to verify that the entire work is clean.

END OF SECTION

SECTION 01720 PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Contractor shall maintain at the site for the County one record copy of:

1. Drawings.
2. Specifications.
3. Addenda.
4. Change Orders and other modifications to the Contract.
5. County's field orders or written instructions.
6. Approved shop drawings, working drawings and samples.
7. Field test records.
8. Construction photographs.

1.02 MAINTENANCE OF DOCUMENTS AND SAMPLES

A. Store documents and samples in Contractor's field office apart from documents used for construction.

1. Provide files and racks for storage of documents.
2. Provide locked cabinet or secure storage space for storage of samples.

B. File documents and samples in accordance with CSI format.

C. Maintain documents in a clean, dry, legible, condition and in good order. Do not use record documents for construction purposes.

D. Make documents and samples available at all times for inspection by the County.

1.03 MARKING DEVICES

A. Provide felt tip marking pens for recording information in the color code designated by the County.

1.04 RECORDING

A. Label each document "PROJECT RECORD" in neat large printed letters.

B. Record information concurrently with construction progress.

C. Do not conceal any work until required information is recorded.

D. Drawings; Legibly mark to record actual construction:

1. All underground piping with elevations and dimensions. Changes to piping location. Horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements. Actual installed pipe material, class, etc. Locations of drainage ditches, swales, water lines and force mains shall be shown every 200 feet (measured along the centerline) or alternate lot lines, whichever is closer. Dimensions at these locations shall indicate distance from

- centerline of right-of-way to the facility.
2. Field changes of dimension and detail.
3. Changes made by Field Order or by Change Order.
4. Details not on original contract drawings.
5. Equipment and piping relocations.
6. Locations of all valves, fire hydrants, manholes, water and sewer services, water and force main fittings, underdrain cleanouts, catch basins, junction boxes and any other structures located in the right-of-way or easement, shall be located by elevation and by station and offset based on intersection P.I.'s and centerline of right-of-way. For facilities located on private roads, the dimensioning shall be from centerline of paving or another readily visible baseline.
7. Elevations shall be provided for all manhole rim and inverts; junction box rim and inverts; catch basin rim and inverts; and baffle, weir and invert elevations in control structures. Elevations shall also be provided at the PVI's and at every other lot line or 200 feet, whichever is less, of drainage swales and ditches. Bench marks and elevation datum shall be indicated.
8. Slopes for pipes and ditches shall be recalculated, based on actual field measured distances, elevations, pipe sizes, and type shown. Cross section of drainage ditches and swales shall be verified.
9. Centerline of roads shall be tied to right-of-way lines. Elevation of roadway centerline shall be given at PVI's and at all intersections.
10. Record drawings shall show bearings and distances for all right-of-way and easement lines, and property corners.
11. Sidewalks, fences and walls, if installed at the time of initial record drawing submittal, shall be located every 200 feet or alternate lot lines, whichever is closer. Dimensions shall include distance from the right-of-way line and the back of curb and lot line or easement line.
12. Sanitary sewer mainline wyes shall be located from the downstream manhole. These dimensions shall be provided by on-site inspections or televising of the sewer following installation.
13. Elevations shall be provided on the top of operating nuts for all water and force main valves.
14. Allowable tolerance shall be ± 6.0 inches for horizontal dimensions. Vertical dimensions such as the difference in elevations between manhole inverts shall have an allowable tolerance of $\pm 1/8$ inch per 50 feet (or part thereof) of horizontal distance up to a maximum tolerance of ± 2 inch.
15. Properly prepared record drawings on mylar, together with two copies, shall be certified by a design professional (Engineer and/or Surveyor registered in the State of Florida), employed by the Contractor, and submitted to the County.

E. Specifications and Addenda; Legibly mark each Section to record:

1. Manufacturer, trade name, catalog number and supplier of each product and item of equipment actually installed.
2. Changes made by field order or by change order.

F. Shop Drawings (after final review and approval):

1. Five sets of record drawings for each process equipment, piping, electrical system and instrumentation system.

1.05 SUBMITTAL

- A. Prior to substantial completion and prior to starting the bacteria testing of water lines, deliver signed and sealed Record Documents and Record Drawings to the County. These will be reviewed and verified by the inspector. If there are any required changes or additions, these shall be completed and the entire signed and sealed set resubmitted prior to final pay application.
- B. The Contractor shall employ a Professional Engineer or Surveyor registered in the State of Florida to verify survey data and properly prepare record drawings. Record drawings shall be certified by the professional(s) (Engineer or Surveyor licensed in Florida), as stipulated by the Land Development Ordinance and submitted on signed and sealed paper drawings, signed and dated mylar drawings together with an AutoCAD version on a recordable compact disk (CD).
- C. The CD shall contain media in AutoCad Version 2004 or later, or in any other CAD program compatible with AutoCad in DWG or DXF form. All fonts, line types, shape files or other pertinent information used in the drawing and not normally included in AutoCad shall be included on the media with a text file or attached noted as to its relevance and use.
- D. Accompany submittal with transmittal letter, containing:
 - 1. Date.
 - 2. Project title and number.
 - 3. Contractor's name and address.
 - 4. Title and number of each Record Document.
 - 5. Signature of Contractor or his authorized representative.

Note: The data required to properly prepare these record drawings shall be obtained at the site, at no cost to the County by the responsible design professional or his/her duly appointed representative. The appointed representative shall be a qualified employee of the responsible design professional or a qualified inspector retained by the responsible design professional on a project-by-project basis.

PART 2 STANDARDS

2.01 MINIMUM RECORD DRAWING STANDARDS FOR ALL RECORD DRAWINGS SUBMITTED TO MANATEE COUNTY

- A. Record drawings shall be submitted to at least the level of detail in the contract documents. It is anticipated that the original contract documents shall serve as at least a background for all record information. Original drawings in CAD format may be requested of the County.
- B. Drawings shall meet the criteria of paragraph 1.04 D above.

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01730 OPERATING AND MAINTENANCE DATA

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Compile product data and related information appropriate for County's maintenance and operation of products furnished under Contract.

Prepare operating and maintenance data as specified in this and as referenced in other pertinent sections of Specifications.

- B. Instruct County's personnel in maintenance of products and equipment and systems.
- C. Provide three (3) sets of operating and maintenance manuals for each piece of equipment provided within this Contract.

1.02 FORM OF SUBMITTALS

- A. Prepare data in form of an instructional manual for use by County's personnel.

- B. Format:

1. Size: 8-1/2 inch x 11 inch
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. Fold larger drawings to size of text pages.
5. Provide fly-leaf for each separate product or each piece of operating equipment.
 - a. Provide typed 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 structures as applicable.
 - c. Identity of general subject matter covered in the manual.

- C. Binders:

1. Commercial quality three-ring binders with durable and cleanable plastic covers.
2. Maximum ring size: 1 inch.
3. When multiple binders are used, correlate the data into related consistent groupings.

1.03 MANUAL FOR EQUIPMENT AND SYSTEMS

- A. Submit three 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 lubricating 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. List of predicted 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. Content, 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 panelboards.
 - a. Electrical service.
 - b. Controls.
 - c. Communications.
- 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 manufacture's spare parts, manufacturer's current prices and recommended quantities to be maintained in storage.
- 8. Prepare and include additional data when the need for such data becomes apparent during instruction of County's personnel.

- D. Prepare and include additional data when the need for such data becomes apparent during instruction on County's personnel.
- E. Additional requirements for operating and maintenance data: Respective sections of Specifications.

1.04 SUBMITTAL SCHEDULE

- A. Submit one copy of completed data in final form fifteen days prior to substantial completion.
 - 1. Copy will be returned after substantial completion, with comments (if any).
- B. Submit two copies of approved data in final form. Final acceptance will not be provided until the completed manual is received and approved.

1.05 INSTRUCTION OF COUNTY'S PERSONNEL

- A. Prior to final inspection or acceptance, fully instruct County'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.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01740 WARRANTIES AND BONDS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Compile specified warranties and bonds.
- B. Compile specified service and maintenance contracts.
- C. Co-execute submittals when so specified.
- D. Review submittals to verify compliance with Contract Documents.
- E. Submit to County for review and transmittal.

1.02 SUBMITTAL REQUIREMENTS

- A. Assemble warranties, bonds and service and maintenance contracts, executed by each of the respective manufacturers, suppliers and subcontractors.
- B. Number of original signed copies required: Two 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 County'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.

1.03 FORM OF SUBMITTALS

- A. Prepare in duplicate packets.
- B. Format:
 - 1. Size 8-1/2 inch x 11 inch punched sheets for standard 3-ring binder. Fold larger sheets to fit into binders.
 - 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-ring, with durable and cleanable plastic covers.

1.04 TIME OF SUBMITTALS

- A. Make submittals within ten days after date of substantial completion and prior to final request for payment.
- B. For items of work, where acceptance is delayed materially beyond date of substantial completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

1.05 SUBMITTALS REQUIRED

- A. Submit warranties, bonds, service and maintenance contracts as specified in respective sections of Specifications.
- B. Approval by the County of all documents required under this section is a pre-requisite to requesting a final inspection and final payment

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

DIVISION 2 SITE WORK

SECTION 02064 MODIFICATIONS TO EXISTING STRUCTURES, PIPING AND EQUIPMENT

PART 1 GENERAL

1.01 SCOPE OF WORK

Furnish all labor, materials, equipment and incidentals required to modify, alter and/or convert existing structures as shown or specified and as required for the installation of piping, mechanical equipment and appurtenances. Existing piping and equipment shall be removed and dismantled as necessary for the performance of facility alterations in accordance with the requirements herein specified.

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 Contract Drawings, herein specified, or necessary to permit completion of the work under this Contract. The Contractor shall dispose of surplus materials resulting from the above work in an approved manner. The work shall include all necessary cutting and bending of reinforcing steel, structural steel, or miscellaneous metal work found embedded in the existing structures.
- B. The Contractor shall dismantle and remove all existing equipment, piping, and other appurtenances required for the completion of the work. Where called for or required, the contractor 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. Surface shall be finished as specified in the Contract Documents.
- C. At the time that a new connection is made to an existing pipeline, additional new piping, extending to and including a new valve, shall be installed. Pipe anchorage, if required, is part of the installation shall also be installed as directed by the County.
- D. 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 County.
- E. When removing materials or portions of existing utility pipelines and/or structures or 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 beyond the limits necessary for the new work, and not to damage the structures or contents by falling or flying debris. Unless otherwise permitted, line drilling will be required in cutting existing concrete.
- F. Materials and equipment removed in the course of making alterations and additions shall remain the property of the County, except that items not salvageable, as determined by the County, shall become the property of the Contractor to be disposed of by him off the work

site at his own place of disposal. Operating equipment shall be thoroughly cleaned, lubricated, and greased for protection during prolonged storage.

- G. All alterations to existing utility pipes and structures shall be done at such time and in such manner as to 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.
- H. 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.
- I. All cutting of existing concrete 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 the extent directed by the Resident Project Representative.
- J. Surfaces of seals visible in the completed work shall be made to match as nearly as possible the adjacent surfaces.
- K. Non-shrink grout shall be used for setting wall castings, sleeves, leveling pump bases, doweling anchors into existing concrete and elsewhere as shown.
- L. Where necessary or required for the purpose of making connections, the Contractor shall cut existing pipelines in a manner to provide an approved joint. Where required, he shall use flanges, or provide Dresser Couplings, all as required.
- M. The Contractor shall provide flumes, hoses, piping and other related items to divert or provide suitable plugs, bulkheads, or other means to hold back the flow of water or other liquids, all as required in the performance of the work under this Contract.
- N. Care shall be taken not to damage any part of existing buildings or foundations or outside structures.

3.02 CONNECTING TO EXISTING PIPING AND EQUIPMENT

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. A Manatee County representative must be present for all tie-ins for a visual inspection.

3.03 REMOVAL AND ABANDONMENT OF ASBESTOS CEMENT PIPE AND APPURTENANCES

- A. All work associated with the removal or abandonment of existing asbestos cement pipe and appurtenances shall be performed by a licensed asbestos abatement contractor or subcontractor registered in the State of Florida. After removal of the facilities, all trenches shall be backfilled in accordance with the Contract Documents. The cost of disposing of the removed materials shall be borne by the Contractor.
- B. The asbestos abatement contractor or subcontractor shall contact the appropriate regulatory agencies prior to removal or abandonment of any asbestos material and shall

obtain all required permits and licenses and issue all required notices. The Contractor shall be responsible for all fees associated with permits, licenses and notices to the governing regulatory agencies. An asbestos manifest form must accompany each and every shipment of such pipe or pipe material waste to the Manatee County Lena Road Landfill. Prior to each shipment, a minimum of 24 hours notice to the Landfill field office (Phone #748-5543) is required.

- C. All work associated with removal or abandonment of asbestos cement pipe and appurtenances shall be performed in accordance with the standards listed below and all other applicable local, State, or Federal standards.
 - 1. Florida Administrative Code, Chapter 62-257, "Asbestos Program".
 - 2. National Emission Standards Hazardous Air Pollution (NESHAP), 40 CFR, Part 61, Subpart M, latest revision.
 - 3. Occupational Safety and Health Act, 29 CFR, 1910.1001 - Asbestos.
 - 4. Title 40 CFR, Part 763, Asbestos.
 - 5. Florida Statute Title XXXII, Chapter 469, Asbestos Abatement.

3.04 IN-PLACE GROUTING OF EXISTING PIPE

- A. Where water and wastewater utility pipes are to be abandoned in place, they shall be filled with a sand/cement grout as specified herein. When such pipes are constructed with asbestos cement materials, the abandonment activities shall be performed by a licensed asbestos abatement contractor as specified in these Specifications.
- B. Grout shall be injected within the pipe sections indicated on the Drawings. The ends of these sections shall be capped and/or plugged. The grouting program shall consist of pumping sand-cement grout with suitable chemical additives at pressures necessary to fill the pipe sections shown on the Drawings to prevent the potential for future collapse.
- C. The pump used for grouting should be a continuous flow, positive displacement model with a pugmill type mixing vat having a minimum shaft speed of 60 rpm and incorporated as an integral part of the equipment. Alternate equipment may be used subject to the approval of the County. The rate of pumping shall not exceed six (6) cubic feet per minute. The pumping pressures shall be in the range of 100 to 150 psi.
- D. The Contractor shall provide standpipes and/or additional means of visual inspection as required by the County to determine if adequate grout material has filled the entire pipe section(s). The Contractor shall make necessary provisions for the County's representative to monitor all grouting operations.
- E. All pipe to be abandoned shall be capped or plugged with a fitting or material that will prevent soil or other material from entering the pipe. All caps and plugs shall be subject to approval by the County.

END OF SECTION

SECTION 02100 SITE PREPARATION

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. This Section covers clearing, grubbing and stripping of the project site and/or along the pipeline route.
- B. The Contractor shall clear and grub all of the area within the limits of construction or as required, which includes, but is not limited to utility easements. The width of the area to be cleared shall be reviewed by the County prior to the beginning of any clearing.
- C. The Contractor's attention is directed to any Soil Erosion and Sediment Control Ordinances in force in Manatee County. The Contractor shall comply with all applicable sections of these ordinances.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 CLEARING

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, trees shall be preserved as hereinafter specified unless otherwise designated by the County. 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. Soil erosion control devices such as hay bales and silt fences shall be installed to satisfy all Federal, State and County requirements.

3.02 GRUBBING

Grubbing shall consist of the complete removal of all stumps, roots larger than 1-1/2 inches in diameter, matted roots, brush, timber, logs and any other organic or metallic debris not suitable for foundation purposes, 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

In areas so designated, topsoil shall be stockpiled. Topsoil so stockpiled shall be protected until it is placed as specified. The County shall have the option to receive all excess topsoil materials. The Contractor shall pay all equipment and labor cost to deliver excess top soil material to a remote site chosen by the County within a five mile radius of the construction site. Should County not choose to receive any or all excess topsoil materials, the Contractor shall dispose of said material at no additional cost to County.

3.04 DISPOSAL OF CLEARED AND GRUBBED MATERIAL

The Contractor shall dispose of all material and debris from the clearing and grubbing

operation by hauling such material and debris off site. The cost of disposal (including hauling) of cleared and grubbed material and debris shall be considered a subsidiary obligation of the Contractor; the cost of which shall be included in the prices bid for the various classes of work.

3.05 PRESERVATION OF TREES

Those trees which are not designated for removal by the County shall be carefully protected from damage. The Contractor shall erect such barricades, guards and enclosures as may be considered necessary by him for the protection of the trees during all construction operation.

3.06 PRESERVATION OF DEVELOPED PRIVATE PROPERTY

- A. The Contractor shall exercise extreme care to avoid unnecessary disturbance of developed private property adjacent to proposed project site. Trees, shrubbery, gardens, lawns and other landscaping, which are not designated by the County to be removed, shall be replaced and replanted to restore the construction easement to the condition existing prior to construction.
- B. All soil preservation procedures and replanting operations shall be under the supervision of a nursery representative experienced in such operations.
- C. Improvements to the land such as fences, walls, outbuildings and other structures 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 completed upon approval of the County.

3.07 PRESERVATION OF PUBLIC PROPERTY

The appropriate paragraphs of these Specifications shall apply to the preservation and restoration of public lands, parks, rights-of-way, easements and all other damaged areas. This includes, but is not limited to the trimming of trees damaged by contractor's equipment.

END OF SECTION

SECTION 02220 EXCAVATION, BACKFILL, FILL AND GRADING FOR STRUCTURES

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Structural excavation shall consist of the removal of material for the construction of foundations for structures and other excavation designated on the drawings or in these specifications.
- B. Structural excavation and backfill shall consist of furnishing material, if necessary and placing and compacting backfill material around structures to the lines and grades designated on the drawings, as specified or directed by the County.
- C. Structural excavation and backfill shall include the furnishing of all materials, equipment and other facilities which may be necessary to perform the excavations, place and compact the backfill, install sheeting and bracing, and carry out any necessary dewatering. It shall also include the wasting or disposal of surplus excavated material in a manner and in locations approved by the County.
- D. The Contractor is responsible for the protection of every tree which is scheduled to remain in the project area. This includes trees which may or may not be shown on the plans. Every tree shall be adequately protected in place at no additional cost to the County. This includes, but is not limited to, protecting the root systems and adjusting grades as necessary for tree/root protection.

1.02 QUALITY ASSURANCE

- A. Testing Agency:
 - 1. In place soil compaction tests shall be performed by a qualified testing laboratory.
 - 2. Compaction tests shall be taken every 500 feet, except in the road crossings or road shoulders. Tests are to be taken according to current FDOT Standards.
- B. Reference Standards:
 - 1. American Society for Testing and Materials (ASTM):
 - a. ASTM D1557, Moisture-Density Relations of Soils Using 10-lb. (4.5-kg) Rammer and 18-in. (457-mm) Drop.

1.03 JOB CONDITIONS

- A. The Contractor shall provide, operate and maintain all necessary pumps, discharge lines, well points, etc., in sufficient number and capacity to keep all excavation, bases, pits, etc., free from seepage, standing or running water at all times throughout the period of construction.
- B. The Contractor shall assume all responsibility for the security of the excavation required, employing bracing, lining or other accepted means necessary to accomplish same.
- C. Excavated areas shall be cleared of all debris, water, slush, muck, clay and soft or loose earth and shall be conditioned to the entire satisfaction of the County.

- D. All excavated material unsuitable for use or which will not be used shall be disposed of in a manner consistent with State and County regulation.
- E. All unsuitable organic materials, roots, logs, etc., found during excavation shall be removed by the Contractor and the trench shall be refilled with suitable material.

PART 2 PRODUCTS

2.01 MATERIAL FOR CONTROLLED FILL

- A. Composition: Only approved material free from organic matter and lumps of clay, shall be used for backfill. Excavated earth free from debris or organic material may be used for backfilling foundations or fill.
- B. Crushed stone and shell shall meet or exceed current FDOT Standards.

2.02 UNSUITABLE MATERIAL

Unsuitable material shall be defined as highly organic soil per ASTM D2487 Group PT. This includes, but is not limited to, such items as topsoil, roots, vegetable matter, trash, debris, and clays that cannot be dried sufficiently to obtain specified compaction.

PART 3 EXECUTION

3.01 INSPECTION

- A. The Contractor shall verify that work preceding the affected work of this Section has been satisfactorily completed.
- B. Conditions adversely affecting the work of this Section shall be corrected to the satisfaction of the County.

3.02 REMOVAL OF UNSUITABLE MATERIALS

- A. The Contractor shall remove unsuitable material from within the limits of the Work.
- B. Materials meeting requirements for controlled fill shall be stockpiled as necessary and in such a manner satisfactory to the County.
- C. All material excavated shall be placed so as to minimize interference with public travel and to permit proper access for inspection of the work.

3.03 EXCAVATION

- A. When concrete or shell subbase footing is to rest on an excavated surface, care shall be taken not to disturb the natural soil. Final removal and replacement of the foundation material and subbase compaction to grade shall not be made until just before the concrete or masonry is placed.
- B. When any structural excavation is completed, the Contractor shall notify the County who will make an inspection of the excavation. No concrete or masonry shall be placed until the excavation has been approved by the County.

- C. The elevations of the footing bottom and the base slab as shown on the Drawings, shall be considered as approximate and the County may order in writing, such changes in dimensions or elevations of the footings and slab base as necessary to secure satisfactory foundations.
- D. All excavation shall be made within an area bounded by lines five feet outside and parallel to the exterior walls of the structure to allow for correct forming, shoring and inspection of foundation work. Pouring of concrete against earth side walls shall not be permitted.
- E. If the ground is excavated below the grade called for by the Drawings or becomes unstable due to the Contractor's carelessness or operations, the ground shall be excavated to undisturbed native soil before continuing concreting operations.
- F. If in the opinion of the County, the material at or below the normal grade of the bottom of the trench is unsuitable for pipe or structure foundation, it shall be removed to the depth directed by the County and if so directed, replaced by crushed stone or washed shell.

3.04 STRUCTURAL BACKFILL

- A. Structural backfill shall not be placed until the footings or other portions of the structure or facility have been inspected by the County and approved for backfilling.
- B. A minimum of 1-1/2" layer of lean concrete shall be placed as a working mat for the concrete base slabs and footings if required by the County.
- C. Fill shall be placed in uniform layers not more than 12" thick and compacted to a minimum of 98 percent of the maximum density determined by ASTM D1557, Method A or C, or as directed by the County. The Contractor shall securely tamp the backfill with pneumatic rammer around all wall foundations. The method of compaction shall be satisfactory to the County.
- D. Compaction of structural backfill by ponding and jetting may be permitted when, as determined by the County: the backfill material is of such character that it will be self-draining when compacted; foundation materials will not soften or be otherwise damaged by the applied water; no damage from hydrostatic pressure will result to the structure. Ponding and jetting within two feet below finished subgrade shall not be permitted in roadway areas. At the discretion of the County, ponding and jetting may be permitted with compaction layers not to exceed four feet.
- E. Surplus material not used on-site shall be removed and disposed of off-site by the Contractor. In no case shall surplus material be deposited on adjacent lands. Fill used for grading shall be placed in layers not to exceed 12 inches in thickness and shall be compacted to a density equal or greater to that of the surrounding natural ground.

3.05 BACKFILLING AROUND STRUCTURES

- A. Common fill and structural fill are specified for use as backfill against the exterior walls of the structures. Fill shall be placed in layers having a maximum thickness of eight (8) inches in loose state and shall be compacted sufficiently to prevent settlement. If compaction is by rolling or ramming, material shall be wetted down as required. Where material can be suitably compacted by jetting or puddling, the Contractor may use one of these methods. No boulders shall be allowed to roll down the slopes and hit the walls.

- B. Backfilling shall be carried up evenly on all walls of an individual structure simultaneously. A variation of two (2) feet in elevation will be the maximum allowable. No backfill shall be allowed against walls until the walls and their supporting slabs, if applicable, have attained sufficient strength. Backfilling shall be subjected to approval by the County.
- C. 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 one foot above the bottom of the pipes:
 - 1. Place structural fill in such areas for a distance of not less than three feet either side of the center line 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 County.
 - 3. Structural fill shall be of the quality specified under Part 2 of this Section.
- D. The surface of filled areas shall be graded to smooth true lines, strictly conforming to grades indicated on the grading plan. No soft spots or uncompacted areas shall be allowed in the work.
- E. Temporary bracing shall be provided as required during construction of all structures to protect partially completed structures against all construction loads, hydraulic pressure and earth pressure. The bracing shall be capable of resisting all loads applied to the walls as a result of backfilling.

3.06 FIELD QUALITY CONTROL

- A. The density of soil in place shall be a minimum of 95 percent in accordance with ASTM test 1557-70T, Method A or C.

END OF SECTION

SECTION 02221 TRENCHING, BEDDING AND BACKFILL FOR PIPE

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. The Contractor shall furnish all labor, materials, equipment and incidentals necessary to perform all excavation, backfill, fill, grading, trench protection or other related work required to complete the piping work shown on the Drawings and specified herein. The work shall include, but not be limited to: vaults; duct conduit; pipe; roadways and paving; backfilling; required fill or borrow operations; grading; disposal of surplus and unsuitable materials; and all related work such as sheeting, bracing and dewatering.
- B. Prior to commencing work, the Contractor shall examine the site and review test borings if available, or undertake his own subsurface investigations and take into consideration all conditions that may affect his work.
- C. The Contractor is responsible for the protection of every tree which is scheduled to remain in the project area. This includes trees which may or may not be shown on the plans. Every tree shall be adequately protected in place at no additional cost to the County. This includes, but is not limited to protecting the root systems and adjusting grades as necessary for tree/root protection.

1.02 PROTECTION

- A. Sheeting and Bracing in Excavations:
 - 1. In connection with construction of underground structures, the Contractor shall properly construct and maintain cofferdams. These shall consist of: 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 yard pipe and/or foundation material from disturbance, undermining, or other damage. Care shall be taken to prevent voids outside of the sheeting, but if voids are formed, they shall be immediately filled and rammed.
 - 2. Trench sheeting for pipes: 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 one foot above the top of any pipe unless otherwise directed by the County. During the progress of the work, the County may direct the Contractor in writing to leave additional wood sheeting in place. If steel sheeting is used for trench sheeting, removal shall be as specified above, unless written approval is given for an alternate method of removal.
 - 3. 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. Unless otherwise approved or indicated on the Drawings or in the Specification, all sheeting and bracing shall be removed after completion of the piping or structure, care being taken not to disturb or otherwise injure the pipeline or finished masonry. All voids left or caused by withdrawal of sheeting shall be immediately refilled with sand by ramming with tools specifically made for that purpose, by watering, or as may otherwise be directed.
 - 4. The Contractor shall construct, to the extent he deems it desirable for his method of operation, the cofferdams and sheeting outside the neat lines of the pipeline trench or foundation unless otherwise indicated on the Drawings or directed by the County.

Sheeting shall be plumb and securely braced and tied in position. Sheeting, bracing and cofferdams shall be adequate to withstand all pressures to which the pipeline or structure will be subjected. Pumping, bracing and other work within the cofferdam shall be done in a manner to avoid disturbing any construction of the pipeline or the enclosed masonry. Any movement or bulging which may occur shall be corrected by the Contractor at his own expense so as to provide the necessary clearances and dimensions.

5. Drawings of the cofferdams and design computations shall be submitted to the County and approved prior to any construction. However, approval of these drawings shall not relieve the Contractor of the responsibility for the cofferdams. The drawings and computations shall be prepared and stamped by a Registered Professional Engineer in the State of Florida and shall be in sufficient detail to disclose the method of operation for each of the various stages of construction, if required, for the completion of the pipeline and substructures.

B. Dewatering, Drainage and Flotation

1. The Contractor shall construct and place all pipelines, concrete work, structural fill, bedding rock and limerock base course, in-the-dry. In addition, the Contractor shall make the final 24" of excavation for this work in-the-dry and not until the water level is a minimum of 6" below proposed bottom of excavation.
2. The Contractor shall, at all times during construction, provide and maintain proper equipment and facilities to remove promptly and dispose of properly all water entering excavation and keep such excavations dry so as to obtain a satisfactory undisturbed subgrade foundation condition until the fill, structure, or pipes to be built thereon have been completed to such extent that they will not be floated or otherwise damaged by allowing water levels to return to natural elevations.
3. Dewatering shall at all times be conducted in such a manner as to preserve the natural undisturbed bearing capacity of the subgrade soils at proposed bottom of excavation.
4. Wellpoints may be required for dewatering the soil prior to final excavation for deeper in-ground structures or piping and for maintaining the lowered groundwater level until construction has been completed to avoid the structure, pipeline, or fill from becoming floated or otherwise damaged. Wellpoints shall be surrounded by suitable filter sand and no fines shall be removed by pumping. Pumping from wellpoints shall be continuous and standby pumps shall be provided.
5. The Contractor shall furnish all materials and equipment to perform all work required to install and maintain the proposed drainage systems for handling groundwater and surface water encountered during construction of structures, pipelines and compacted fills.
6. Where required, the Contractor shall provide a minimum of two operating groundwater observation wells at each structure to determine the water level during construction of the pipeline or structure. Locations of the observation wells shall be at structures and along pipelines as approved by the County prior to their installation. The observation wells shall be extended to 6 inches above finished grade, capped with screw-on caps protected by 24" x 24" wide concrete base and left in place at the completion of this Project.
7. Prior to excavation, the Contractor shall submit his proposed method of dewatering and maintaining dry conditions to the County for approval. Such approval shall not relieve the Contractor of the responsibility for the satisfactory performance of the system. The Contractor shall be responsible for correcting any disturbance of natural bearing soils for damage to pipeline or structures caused by an inadequate

dewatering system or by interruption of the continuous operation of the system as specified.

8. As part of his request for approval of a dewatering system, the Contractor shall demonstrate the adequacy of the proposed system and wellpoint filter sand by means of a test installation. Discharge water shall be clear, with no visible soil particles in a one quart sample. Discharge water shall not flow directly into wetlands or Waters of the State as defined by FDEP and SWFWMD.
9. During backfilling and construction, water levels shall be measured in observation wells located as directed by the County.
10. Continuous pumping will be required as long as water levels are required to be below natural levels.

PART 2 PRODUCTS

2.01 MATERIALS

A. General

1. Materials for use as fill and backfill shall be described below. For each material, the Contractor shall notify the County of the source of the material and shall furnish the County, for approval, a representative sample weighing approximately 50 pounds, at least ten calendar days prior to the date of anticipated use of such material.
2. Additional materials shall be furnished as required from off-site sources and hauled to the site.

B. Structural Fill

1. Structural fill in trenches shall be used below spread footing foundations, slab-on-grade floors and other structures as backfill within three feet of the below grade portions of structures.
2. Structural fill material shall be a minimum of 60 percent clean sand, free of organic, deleterious and/or compressible material. Minimum acceptable density shall be 98 percent of the maximum density as determined by AASHTO T-180. Rock in excess of 2-1/2" in diameter shall not be used in the fill material. If the moisture content is improper for attaining the specified density, either water shall be added or material shall be permitted to dry until the proper moisture content for compaction is reached.

C. Common Fill

1. Common fill material shall be free from organic matter, muck or marl and rock exceeding 2-1/2" in diameter. Common fill shall not contain broken concrete, masonry, rubble or other similar materials. Existing soil may be used to adjust grades over the site with the exception of the construction area.
2. Material falling within the above specification, encountered during the excavation, may be stored in segregated stockpiles for reuse. All material which, in the opinion of the County, is not suitable for reuse shall be spoiled as specified herein for disposal of unsuitable materials by the Contractor.

D. Crushed Stone

1. Crushed stone may be used for pipe bedding, manhole bases, as a drainage layer below structures with underdrains and at other locations indicated on the Drawings.

2. Crushed stone shall be size No. 57 with gradation as noted in Table 1 of Section 901 of Florida Department of Transportation, Construction of Roads and Bridges.

PART 3 EXECUTION

3.01 TRENCH EXCAVATION AND BACKFILLING

- A. Excavation for all trenches required for the installation of pipes and electrical ducts shall be made to the depths indicated on the Drawings and in such manner and to such widths as will give suitable room for laying the pipe or installing the ducts within the trenches.
- B. Rock shall be removed to a minimum 6" clearance around the bottom and sides of all the pipe or ducts being laid.
- C. Where pipes or ducts are 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 is no more than slightly disturbed.
- 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 grade by machinery. The last of the material being excavated manually, shall be done in such a manner that will give a flat bottom true to grade so that pipe or duct can be evenly supported on undisturbed material. Bell holes shall be made as required.
- E. Backfilling over pipes shall begin as soon as practicable after the pipe has been laid, jointed and inspected and the trench filled with suitable compacted material to the mid-diameter of the pipe.
- F. Backfilling over ducts shall begin not less than three days after placing concrete encasement.
- G. All backfilling shall be prosecuted expeditiously and as detailed on the Drawings.
- H. Any space remaining between the pipe and sides of the trench shall be packed full by hand shovel with selected earth, free from stones having a diameter greater than 2" and thoroughly compacted with a tamper as fast as placed, up to a level of one foot above the top of the pipe.
- I. The filling shall be carried up evenly on both sides with at least one man tamping for each man shoveling material into the trench.
- J. The remainder of the trench above the compacted backfill, as just described above, shall be filled and thoroughly compacted by rolling, ramming, or puddling, as the County may direct, sufficiently to prevent subsequent settling.

END OF SECTION

**SECTION 02223 EXCAVATION BELOW GRADE AND CRUSHED STONE OR SHELL
REFILL**

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. If in the opinion of the County, the material at or below the normal grade of the bottom of the trench is unsuitable for pipe or structure foundation, it shall be removed to the depth directed by the County and replaced by crushed stone or washed shell.

PART 2 PRODUCTS (NOT USED)

PART 3 MATERIALS

3.01 EXCAVATION AND DRAINAGE

- A. Whatever the nature of unstable material encountered or the groundwater conditions, trench stabilization shall be complete and effective.
- B. Should the Contractor excavate below the grade shown on the Contract drawings because of negligence or for his own convenience; due to failure in properly dewatering the trench; disturbs the subgrade before dewatering is sufficiently complete; he shall be directed by the County to excavate below grade. The work of excavating below grade and furnishing and placing the approved refill material shall be performed at the Contractor's expense.

3.02 REFILL

- A. Should the material at the level of trench bottom consist of fine sand, sand and silt or soft earth, the subgrade material shall be removed as directed by the County and the excavation shall be refilled with crushed stone or washed shell.

END OF SECTION

SECTION 02260 FINISH GRADING

PART 1 GENERAL

1.01 WORK INCLUDED

- A. The Contractor shall finish grade sub-soil.
- B. The Contractor shall cut out areas to receive stabilizing base course materials for paving and sidewalks.
- C. The Contractor shall place, finish grade and compact top soil.

1.02 PROTECTION

The Contractor shall prevent damage to existing fencing, trees, landscaping, natural features, bench marks, pavement and utility lines. Damage shall be corrected at no cost to the County.

PART 2 PRODUCTS

- A. Topsoil: Shall be friable loam free from subsoil, roots, grass, excessive amount of weeds or other organics, stones, and foreign matter; acidity range (pH) of 5.5 to 7.5; containing a minimum of 4 percent and a maximum of 25 percent organic matter. The Contractor may use topsoil stockpiles on site if they conform to these requirements.

PART 3 EXECUTION

3.01 SUB-SOIL PREPARATION

- A. The Contractor shall rough grade sub-soil systematically to allow for a maximum amount of natural settlement and compaction. Uneven areas and low spots shall be eliminated. Debris, roots, branches or other organics, stones, and sub-soil shall be removed by the Contractor and disposed of in a manner consistent with the latest Manatee County Standards as well as any affected regulatory agency. Should contaminated soil be found, the Contractor shall notify the County.
- B. The Contractor shall cut out areas to sub-grade elevation to stabilize base material for paving and sidewalks.
- C. The Contractor shall bring sub-soil to required profiles and contour grades gradually; and blend slopes into level areas.
- D. The Contractor shall slope the structure grade a minimum of two (2) inches in ten (10) feet unless indicated otherwise on the Drawings.
- E. The Contractor shall cultivate sub-grade to a depth of 3 inches where the topsoil is to be placed. He shall repeat cultivation in areas where equipment use has compacted sub-soil.
- F. The Contractor shall not make grade changes which causes water to flow onto adjacent lands.

3.02 PLACING TOPSOIL

- A. The Contractor shall place topsoil in areas where seeding, sodding and planting is to be performed. He shall place from the following minimum depths, up to finished grade elevations:
 - 1. 6 inches for seeded areas
 - 2. 4-1/2 inches for sodded areas
 - 3. 24 inches for shrub beds
 - 4. 18 inches for flower beds
- B. The Contractor shall use topsoil in a dry state as determined by the County. He shall place the material during dry weather.
- C. The Contractor shall use fine grade topsoil eliminating rough and low areas to ensure positive drainage. He shall maintain levels, profiles and contours of the sub-grades.
- D. The Contractor shall remove stone, roots, grass, weeds, debris, and other organics or foreign material while spreading the material.
- E. The Contractor shall manually spread topsoil around trees, plants and structures to prevent damage which may be caused by grading equipment.
- F. The Contractor shall lightly compact and place the topsoil.

3.03 SURPLUS MATERIAL

- A. The Contractor shall remove surplus sub-soil and topsoil from site at his expense.
- B. The Contractor shall leave stockpile areas and entire job site clean and raked, ready for landscaping operations.

END OF SECTION

SECTION 02276 TEMPORARY EROSION AND SEDIMENTATION CONTROL

PART 1 GENERAL

1.01 DESCRIPTION

- A. The work specified in this Section consists of the design, provision, maintenance and removal of temporary erosion and sedimentation controls as necessary.
- B. Temporary erosion controls include, but are not limited to: grassing, mulching, netting, watering, and the reseeding of on-site surfaces and spoil and borrow area surfaces, interceptor ditches at ends of berms and other such work at those locations which will ensure that erosion during construction will be either eliminated or maintained within acceptable limits as established by the County.
- C. Temporary sedimentation controls include, but are not limited to: silt dams, traps, barriers, and appurtenances at the foot of sloped surfaces which shall ensure that sedimentation pollution will be either eliminated or maintained within acceptable limits as established by the County.
- D. The Contractor is responsible for providing effective temporary erosion and sediment control measures during construction or until final controls become effective.

1.02 REFERENCE DOCUMENTS

- A. Florida Building Code.
- B. FDEP/COE Dredge and Fill Regulations and/or Permit as applicable.
- C. SWFWMD Permit Regulations and/or Permit as applicable.
- D. Florida Stormwater, Erosion and Sedimentation Control Inspector's Manual.

PART 2 PRODUCTS

2.01 EROSION CONTROL

- A. Netting - fabricated of material acceptable to the County.
- B. Seed and sod.

2.02 SEDIMENTATION CONTROL

- A. Bales - clean, seed free cereal hay type.
- B. Netting - fabricated of material acceptable to the County.
- C. Filter stone - crushed stone conforming to Florida Dept of Transportation specifications.
- D. Concrete block - hollow, non-load-bearing type.
- E. Concrete - exterior grade not less than one inch thick.

PART 3 EXECUTION

3.01 EROSION CONTROL

- A. Minimum procedures for grassing shall be:
1. Scarify slopes to a depth of not less than six inches and remove large clods, rock, stumps, roots larger than 1/2 inch in diameter and debris.
 2. Sow seed within twenty-four (24) hours after the ground is scarified with either mechanical seed drills or rotary hand seeders.
 3. Apply mulch loosely and to a thickness of between 3/4-inch and 1-1/2 inches.
 4. Apply netting over mulched areas on sloped surfaces.
 5. Roll and water seeded areas in a manner which will encourage sprouting of seeds and growing of grass. Reseed areas which exhibit unsatisfactory growth. Backfill and seed eroded areas.

3.02 SEDIMENTATION CONTROL

- A. The Contractor shall install and maintain silt dams, traps, barriers, and appurtenances as shown on the approved descriptions and working drawings. Deteriorated hay bales and dislodged filter stone shall be replaced by the Contractor at his expense.

3.03 PERFORMANCE

- A. The Contractor, at his own expense, shall immediately take whatever steps are necessary to correct any deficiencies of the temporary erosion and sediment control measures employed if they fail to produce results or do not comply with the requirements of the State of Florida or any other federal, governmental or regulatory agency.

END OF SECTION

SECTION 02355 LUMBER LEFT IN PLACE

PART 1 GENERAL

1.01 SCOPE OF WORK

The Contractor shall furnish and install shoring and sheeting as necessary to provide adequate safety.

PART 2 PRODUCTS

2.01 MATERIALS

Wood for shoring and sheeting shall be green, rough cut hardwood planking.

PART 3 EXECUTION

3.01 INSTALLATION

- A. The Contractor shall furnish, install and maintain sheeting and bracing required to support the sides of excavations, to prevent any movement which could in any way diminish the width of the excavation below which is necessary for proper construction and to protect adjacent structures from undermining or other damage. If the County determines that insufficient or improper supports have been provided, he may order additional supports to be installed at the expense of the Contractor. Compliance with such orders shall not relieve or release the Contractor from his responsibility for the sufficiency of such supports. Care shall be taken to prevent voids outside of the sheeting. Should voids form, they shall be immediately filled and rammed.
- B. The Contractor shall embed and leave in place all sheeting, bracing and other related items as shown on the Contract Drawings. The County may direct that sheeting and bracing timber be cut off at a specified elevation. No additional payment or compensation shall be made for this work.
- C. Sheeting and bracing not left in place shall be removed carefully in such manner as not to endanger other structures, utilities, property, or proposed construction.
- D. The County may order sheeting and bracing to be left in place; however, this shall not relieve the Contractor from liability for damages to persons or property due to negligence or the failure on the part of the Contractor to leave in place sufficient sheeting and bracing to prevent any caving or moving of the ground.
- E. The Contractor shall receive no payment other than that included in the pipe bid item price for any timber used for sheeting bracing, or other related items.

END OF SECTION

SECTION 02480 LANDSCAPING

PART 1 GENERAL

1.10 SCOPE OF WORK

- A. The Contractor shall furnish all labor, materials, equipment, and incidentals required to install trees, ground cover, and shrubs, to place accessory planting materials, to maintain and guarantee all planted areas. All work shall be in strict accordance with sound nursery practice and shall include maintenance and watering of all of the work of this Contract until final completion and acceptance by the County.
- B. The landscaping shall be performed by a contractor or subcontractor who specializes in landscaping and who is fully familiar and experienced in projects of this type and scope. The landscaping contractor or subcontractor shall be subject to the approval of the County.
- C. The Contractor shall provide all landscaping complete and ready for use as specified in the Contract Documents and as shown on the Drawings.

1.02 SUBMITTALS

- A. The Contractor shall submit to the County for review and approval, shop drawings and complete written maintenance instructions for each type of plant furnished under this Contract.
- B. The Contractor shall submit representative samples of any or all of required accessory planting materials as requested by the County.

1.03 OBSTRUCTIONS BELOW GROUND

- A. The County may change the location of plant material if underground construction, utilities or obstructions are encountered in excavation of planting areas or pits.
- B. The Contractor shall make such changes without additional compensation from the County.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Plant species and size shall conform to those indicated in the Plant List and in plan locations shown on the Drawings. Nomenclature shall conform to the Florida Department of Agriculture: "Grades and Standards for Nursery Plants". The designated authority for identification of plants shall be in conformance with FDOT Standard Specification Section 580-2.1.1 Plants.
- B. Plants shall be sound, healthy, vigorous, free from plant diseases, insects, pests, or their eggs and shall have healthy normal root systems. Plants shall be nursery grown stock, freshly dug. No heeled in, cold storage, or collected stock shall be accepted.
- C. Shape and Form

- 1. Plant material shall be symmetrical, typical for the variety and species, and shall

- conform to the measurements specified in the Plant List.
2. Plants used where symmetry is required shall be matched as nearly as possible.
 3. Plants shall not be pruned prior to delivery except as authorized by the County.
 4. All plants shall have been transplanted or root pruned at least once in the past three years.
 5. Unless otherwise noted, street trees shall be free of branches up to six feet, with the single leader well branched, and with straight trunks.
 6. Shrubs shall have been transplanted twice, have fully developed root systems, be heavily canned with foliage to base, fulfill dimensions required, and be typical of species.
 7. Ground covers shall have sturdy fibrous root systems and shall be heavily leafed.
- D. Measurement: The height and/or width of trees shall be measured from the ground or across the normal spread of branches with the plants in their normal position. This measurement shall not include the immediate terminal growth.
- E. Substitutions in plant species or size shall be made only with the written approval of the County.
- F. Ground cover plants shall be planted in beds of four inches of approved topsoil. The beds shall be thoroughly disked into the soil. The compacted and settled finished surface shall be set to the required grade. Plants shall be spaced as described in the Contract Documents or shown on the Contract Drawings, or otherwise directed by the County in accordance with the best practices of the trade.
- G. Planting Soil
1. Soil for backfilling around plants and planting beds shall be a good grade of garden loam as approved by the County. Soil shall be free of heavy clay, coarse sand, stones, lumps, sticks, or other foreign material. The soil shall not be delivered or used in a muddy condition.
 2. The soil shall be taken from ground that has never been stripped. There shall be a slight acid reaction to the soil with no excess of calcium or carbonate. The soil shall be free from excess weeds or other objectionable material.
 3. Soil for trees and shrubs shall be delivered in a loose, friable condition. All trees shall average approximately one cubic yard per tree, except Sabal Palmetto, which shall be planted with clean sand. There shall be a minimum of 4-inches of planting soil in ground cover areas and 1/8 cubic yard per shrub or vine.
 4. No marl shall be allowed in ground cover planting beds.
- H. Before plants are backfilled with planting soil, fertilizer tablets, Agriform 20-10-5 or equal, shall be placed in each pit. The Contractor shall provide three tablets for each tree and one for each shrub or vine.
- I. Tree Staking: All tree staking and bracing shall be included herein in accordance with sound nursery practice and shall be in accordance with the Contract Documents. The Contractor shall furnish all materials required for staking and bracing as approved.
- J. Landscaping stones shall be inert and nonleaching. The Contractor shall provide physical samples for approval prior to installation. Crushed limerock shall not be acceptable.

PART 3 EXECUTION

3.01 PLANTING PROCEDURES

- A. Plant Locations: All plants shall be located as shown on the Drawings, to dimensions if shown, to scale if not dimensioned. Large areas or beds shall be scaled and the plants spaced evenly. Approval by the County is required before any plants may be installed.
- B. Tree Pits: Pits for trees shall be at least two feet greater in diameter than the specified diameter of the ball. Pits shall be of sufficient depth to allow a 12-inch layer of planting soil under the ball when it is set to grade. Bottom of pit shall be loosened prior to backfilling.
- C. Digging and Handling
 - 1. Plants shall be handled at all times so that roots or balls are adequately protected from sun or drying winds. Tops or roots of plant allowed to dry out will be rejected.
 - 2. Balled and burlapped plants shall be moved with firm, natural balls of soil, not less than one foot diameter of ball to every one inch caliper of trunk, and a depth of not less than 2/3 of ball diameter. No plant shall be accepted when the ball of earth surrounding its roots has been cracked or broken. All trees, except palms, shall be dug with ball and burlapped. Root pruning shall have been done at minimum of four weeks before planting at the job.
 - 3. Bare root plants shall be dug with spread of root and of sufficient depth to insure full recovery of plant.
- D. Cabbage Palms (Sable Palmetto):
 - 1. Cabbage Palms shall be taken from moist black sand areas. Only a minimum of fronds shall be removed from the crown to facilitate moving and handling. Clear trunk or overall height shall be as specified after the minimum of fronds have been removed.
 - 2. Cabbage Palms buds shall be tied to a suitable support with a burlap strip, to be left in place until the tree is well established in its new location.
 - 3. Cabbage Palms shall be planted in sand, thoroughly washed in during planting operations, and with a dished or saucer depression left at the soil line for future waterings. Palms with marred or burned trunks will be accepted at the discretion of the County only.
 - 4. Trees moved by winch or crane shall be thoroughly protected from chain marks, girdling or bark slippage by means of burlap, wood battens, or other approved method.
- E. When balled or burlapped plants are set, planting soil shall be carefully tamped under and around the base of the balls to prevent voids. All burlap, rope, wires, etc., shall be removed from the sides and tops of balls, but no burlap shall be pulled from underneath. Roots of bare rooted plants shall be properly spread out and planting soil carefully worked in among them.
- F. All plants shall be set straight or plumb, in locations shown on the Drawings. Except as otherwise specified, plants shall be planted in pits which shall be set at such level that, after settlement, they bear the same relation to the finished grade or the surrounding ground as they bore to the grade of the soil from which they are taken.
- G. Pruning shall be carefully done by experienced plantsmen. Prune immediately upon acceptance by the County, including any broken branches, thinning small branches and tipping back main branches (except main leaders).
- H. Excess soil and debris shall be disposed of off the project site unless ordered stockpiled by

the County.

3.02 NORMAL MAINTENANCE OF PLANT MATERIALS

- A. Plant material maintenance shall begin when planting operations start and shall extend until final acceptance of work.
- B. Maintain all plant materials under this Contract to the satisfaction of the County. Maintenance shall include necessary watering, cultivation, weeding, pruning, spraying, tightening and repair to guy wires, removal of dead material, resetting, and other work required to conform with referenced standards and accepted nursery standards as approved.
- C. Plant materials which are in a tilted or in a leaning position shall be properly righted.
- D. After final acceptance by the County and until one calendar year after acceptance of all plantings, the landscaping contractor or subcontractor shall make monthly inspections of materials and report in writing to the County the conditions of the plants and the necessary requirements to keep the plants in a healthy growing condition.

3.03 TREE AND PLANT PROTECTION

- A. The Contractor shall remove all trees (if any) within the limit of landscaping shown on the detail sheet except those designated to be salvaged (if any). Prior to removal of said trees, the Contractor shall obtain a tree removal permit, if required. All other trees in the vicinity of the work shall be protected against damage by the Contractor until all work under the Contract has been completed.
- B. Consult with the County, and remove agreed-on roots and branches which interfere with construction. Employ qualified tree surgeon to remove, and to treat cuts.
- C. Provide temporary barriers to a height of six feet around each group of trees and plants.
- D. Protect root zones of trees and plants
 - 1. Do not allow vehicular traffic or parking.
 - 2. Do not store materials or products.
 - 3. Prevent dumping or refuse or chemically injurious materials or liquids.
 - 4. Prevent puddling or continuous running water.
- E. Carefully supervise excavating, grading, and filling, and subsequent construction operations, to prevent damage.
- F. In case of inadvertent damage to any tree or plant by the Contractor or any of his subcontractors or employees, the Contractor shall provide replacement of each such damaged tree or plant with a new one of acceptable type, size and quality.
- G. Completely remove barricades, including foundations, when construction has progressed to the point that they are no longer needed, and when approved by the County.
- H. Clean and repair damage caused by installation, fill and grade the areas of the site to required elevations and slopes, and clean the area.

3.04 GUARANTEE

The life and satisfactory condition of all plant material planted shall be guaranteed by the Contractor for a minimum of one calendar year. Guarantee shall include complete replacement with material of the same kind and size as in the original work if not in a healthy condition, as determined by the County, at the end of the guarantee period.

3.05 REPLACEMENT

- A. At the end of the guarantee period, any plant required under this Contract that is dead or not in satisfactory growth as determined by the County, shall be removed. Plants replaced shall be guaranteed for 90 days after date of replacement.
- B. Replacement of plants necessary during guarantee period shall be the responsibility of the Contractor, except for possible replacements of plants resulting from removal, vandalism, acts of neglect on the part of others, or acts of God.
- C. All replacements shall be plants of the same kind and size as specified in the Drawings. They shall be furnished and planted as herein specified. The cost shall be the responsibility of the Contractor.

END OF SECTION

SECTION 02485 SEEDING AND SODDING

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. The Contractor shall furnish all labor, materials and equipment necessary to satisfactorily return all construction areas to their original conditions or better.
- B. Work shall include furnishing and placing seed or sod, fertilizing, planting, watering and maintenance until acceptance by County.

1.02 RELATED WORK NOT INCLUDED

Excavation, filling and grading required to establish elevation shown on the Drawings are included under other sections of these Specifications.

1.03 QUALITY ASSURANCE

- A. It is the intent of this Specification that the Contractor is obliged to deliver a satisfactory stand of grass as specified. If necessary, the Contractor shall repeat any or all of the work, including grading, fertilizing, watering and seeding or sodding at no additional cost to the County until a satisfactory stand is obtained. For purposes of grassing, a satisfactory stand of grass is herein defined as a full lawn cover over areas to be sodded or seeded, with grass free of weeds, alive and growing, leaving no bare spots larger than 3/4 square yard within a radius of 8 feet.
- B. All previously grassed areas where pipelines are laid shall be sodded. All sodding and grassing shall be installed in accordance with these Specifications or as directed by the County.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Fertilizer: The fertilizer shall be of the slow-release type meeting the following minimum requirements: 12 percent nitrogen, 8 percent phosphorus, 8 percent potassium; 40 percent other available materials derived from organic sources. At least 50 percent of the phosphoric acid shall be from normal super phosphate or an equivalent source which will provide a minimum of two units of sulfur. The amount of sulfur shall be indicated on the quantitative analysis card attached to each bag or other container. Fertilizer shall be uniform in composition, dry and free flowing delivered to sites in original unopened containers bearing manufacturer's statement or guarantee.
- B. Seeding/Grassing: The Contractor shall grass all unpaved areas disturbed during construction which do not require sod. All grassing shall be completed in conformance with FDOT Specifications, Sections 570 and 981. The grassed areas shall be mulched and fertilized in accordance with FDOT Specifications, except that no additional payment will be made for mulching, fertilizing and/or watering.
- C. Sodding: Sod shall be provided as required on the construction drawings or at locations as directed by the County in accordance with Florida Department of Transportation, Specifications Section 575 and 981. The Contractor shall furnish bahia grass sod or match

existing sod. Placement and watering requirements shall be in accordance with FDOT Specifications Section 575, except that no additional payment will be made for placement and/or watering. This cost shall be included in the Contract price bid for sodding.

- D. Topsoil: Topsoil stockpiled during excavation may be used as necessary. If additional topsoil is required to replace topsoil removed during construction, it shall be obtained off site at no additional cost to the County. Topsoil shall be fertile, natural surface soil, capable of producing all trees, plants and grassing specified herein.
- E. Water: It is the Contractor's responsibility to supply all water to the site, as required during seeding and sodding operations and through the maintenance period and until the work is accepted. The Contractor shall make whatever arrangements that may be necessary to ensure an adequate supply of water to meet the needs for his work. He shall also furnish all necessary hose, equipment, attachments and accessories for the adequate irrigation of lawns and planted areas as may be required. Water shall be suitable for irrigation and free from ingredients harmful to plant life.

PART 3 EXECUTION

3.01 INSTALLATION

- A. When the trench backfill has stabilized sufficiently, the Contractor shall commence work on lawns and grassed areas, including fine grading as necessary and as directed by the County.
- B. Finish Grading: Areas to be seeded or sodded shall be finish graded, raked, and debris removed. Soft spots and uneven grades shall be eliminated. The County shall approve the finish grade of all areas to be seeded or sodded prior to seed or sod application.
- C. Protection: Seeded and sodded areas shall be protected against traffic or other use by placing warning signs or erecting barricades as necessary. Any areas damaged prior to acceptance by the County shall be repaired by the Contractor as directed by the County.

3.02 CLEANUP

Soil or similar materials spilled onto paved areas shall be removed promptly, keeping those areas as clean as possible at all times. Upon completion of seeding and sodding operations, all excess soil, stones and debris remaining shall be removed from the construction areas.

3.03 LANDSCAPE MAINTENANCE

- A. Any existing landscape items damaged or altered during construction by the Contractor shall be restored or replaced as directed by the County.
- B. Maintain landscape work for a period of 90 days immediately following complete installation of work or until County accepts project. Watering, weeding, cultivating, restoration of grade, mowing and trimming, protection from insects and diseases, fertilizing and similar operations as needed to ensure normal growth and good health for live plant material shall be included at no additional cost to the County.

3.04 REPAIRS TO LAWN AREAS DISTURBED BY CONTRACTOR'S OPERATORS

Lawn areas planted under this Contract and all lawn areas damaged by the Contractor's

operation shall be repaired at once by proper soil preparation, fertilizing and sodding, in accordance with these Specifications.

END OF SECTION

SECTION 02513 ASPHALT CONCRETE PAVING

PART 1 GENERAL

1.01 SCOPE OF WORK

The Contractor shall furnish all labor, materials and equipment necessary to complete all milling asphalt pavement and asphalt concrete paving (including restoration of driveways) as called out on the Contract Documents or as shown on the Drawings.

1.02 QUALITY ASSURANCE

- A. Qualifications of Asphalt Concrete Producer: The only materials permitted shall be furnished by a bulk asphalt concrete producer exclusively engaged in the production of hot-mix, hot-laid asphalt concrete.
- B. Qualification of Testing Agency: The County may employ a commercial testing laboratory to conduct tests and evaluations of asphalt concrete materials and design. The Contractor shall:
 - 1. Provide asphalt concrete testing and inspection service acceptable to County.
 - 2. Include sampling and testing asphalt concrete materials proposed, and tests and calculations for asphalt concrete mixtures.
 - 3. Provide field testing facilities for quality control testing during paving operations.
- C. Requirements of Regulatory Agencies: The Contractor shall comply with the applicable requirements of:
 - 1. Manatee County Utility Operations Department
 - 2. Manatee County Transportation Department
 - 3. State of Florida Dept. of Transportation

1.03 PAVING QUALITY REQUIREMENTS

- A. General: In addition to other specified conditions, the Contractor shall comply with the following minimum requirements:
 - 1. In-place asphalt concrete course shall be tested for compliance with requirements for density, thickness and surface smoothness.
 - 2. Final surface shall be provided of uniform texture, conforming to required grades and cross sections.
 - 3. A minimum of four inch diameter pavement specimens for each completed course shall be taken from locations as directed by the County.
 - 4. Holes from test specimens shall be repaved as specified for patching defective work.
- B. Density:
 - 1. When subjected to 50 blows of standard Marshall hammer on each side of an in place material specimen, densities shall be comparable to a laboratory specimen of same asphalt concrete mixture.
 - 2. The minimum acceptable density of in-place course material shall be 98% of the recorded laboratory specimen density.

- C. Thickness: In-place compacted thicknesses shall not be acceptable if less than the minimum thicknesses shown on the Drawings.
- D. Surface Smoothness:
 - 1. Finished surface of each asphalt concrete course shall be tested for smoothness, using a 10 ft. straightedge applied parallel to and at right angles to centerline of paved areas.
 - 2. Surface areas shall be checked at intervals directed by County.
 - 3. Surfaces shall not be acceptable if they exceed the following:
 - a. Base Course: 1/4 in. in 10 ft.
 - b. Surface Course: 3/16 in. in 10 ft.
 - c. Crowned Surfaces:
 - (1) Test crowned surfaces with a crown template, centered and at right angles to the crown.
 - (2) Surfaces will not be acceptable if varying more than 1/4 in. from the template.

1.04 SUBMITTALS

- A. Samples: The Contractor may be required to provide samples of materials for laboratory testing and job-mix design.
- B. Test Reports: The Contractor shall submit laboratory reports for following materials tests:
 - 1. Coarse and fine aggregates from each material source and each required grading:
 - a. Sieve Analysis: ASTM C 136 (AASHTO T 27).
 - b. Unit Weight of Slag: ASTM C29 (AASHTO T 19).
 - c. Soundness: ASTM C 88 (AASHTO T 104) for surface course aggregates only.
 - d. Sand Equivalent: ASTM D 2419 (AASHTO T 176).
 - e. Abrasion of Coarse Aggregate: ASTM C131 (AASHTO T 96), for surface course aggregates only.
 - 2. Asphalt cement for each penetration grade:
 - a. Penetration: ASTM D5 (AASHTO T49).
 - b. Viscosity (Kinematic): ASTM D2170 (AASHTO T 201).
 - c. Flash Point: ASTM D92 (AASHTO T 48).
 - d. Ductility: ASTM D 113 (AASHTO T 51).
 - e. Solubility: ASTM D 4 (AASHTO T 44).
 - f. Specific Gravity: ASTM D 70 (AASHTO T 43).
 - 3. Job-mix design mixtures for each material or grade:
 - a. Bulk Specific Gravity for Coarse Aggregate: ASTM C 117(AASHTO T 85).
 - b. Bulk Specific Gravity for Fine Aggregate: ASTM C 128(AASHTO T 84).
 - 4. Uncompacted asphalt concrete mix: Maximum Specific Gravity: ASTM D 2041 (AASHTO T 209).
 - 5. Compacted asphalt concrete mix:
 - a. Bulk Density: ASTM D 1188 (AASHTO T 166).
 - b. Marshall Stability and Flow: ASTM D 1559.
 - 6. Density and voids analysis:
 - a. Provide each series of asphalt concrete mixture test specimens, in accordance with A.I. MS-2 "Mix Design Methods for Asphalt Concrete".
 - b. Use Marshall method of mix design unless otherwise directed or acceptable to the County.
 - c. Report the quantity of absorbed asphalt cement in pounds of dry aggregate,

- percent air voids, and percent voids in mineral aggregate.
7. Sampling and testing of asphalt concrete mixtures for quality control during paving operations:
 - a. Uncompacted asphalt concrete mix.
 - (1) Asphalt Cement Content: ASTM D 2172 (AASHTO T 164).
 - (2) Penetration of Recovered Asphalt Cement: ASTM D 5(AASHTO T 49).
 - (3) Ductility of Recovered Asphalt Cement: ASTM D 113(AASHTO T 51).
 - b. Compacted asphalt concrete mix:
 - (1) Bulk Density: ASTM D 1188 (AASHTO T 166).
 - Marshall Stability and Flow: ASTM D1559).
 - c. Perform at least one test for each day's paving.
 8. Asphalt plant inspection: ASTM D 290.
 9. Additional testing:
 - a. Retesting shall be required if previous tests indicate insufficient values, or if directed by the County.
 - b. Testing shall continue until specified values have been attained.
 10. Asphalt concrete materials which do not comply with specified requirements shall not be permitted in the work.

1.05 JOB CONDITIONS

A. Weather Limitations:

1. Apply bituminous prime and tack coats only when the ambient temperature in the shade is 50 degrees F. and when the temperature has not been below 35 degrees F. for 12 hours immediately prior to application.
2. Do not apply when the base surface is wet or contains an excess of moisture which would prevent uniform distribution and the required penetration.
3. Construct asphalt concrete surface course only when atmospheric temperature is above 40 degrees F., when the underlying base is dry, and when weather is not rainy.
4. Base course may be placed when air temperature is not below 30 degrees F. and rising, when acceptable to the County.

B. Grade Control: Establish and maintain the required lines and grades, including crown and cross-slope, for each course during construction operations.

C. Traffic Control: Maintain vehicular and pedestrian traffic during paving operations, as required for other construction activities.

PART 2 PRODUCTS

2.01 MATERIALS

A. Soil Cement or Shell Base Course: as specified in FDOT Section 270, "Material for Base and Stabilized Base", and as called for in the Contract Documents.

B. Aggregate for Asphalt Concrete, General:

1. Sound, angular crushed stone, crushed gravel, or crushed slag: ASTM D 692.
2. Sand, stone, or slag screening: ASTM D 1073.

3. Provide aggregate in gradations for various courses to comply with local highway standards.
- C. Surface Course Aggregates:
 1. Provide natural sand, unless sand prepared from stone, slag, or gravel or combinations are required to suit local conditions.
- D. Asphalt Cement: Comply with ASTM D 946 for 85-100 penetration grade.
- E. Prime Coat:
 1. Cut-back liquid asphalt.
 2. Medium-Curing type: ASTM D 2027, Grade MC-70.

2.02 ASPHALT-AGGREGATE MIXTURES

- A. Job-mix criteria:
 1. Provide job-mix formulas for each required asphalt-aggregate mixture.
 2. Establish a single percentage of aggregate passing each required sieve size, a single percentage of asphalt cement to be added to aggregate, and a single temperature at which asphalt concrete is to be produced.
 3. Comply with the mix requirements of local governing highway standards.
 4. Maintain material quantities within allowable tolerances of the governing standards.

2.03 TRAFFIC AND PARKING MARKING MATERIALS

- A. Traffic lane marking paint with chlorinated rubber base.
- B. Factory mixed, quick drying and non bleeding, FS TT-P-115C, Type III.
- C. Color: Driving Lane Dividers - White
No Parking Zone - Yellow
Parking Dividers - White

PART 3 EXECUTION

3.01 SURFACE PREPARATION

- A. Subbase Preparation:
 1. The Contractor shall remove from the area all organic substance encountered to a depth of six or eight inches (6" or 8"), or to such depth and width as directed by the County. The entire area shall be plowed and dragged prior to placing a stabilizing additive, if required to meet minimum bearing value.
 2. Subbase shall be compacted to a minimum density of 98 percent of the maximum as determined by the Modified Proctor Density AASHTO T180, and shall have a minimum bearing value of 40 pounds per square inch as determined by the Florida Bearing Test.
- B. Base Course:

1. Check subgrade for conformity with elevations and section immediately before placing base material.
2. Place base material in compacted layers not more than 6 inches thick, unless continuing tests indicate the required results are being obtained with thicker layers.
3. In no case will more than 8-inches of compacted base be placed in one lift.
4. Spread, shape, and compact all base material deposited on the subgrade during the same day.
5. Compact base course material to be not less than 95% of maximum density: ASTM D 1557, Method D (98 percent maximum density: AASHTO T-180).
6. Test density of compacted base course: ASTM D 2167.
7. Conduct one test for each 250 sq. yds. of in-place material, but in no case not less than one daily for each layer.

C. Loose and Foreign Material:

1. Remove loose and foreign material from compacted subbase surface immediately before application of paving.
2. Use power brooms or blowers, and brooming as required.
3. Do not displace subbase material.

D. Prime Coat:

1. Uniformly apply at rate of 0.20 to 0.5 gal. per sq. yd. over compacted and cleaned subbase surface.
2. Apply enough material to penetrate and seal, but not flood the surface.
3. Allow to cure and dry as long as required to attain penetration and evaporation of volatile, and in no case less than 24 hours unless otherwise acceptable to the County.
4. Blot excess asphalt with just enough sand to prevent pick-up under traffic.
5. Remove loose sand before paving.

E. Tack Coat:

1. Dilute material with equal parts of water and apply to contact surfaces of previously constructed asphalt concrete or portland cement concrete and similar surfaces.
2. Apply at rate of 0.05 to 0.15 gal. per sq. yd. of surface.
3. Apply tack coat by brush to contact surfaces of structures projecting into or abutting asphalt concrete pavement.
4. Allow surfaces to dry until material is at condition of tackiness to receive pavement.

3.02 MANHOLE FRAME / VALVE BOX ADJUSTMENTS (IF APPLICABLE)

A. Placing Manhole frames:

1. Surround manhole frames set to elevation with a ring of compacted asphalt concrete base prior to paving.
2. Place asphalt concrete mixture up to 1 in. below top of frame, slope to grade, and compact by hand tamping.

B. Adjust manhole frames to proper position to meet paving.

C. If permanent covers are not in place, provide temporary covers over openings until completion of rolling operations.

- D. Set cover manhole frames to grade, flush with surface of adjacent pavement.

3.03 PREPARING THE MIXTURE

- A. Comply with ASTM D 995 for material storage, control, and mixing, and for plant equipment and operation.
- B. Stockpiles:
 - 1. Keep each component of the various-sized combined aggregates in separate stockpiles.
 - 2. Maintain stockpiles so that separate aggregate sizes shall not be intermixed.
- C. Heating:
 - 1. Heat the asphalt cement at the mixing plant to viscosity at which it can be uniformly distributed throughout mixture
 - 2. Use lowest possible temperature to suit temperature-viscosity characteristics of asphalt.
 - 3. Do not exceed 350 degrees F. (176.6 degrees C.).
- D. Aggregate:
 - 1. Heat-dry aggregates to reduce moisture content to not more than 2.0%.
 - 2. Deliver dry aggregate to mixer at recommended temperature to suit penetration grade and viscosity characteristics of asphalt cement, ambient temperature, and workability of mixture.
 - 3. Accurately weigh or measure dry aggregates and weigh or meter asphalt cement to comply with job-mix formula requirements.
- E. Mix aggregate and asphalt cement to achieve 90-95% of coated particles for base mixtures and 85-90% of coated particles for surface mixture, when tested in accordance with ASTM D 2489.
- F. Transporting:
 - 1. Transport asphalt concrete mixtures from mixing site in trucks having tight, clean compartments.
 - 2. Coat hauling compartments with a lime-water mixture to prevent asphalt concrete mixture from sticking.
 - 3. Elevate and drain compartment of excess solution before loading mix.
 - 4. Provide covers over asphalt concrete mixture when transporting to protect from weather and to prevent loss of heat.
 - 5. During periods of cold weather or for long-distance deliveries, provide insulation around entire truck bed surfaces.

3.04 EQUIPMENT

- A. Provide size and quantity of equipment to complete the work specified within project time schedule.
- B. Bituminous Pavers: Self-propelled that spread hot asphalt concrete mixtures without tearing, shoving or gouging surfaces, and control pavement edges to true lines without use

of stationary forms.

C. Rolling Equipment:

1. Self-propelled, steel-wheeled and pneumatic-tired rollers that can reverse direction without backlash.
2. Other type rollers may be used if acceptable to the County.

D. Hand Tools: Provide rakes, lutes, shovels, tampers, smoothing irons, pavement cutters, portable heaters, and other miscellaneous small tools to complete the work specified.

3.05 PLACING THE MIX

A. Place asphalt concrete mixture on prepared surface, spread and strike-off using paving machine.

B. Spread mixture at a minimum temperature of 225 degrees F. (107.2 degrees C.).

C. Inaccessible and small areas may be placed by hand.

D. Place each course at thickness so that when compacted, it will conform to the indicated grade, cross-section, finish thickness, and density indicated.

E. Paver Placing:

1. Unless otherwise directed, begin placing along centerline of areas to be paved on crowned section, and at high side of sections on one-way slope, and in direction of traffic flow.
2. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips.
3. Complete base courses for a section before placing surface courses.
4. Place mixture in continuous operation as practicable.

F. Hand Placing:

1. Spread, tamp, and finish mixture using hand tools in areas where machine spreading is not possible, as acceptable to County.
2. Place mixture at a rate that will insure handling and compaction before mixture becomes cooler than acceptable working temperature.

G. Joints:

1. Carefully make joints between old and new pavements, or between successive days' work, to ensure a continuous bond between adjoining work.
2. Construct joints to have same texture, density and smoothness as adjacent sections of asphalt concrete course.
3. Clean contact surfaces free of sand, dirt, or other objectionable material and apply tack coat.
4. Offset transverse joints in succeeding courses not less than 24 inches.
5. Cut back edge of previously placed course to expose an even, vertical surface for full course thickness.
6. Offset longitudinal joints in succeeding courses not less than 6 inches.
7. When the edges of longitudinal joints are irregular, honeycombed, or inadequately compacted, cut back unsatisfactory sections to expose an even, vertical surface for

full course thickness.

3.06 COMPACTING THE MIX

- A. Provide sufficient rollers to obtain the required pavement density.
- B. Begin rolling operations as soon after placing when the mixture will bear weight of roller without excessive displacement.
- C. Do not permit heavy equipment, including rollers to stand on finished surface before it has thoroughly cooled or set.
- D. Compact mixture with hot hand tampers or vibrating plate compactors in areas inaccessible to rollers.
- E. Start rolling longitudinally at extreme lower side of sections and proceed toward center of pavement. Roll to slightly different lengths on alternate roller runs.
- F. Do not roll centers of sections first under any circumstances.
- G. Breakdown Rolling:
 - 1. Accomplish breakdown or initial rolling immediately following rolling of transverse and longitudinal joints and outside edge.
 - 2. Operate rollers as close as possible to paver without causing pavement displacement.
 - 3. Check crown, grade, and smoothness after breakdown rolling.
 - 4. Repair displaced areas by loosening at once with lutes or rakes and filling, if required, with hot loose material before continuing rolling.
- H. Second Rolling:
 - 1. Follow breakdown rolling as soon as possible, while mixture is hot and in condition for compaction.
 - 2. Continue second rolling until mixture has been thoroughly compacted.
- I. Finish Rolling:
 - 1. Perform finish rolling while mixture is still warm enough for removal of roller marks.
 - 2. Continue rolling until roller marks are eliminated and course has attained specified density.
- J. Patching:
 - 1. Remove and replace defective areas.
 - 2. Cut-out and fill with fresh, hot asphalt concrete.
 - 3. Compact by rolling to specified surface density and smoothness.
 - 4. Remove deficient areas for full depth of course.
 - 5. Cut sides perpendicular and parallel to direction of traffic with edges vertical.
 - 6. Apply tack coat to exposed surfaces before placing new asphalt concrete mixture.

3.07 MARKING ASPHALT CONCRETE PAVEMENT

- A. Cleaning:
 - 1. Sweep surface with power broom supplemented by hand brooms to remove loose material and dirt.
 - 2. Do not begin marking asphalt concrete pavement until acceptable to the County.
- B. Apply paint with mechanical equipment.
 - 1. Provide uniform straight edges.
 - 2. Not less than two separate coats in accordance with manufacturer's recommended rates.

3.08 CLEANING AND PROTECTION

- A. Cleaning: After completion of paving operations, clean surfaces of excess or spilled asphalt materials to the satisfaction of the County.
- B. Protection:
 - 1. After final rolling, do not permit vehicular traffic on asphalt concrete pavement until it has cooled and hardened, and in no case sooner than 6 hours.
 - 2. Provide barricades and warning devices as required to protect pavement.
 - 3. Cover openings of structures in the area of paving until permanent coverings are placed (if applicable).

END OF SECTION

SECTION 02575 PAVEMENT REPAIR AND RESTORATION

PART 1 GENERAL

1.01 SCOPE OF WORK

The Contractor shall furnish all labor, materials, equipment, obtain County or State right-of-way permits and incidentals required and remove and replace pavements over trenches excavated for installation of water or sewer lines and appurtenances as shown on the Contract Drawings.

1.02 GENERAL

- A. The Contractor shall take before and after photographs.
- B. The Contractor shall repair in a manner satisfactory to the County or State, all damage done to existing structures, pavement, driveways, paved areas, curbs and gutters, sidewalks, shrubbery, grass, trees, utility poles, utility pipe lines, conduits, drains, catch basin, flagstones, or stabilized areas or driveways and including all obstructions not specifically named herein, which results from this Project.
- C. The Contractor shall keep the surface of the backfilled area of excavation in a safe traffic bearing condition and firm and level with the remaining pavement until the pavement is restored in the manner specified herein. All surface irregularities that are dangerous or obstructive to traffic are to be removed. The repair shall conform to applicable requirements of Manatee County Transportation Department requirements for pavement repair and as described herein, including all base, subbase and asphalt replacement.
- D. All materials and workmanship shall meet or exceed the County requirements and as called for in the Contract Documents and nothing herein shall be construed as to relieve the Contractor from this responsibility.
- E. All street, road and highway repair shall be made in accordance with the FDOT and County details indicated on the Drawings and in accordance with the applicable requirements and approval of affected County and State agencies.

PART 2 PRODUCTS

2.01 PAVEMENT SECTION

- A. Asphaltic concrete shall consist of asphalt cement, coarse aggregate, fine aggregate and mineral filler conforming to FDOT Type S-III Asphalt. Pavement replacement thickness shall match that removed but in no case shall be less than 1-1/2" compacted thickness. All asphalt concrete pavement shall be furnished, installed and tested in accordance with FDOT Specifications for Road and Bridge Construction.
- B. Asphalt or crushed concrete or approved equal base material shall be furnished and installed under all pavement sections restored under this Contract. Asphalt base shall have a minimum 6" compacted thickness, meet requirements for FDOT ABC III (Minimum Marshall Stability of 1000) and be furnished, installed and tested in accordance with the requirements of the FDOT Standards. Crushed concrete base shall be 10" minimum compacted thickness. Crushed concrete aggregate material shall have a minimum LBR of

140 compacted to 99% T-180 AASHTO density. Asphalt base and crushed concrete base are acceptable. Other bases shall be submitted for approval.

- C. Prime and tack will be required and applied in accordance with Section 300 - FDOT Specifications: Prime and Tack Coat for Base Courses.

PART 3 EXECUTION

3.01 CUTTING PAVEMENT

- A. The Contractor shall saw cut in straight lines and remove pavement as necessary to install the new pipelines and appurtenances and for making connections to existing pipelines.
- B. Prior to pavement removal, the Contractor shall mark the pavement for cuts nearly paralleling pipe lines and existing street lines. Asphalt pavement shall be cut along the markings with a rotary saw or other suitable tool. Concrete pavement shall be scored to a depth of approximately two (2) inches below the surface of the concrete along the marked cuts. Scoring shall be done by use of a rotary saw, after which the pavement may be broken below the scoring with a jackhammer or other suitable equipment.
- C. The Contractor shall not machine pull the pavement until it is completely broken and separated along the marked cuts.
- D. The pavement adjacent to pipe line trenches shall neither be disturbed or damaged. If the adjacent pavement is disturbed or damaged, irrespective of cause, the Contractor shall remove and replace the pavement. In addition, the base and sub-base shall be restored in accordance with these Specifications, Florida Dept. of Transportation Standard Specifications and as directed by the County.

3.02 PAVEMENT REPAIR AND REPLACEMENT

- A. The Contractor shall repair, to meet or exceed original surface material, all existing concrete or asphaltic pavement, driveways, or sidewalks cut or damaged by construction under this Contract. He shall match the original grade unless otherwise specified or shown on the Drawings. Materials and construction procedures for base course and pavement repair shall conform to those of the Florida Dept. of Transportation.
- B. The Contractor's repair shall include the preparation of the subbase and base, place and maintain the roadway surface, any special requirements whether specifically called for or implied and all work necessary for a satisfactory completion of this work. Stabilized roads and drives shall be finished to match the existing grade. Dirt roads and drives shall have the required depth of backfill material as shown on the Contract Drawings.
- C. The width of all asphaltic concrete repairs shall extend the full width and length of the excavation or to the limits of any damaged section. The edge of the pavement to be left in place shall be cut to a true edge with a saw or other approved method so as to provide a clean edge to abut the repair. The line of the repair shall be reasonably uniform with no unnecessary irregularities.

3.03 MISCELLANEOUS RESTORATION

Sidewalks or driveways cut or damaged by construction shall be restored in full sections or blocks to a minimum thickness of four inches. Concrete curb or curb and gutter shall be

restored to the existing height and cross section in full sections or lengths between joints. RCP pipe shall be repaired or installed in accordance with manufacturer's specifications. Grassed yards, shoulders and parkways shall be restored to match the existing sections with grass sod of a type matching the existing grass.

3.04 SPECIAL REQUIREMENTS

The restoration of all surfaces, as described herein, disturbed by the installation of pipelines shall be completed as soon as is reasonable and practical. The complete and final restoration of both paved and shell stabilized roads within a reasonable time frame is of paramount importance. To this end, the Contractor shall, as part of his work schedule, complete the restoration of any area of road within five weeks after removing the original surface. Successful leak testing shall be performed prior to restoring any area of road. All restoration and replacement or repairs are the responsibility of the Contractor.

3.05 CLEANUP

After all repair and restoration or paving has been completed, all excess asphalt, dirt and other debris shall be removed from the roadways. All existing storm sewers and inlets shall be checked and cleaned of any construction debris.

3.06 MAINTENANCE OR REPAIR

All wearing surfaces shall be maintained by the Contractor in good order suitable for traffic prior to completion and acceptance of the work.

END OF SECTION

SECTION 02615 DUCTILE IRON PIPE AND FITTINGS

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. The Contractor shall furnish all labor, materials, equipment and incidentals required to install ductile iron pipe and restrained joint ductile iron pipe and cast iron or ductile iron restrained joint fittings, complete, as shown on the Drawings and specified in these Standards.
- B. Fittings are noted on the drawings for the Contractor's convenience and do not relieve him from laying and jointing different or additional items where required.
- C. The Contractor shall furnish all labor, materials, equipment and incidentals required to install push-on joint or restrained joint ductile iron pipe, complete as shown on the Drawings and Specifications.
- D. Newly installed pipe shall be kept clean and free of all foreign matter. All DI pipe installed underground shall be poly wrapped unless noted otherwise on the plans.

1.02 SUBMITTALS

- A. The Contractor shall submit to the County, within ten days after receipt of Notice to Proceed, a list of materials to be furnished, the names of the suppliers and the appropriate shop drawings for all ductile iron pipe and fittings.
- B. The Contractor shall submit the pipe manufacturer's certification of compliance with the applicable sections of the Specifications.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Ductile iron pipe shall conform to ANSI/AWWA C150/A21.50 and ANSI/AWWA C151/A21.51. Thickness of pipe shall be Class 50 or pressure Class 350. All pipe not buried shall be Class 53. All ductile iron pipe shall be clearly marked on the outside of the barrel to readily identify it from cast iron.
- B. Unrestrained joint pipe shall be supplied in lengths not to exceed 21 feet. Unless otherwise called for in the Contract Documents, unrestrained joint pipe shall be either the rubber-ring type push-on joint or standard mechanical joint pipe as manufactured by the American Cast Iron Pipe Company, U.S. Pipe and Foundry Company, or approved equal.
- C. All mechanical joint fittings shall be pressure rated for 350 psi and meet the requirement of AWWA C110 or AWWA C153 except flanged fittings shall be rated for 250 psi. Rubber gaskets shall conform to AWWA C111 for mechanical and push-on type joints and shall be EPDM (Ethylene-Propylene Diene Monomer) rubber for potable water and reclaimed water pipelines. Standard gaskets shall be such as Fastite as manufactured by American Cast Iron Pipe Company, or an approved equal. Acrylonitrile butadiene (NBR) gaskets shall be used for potable water mains that are located in soil that is contaminated with low molecular-weight petroleum products or non-chlorinated organic solvents or non-aromatic organic solvents. Fluorocarbon (FKM) gaskets shall be used for potable water mains that are located in soil that is contaminated with aromatic hydrocarbons or chlorinated

hydrocarbons. Fluorocarbon (FKM) gaskets shall be used where both classes of contaminants are found.

- D. Water Mains: All ductile iron pipe and fittings shall have a standard thickness cement lining on the inside in accordance with AWWA/ANSI C104/A21.4 and a coal tar enamel coating on the outside. The coal tar enamel shall be in accordance with ANSI A21.4. All interior linings shall be EPA/NSF approved.
- E. Force Main: All ductile iron pipe and fittings shall have a factory applied fusion bonded epoxy or epoxy and polyethylene lining on the inside in accordance with manufacturer's specifications and a coal tar enamel coating on the outside. The coal tar enamel shall be in accordance with ANSI A21.4. The interior lining is to be based on manufacturer's recommendation for long-term exposure to raw sewage.
- F. Restrained joints shall be provided at all horizontal and vertical bends and fittings, at casings under roads and railroads and at other locations shown on the Contract Drawings. Restrained joint pipe fittings shall be designed and rated for the following pressures: 350 psi for pipe sizes up to and including 24" diameter; 250 psi for pipe sizes 30" diameter and above.

2.02 IDENTIFICATION

- A. Each length of pipe and each fitting shall be marked with the name of the manufacturer, size and class and shall be clearly identified as ductile iron pipe. All gaskets shall be marked with the name of the manufacturer, size and proper insertion direction.
- B. Pipe shall be poly wrapped blue for potable water mains, purple for reclaimed water mains and green for sewage force mains. All potable water pipe shall be NSF certified and copies of lab certification shall be submitted to the County.
- C. All above ground potable water mains and appurtenances shall be painted safety blue.

END OF SECTION

SECTION 02616 DISINFECTING POTABLE WATER PIPE LINES

PART 1 GENERAL

1.01 SCOPE OF WORK

The Contractor shall furnish all labor, materials, equipment and incidentals required to clean and disinfect potable water pipe lines. This work is required to place all types of pipe into service as potable water lines.

1.02 CLEANING WATER MAINS

At the conclusion of the work, the Contractor shall thoroughly clean all of the new pipes to remove all dirt, stones, pieces of wood or other material which may have entered during the construction period per Section 02618.

1.03 DISINFECTING POTABLE WATER PIPE LINES

- A. All record drawing requirements must be submitted to the County prior to starting the bacteriological testing of the water lines.
- B. Prior to being placed in service, all potable water pipe lines shall be chlorinated in accordance with AWWA 651, "Standard Procedure for Disinfecting Water Main". The procedure shall meet Health Department requirements. The location of the chlorination and sampling points shall be determined by the County. Taps for chlorination and sampling shall be uncovered and backfilled by the Contractor as required.
- C. The general procedure for chlorination shall be to flush all dirty or discolored water from the lines, 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 pipe line for 24 hours.

Water for flushing, filling and disinfecting the new lines must be obtained without contaminating existing pipe lines. Water obtained from existing pipe lines for this purpose shall pass through an approved air gap or backflow prevention device.

- D. 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 an approved laboratory or the Health Department in full accordance with the AWWA Manual C651. The line shall not be placed in service until the requirements of the State and County Public Health Department are met. Results of the bacteriological tests together with certified record drawings must be submitted to the Health Department (FDEP) within 30 days of the tests.
- E. Special disinfecting procedures when approved by the County, may be used where the method outlined above is not practical.

END OF SECTION

SECTION 02617 INSTALLATION AND TESTING OF PRESSURE PIPE

PART 1 GENERAL

1.01 INSTALLING PIPE AND FITTINGS

- A. The Contractor shall install all pipe in accordance with the recommendations of the pipe manufacturer and as specified herein.
- B. The Contractor shall take care in handling, storage and installation of pipe and fittings to prevent injury to the pipe or coatings. All pipe and fittings shall be examined before installation and pipe which is deemed to be defective by the County shall not be installed.
- C. The Contractor shall thoroughly clean and keep thoroughly clean, all pipe and fittings prior to during and after installation.
- D. The Contractor shall lay the pipe to the lines and grades shown on the Contract Drawings with bedding and backfill as shown on the Drawings or called out in the Contract Documents. Blocking under the pipe shall not be permitted except through casing sleeves.
- E. The Contractor shall keep the open ends of all pipe closed with a tightly fitting plug when installation is not in progress or the potential exists for dirt or debris to enter the pipe.
- F. The pipe or accessories shall not be dropped into the trench under any circumstances.
- G. The Contractor shall construct all water mains pursuant to the provisions of "Recommended Standards for Water Works", Part 8, incorporated by reference in Rule 17-555.330(3), F.A.C.
- H. As a marker for the Surveyor, a PVC pipe marker or 2" x 4" marker shall be inserted by the Contractor on the top of pipe for potable water mains, reclaimed water mains and sanitary force mains at intervals no greater than 200 feet apart and at locations where there is a substantial grade change. The pipe markers shall indicate the pipe diameter and shall be labeled PWM in "safety" blue, RWM in purple, and FM in green, for potable water mains, reclaimed water mains and sanitary force mains, respectively. As a marker for the Surveyor, a PVC pipe marker or 2" x 4" marker shall be inserted by the Contractor on the top of all pipe fittings (other than sanitary sewer service wyes, potable water saddles and reclaimed water saddles). The markers for fittings shall indicate the type of fitting and shall be labeled PWF in "safety" blue, RWF in purple, and FMF in green, for potable water fittings, reclaimed water fittings, and sanitary force main fittings, respectively. The Contractor is responsible for making the aforementioned markers available to the Surveyor. The Contractor shall field locate the mains and fittings when markers are not made available to the Surveyor.
- I. A PVC pipe marker or 2" x 4" marker shall be inserted by the Contractor at the beginning and end of each horizontal directional drill (HDD). The HDD Contractor shall provide a certified report and bore log indicating the horizontal and vertical location every 25 linear feet or less along the pipe.
- J. A 2" PVC pipe marker with a painted end cap shall be inserted by the Contractor at the ROW line indicating each individual new service location or stub out. The marker shall be a 6 foot length of PVC pipe inserted 2 feet into the ground and shall be painted "safety" blue for potable water, purple for reclaimed water, and green for sewer.

1.02 PROCEDURE FOR TESTING WATER LINES, FORCE MAINS AND RECLAIMED WATER LINES

- A. A 48-hour notice is needed prior to testing. A letter stating the reasons testing should be scheduled ahead of other jobs must accompany all emergency testing requests.
- B. County and Contractor must be present for all testing, except for testing tapping valves and sleeves.
- C. All pressure pipe lines shall remain undisturbed for 24 hours to develop complete strength at all joints. All pipe lines shall be subjected to a hydrostatic pressure test for two (2) hours at full working pressure, but not less than 180 psi for water/reclaimed (150 psi for force main). Maximum length of pipe to be tested at one time is 2,600 feet. If line is longer than 2,600 feet and cannot be sectioned in 2,600 feet (max.) lengths, the allowable leakage will be figured at 2,600 feet.
- D. Allowable leakage shall be determined by AWWA C600 table for hydrostatic tests. Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe, or any valved section thereof; to maintain the test pressure after the air in the pipe line has been expelled and the pipe has been filled with water.
- E. All digging on the job site in the right-of-way must be completed before any testing of water or sewer. Any digging or boring across water or sewer lines after they have been tested may result in a retest of the lines at the County's request.
- F. If any revisions or changes are made after initial testing, lines will be re-tested at the County's request.
- G. Disconnect water supply during test.
- H. All force mains will be tested from the valves in the valve vault at the lift station to the point of connection whether it be against a valve on another force main or into a manhole.
- I. All services to be aboveground during test. The services should be the correct length so they will be one (1) foot inside right-of-way line.
- J. All fire hydrant gate valves to be open during test.
- K. All visible leaks are to be repaired, regardless of the amount of leakage.
- L. Check gauge pressure periodically during test. If test pressure drops to 175 psi for water/reclaimed lines or to 145 psi for force mains during test, the line must be repumped back to 180 psi for water/reclaimed (150 psi force mains) and the amount of leakage measured. The test will continue on with the remaining time left. At the end of the test, the line must be repumped again back to 180 psi (150 psi for force main) and the amount of leakage measured and added to any previous leakage determined earlier in the test.
- M. After the line passes the test, the pressure will be blown off from the opposite end of line from the gauge location. Fire hydrants, services and end-of-line blow offs will be opened to demonstrate they were on line during the test.
- N. At end of test, the test gauge must return to zero. The pressure gauge must read 0 psi to a maximum of 300 psi in 5 psi increments.

- O. The section of line being tested must be identified on the charge sheet. The length and size of pipe, the exact area being tested and the valves being tested against, must be identified. Use Station numbers if available.
- P. A punch list must be made at the end of all tests.
- Q. A copy of the charge sheet will be given to the County and the Contractor at the end of the test.

1.03 INSPECTION/TESTING PROCEDURE COVERING BORED PIPE LINES OR CASING AND CONDUITS INSTALLED ACROSS PREVIOUSLY TESTED AND/OR COUNTY ACCEPTED WATER AND SEWER PIPE WITHIN DEVELOPMENT PROJECTS UNDER ACTIVE CONSTRUCTION

- A. Prior to testing water and sewer lines, every effort will be made to install sleeves for underground utilities that will cross these water and sewer lines or services.
- B. Where it has not been possible to pre-install sleeves prior to testing and bores or conduits are required, it is the responsibility of the utility company and/or their Contractor performing the work to provide Manatee County Utility Operations Department or the Engineer of Record with accurate horizontal and vertical as-built information of the sleeves, bores and conduits installed by said utility company. This applies to all bores and conduits crossing water and sewer lines.
- C. Procedures to be followed for installation of conduits, pipe lines and bores that will cross, or be closer than 5'-0" horizontally and 18 inches vertically to, previously tested water and sewer lines that are still under the ownership of the developer/contractor.
 - 1. Notify the County and obtain the best as-built information available. Allow sufficient time for the County to field locate the existing pipe lines.
 - 2. Submit drawings of proposed location to the County and Manatee County Utility Operations Dept. Utility Locations Section for review.
 - 3. Obtain a County Right-of-Way Use Permit if the work area is within a dedicated area of right-of-way.
 - 4. Perform installation in the presence of a County representative. Call (941) 792-8811, ext. 5061 or ext. 5069 with at least two (2) working days notice.
 - 5. Submit two (2) copies of as-built information to the County to incorporate into the record drawings to be submitted to the County.
 - 6. Failure to follow steps 2) thru 5) will result in additional charges for retesting the previously tested water and sewer lines.
- D. Procedures to be followed for installation of conduits, pipe lines and bores crossing or closer than 5'-0" horizontally and 18 inches vertically to previously tested water and sewer lines that have been previously accepted by Manatee County:
 - 1. Obtain record drawing information from the County.
 - 2. If roadway has been dedicated to Manatee County, obtain Right-of-Way Use Permit and copy the Project Management Department Locations Section with proposed location drawing.
 - 3. Follow procedures in "Sunshine State One-Call", paying special attention to the requirements of Section VII.

- E. Should water or sewer lines be damaged during the bore pipe line or casing installation, the cost of any repairs and retesting will be paid for by the utility company that installed the bore. The actual clearance between a bored casing crossing a water or sewer pipe should not be less than 18 inches.

1.04 DETECTION

- A. Direct buried pipe shall have 3" detectable metallic tape of the proper color placed directly above the pipe and 12" below finished grade or 6" detectable tape between 12" and 24" below finished grade.
- B. Direct buried or horizontal directional drilled non-metallic pipe shall also have tracer wire installed along the pipe alignment. The tracer wire to be used shall be a solid, 10 gauge, high strength, copper clad steel wire with a polyethylene jacket of appropriate color manufactured by Copperhead Industries or Manatee County approved equal.

END OF SECTION

SECTION 02618 PIPELINE CLEANING

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. The Contractor shall furnish all labor, materials, equipment and incidentals required to clean all new lines 4" and larger, and existing pipelines as specified in this specification and as indicated on the Drawings.
- B. This work shall include the furnishing and installation of all pig launching and retrieval devices and the appropriate pigs for the cleaning procedure, and all necessary excavations, shutdowns, fittings and valves required.

1.02 RELATED WORK

- A. The contractor is responsible for all necessary supply water.
- B. The contractor is responsible for all necessary bypass pumping.
- C. The contractor is responsible for the proper disposal of any materials removed from the pipe lines as a result of the cleaning procedure.

1.03 SUBMITTALS

- A. The Contractor shall submit prior to construction, a cleaning plan, Shop Drawings, and layout diagram for approval to the County.
- B. The Contractor shall submit to the County a list of materials to be furnished, and the names of suppliers.

1.04 QUALIFICATIONS

- A. The Contractor performing this work shall be fully qualified, experienced and equipped to complete this work expeditiously and in a satisfactory manner.
- B. The Contractor shall also be capable of providing crews as needed to complete this work without undue delay.
- C. The County reserves the right to approve or disapprove the Contractor, based on the submitted qualifications.

PART 2 PRODUCTS

2.01 GENERAL

- A. The contractor shall be responsible for furnishing pigs in sufficient numbers and sizes, of appropriate densities, coatings and configurations to properly clean the piping systems.
- B. All pigs used for the cleaning of sewer or reclaimed water lines shall not be used in the cleaning of potable water lines.

2.02 MATERIALS

- A. The pig launching and retrieval equipment shall be of the latest design and construction and shall include the means to maintain constant monitoring of the in-line flows and pressures of the system being cleaned and the constant location of the cleaning pigs in the system. Launching and retrieval systems shall be fabricated, designed and manufactured according to ANSI standards and capable of withstanding working pressures of 150 psi. Launching and receiving devices shall be sized one diameter larger than the system to which it will be attached with a minimum length of 2.5 times the diameter.
- B. The contractor shall have available for immediate use an electronic pig detector for use in the system being cleaned to provide a means of tracking the passage of the pig in the system to locate areas of potential or suspected blockage and other disparities in the system.
- C. The pig shall be constructed of elastomer polyurethane with an open cell construction and a density equal to or suitable for use in the piping system being cleaned. Pig configuration shall consist of a parabolic nose with a concave base and coated with a resilient surface material that will maintain a peripheral seal and will effectively clean the piping system without over abrading the interior pipe wall. Pig characteristics shall include the ability to navigate through 90 degree bends, 180 degree turns, bi-directional fittings, full port valves, reduce its cross sectional area and return to its original design configuration and be propelled by hydraulic pressure.

PART 3 EXECUTION

3.01 PIPELINE CLEANING

- A. The cleaning of the pipe line shall be done by the controlled and pressurized passage of a polyurethane pig of varying dimensions, coatings and densities as determined by the County through the piping system.
- B. A series of pigs shall be entered into the system at a point as near to the beginning as is logistically and mechanically feasible.
- C. A launching assembly shall be used as the entrance point for the pig. This assembly shall allow for the following:
 - 1. The entering of pigs into the system by providing the means to induce flow from an external source, independent of the flows and pressures immediately available from the system, on the back of the pig to develop sufficient pressure to force the pig through the system.
 - 2. A means to control and regulate the flow.
 - 3. A means to monitor the flows and pressures.
 - 4. A means to connect and disconnect from the system without any disruption to the operation of the system.
- D. The pig shall be removed or discharged from the system at a point as near to the end as is logistically and mechanically feasible.
- E. The contractor shall be responsible for the retrieval of the pig at the discharge point. This may include setting a trap that will not disrupt normal flow and operations but will capture the pig and any debris. A retrieval assembly may also be used but said assembly shall be able to connect and disconnect from the system without any disruption to the operation of

the system.

- F. Alternative launching and retrieval methods shall be done with the prior approval of the County.
- G. Any pig that cannot progress through the piping system shall be located by the contractor and removed by excavation of the pipe in order to remove the blockage. All pipe repairs shall be the responsibility of the contractor and shall be performed with as little disruption to the system as possible.
- H. Any increase in pressure that cannot be accounted for, i.e. fittings or valves or additional cleaning runs, shall be investigated, per the Engineers' approval, by locating the pig at the beginning of the increased pressure and excavating to determine the cause of the pressure increase. All pipe repairs shall be the responsibility of the contractor and shall be performed with as little disruption to the system as possible.
- I. Final flushing of the cleansed lines shall be performed after the last successful run of the pig as determined by the County. The contractor shall be responsible for all applicable flushing and disinfection requirements for potable water lines.

3.02 ACCEPTANCE

- A. The contractor shall maintain and provide a report at the end of the cleaning procedure containing the following:
 - 1. The pressures in the pipe during the pigging procedure.
 - 2. Any inline problems encountered during the procedure including all excavations with detailed locations, reason for the excavation and any corrective measures taken to the pipeline.
 - 3. A record of the pigs used, their sizes, styles and other pertinent information regarding what materials were used during the cleaning.
 - 4. An analysis of the condition of the pipeline before and after the cleaning procedure.

END OF SECTION

SECTION 02619 HORIZONTAL DIRECTIONAL DRILLING

PART 1 GENERAL

1.01 SCOPE

The Contractor shall furnish all labor, materials, equipment and incidentals required to install all pipe, fittings and appurtenances as shown on the Drawings and specified in the Contract Documents by Horizontal Directional Drilling (HDD).

1.02 GENERAL

- A. All existing structures, water and sewer lines, storm drains, utilities, driveways, sidewalks, signs, mail boxes, fences, trees, landscaping, and any other improvement or facility in the construction area that the Contractor disturbs for his own construction purposes shall be replaced to original condition at no additional cost to the County.
- B. For "Navigable Waters of the U.S." reference 33 of the Code of Federal Regulations, Part 329.
- C. For "Waters of the U.S." reference 33 of the Code of Federal Regulations, Part 323.
- D. For "Waters of the State" reference Section 62-301 of the Florida Administrative Code.

1.03 TESTING

- A. In place soil compaction tests shall be performed by a qualified testing laboratory.
- B. Compaction tests shall be taken at every excavation, except in the road crossings or road shoulders; tests are to be taken according to current FDOT Standards.
- C. All pipe shall be tested in accordance with the appropriate material specifications.
- D. Reference Standards: American Society for Testing and Materials (ASTM), D1557, Moisture-Density Relations of Soils Using 10-lb. Rammer and 18-in. Drop.
- E. The density of soil in place shall be a minimum of 95 percent in accordance with ASTM test 1557-70T, Method A or C.

1.04 QUALIFICATIONS

- A. Pipe Manufacture: All pipe and fittings shall be furnished by a single manufacturer who is fully experienced, reputable and qualified in the manufacture of the items to be furnished.
- B. Drilling Supervisor: The Contractor shall provide a competent boring specialist who shall remain on the project site during the entirety of the directional boring operation. This includes, but is not limited to, drilling fluid preparation, seaming, boring and pulling. The boring specialist shall have a minimum of five years experience in supervising directional bores of similar nature, diameter, materials and lengths.
- C. Pipe Fusion: All boring and fusing equipment shall be certified for operation. The Contractor responsible for thermal butt fusing pipe and fittings shall have manufacturer certification for performing such work or a minimum of five years experience performing this type of work.

If no certification is available, written documentation of the required work experience shall be submitted for approval.

- D. Drilling Fluid Specialist: The personnel responsible for supervising the supply, mixing, monitoring fluid quality, pumping and re-circulation system proposed for the drilling fluid shall have a written certification issued by the Drilling Fluid manufacturer for performing such work or a minimum of five years experience performing this type of work. If no certification is available, written documentation of the required work experience for the proposed personnel shall be submitted for review and approval.
- E. **The Contractor shall have experience successfully completing at least four (4) horizontal directional drill projects of at least 12-inch or larger diameter and at least 1000 feet or longer in length of which at least one (1) directional drill was under major water bodies or wetlands of at least 800 feet. At least two (2) projects must be located in Florida.**

1.05 SUBMITTALS

- A. Detailed description including specifications and catalog cuts for:
 - 1. Shop drawings and catalog data for all HDD equipment.
 - 2. The pipe manufacturer's maximum degree of radial bending allowed for the pipe when full and when empty and pullback force recommended setting.
 - 3. Steering and tracking devices including specific tracer wire.
 - 4. Drilling fluids; the drilling fluid submittal shall include the ratio of mixture to water, including any additives, based on the Contractor's field observations prior to construction, knowledge and experience with drilling in similar conditions, and any soil data provided in the Contract Documents, which shall be verified by the fluid specialist.
 - 5. Shop drawings for the breakaway swivel, including the method of setting the swivels' break point and set point to be used.
 - 6. Pipe assembly procedure, details of support devices, and staging area layout including methods to avoid interference with local streets, driveways, and sidewalks.
 - 7. Details of pipe fusion procedures and copies of the fusion technician qualification certification or documentation.
 - 8. Drilling fluid technician qualification certification or documentation
- B. If the Contractor proposes any changes to the pull-back distance or profile shown on the drawings, he may be required to submit a complete design for the proposed pipe including an analysis for pull-back forces, external loads including full hydrostatic pressure if empty, external forces due to borehole collapse, ovalization during pull-back, thermal stress while exposed to Sun-light, shortening after release of pull-back force, and tensile stress during pull-back.
- C. Bore Plan: For all contiguous piping installations over 300 feet in length or any installations for piping larger than 4" in diameter, the Contractor shall submit a Bore Plan that includes the following:
 - 1. Contact information and experience for the drilling fluid specialist.
 - 2. The number of passes the bore will include to get the product pipe installed.
 - 3. The pilot bore and all reaming bore sizes including the final pullback with the product pipe.
 - 4. Drilling rod length in feet.

5. The pilot bore, pre-ream bores (if any) and pullback production rate in minutes per (drilling) rod to maintain adequate mud flow.
6. Details of the entry and exit pit locations along with entry and exit angles for the bore, drawn to scale, depicting the position of all required equipment, access points, existing facilities to remain in place, existing traffic lanes to be maintained in operation, office trailers and storage sites.
7. The method of fusing or joining pipe of adjacent bores to ensure that the joint is on grade with the installed pipe.
8. Pullback monitoring plan.
9. Details of drill head and back reaming devices.
10. All submittals required by Army Corps permit and FDEP ER permit and FDEP construction permit, including advance notification of commencement.
11. Incident Reaction Contingency Plan: Contractor to describe in detail the actions and materials to be used in the event that the proposed and approved construction activity or progress is stopped, deviated, delayed, or obstructed, or the materials fail to perform as intended. The plan shall consider a range of failure scenarios and describe the required and intended reactions that will restore the work to its intended design. For spills, the plan shall include as a minimum, the prevention, monitoring, and response activities presented in the Drilling Mud Management Plan and Emergency Spill Plan example included at the end of these specifications. These requirements are part of the FDEP Environmental Resource Permit for this project and must be followed.
12. Drill fluid disposal plan.

D. Furnish a Bore Path Report to the County within seven days of the completion of each bore path. Data collected by the County Representative does not relieve the Contractor from the responsibility of recording his own data. Include the following in the report:

1. Location of project, project name and number
2. Name of person collecting data, including title, position and company name
3. Investigation site location (Contract plans station number or reference to a permanent structure within the project right-of-way)
4. Driller's Log & identification of the detection method used
5. Elevations and offset dimensions of installed pipe as referenced to the drawings
6. Data log of pullback force during product pipe installation
7. All failed bores. Include length of pipe left in place and explanation of failed installation.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Incidental materials that may or may not be used to install the product depending on field requirements are not paid for separately and will be included in the cost of the installed product.
- B. Drilling Fluids shall use a mixture of bentonite clay or other approved stabilizing agent mixed with potable water with a pH of 8.5 to 10.0 to create the drilling fluid for lubrication and soil stabilization. Vary the fluid viscosity to best fit the soil conditions encountered. Contractor shall have appropriate additives for drilling fluid available for different soil conditions that may be encountered. Do not use any other chemicals or polymer surfactants in the drilling

fluid without written consent from the County. Certify to the County in writing that any chemicals to be added are environmentally safe and not harmful or corrosive to the product pipe.

- C. For drilling operations that will be below waters of the State of Florida, only bentonite free drilling fluids shall be used. Acceptable products are BioMax, manufactured by M-I Swaco, Inc., P.O. Box 2216, Laurel, Mississippi 39440, Phone: (800) 731-7331 or Bio-Bore, manufactured by Baroid Drilling Fluids, Inc., P.O. Box 1675, Houston, Texas 77251, Phone: (731) 987-5900 or approved equal.
- D. Identify the source of water for mixing the drilling fluid. Approvals and permits are required for obtaining water from such sources as streams, rivers, ponds or fire hydrants. Any water source used other than potable water may require a pH test.
- E. The tracer wire to be used for all directional drills shall be a solid, 10 gauge, high strength, copper clad steel wire with a polyethylene jacket of appropriate color manufactured by Copperhead Industries or Manatee County approved equal.
- F. Breakaway connectors shall be supplied by DCD Design & Manufacturing, Condux International, Inc. or approved equal.

PART 3 EXECUTION

3.01 SITE CONDITIONS

- A. Carry out excavation for entry, exit, recovery pits, slurry sump pits, or any other excavation as specified in the Contract documents. Sump pits are required to contain drilling fluids if vacuum devices are not operated throughout the drilling operation, unless approved by the County.
- B. Within 48 hours of completing installation of the boring product, clean the work site of all excess slurry or spoils. Take responsibility for the removal and final disposition of excess slurry or spoils. Ensure that the work site is restored to pre-construction conditions or as identified on the plans.
- C. Exposure of product pipe to sunlight shall be limited to 14 consecutive days unless approved by the County.
- C. The pipe shall be supported at intervals along its length with rollers or Teflon pads to minimize frictional forces when being pulled, and to hold the pipe above the ground. Surface cuts or scratches greater than or equal to the maximum defect depth in 3.08 E are not acceptable.

3.02 DAMAGE RESTORATION & REMEDIATION

- A. The Contractor shall take responsibility for restoration for any damage caused by heaving, settlement, separation of pavement, escaping drilling fluid (frac-out), or the directional drilling operation, at no cost to the County.
- B. When required by the County, provide detailed plans which show how damage to any roadway facility will be remedied. These details will become part of the Record Drawings Package. Remediation Plans must follow the same guidelines for development and

presentation of the Record Drawings. When remediation plans are required, they must be approved by the County before any work proceeds.

- C. For HDD operations that will be below waters of the State of Florida, the contractor shall be responsible for any damage caused by the drilling operation, including, but not limited to, fracturing of the channel bottom. Any State or Federal required environmental cleanup due to the release of drilling fluids into State waters shall be at the Contractor's expense. The Contractor may at his own expense increase the depth of his drilling operations upon the approval from the County.

3.03 QUALIFICATIONS FOR REJECTION OF DIRECTIONAL BORE

- A. The County may reject any portion of the work that is deemed to be non-responsive to the Contract requirements or not in conformance with approved plans and submittals, and for other factors including the following:
 - 1. Failed Bore: When there is any indication that the installed product has sustained damage, stop all work, notify the County and investigate damage. The County may require a pressure and / or mandrel test at no additional cost to the County and shall have a County representative present during the test. Perform all testing within 24 hours unless otherwise approved by the County. Furnish a copy of the test results and all bore logs to the County for review and approval. The County is allowed up to 5 working days to approve or determine if the product installation is not in compliance with the specifications.
 - 2. Obstructions: If an obstruction is encountered during boring which prevents completion of the installation in accordance with the design location and specification, the pipe may be taken out of service and left in place at the discretion of the County.
 - 3. Pull-back Failure: If the installed breakaway device should fail during pull back.
 - 4. Loss of Drilling Fluids: If the drilling fluid is "lost" during the pull back of the product and can not be regained within the required timeframe of the manufacturer or if more than a reasonable amount of fluid is used to fill an unknown void and flow can not be regained. No pipe shall be pulled without visible flow of drilling fluid.
 - 5. Test Failure: If the pipe shall fail a hydraulic pressure test as specified by the County.
 - 6. Damaged Pipe: If at any time when the product is pulled back and any exposed areas have a greater than allowable "gouging" or visible marring of the pipe per the table in 3.08 E.
 - 7. Alignment Tolerance Exceeded: If the vertical and horizontal limits are not within tolerances.
 - 8. Defective Material: Any other defect in material or workmanship which would affect the quality, performance, or installation life of the installed pipeline.
- B. Remediation: All rejected bores shall be at the Contractors expense to correct and provide a satisfactory installed product. The Contractor shall submit to the County a revised installation plan and procedure for approval before resuming work. The County may require non-compliant installations to be filled with excavatable flowable fill or to be completely removed at no additional cost to the County.

3.04 PRODUCT LOCATING AND TRACKING

- A. The County recognizes walkover, wire line, and wire line with surface grid verification, or any other system as approved by the County, as the accepted methods of tracking directional bores. Use a locating and tracking system capable of ensuring that the proposed

installation is installed as intended. The locating and tracking system must provide information on:

1. Clock and pitch information
 2. Depth
 3. Transmitter temperature
 4. Battery status
 5. Position (x,y)
 6. Azimuth, where direct overhead readings (walkover) are not possible (i.e. sub aqueous)
- B. Ensure proper calibration of all equipment before commencing directional drilling operation.
- C. Prepare the Driller's Log. Take and record alignment readings or plot points such that elevations on top of and offset dimensions from the center of the product to a permanent fixed feature are provided. Such permanent fixed feature must have prior approval of the County. Provide elevations and dimensions at all bore alignment corrections (vertical and horizontal) with a minimum distance between points of 10 feet. Provide a sufficient number of elevations and offset distances to accurately plot the vertical and horizontal alignment of the installed product.
- D. Installation Location Tolerances: The location of the initial bored hole shall be deemed acceptable by the County if the deviations of the bore from the design alignment or approved adjustments do not exceed the following tolerances:
1. Profile:
 - a. 2.0 feet within a length of 100 feet
 - b. No reverse curvature within 200 feet
 - c. Total deviation not to exceed 5 feet
 2. Alignment:
 - a. 3.0 feet within a length of 200 feet
 - b. No reverse curvature
 - c. Total deviation not to exceed 7.0 feet

3.05 PRODUCT BORE HOLE DIAMETER

Minimize potential damage from soil displacement/settlement by limiting the ratio of the bore hole to the product size. The size of the back reamer bit or pilot bit, if no back reaming is required, will be limited relative to the product diameter to be installed as follows:

Maximum Pilot or Back-Reamer Bit Diameter When Rotated 360 Degrees	
Nominal Inside Pipe Diameter Inches	Bit Diameter Inches
2	4
3	6
4	8
6	10
8	12
10	16
12 and greater	Maximum Product OD plus 6

3.06 EQUIPMENT REQUIREMENTS

- A. The HDD equipment selected by the Contractor shall be capable of drilling, steering, tracking, reaming and installing the pipeline through all the subsurface conditions that may be present at the site.
- B. Match equipment to the size of pipe being installed. Obtain the County's approval for installations differing from the above chart. Ensure that the drill rod can meet the bend radius required for the proposed installation.
- C. All HDD equipment shall have an electronic data logger to record pull back force during all pipe installations.
- D. All HDD equipment that has the capability to exceed the maximum recommended pulling force shall have a breakaway swivel properly attached to the product pipe that will release if the pullback force exceeds the pipe manufacturers recommended pulling force.

3.07 THRUST / PULLBACK REQUIREMENTS

The Contractor shall provide as part of the required working drawings submittal complete data regarding the operational and maximum thrust or pulling forces to be used for the initial drill head and back-reamer installations, and the final pull-back of the pipe. Gages or other measurement tools shall be used to monitor the forces being used.

3.08 INSTALLATION PROCESS

- A. Ensure adequate removal of soil cuttings and stability of the bore hole by monitoring the drilling fluids such as the pumping rate, pressures, viscosity and density during the pilot bore, back reaming and pipe installation. Relief holes can be used as necessary to relieve excess pressure down hole. Obtain the County's approval of the location and all conditions necessary to construct relief holes to ensure the proper disposition of drilling fluids is maintained and unnecessary inconvenience is minimized to other facility users.
- B. The Contractor shall determine the pull-back rate in order to allow the removal of soil cuttings without building excess down-hole pressure and to avoid local heaving, or spills. Contain excess drilling fluids at entry and exit points until they are recycled and separated from excavated materials, or removed from the site or vacuumed during drilling operations. Ensure that entry and exit pits and storage tanks are of sufficient size to contain the expected return of drilling fluids and soil cuttings. The bored hole shall always be maintained full of drilling fluids for support of surfaces, and the fluid re-circulation equipment shall operate continuously until the pipe installation is completed and accepted by the County.
- C. Ensure that all drilling fluids are disposed of or recycled in a manner acceptable to the appropriate local, state, or federal regulatory agencies. When drilling in suspected contaminated ground, test the drilling fluid for contamination and appropriately dispose of it. Remove any excess material upon completion of the bore. If in the drilling process it becomes evident that the soil is contaminated, contact the County immediately. Do not continue drilling without the County's approval.
- D. The timing of all boring processes is critical. Install a product into a bore hole within the same day that the pre-bore is completed to ensure necessary support exists. Once pullback operations have commenced, the operation shall continue without interruption until the pipe is completely pulled into the borehole.

- D. All prepared pipe that is being used for installation shall be adequately supported off the ground along the entire length to avoid damaging of the material during pullback due to ground surface conditions. Surface cuts or scratches greater than or equal to the maximum defect depth are not acceptable.

Pipe Size	Max. Defect Depth
In.	In.
4	1/16
6	1/11
8	5/32
10	3/16
12	1/4
> 12	Per Pipe Manufacturer's Recommendations

- F. The drilling fluid specialist shall remain on the project site during the entirety of the directional boring operation to ensure proper mixture and production of drilling fluids needed for the bore.
- G. Upon successful completion of the pilot hole, the borehole shall be reamed to a minimum of 25 percent greater than the outside diameter of the pipe being installed.
- H. For bores with more than two radii of curvature (entrance and exit), the borehole should be reamed up to 50 percent larger than the outside diameter of the carrier pipe. Prereaming may be necessary dependent on size of material to be pulled.
- I. Additional passes for prereaming may be required for larger pipe. Incremental increases shall be used as needed until appropriate bore hole size has been achieved.
- J. Prereaming must be accomplished with no product attached to the reamer head on all bore pipe 6" and larger. The bore product maybe pulled back on final pass of prereaming upon prior approval from the County.
- K. After reaming the borehole to the required diameter, the pipe shall be pulled through the hole. In front of the pipe shall be a breakaway swivel and barrel reamer to compact the borehole walls.
- L. The Contractor shall not attempt to ream at a rate greater than the drilling equipment and drilling fluid system are designed to safely handle.
- M. Install all piping such that their location can be readily determined by electronic designation after installation. For non-conductive installations, externally attach two (2) tracer wires; see Section 2.01 - Materials, Part I. above, to the product pipe.

Connect any break in the conductor line before construction with an electrical clamp, or solder, and coat the connection with a rubber or plastic insulator to maintain the integrity of the connection from corrosion. Clamp connections must be made of brass or copper and of the butt end type with wires secured by compression. Soldered connections must be made by tight spiral winding of each wire around the other with a finished length minimum of 3 inches overlap. Tracking conductors must extend 2 feet beyond bore termini. Test conductors for continuity. Each conductor that passes must be identified as such by removing the last 6 inches of the sheath. No deductions are allowed for failed tracking conductors. Upon completion of the directional bore, the Contractor shall demonstrate to the County that the wire is continuous and unbroken through the entire run of the pipe by

providing full signal conductivity (including splices) when energizing for the entire run in the presence of the County Representative. If the wire is broken, the Contractor shall repair or replace it at no additional cost to the County.

END OF SECTION

SECTION 02620 POLYETHYLENE (PE) PRESSURE PIPE

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. The Contractor shall furnish all labor, materials, equipment and incidentals required to install polyethylene pressure pipe, fittings and appurtenances as shown on the Drawings and specified in the Contract Documents and these Standards.
- B. Newly installed pipe shall be kept clean and free of all foreign matter & gouges.
- C. All pipe shall be correctly color coded / identified.

1.02 QUALIFICATIONS

All polyethylene pipe, fittings and appurtenances shall be furnished by a single manufacturer who is fully experienced, reputable and qualified in the manufacture of the items to be furnished.

1.03 SUBMITTALS

- A. The Contractor shall submit to the County, within ten days after receipt of Notice to Proceed, a list of materials to be furnished, the names of the suppliers and the appropriate shop drawings for all polyethylene pipe and fittings.
- B. The Contractor shall submit the pipe manufacturer's certification of compliance with the applicable sections of the Specifications.
- C. The Contractor shall submit shop drawings showing installation method and the proposed method and specialized equipment to be used.

PART 2 PRODUCTS

2.01 POLYETHYLENE PRESSURE PIPE

- A. Polyethylene pipe 4" diameter and larger shall be high-density PE 3408 polyethylene resin per ASTM D 3350, Cell Classification 345464C, Class 160, DR 11, CPChem DriscoPlex 4000, 4300 or 4500 or an approved equal, meeting the requirements of AWWA C906. All pipe materials used in potable water systems shall comply with NSF Standard 61. Outside diameters of water, reclaimed water and pressure sewer HDPE pipes shall be ductile iron size (DIPS).
- B. Polyethylene pipe and tubing 3" diameter and smaller shall be pressure Class 200, DR 9 "Driscopipe 5100", Endo Pure by Endot, or equal, meeting the requirements of AWWA C901 (latest revision) and the following ASTM requirements:

Material Designation PPI/ASTM PE 3408
Material Classification ASTM D-1248 III C5 P34
Cell Classification ASTM D-3350

2.02 JOINTS

- A. Where PE pipe is joined to PE pipe, it shall be by thermal butt fusion. Thermal fusion shall be accomplished in accordance with the written instructions of the pipe manufacturer and fusion equipment supplier. The installer of the thermal butt fused PE pipe shall have received training in heat fusion pipe joining methods and shall have had experience in performing this type of work.
- B. Where thermal butt fusion cannot be used, or when specifically called for on the plans, electro-fused couplings may be used. Fusion shall be in accordance with the written instructions of the fitting manufacturer.
- C. Flanged joints, mechanical joints, tapping saddles, and molded fittings shall be in accordance with AWWA C901, C906 or C909, ASTM D3350 and D3140, as applicable. Fusion and mechanical connections are allowed, chemical (solvents, epoxies, etc.) are not allowed.

2.03 DETECTION

- A. Direct buried HDPE pipe shall have 3" detectable metallic tape of the proper color placed directly above the pipe and 12" below finished grade or 6" detectable tape between 12" and 24" below finished grade.
- B. Direct buried or horizontal directional drilled HDPE pipe shall also have tracer wire installed along the pipe alignment. The tracer wire to be used shall be a solid, 10 gauge, high strength, copper clad steel wire with a polyethylene jacket of appropriate color manufactured by Copperhead Industries or Manatee County approved equal.

2.04 IDENTIFICATION

- A. Pipe shall bear identification markings in accordance with AWWA C906.
- B. Pipe shall be color coded blue for water, purple (Pantone 522 C) for reclaimed water or green for pressure sewer using a solid pipe color or embedded colored stripes. Where stripes are used, there shall be a minimum of three stripes equally spaced.

PART 3 EXECUTION

3.01 INSTALLING POLYETHYLENE PRESSURE PIPE AND FITTINGS

All polyethylene pressure pipe shall be installed by direct bury, directional bore, or a method approved by the County prior to construction. If directional bore is used, or if directed by the County, the entire area of construction shall be surrounded by silt barriers during construction.

3.02 INSPECTION AND TESTING

All pipelines shall remain undisturbed for 24 hours to develop complete strength at all joints. All pipelines shall be subjected to a hydrostatic pressure and leak test per section 02617.

END OF SECTION

**SECTION 02622 POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS
(AWWA SPECIFICATIONS C-900 & C-905)**

PART 1 GENERAL

1.01 SCOPE OF WORK

The Contractor shall furnish all labor, materials, equipment and incidentals required to install the plastic piping, fittings and appurtenances complete and ready for use as specified in the Contract Documents and these Standards.

1.02 DESCRIPTION OF SYSTEM

The Contractor shall install the piping in the locations as shown on the Drawings.

1.03 QUALIFICATIONS

All plastic pipe, fittings and appurtenances shall be furnished by a single manufacturer who is fully experienced, reputable, qualified and specializes in the manufacture of the items to be furnished. The pipe and fittings shall be designed, constructed and installed in accordance with the best practices and methods and shall comply with these Specifications.

1.04 SUBMITTALS

- A. The Contractor shall submit shop drawings to the County including, but not limited to, dimensions and technical specifications for all piping.
- B. The Contractor shall submit to the County, samples of all materials specified herein.
- C. The Contractor shall submit and shall comply with pipe manufacturer's recommendation for handling, storing and installing pipe and fittings.
- D. The Contractor shall submit pipe manufacturer's certification of compliance with these Specifications.

1.05 TOOLS

The Contractor shall supply special tools, solvents, lubricants, and caulking compounds required for proper installation.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Pressure Class-Rated Polyvinyl Chloride (PVC) Pipe
 - 1. Pressure class-rated PVC pipe and accessories four to twelve inches (4"-12") in diameter, shall meet the requirements of AWWA Specification C-900 "Polyvinyl Chloride (PVC) Pressure Pipe". Pipe shall be Class 150, meeting requirements of Dimension Ratio (DR) 18 and shall have the dimension of ductile iron outside diameters. Each length of pipe shall be hydrotested to four (4) times its class pressure by the manufacturer in accordance with AWWA C-900.
 - 2. PVC pipe shall not be used for potable and reclaim waterlines 16 inches and larger.

Fourteen inch (14") thru 36" PVC pipe for sewer force mains shall meet AWWA C-905 requirements for dimension ratio (DR) 21. Each length of pipe shall be tested at twice the pressure rating (PR 200 psi) for a minimum dwell of five seconds in accordance with AWWA C-905.

Pipe shall be listed by Underwriters Laboratories. Provisions shall be made for expansion and contraction at each joint with an elastomeric ring, and shall have an integral thickened bell as part of each joint. PVC Class pipe shall be installed as recommended by the manufacturer. Pipe shall be furnished in nominal lengths of approximately 20 feet, unless otherwise directed by the County. Pipe and accessories shall bear the NSF mark indicating pipe size, manufacturer's names, AWWA and/or ASTM Specification number, working pressure, and production code.

3. Gaskets for 16" diameter and larger pipe used for potable water pipe shall be EPDM (Ethylene-Propylene Dine Monomer).
4. PVC pipe 3" and less in diameter may be constructed using pipe conforming to ASTM D2241 with push-on joints. Pipe shall be 200 psi pipe-SDR 21 unless otherwise specified by the County. This PVC pipe shall not be used for working pressures greater than 125 psi.
5. Pipe shall be blue for potable water mains, green for sewage force mains and purple for reclaimed water mains. All potable water pipe shall be NSF certified and copies of lab certification shall be submitted to the County.
6. Where colored pipe is unavailable, white PVC color coded spiral wrapped pipe shall be installed.

B. Joints

1. The PVC joints for pipe shall be of the push-on type unless otherwise directed by the County so that the pipe and fittings may be connected on the job without the use of solvent cement or any special equipment. The push-on joint shall be a single resilient gasket joint designed to be assembled by the positioning of a continuous, molded resilient ring gasket in an annular recess in the pipe or fitting socket and the forcing of the plain end of the entering pipe into the socket, thereby compressing the gasket radially to the pipe to form a positive seal. The gasket and annular recess shall be designed and shaped so that the gasket is locked in place against displacement as the joint is assembled.

The resilient ring joint shall be designed for thermal expansion or contraction with a total temperature change of at least 75 degrees F in each joint per length of pipe. The bell shall consist of an integral wall section with a solid cross section elastomeric ring which shall meet requirements of ASTM F-477. The thickened bell section shall be designed to be at least as strong as the pipe wall. Lubricant furnished for lubricating joints shall be nontoxic, shall not support the growth of bacteria, shall have no deteriorating effects on the gasket or pipe material, and shall not impart color, taste, or odor to the water. Gaskets shall be suitable for use with potable water, reclaimed water or sanitary sewer as applicable.

2. Restrained joints shall be provided at all horizontal and vertical bends and fittings, at casings under roads and railroads and at other locations shown on the Contract Drawings. PVC joints for pipe shall be restrained by the following methods: thrust blocks, restraining glands such as Certa-Lok Restraining Joint Municipal Water Pipe

by the Certain Teed Corporation of Valley Forge, PA, or approved equal. All Grip, Star Grip by Star Products, MJR by Tyler Pipe, Tyler, Texas. Restrained joint PVC pipe shall be installed in strict accordance with the manufacturer's recommendation.

C. Fittings

1. All fittings for class-rated PVC pipe shall be ductile iron with mechanical joints and shall conform to the specifications for ductile iron fittings, unless otherwise directed. Class 200, C-900 PVC fittings are allowable for sewage force main applications up to and including 12" diameter only. DR ratio shall be the same as the pipe.
2. The manufacturer of the pipe shall supply all polyvinyl chloride accessories as well as any adapters and/or specials required to perform the work as shown on the Drawings and specified herein. Standard double bell couplings will not be accepted where the pipe will slip completely through the coupling.

PART 3 EXECUTION

3.01 INSTALLATION

The Contractor shall install the plastic pipe in strict accordance with the manufacturer's technical data and printed instructions. Direct bury pipe shall have 3" detectable metallic tape of the proper color placed directly above the pipe 12" below finished grade or 6" detectable tape between 12" and 24" below grade.

3.02 INSPECTION AND TESTING

All pipe lines shall remain undisturbed for 24 hours to develop complete strength at all joints. All pipe lines shall be subjected to a hydrostatic pressure test for two (2) hours at full working pressure, but not less than 180 psi for water/reclaimed (150 psi for force main). All visible leaks shall be repaired and retested for approval by the County. Prior to testing, the pipe lines shall be supported in a manner approved by the County to prevent movement during tests.

END OF SECTION

SECTION 02640 VALVES AND APPURTENANCES

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. The Contractor shall furnish all labor, materials, equipment and incidentals required and install complete and ready for operation all valves and appurtenances as shown on the Drawings and as specified herein.
- B. All valves and appurtenances shall be of the size shown on the Drawings and, to the extent possible, all equipment of the same type on the Project shall be from one manufacturer.
- C. All 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.
- D. All valves shall have a factory applied, fusion bonded epoxy coating on interior and exterior unless noted otherwise in the plans or this specification.
- E. The equipment shall include, but not be limited to, the following:
 - 1. Gate valves (Sec. 2.01)
 - 2. Pressure Sustaining and Check Valves (Sec. 2.02)
 - 3. Ball Valves for PVC Pipe (Sec. 2.03)
 - 4. Butterfly Valves (Sec. 2.04)
 - 5. Plug Valves (Sec. 2.05)
 - 6. Valve Actuators (Sec. 2.06)
 - 7. Air Release Valves (Sec. 2.07)
 - 8. Valves Boxes (Sec. 2.08)
 - 9. Corporation Cocks (Sec. 2.09)
 - 10. Flange Adapter Couplings (Sec. 2.10)
 - 11. Flexible Couplings (Sec. 2.11)
 - 12. Hose Bibs (Sec. 2.12)
 - 13. Slow Closing Air and Vacuum Valves (Sec. 2.13)
 - 14. Surge Anticipator Valve (Sec. 2.14)
 - 15. Check Valves (Sec. 2.15)
 - 16. Hydrants (Sec. 2.16)
 - 17. Restraining Clamps (Sec. 2.17)
 - 18. Tapping Sleeves and Tapping Valves (Sec. 2.18)
 - 19. Single Acting Altitude Valves (Sec. 2.19)

1.02 DESCRIPTION OF SYSTEMS

All of the equipment and materials specified herein are intended to be standard for use in controlling the flow of potable water, reclaim water, wastewater, etc., depending on the applications.

1.03 QUALIFICATIONS

All of the types of 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. The equipment shall be designed, constructed and installed in accordance

with the best practices and methods and shall comply with these Specifications as applicable. Valves shall be as covered under mechanical devices in Section 8 of ANSI/NSF Standard 61.

1.04 SUBMITTALS

- A. Submit to the County within 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. Complete shop drawings of all valves and appurtenances shall be submitted to the County for approval in accordance with the Specifications.

1.05 TOOLS

Special tools, if required for normal operation and maintenance shall be supplied with the equipment.

PART 2 PRODUCTS

2.01 GATE VALVES

- A. All buried valves shall have cast or ductile iron three (3) piece valve bodies.
- B. Where indicated on the drawings or necessary due to locations, size, or inaccessibility, 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 provide for easy operation of the valve. Chains for valve operators shall be galvanized.
- C. Where required, gate valves shall be provided with a box cast in a concrete slab and a box cover. Length of box shall include slab thickness. Box cover opening shall be for valve stem and nut. Valve wrenches and extension stems shall be provided by the manufacturer to actuate the valves. The floor box and cover shall be equal to those manufactured by Rodney Hunt Machine Company, Orange, Massachusetts, Clow, DeZurik or approved equal.
- D. Gate valves with 3"-20" diameters shall be resilient seated, manufactured to meet or exceed the requirements of AWWA C509 or C515 and UL/FM of latest revision and in accordance with the following specifications. Valves shall have an unobstructed waterway equal to or greater than the full nominal diameter of the valve.
- E. Wrench nut shall be provided for operating the valve.
- F. Valves shall be suitable for an operating pressure of 200 psi and shall be tested in accordance with AWWA C509 or C515. Mueller, Kennedy, M&H, and Clow are acceptable valves.
- G. All bonnet bolts, nuts and studs shall be stainless steel.

2.02 PRESSURE SUSTAINING AND CHECK VALVE

- A. Pressure sustaining and check valve shall be pilot operated diaphragm actuated valve with cast iron body, bronze trim, and 125-pound flanged ends. The valve shall be hydraulically operated, diaphragm type globe valve. The main valve shall have a single removable seat

and a resilient disc, of rectangular cross section, surrounded on three and a half sides. The stainless steel stem shall be fully guided at both ends by a bearing in the valve cover, and an integral bearing in the valve seat. It shall be sleeved at both ends with delrin. No external packing glands are permitted and there shall be no pistons operating the main valve or any controls. The valve shall be equipped with isolation cocks to service the pilot system while permitting flow if necessary. Main valve and all pilot controls shall be manufactured in the United States of America. Valve shall be single chamber type, with seat cut to 5 degrees taper.

- B. Valve shall maintain a minimum (adjustable) upstream pressure to a preset (adjustable) maximum. The pilot system shall consist of two direct acting, adjustable, spring loaded diaphragm valves.
- C. Valve shall be cast iron (ASTM A48) with main valve trim of brass (QQB-B-626) and bronze (ASTM B61). The pilot control valves shall be cast brass (ASTM B62) with 303 stainless steel trim. All ferrous surfaces inside and outside shall have a 2-part epoxy coating. Valve shall be similar in all respects to CLA-VAL Company, Model 692G-01ABKG, as manufactured by CLA-VAL Company, Winter Park, Florida, or similar pressure sustaining and check valve as manufactured by Golden Alderson; or approved equal.

2.03 BALL VALVES FOR PVC PIPE

- A. Ball valves for PVC pipe shall be of PVC Type 1 with union, socket, threaded or flanged ends as required. Ball valves shall be full port, full flow, all plastic construction, 150 psi rated with teflon seat seals and T-handles. PVC ball valves shall be as manufactured by Celanese Piping Systems, Inc., Wallace and Tiernan, Inc., Plastiline, Inc., or approved equal.
- B. All valves shall be mounted in such a position that valve position indicators are plainly visible when standing on the floor.

2.04 BUTTERFLY VALVES

- A. Butterfly valves shall conform to the AWWA Standard Specifications for Rubber Seated Butterfly Valves, Designated C504, except as hereinafter specified. Valves shall be Class 250 and equal to those manufactured by Henry Pratt Company, DeZurik, Mueller, or approved equal. M&H/Kennedy/Clow are not generally approved equals. Ductile iron conforming to ASTM A536, Grade 65-45-12 shall be provided. All valves shall be leak tested at 200 psi.
- B. The face-to-face dimensions of flanged end valves shall be in accordance with Table 1 of above mentioned AWWA Specification for short-body valve. Adequate two-way thrust bearings shall be provided. Flange drilling shall be in accordance with ANSI B16.1.
- C. Valve seats shall be an EPDM elastomer. Valve seats 24 inches and larger shall be field adjustable and replaceable without dismounting operator disc or shaft and without removing the valve from the line. All retaining segments and adjusting devices shall be of corrosion resistant material with stainless Nylock screws and be capable of the 1/8-inch adjustment. Valves 20 inches and smaller shall have bonded or mechanically restrained seats as outlined in AWWA C 504. Where the EPDM seat is mounted on the valve body, the mating edge of the valve disc shall be 18-8 stainless steel or Nickel-Chrome, 80-20%. Where the EPDM seat is mounted on the valve disc, the valve body shall be fitted with an 18-8 stainless steel seat offset from the shaft, mechanically restrained and covering 360 degrees of the

peripheral opening or seating surface.

- D. The valve body shall be constructed of ductile iron or close grain cast iron per ASTM A126, Class B with integrally cast hubs for shaft bearing housings of the through boss-type. Butterfly valves of the "wafer" or "spool" type will not be accepted.
- E. The valve shaft shall be turned, ground, and polished constructed of 18-8, ASTM A-276, Type 304 stainless steel and designed for both torsional and shearing stresses when the valve is operated under its greatest dynamic or seating torque. Shaft shall be of either a one piece unit extending full size through the valve disc and valve bearing or it may be of a stub shaft design. Shaft bearings shall be teflon or nylon, self-lubricated type.
- F. All valves shall be subject to hydrostatic and leakage tests at the point of manufacture. The hydrostatic test shall be performed with an internal hydrostatic pressure equal to 500 psi applied to the inside of the valve body of each valve for a period of five minutes. During the hydrostatic test, there shall be no leakage through the metal, the end joints or the valve shaft seal. The leakage test shall be performed at a differential pressure of 230 psi and against both sides of the valve. No adjustment of the valve disc shall be necessary after pressure test for normal operation of valve.
- G. In general, the butterfly valve operators shall conform to the requirements of Section 3.8 of the AWWA Standard Specifications for Rubber Seated Butterfly Valves, Designation C504, insofar as applicable, and as herein specified.
- H. Gearing for the operators shall be totally enclosed in a gear case in accordance with paragraph 3.8.3 of the above mentioned AWWA Standard Specification.
- I. Operators shall be capable of seating and unseating the disc against the full design pressure of velocity, as specified for each class, into a dry system downstream and shall transmit a minimum torque to the valve. Operators shall be rigidly attached to the valve body.
- J. The manufacturer shall certify that the required tests on the various materials and on the completed valves have been satisfactory and that the valves conform with all requirements of this Specification and the AWWA standard.
- K. Where indicated on the Drawings, extension stems, floor stands, couplings, stem guides, and floor boxes as required shall be furnished and installed.

2.05 PLUG VALVES

- A. All plug valves shall be eccentric plug valves capable of sustaining 150 psi in either direction without leaking.

Exception: Single direction plug valves may be used if it is clearly demonstrated they will never be required to resist pressure in both directions either in service or during pipe line testing.
- B. Plug valves shall be tested in accordance with current AWWA Standard C-504-80 Section 5. Each valve shall be performance tested in accordance with paragraph 5.2 and shall be given a leakage test and hydrostatic test as described in paragraphs 5.3 and 5.4. Plug valves shall be Dezurik.

- C. Plug valves shall be of the 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 to the ANSI 150 lb. standard. Mechanical joint ends shall be to the AWWA Standard C111-72. Bell ends shall be to the AWWA Standard C100-55 Class B. Screwed ends shall be to the NPT standard.
- D. Plug valve bodies shall be of ASTM A126 Class B Semi-steel, 31,000 psi tensile strength minimum in compliance with AWWA Standard C507-73, Section 5.1 and AWWA Standard C504-70 Section 6.4. Plug valves shall have a minimum 100% circular cross sectional area and full port unless written approval is received from the County. All exposed nuts, bolts, springs, washers, etc. shall be stainless steel. Resilient plug facings shall be of Hycar or Neoprene. The minimum dimension of the plug opening must be the maximum available that meets all other requirements of this specification.
- E. Plug valves shall be furnished with permanently lubricated stainless steel or oil-impregnated bronze upper and lower plug stem bushings. These bearings shall comply with current AWWA Standards.

2.06 VALVE ACTUATORS

A. General

- 1. All valve actuators shall conform to Section 3.8 of the AWWA Standard Specification and shall be either manual or motor operated.
- 2. Actuators shall be capable of seating and unseating the disc against the full design pressure and velocity, as specified for each class, into a dry system downstream, and shall transmit a minimum torque to the valve. Actuators shall be rigidly attached to the valve body.
- 3. Butterfly valve actuators shall conform to the requirements of Section 3.8 of the AWWA Standard specifications for Rubber Seated Butterfly Valves, Designated C504, insofar as applicable and as herein specified.

B. Manual Actuators

- 1. Manual actuators shall have permanently lubricated, totally enclosed gearing with handwheel and gear ratio sized on the basis of actual line pressure and velocities. Actuators shall be equipped with handwheel, position indicator, and mechanical stop-limiting locking devices to prevent over travel of the disc in the open and closed positions. They shall turn counter-clockwise to open valves. Manual actuators shall be of the traveling nut, self-locking type and shall be designed to hold the valve in any intermediate position between fully open and fully closed without creeping or fluttering. Actuators shall be fully enclosed and designed to produce the specified torque with a maximum pull of 80 pounds on the handwheel or chainwheel. Actuator components shall withstand an input of 450 foot pounds for 30" and smaller and 300 foot pounds for larger than 30" size valves at extreme actuator positions without damage. Valves located above grade shall have handwheel and position indicator, and valves located below grade shall be equipped with a two inch (2") square AWWA operating nut located at ground level and cast iron extension type valve box. Valve actuators shall conform to AWWA C504, latest revision.

C. Motor Actuators (Modulating)

- 1. The motor actuated valve controller shall include the motor, actuator unit gearing,

limit switch gearing, limit switches, position transmitter which shall transmit a 4-20 mA DC signal, control power transformer, electronic controller which will position the valve based on a remote 4-20 milliamp signal, torque switches, bored and keywayed drive sleeve for non-rising stem valves, declutch lever and auxiliary handwheel as a self-contained unit.

2. The motor shall be specifically designed for valve actuator service using 480 volt, 60 Hertz, three phase power as shown, on the electrical drawings. The motor shall be sized to provide an output torque and shall be the totally enclosed, non-ventilated type. The power gearing shall consist of helical gears fabricated from heat treated alloy steel forming the first stage of reduction. The second reduction stage shall be a single stage worm gear. The worm shall be of alloy steel with carburized threads hardened and ground for high efficiency. The worm gear shall be of high tensile strength bronze with hobbed teeth. All power gearing shall be grease lubricated. Ball or roller bearings shall be used throughout. Preference will be given to units having a minimum number of gears and moving parts. Spur gear reduction shall be provided as required.
3. Limit switches and gearing shall be an integral part of the valve control. The limit switch gearing shall be made of bronze and shall be grease lubricated, intermittent type and totally enclosed to prevent dirt and foreign matter from entering the gear train. Limit switches shall be of the adjustable type capable of being adjusted to trip at any point between fully opened valve and fully closed valve.
4. The speed of the actuator shall be the responsibility of the system supplier with regard to hydraulic requirements and response compatibility with other components within the control loop. Each valve controller shall be provided with a minimum of two rotor type gear limit switches, one for opening and one for closing. The rotor type gear limit switch shall have two normally open and two normally closed contacts per rotor. Gear limit switches must be geared to the driving mechanism and in step at all times whether in motor or manual operation. Provision shall be made for two additional rotors as described above, each to have two normally open and two normally closed contacts. Each valve controller shall be equipped with a double torque switch. The torque switch shall be adjustable and will be responsive to load encountered in either direction of travel. It shall operate during the complete cycle without auxiliary relays or devices to protect the valve, should excessive load be met by obstructions in either direction of travel. The torque switch shall be provided with double-pole contacts.
5. A permanently mounted handwheel shall be provided for manual operation. The handwheel shall not rotate during electric operations, but must be responsive to manual operation at all times except when being electrically operated. The motor shall not rotate during hand operation nor shall a fused motor prevent manual operation. When in manual operating position, the unit will remain in this position until motor is energized at which time the valve operator will automatically return to electric operation and shall remain in motor position until handwheel operation is desired. This movement from motor operation to handwheel operation shall be accomplished by a positive declutching lever which will disengage the motor and motor gearing mechanically, but not electrically. Hand operation must be reasonably fast. It shall be impossible to place the unit in manual operation when the motor is running. The gear limit switches and torque switches shall be housed in a single easily accessible compartment integral with the power compartment of the valve control. All wiring shall be accessible through this compartment. Stepping motor drives will not be acceptable.
6. The motor with its control module must be capable of continuously modulating over its entire range without interruption by heat protection devices. The system, including the operator and control module must be able to function, without override

- protection of any kind, down to zero dead zone.
- 7. All units shall have strip heaters in both the motor and limit switch compartments.
- 8. The actuator shall be equipped with open-stop-close push buttons, an auto-manual selector switch, and indicating lights, all mounted on the actuator or on a separate locally mounted power control station.
- 9. The electronics for the electric operator shall be protected against temporary submergence.
- 10. Actuators shall be Limitorque L120 with Modutronic Control System containing a position transmitter with a 4-20MA output signal or equal.

D. Motor Actuators (Open-Close)

- 1. The electronic motor-driven valve actuator shall include the motor, actuator gearing, limit switch gearing, limit switches, torque switches, fully machined drive sleeve, declutch lever, and auxiliary handwheel as a self-contained unit.
- 2. The motor shall be specifically designed for valve actuator service and shall be of high torque totally enclosed, nonventilated construction, with motor leads brought into the limit switch compartment without having external piping or conduit box.
 - (a) The motor shall be of sufficient size to open or close the valve against maximum differential pressure when voltage to motor terminals is 10% above or below nominal voltage.
 - (b) The motor shall be prelubricated and all bearings shall be of the anti-friction type.
- 3. The power gearing shall consist of helical gears fabricated from heat treated steel and worm gearing. The worm shall be carburized and hardened alloy steel with the threads ground after heat treating. The worm gear shall be of alloy bronze accurately cut with a hobbing machine. All power gearing shall be grease lubricated. Ball or roller bearings shall be used throughout.
- 4. Limit switches and gearing shall be an integral part of the valve actuator. The switches shall be of the adjustable rotor type capable of being adjusted to trip at any point between fully opened valve and fully closed valve. Each valve controller shall be provided with a minimum of two rotor type gear limit switches, one for opening and one for closing (influent valves require additional contacts to allow stopping at an intermediate position). The rotor type gear limit switch shall have two normally open and two normally closed contacts per rotor. Additional switches shall be provided if shown on the control and/or instrumentation diagrams. Limit switches shall be geared to the driving mechanism and in step at all times whether in motor or manual operation. Each valve actuator shall be equipped with a double torque switch. The torque switch shall be adjustable and will be responsive to load encountered in either direction of travel. It shall operate during the complete cycle without auxiliary relays or devices to protect the valve should excessive load be met by obstructions in either direction of travel. Travel and thrusts shall be independent of wear in valve disc or seat rings.
- 5. A permanently mounted handwheel shall be provided for manual operation. The handwheel shall not rotate during electric operation except when being electrically operated. The motor shall not rotate during hand operation, nor shall a fused motor prevent manual operation. When in manual operating position, the unit will remain in this position until motor is energized at which time the valve actuator will automatically return to electric operation and shall remain in motor position until handwheel operation is desired. Movement from motor operation to handwheel operation shall be accomplished by a positive declutching lever which will disengage the motor and motor gearing mechanically, but not electrically. Hand operation must be reasonably fast. It shall be impossible to place the unit in manual operation when

- the motor is running.
6. Valve actuators shall be equipped with an integral reversing controller and three phase overload relays, Open-Stop-Close push buttons, local-remote-manual selector switch, control circuit transformer, three-phase thermal overload relays and two pilot lights in a NEMA 4X enclosure. In addition to the above, a close coupled air circuit breaker or disconnect switch shall be mounted and wired to the valve input power terminals for the purpose of disconnecting all underground phase conductors.
 7. The valve actuator shall be capable of being controlled locally or remotely via a selector switch integral with the actuator. In addition, an auxiliary dry contact shall be provided for remote position feedback.
 8. Valve A.C. motors shall be designed for operation on a 480 volt, 3-phase service. Valve control circuit shall operate from a fuse protected 120 volt power supply.
 9. Motor operators shall be as manufactured by Limitorque Corporation, Type L120 or approved equal.

2.07 AIR RELEASE VALVES

The air release valves for use in water or force mains shall be installed as shown on the Drawings. The valves shall have a cast iron body cover and baffle, stainless steel float, bronze water diffuser, Buna-N or Viton seat, and stainless steel trim. The fittings shall be threaded. The air release valves shall be Model 200A or 400A as manufactured by APCO Valve and Primer Corporation, Schaumburg, Illinois; or approved equal.

2.08 VALVE BOXES

- A. Buried valves shall have cast-iron three piece valve boxes or HDPE adjustable valve boxes. Cast iron valve boxes shall be provided with suitable heavy bonnets and shall extend to such elevation at or slightly above the finished grade surface as directed by the County. The barrel shall be two-piece, screw type, having a 5-1/4 inch shaft. The upper section shall have a flange at the bottom with sufficient bearing area to prevent settling and shall be complete with cast iron covers. Covers shall have WATER, SEWER, or RECLAIM, as applicable, cast into the top. Lids will be painted "safety" blue for potable, purple for reclaimed, and green for sanitary sewer.
- B. All valves shall have actuating nuts extended to within four (4) feet of the top of the valve box. All valve extensions will have a centering guide plate two (2) inches maximum below the actuating nut. The valve extension shall be fastened to the existing nut with a set screw. Valve boxes shall be provided with a concrete base and a valve nameplate engraved with lettering 1/8-inch deep as shown on the Drawings.
- C. HDPE adjustable valve boxes shall be one complete assembled unit composed of the valve box and extension stem. All moving parts of the extension stem shall be enclosed in a housing to prevent contact with the soil. Valve box assembly shall be adjustable to accommodate variable trench depths.
- D. The entire assembly shall be made of heavy wall high density polyethylene. All exterior components shall be joined with stainless steel screws. The valve box top section shall be adaptable to fit inside a valve box upper section.
- E. The stem assembly shall be of a telescoping design that allows for variable adjustment length. The stem material shall be of plated steel square tubing. The stem assembly shall have a built-in device that keeps the stem assembly from disengaging at its fully extended length. The extension stem must be torque tested to 1000 foot pounds. Covers shall have

WATER, SEWER or RECLAIMED clearly and permanently impressed into the top surface.

2.09 CORPORATION COCKS

Corporation cocks for connections to cast-iron, ductile iron or steel piping shall be all brass or bronze suitable for 180 psi operating pressure and similar to Mueller Co. H-10046 or approved equal by Clow Corp., and shall be of sizes required and/or noted on the Drawings.

2.10 FLANGE ADAPTER COUPLINGS

Flange adapter couplings shall be of the size and pressure rating required for each installation and shall be suitable for use on either cast iron or ductile iron pipe. They shall be similar or approved equal to Dresser Company, Style 128. All couplings shall have a sufficient number of factory installed anchor studs to meet or exceed a minimum test pressure rating of 230 psi minimum.

2.11 FLEXIBLE COUPLINGS

Flexible couplings shall be either the split type or the sleeve type as shown on the Drawings.

1. Split type coupling shall be used with all interior piping and with exterior pipings noted on the Drawings. The couplings shall be mechanical type for radius groove piping. The couplings shall mechanically engage and lock grooved pipe ends in a positive couple and allow for angular deflection and contracting and expansion.
2. Couplings shall consist of malleable iron, ASTM Specification A47, Grade 32510 housing clamps in two or more parts, a single chlorinated butyl composition sealing gasket with a "C" shaped cross-section and internal sealing lips projecting diagonally inward, and two or more oval track head type bolts with hexagonal heavy nuts conforming to ASTM Specification A 183 and A194 to assemble the housing clamps. Bolts and nuts shall be hot dipped galvanized after fabrication.
3. Victaulic type couplings and fittings may be used in lieu of flanged joints. Pipes shall be radius grooved as specified for use with the Victaulic couplings. Flanged adapter connections at fittings, valves, and equipment shall be Victaulic Vic Flange Style 741, equal by Gustin-Bacon Group, Division of Certain-Teed Products, Kansas City, Kansas, or approved equal.
4. Sleeve type couplings shall be used with all buried piping. The couplings shall be of steel and shall be Dresser Style 38 or 40, as shown on the Drawings, or equal. The coupling shall be provided with hot dipped galvanized steel bolts and nuts unless indicated otherwise.
5. All couplings shall be furnished with the pipe stop removed.
6. Couplings shall be provided with gaskets of a composition suitable for exposure to the liquid within the pipe.
7. If the Contractor decides to use victaulic couplings in lieu of flanged joints, he shall be responsible for supplying supports for the joints.

2.12 HOSE BIBS

Hose bibs shall be 3/4" or 1" brass, polished chromium plated brass, with vacuum breaker as noted on the drawings.

2.13 SLOW CLOSING AIR AND VACUUM VALVES

- A. The Contractor shall furnish and install slow closing air and vacuum valves as shown on the

Drawings which shall have two (2) independent valves bolted together. The air and vacuum valve shall have all stainless steel float, guided on both ends with stainless shafts. The air and vacuum valve seat shall be Buna-N to insure drop tight closure. The Buna-N seat shall be fastened to the cover stainless shoulder screws in a manner to prevent distortion of the seat. The float shall be guided at both ends with stainless steel bushings.

- B. The valve cover shall have a male lip designed to fit into the body register for accurate alignment of the float into the Buna-N seat. The valve cover shall have 250-pound class flanged outlet connection.
- C. The surge check valve shall be bolted to the inlet of the air and vacuum valve and consist of a body, seat, disc, and compression spring. A surge check unit shall operate on the interphase between the kinetic energy and relative velocity flows of air and water, so that after air passes through, and water rushes into the surge check, the disc starts to close, reducing the rate of flow of water into the air valve by means of throttling orifices in the disc to prevent water hammer in the air valves. The surge check orifices must be adjustable type for regulation in the field to suit operating conditions. Valve shall be rated for 250-pound class working pressure.
- D. The complete slow closing air and vacuum valve with air release valve shall have been flow tested in the field, substantiated with test data to show reduction of surge pressure in the valve. Flow test data shall be submitted with initial shop drawings for approval.
- E. Valve exterior to be painted Red Oxide, Phenolic TT-P86, Primer or approved equal for high resistance to corrosion.
- F. All materials of construction shall be certified in writing to conform to ASTM specifications as follows:

Air Valve Cover, Body, and Surge Check Body	Cast Iron	ASTM A48, Class 30
Float	Stainless Steel	ASTM A240
Surge Check Seat and Disc	Stainless Steel	ASTM A582
Air Valve Seat	Buna-N	
Spring	Stainless Steel	T302

2.14 SURGE ANTICIPATOR VALVES

- A. Surge anticipator valves shall be furnished for the pumping systems as shown on the Drawings. The valve shall be hydraulically operated, pilot controlled, and diaphragm or piston actuated. The main valve shall be cast iron conforming to ASTM A48 with bronze trim conforming to ASTM B61 and flanged ends conforming to ANSI B161.1. The main valve shall be globe type with a single removable seat and a resilient disc.
- B. The diaphragm actuated valve shall have a stainless steel stem guided at both ends by a bearing in the valve cover and an integral bearing surface in the seat. No external packing

glands shall be permitted. The valve shall be fully serviceable without removing it from the line. The pilot system shall be of noncorrosive construction and provided with isolation cocks.

- C. The piston actuated valve shall operate on the differential piston principle. The valve piston shall be guided on its outside diameter. The valve shall be able to operate in any position and shall be fully serviceable without removing it from the line. The pilot system shall be provided with isolation cocks, and be of noncorrosive materials of construction.
- D. The valve shall be designed specifically to minimize the effects of water hammer, resulting from power failure at the pumping station, or from normal stopping and starting of pumping operators. The valve shall open hydraulically on a down surge, or low pressure wave created when the pump stops, remain open during the low pressure cycle in order to be open when the high pressure wave returns. The high pressure pilot shall be adjustable over a 20 to 200 psi range and the low pressure pilot shall be adjustable over a 15 to 75 psi range. The valve shall be the 250 Class.

2.15 CHECK VALVES

- A. Check valves for cast iron and ductile iron pipe lines shall be swing type and shall meet the material requirements of AWWA Specification C508. The valves shall be iron body, bronze mounted, single disc, 175 psi working water pressure and nonshock. Valves shall be as manufactured by Mueller, Clow, Kennedy, or M&H. Valves 8" and larger shall be air cushioned to reduce valve slam.
- B. When there is no flow through the line, the disc shall hang lightly against its seat in practically a vertical position. When open, the disc shall swing clear of the waterway.
- C. Check valves shall have bronze seat and body rings, extended bronze hinge pins and bronze nuts on the bolts of bolted covers. The interior and exterior of the valve body shall have a factory applied fusion bonded or 10 mil 2 part epoxy coating (Protecto 401 or approved equal).
- D. Valves shall be so constructed that disc and body seat may easily be removed and replaced without removing the valve from the line. Valves shall be fitted with an extended hinge arm with outside lever and weight. Weights provided and approved by the County shall be installed.

2.16 HYDRANTS

Hydrants shall be AVK Series 2780 Barrel (nostalgic style with stainless steel bolts) American Darling B-84-B or Mueller Super Centurian 250, or approved equal and shall conform to the "Standard Specification for Fire Hydrants for Ordinary Water Works Service", AWWA C502, and UL/FM certified, and shall in addition meet the specific requirements and exceptions which follow:

- 1. Hydrants shall be according to manufacturer's standard pattern and of standard size, and shall have one 4-1/2" steamer nozzle and two 2-1/2" hose nozzles.
- 2. Hydrant inlet connections shall have mechanical joints for 6" ductile-iron pipe.
- 3. Hydrant valve opening shall have an area at least equal to that area of a 5-1/4" minimum diameter circle and be obstructed only by the valve rod. Each hydrant shall be able to deliver 500 gallons minimum through its two 2-1/2" hose nozzles when opened together with a loss of not more than 2 psi in the hydrants.

4. Each hydrant shall be designed for installation in a trench that will provide 5-ft. cover.
5. Hydrants shall be hydrostatically tested as specified in AWWA C502.
6. Hydrants shall be rated at 200 psi.
7. All nozzle threads shall be American National Standard.
8. Each nozzle cap shall be provided with a Buna N rubber washer.
9. Hydrants shall be so arranged that the direction of outlets may be turned 90 degrees without interference with the drip mechanism and without the mechanism obstructing the discharge from any outlet.
10. Hydrants must be capable of being extended without removing any operating parts.
11. Hydrants shall have bronze-to-bronze seatings as per AWWA C502-85.
12. Hydrant main valve closure shall be of the compression type opening against the pressure and closing with the pressure. The resilient seat material shall meet the requirements of AWWA C-509 and shall preferably be EPDM Elastomer.
13. Internal and below ground iron parts (bonnet, nozzle section and base) shall have a fusion bonded epoxy coating per AWWA C550. Aboveground external hydrant parts (cap, bonnet and nozzle section) shall be either epoxy coated together with a UV resistant polyester coating or have two shop coats of paint per AWWA C502. The lower stand pipe or barrel shall be protected with asphaltic coatings per AWWA C502.
14. Exterior nuts, bolts and washer shall be stainless steel. Bronze nuts may be used below grade.
15. All internal operating parts shall be removable without requiring excavation.

2.17 RESTRAINING CLAMPS

Restraining clamp assemblies as detailed in the drawings for use at hydrant connections to water mains, or at fittings where shown on the Drawings, shall be as manufactured by American Cast Iron Pipe, Star Pipe Products, U.S. Pipe; or approved equal. Corten or Stainless Steel nuts, bolts, and rods are required.

2.18 TAPPING SLEEVES AND GATE VALVES

- A. Tapping valves shall meet the requirement of AWWA C500. The valves shall be flanged, shall be mechanical joint outlet with nonrising stem, designed for vertical burial and shall open left or counterclockwise. Stuffing boxes shall be the "O-ring" type. Operating nut shall be AWWA Standard 2" square for valves 2" and up. The valves shall be provided with an overload seat to permit the use of full size cutters. Gaskets shall cover the entire area of flange surfaces and shall be supplied with EPDM wedges up to 30" diameter.
- B. Tapping sleeves and saddles shall seal to the pipe by the use of a confined "O" ring gasket, and shall be able to withstand a pressure test of 180 psi for one hour with no leakage in accordance with AWWA C110, latest edition. A stainless steel 3/4" NPT test plug shall be provided for pressure testing. All bolts joining the two halves shall be stainless steel and shall be included with the sleeve or saddle. Sleeves and saddles shall be protected from corrosion by being fusion applied epoxy coated, or be made of 18-8 Type 304 stainless steel. Saddle straps shall be 18-8 Type 304 stainless steel.

2.19 SINGLE ACTING ALTITUDE VALVES

- A. Function
 1. The altitude control valve shall be of the single acting type, closing off tightly when the water reaches the maximum predetermined level in the tank to prevent overflow;

and opening to permit replenishing of the tank supply when the water level drops approximately 6" to 12" below the maximum level.

2. A hand operated valve in the power water line to the top of the piston shall permit adjustment of the speed of valve closing. The tank water level control shall be by means of a diaphragm operated, spring loaded, three way pilot which directs power water to or from the top of the main valve piston. The three way pilot shall be of bronze construction. The diaphragm surface exposed to the tank head shall be not less than 57 sq. inches. It shall be possible to adjust the spring above the diaphragm for water level control approximately 20% above or below the factory setting.

B. Description

1. The main valve shall operate on the differential piston principle such that the area on the underside of the piston is no less than the pipe area on the upper surface of the piston is of a greater area than the underside of the piston.
2. The valve piston shall be guided on its outside diameter by long stroke stationary Vee ports which shall be downstream of the seating surface to minimize the consequences of throttling. Throttling shall be done by the valve Vee ports and not the valve seating surfaces.
3. The valve shall be capable of operating in any position and shall incorporate only one flanged cover at the valve top from which all internal parts shall be accessible. There shall be no stems, stem guides, or spokes within the waterway. There shall be no springs to assist the valve operation.

C. Construction

1. The valve body shall be of cast iron ASTM A-126 with flanges conforming to the latest ANSI Standards. The valve shall be extra heavy construction throughout. The valve interior trim shall be bronze B-62 as well as the main valve operation.
2. The valve seals shall be easily renewable while no diaphragm shall be permitted within the main valve body.
3. All controls and piping shall be of non-corrosive construction.
4. A visual valve position indicator shall be provided for observing the valve piston position at any time.

D. Figure Number

The valves shall be the 20" Globe type (Fig. 3200-D) as manufactured by GA Industries of Mars, Pennsylvania, or approved equal.

PART 3 EXECUTION

3.01 INSTALLATION

- A. All valves and appurtenances shall be installed in the location shown, true to alignment and rigidly supported. Any damage occurring to the above items before they are installed shall be repaired to the satisfaction of the County.
- B. After installation, all valves and appurtenances shall be tested at least two hours at the working pressure corresponding to the class of pipe, unless a different test pressure is specified. If any joint proves to be defective, it shall be repaired to the satisfaction of the County.

- C. Install all floor boxes, brackets, extension rods, guides, the various types of operators and appurtenances as shown on the Drawings that are in masonry floors or walls, and install concrete inserts for hangers and supports as soon as forms are erected and before concrete is poured. Before setting these items, the Contractor shall check all plans and figures which have a direct bearing on their location and he shall be responsible for the proper location of these valves and appurtenances during the construction of the structures.
- D. Pipe for use with flexible couplings shall have plain ends as specified in the respective pipe sections.
- E. Flanged joints shall be made with high strength, low alloy Corten 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 comparable to Inertol No. 66 Special Heavy.
- F. Prior to assembly of split couplings, the grooves as well as other parts shall be thoroughly cleaned. The ends of the pipes and outside 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 then shall 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.
- G. Prior to the installation of sleeve-type couplings, the pipe ends shall be cleaned thoroughly for a distance of 8". 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" from the end.
- H. Valve boxes with concrete bases shall be installed as shown on the Drawings. Mechanical joints shall be made in the standard manner. Valve stems shall be vertical in all cases. Place cast iron box over each stem with base bearing on compacted fill and the top flush with final grade. Boxes shall have sufficient bracing to maintain alignment during backfilling. Knobs on cover shall be parallel to pipe. Remove any sand or undesirable fill from valve box.

3.02 HYDRANTS

- A. Hydrants shall be set at the locations designated by the County and/or as shown on the Drawings and shall be bedded on a firm foundation. A drainage pit on crushed stone as shown on the Drawings shall be filled with gravel or crushed stone and satisfactorily compacted. During backfilling, additional gravel or crushed stone shall be brought up around and 6" over the drain port. Each hydrant shall be set in true vertical alignment and shall be properly braced. Concrete thrust blocks shall be placed between the back of the hydrant inlet and undisturbed soil at the end of the trench. Minimum bearing area shall be as shown on the plans. Felt paper shall be placed around the hydrant elbow prior to placing concrete. CARE MUST BE TAKEN TO INSURE THAT CONCRETE DOES NOT PLUG THE DRAIN PORTS. Concrete used for backing shall be as specified herein.
- B. When installations are made under pressure, the flow of water through the existing main shall be maintained at all times. The diameter of the tap shall be a minimum of 2" less than the inside diameter of the branch line.

- C. The entire operation shall be conducted by workmen thoroughly experienced in the installation of tapping sleeves and valves, and under the supervision of qualified personnel furnished by the manufacturer. The tapping machine shall be furnished by the Contractor if tap is larger than 12" in diameter.
- D. The Contractor shall determine the locations of the existing main to be tapped to confirm the fact that the proposed position for the tapping sleeve will be satisfactory and no interference will be encountered such as the occurrence of existing utilities or of a joint or fitting at the location proposed for the connection. No tap will be made closer than 30" from a pipe joint.
- E. Tapping valves shall be set in vertical position and be supplied with a 2" square operating nut for valves 2" and larger. The valve shall be provided with an oversized seat to permit the use of full sized cutters.
- F. Tapping sleeves and valves with boxes shall be set vertically or horizontally as indicated on the Drawings and shall be squarely centered on the main to be tapped. Adequate support shall be provided under the sleeve and valve during the tapping operation. Sleeves shall be no closer than 30" from water main joints. Thrust blocks shall be provided behind all tapping sleeves. Proper tamping of supporting earth around and under the valve and sleeve is mandatory. After completing the tap, the valve shall be flushed to ensure that the valve seat is clean.

3.03 SHOP PAINTING

Ferrous surfaces of valves and appurtenances shall receive a coating of rust-inhibitive primer. All pipe connection openings shall be capped to prevent the entry of foreign matter prior to installation.

3.04 FIELD PAINTING

All metal valves and appurtenances specified herein and exposed to view shall be painted.

All above ground potable water main valves shall be painted safety blue.

3.05 INSPECTION AND TESTING

Completed pipe shall be subjected to hydrostatic pressure test for two hours at 180 psi. All leaks shall be repaired and lines retested as approved by the County. Prior to testing, the pipelines shall be supported in an approved manner to prevent movement during tests.

END OF SECTION

SECTION 02720 SANITARY SEWER BYPASS PUMPING

PART 1 GENERAL

1.01 SCOPE

The Contractor shall furnish all labor, materials, equipment and incidentals required to maintain existing and anticipated flows within the affected portion of the collection system throughout the construction period.

1.02 PUBLIC IMPACTS

The contractor shall not create a public nuisance due to excessive noise or dust, nor impact the public with flooding of adjacent lands, discharge of raw sewage, or release of other potential hazards, nor shall he encroach on or limit access to adjacent lands. No extra charge may be made for increased costs to the contractor due to any of the above.

1.03 SUBMITTALS

- A. The Contractor shall, within 30 days of the date of the Notice to Proceed, submit to the Project Manager a detailed Pumping Plan for each site by-pass pumping will be needed. The Pumping Plan shall address all measures and systems to prevent a sanitary sewer overflow (SSO) as defined by the EPA. The Plan shall include as a minimum:
1. Working drawings and sketches showing work location, pump location, piping layout & routing. Show all proposed encroachment and access impacts on adjacent properties or facilities.
 2. Pump, control, alarm and pipe specifications or catalog cuts. Detailed sketch of controls and alarm system.
 3. Power requirements and details on methods to provide by-pass power or fueling.
 4. Calculation and determination of response times to prevent an SSO after a high water alarm. If anticipated peak flows are 750 G.P.M. or greater, an operator is required on site at all times pump is in service. If the anticipated peak flows are less than 750 G.P.M. an operator may not be required to be on site at all times; show operator on-site schedule.
 5. Procedures to be taken in case of power, pump, or piping failures; including contact names and numbers for emergency notifications.
 6. Frequency and specific responsibility for monitoring pump operation, fuel levels, pump maintenance and entire length of piping.

PART 2 PRODUCTS

2.01 EQUIPMENT

- A. Pumps:
1. By-pass pumping system shall consist of at least a primary pump and a backup pump. Each pump shall have a minimum pumping capacity of 150% of the anticipated peak flows. When bypassing a pump station, 150% of the lift station capacity (G.P.M. & T.D.H) shall be provided.
 2. Pumps shall be low noise or sound attenuated. The noise level at any operating condition, in any direction, shall not exceed 70dBA at a distance of twenty three (23)

feet (7 meters) from the pump and/or power source.

B. Controls:

The by-pass pump system shall be equipped with automatic controls and an alarm system. The automatic controls will automatically start the backup pump in the event of a high water condition or failure of the primary pump. The alarm system will immediately notify the Contractor of a pump failure or high water condition.

C. Pipe:

Pipe shall be of adequate size and capacity to match the pumps. Pipe type and materials will depend on the particulars of the site conditions, and shall be detailed in the Pumping Plan. Contractor will provide all connections.

PART 3 EXECUTION

3.01 SITE CONDITIONS

Site conditions will vary by site. Contractor is responsible to determine and address requirements such as traffic control, excavation, connections & fittings, impacts on access to adjacent properties, routing and support of by-pass piping, etc., in the Pumping Plan.

3.02 ON-SITE MONITORING

- A. All by-pass operations where the anticipated flow rates are 750 G.P.M or greater shall require an employee on-site at all times (full-time on-site monitoring attended by personnel experienced with the pumps and controls, with demonstrated ability to monitor, turn on & off, and switch between pumps while the by-pass pump system is in service.
- B. By-pass operations where the anticipated flow rates are less than 750 G.P.M may not require an employee on-site at all times while the by-pass pump system is in operation. The Contractor shall have personnel experienced with the pumps and controls on site within the calculated response time to prevent an SSO after a high water alarm.
- C. During by-pass operations, the Contractor shall have posted on site with the permit, a copy of the approved Plan and the name and 24 hour contact number of the primary response person, the job site superintendent, and the construction company owner.

3.03 OPERATIONS

- A. The Contractor is responsible for securing and providing power, fuel, site security, traffic control and all other supplies, materials and permits required for the by-pass pumping.
- B. Contractor shall demonstrate automatic pump switching and alarm system to the satisfaction of: the County inspector, Project Manager, or Lift Stations Superintendent prior to beginning by-pass pumping. Satisfactory demonstration shall be documented by the inspector's, PM's or Lift Station Superintendent's dated signature on the posted copy of the approved Pumping Plan.

3.04 DAMAGE RESTORATION & REMEDIATION

- A. The Contractor shall be responsible for any pre-pump notifications, all restoration of pre-pump conditions and any damage caused by by-pass operations.
- B. Should there be an SSO caused by or as a direct result of the by-pass pumping, the contractor is responsible for all immediate & long term response, notifications, clean up, mitigation, etc. Copies of all written response plans, notifications, documentation, mitigation plans, etc., shall be submitted to the County Project Manager.

END OF SECTION

DIVISION 3 CONCRETE

SECTION 03200 CONCRETE REINFORCEMENT

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Reinforcing steel bars and welded steel wire fabric for cast-in-place concrete, complete with tie wire.
- B. Support chairs, bolsters, bar supports and spacers, for reinforcing.

1.02 QUALITY ASSURANCE

Perform concrete reinforcing work in accordance with ACI 318 unless specified otherwise in this Section.

1.03 REFERENCES

- A. ACI 318 - Building Code Requirements for Reinforced Concrete.
- B. ASTM A185 - Welded Steel Wire Fabric for Concrete Reinforcement.
- C. ASTM A615 - Deformed and Plain Billet Steel Bars for Concrete Reinforcement.
- D. CRSI 63 - Recommended practice for placing reinforcing bars.
- E. CRSI 65 - Recommended practice for placing bar supports, specifications and nomenclature.
- F. ACI 315 - American Concrete Institute - Manual of Standard Practice.

1.04 SHOP DRAWINGS

- A. Submit shop drawings in accordance with Contract Documents.
- B. Indicate bar sizes, spacings, locations and quantities of reinforcing steel and wire fabric, bending and cutting schedules and supporting and spacing devices.
- C. Manufacturer's Literature: Manufacturer's specifications and installation instructions for splice devices.

PART 2 PRODUCTS

2.01 REINFORCING

- A. Reinforcing steel: Grade 60, Minimum Yield Strength 60,000 psi, deformed billet steel bars, ASTM A615; plain finish.
- B. Welded steel wire fabric: Deformed wire, ASTM A497; smooth wire ASTM A185 in flat

sheets; plain finish.

2.02 ACCESSORY MATERIALS

- A. Tie wire: Minimum 16 gauge annealed type, or patented system accepted by County.
- B. Chairs, bolsters, bar supports, spacers: Sized and shaped for strength and support of reinforcing during construction conditions.
- C. Special chairs, bolsters, bar supports, spacers (where adjacent to architectural concrete surfaces): Stainless steel type sized and shaped as required.

2.03 FABRICATION

- A. Fabricate concrete reinforcing in accordance with ACI 315.
- B. Locate reinforcing splices, not indicated on Drawings, at points of minimum stress. Location of splices shall be reviewed by County.
- C. Where indicated, weld reinforcing bars in accordance with AWS D12.1.

PART 3 EXECUTION

3.01 PLACEMENT

- A. Reinforcing shall be supported and secured against displacement. Do not deviate from true alignment.
- B. Before placing concrete, ensure reinforcing is clean, free of loose scale, dirt, or other foreign coatings which would reduce bond to concrete.

3.02 QUALITY ASSURANCE

- A. Acceptable Manufacturers: Regularly engaged in manufacture of steel bar and welded wire fabric reinforcing.
- B. Installer Qualifications: Three years experience in installation of steel bar and welded wire fabric reinforcing.
- C. Allowable Tolerances:
 - 1. Fabrication:
 - a. Sheared length: ± 1 in.
 - b. Depth of truss bars: $+0, -1/2$ in.
 - c. Stirrups, ties and spirals: $\pm 1/4$ in.
 - d. All other bends: ± 1 in.
 - 2. Placement:
 - a. Concrete cover to form surfaces: $\pm 1/4$ in.
 - b. Minimum spacing between bars: 1 in.
 - c. Top bars in slabs and beams:
 - (1) Members 8 in. deep or less: $\pm 1/4$ in.
 - (2) Members more than 8 in.: $\pm 1/2$ in.
 - d. Crosswise of members: Spaced evenly within 2 in. of stated separation.

- e. Lengthwise of members: Plus or minus 2 in.
- 3. Maximum bar movement to avoid interference with other reinforcing steel, conduits, or embedded items: 1 bar diameter.

3.04 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver reinforcement to project site in bundles marked with metal tags indicating bar size and length.
- B. Handle and store materials to prevent contamination.

3.05 INSTALLATION

- A. Placement:
 - 1. Bar Supports: CRSI 65.
 - 2. Reinforcing Bars: CRSI 63.
- B. Steel Adjustment:
 - 1. Move within allowable tolerances to avoid interference with other reinforcing steel, conduits, or embedded items.
 - 2. Do not move bars beyond allowable tolerances without concurrence of County.
 - 3. Do not heat, bend, or cut bars without concurrence of County.
- C. Splices:
 - 1. Lap splices: Tie securely with wire to prevent displacement of splices during placement of concrete.
 - 2. Splice devices: Install in accordance with manufacturer's written instructions.
 - 3. Do not splice bars without concurrency of County, except at locations shown on Drawings.
- D. Wire Fabric:
 - 1. Install in longest practicable length.
 - 2. Lap adjoining pieces one full mesh minimum, and lay splices with 16 gauge wire.
 - 3. Do not make end laps midway between supporting beams, or directly over beams of continuous structures.
 - 4. Offset end laps in adjacent widths to prevent continuous laps.
- E. Cleaning: Remove dirt, grease, oil, loose mill scale, excessive rust, and foreign matter that will reduce bond with concrete.
- F. Protection During Concreting: Keep reinforcing steel in proper position during concrete placement.

END OF SECTION

SECTION 03300 CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 WORK INCLUDED

Poured-in-place concrete slabs, thrust blocks, pile caps and pipe support cradles.

1.02 QUALITY ASSURANCE

Perform cast-in-place concrete work in accordance with ACI 318, unless specified otherwise in this Section.

1.03 TESTING LABORATORY SERVICES

- A. Inspection and testing will be performed by the testing laboratory currently under contract to Manatee County in accordance with the Contract Documents.
- B. Provide free access to work and cooperate with appointed firm.
- C. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of work.
- D. Tests of cement and aggregates may be performed to ensure conformance with requirements stated herein.
- E. Three concrete test cylinders will be taken for every 100 cu. yds. or part thereof of each class of concrete placed each day. Smaller pours shall have cylinders taken as directed by the County.
- F. One slump test will be taken for each set of test cylinders taken.

1.04 REFERENCES

- A. ASTM C33 - Concrete Aggregates
- B. ASTM C150 - Portland Cement
- C. ACI 318 - Building Code Requirements for Reinforced Concrete
- D. ASTM C260 - Air Entraining Admixtures for Concrete
- E. ASTM C94 - Ready-Mixed Concrete
- F. ACI 304 - Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete
- G. ACI 305 - Recommended Practice for Hot Weather Concreting

PART 2 PRODUCTS

2.01 CONCRETE MATERIALS

- A. Cement: Moderate-Type II, High early strength-Type III, Portland type, ASTM C150.
- B. Fine and Coarse Aggregates: ASTM C33.
- C. Water: Clean and free from injurious amounts of oil, alkali, organic matter, or other deleterious material.

2.02 ADMIXTURES

- A. Air Entrainment: ASTM C260.
- B. Chemical: ASTM C494 Type A - water reducing admixture.

2.03 ACCEPTABLE MANUFACTURERS

Acceptable Products:

- 1. Pozzolith
- 2. WRDA

2.04 ACCESSORIES

Non-shrink grout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents; capable of developing minimum compressive strength of 2400 psi in 2 days and 7000 psi in 28 days.

2.05 CONCRETE MIXES

- A. Mix concrete in accordance with ASTM C94.
- B. Provide concrete of following strength:
 - 1. Required concrete strengths as determined by 28 day cylinders shall be as shown on the Drawings, but shall not be less than 3000 psi.
 - 2. Select proportions for normal weight concrete in accordance with ACI 301 3.8 Method 1, Method 2, or Method 3. Add air entraining agent to concrete to entrain air as indicated in ACI 301 Table 3.4.1.
 - 3. All mixes shall be in accordance with FDOT Specifications.
- C. Use set-retarding admixtures during hot weather only when accepted by County.
- D. Add air entraining agent to concrete mix for concrete work exposed to exterior.

2.06 FORMS

- A. Forms shall be used for all concrete masonry, including footings. Form shall be so constructed and placed that the resulting concrete will be of the shape, lines, dimensions, appearance and to the elevations indicated on the Drawings.
- B. Forms shall be made of wood, metal, or other approved material. Wood forms shall be constructed of sound lumber or plywood of suitable dimensions, free from knotholes and loose knots; where used for expose surfaces, boards shall be dressed and matched. Plywood shall be sanded smooth and fitted with tight joints between panels. Metal forms

shall be of an approved type for the class of work involved and of the thickness and design required for rigid construction.

- C. Edges of all form panels in contact with concrete shall be flush within 1/32-inch and forms for plane surfaces shall be such that the concrete will be plane within 1/16-inch in four feet. Forms shall be tight to prevent the passage of mortar and water and grout.
- D. Forms for walls shall have removable panels at the bottom for cleaning, inspection and scrubbing-in of bonding paste. Forms for walls of considerable height shall be arranged with tremies and hoppers for placing concrete in a manner that will prevent segregation and accumulation of hardened concrete on the forms or reinforcement above the fresh concrete.
- E. Molding or bevels shall be placed to produce a 3/4-inch chamfer on all exposed projecting corners, unless otherwise shown on the Drawings. Similar chamfer strips shall be provided at horizontal and vertical extremities of all wall placements to produce "clean" separation between successive placements as called for on the Plans.
- F. Forms shall be sufficiently rigid to withstand vibration, to prevent displacement or sagging between supports and constructed so the concrete will not be damaged by their removal. The Contractor shall be entirely responsible for their adequacy.
- G. Forms, including new pre-oiled forms, shall be oiled before reinforcement is placed, with an approved nonstaining oil or liquid form coating having a non-paraffin base.
- H. Before form material is re-used, all surfaces in contact with concrete shall be thoroughly cleaned, all damaged places repaired, all projecting nails withdrawn, all protrusions smoothed and in the case of wood forms pre-oiled.
- I. Form ties encased in concrete shall be designed so that after removal of the projecting part, no metal shall be within 1-inch of the face of the concrete. That part of the tie to be removed shall be at least 1/2-inch diameter or be provided with a wood or metal cone at least 1/2-inch in diameter and 1-inch long. Form ties in concrete exposed to view shall be the cone-washer type equal to the Richmond "Tyscru". Throughbolts or common wire shall not be used for form ties.

PART 3 EXECUTION

3.01 PLACING CONCRETE

- A. Place concrete in accordance with ACI 304.
- B. Notify County minimum 24 hours prior to commencement of concreting operations.
- C. Verify anchors, seats, plates and other items to be cast into concrete are placed, held securely and will not cause hardship in placing concrete. Rectify same and proceed with work.
- D. Maintain records of poured concrete items. Record date, location of pour, quantity, air temperature and test samples taken.
- E. Ensure reinforcement, inserts, embedded parts, formed expansion and contraction joints are not disturbed during concrete placement.

- F. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent. Apply bonding agent in accordance with manufacturer's recommendations.
- G. Pour concrete continuously between predetermined construction and control joints. Do not break or interrupt successive pours such that cold joints occur.
- H. In locations where new concrete is dowelled to existing work, drill holes in existing concrete, insert steel dowels and pack solidly with non-shrink grout.
- I. Excessive honeycomb or embedded debris in concrete is not acceptable. Notify County upon discovery.
- J. Conform to ACI 305 when concreting during hot weather.

3.02 SCREEDING

Screed surfaces level, maintaining flatness within a maximum deviation of 1/8" in 10 feet.

3.03 PATCHING

Allow County to inspect concrete surfaces immediately upon removal of forms. Patch imperfections as directed. All patching procedures shall be submitted to and approved by the County prior to use.

3.04 DEFECTIVE CONCRETE

- A. Modify or replace concrete not conforming to required lines, details and elevations.
- B. Repair or replace concrete not properly placed resulting in excessive honeycomb and other defects. Do not patch, fill, touch-up, repair, or replace exposed architectural concrete except upon express direction of County for each individual area.

3.05 CONCRETE FINISHING

Provide concrete surfaces to be left exposed, columns, beams and joists with smooth rubbed finish.

3.06 CURING AND PROTECTION

Beginning immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures and mechanical injury. Maintain concrete with minimal moisture loss at relatively constant temperature for a period of 7 days or until concrete strengths reaches 75% of the 28 day design strength.

Protection against moisture loss may be obtained with spray on curing compounds or plastic sheets. Protection against heat or cold may be obtained with insulated curing blankets or forms.

3.07 CONCRETE DRIVEWAY RESTORATION

Concrete driveways shall be restored with 6 inches of 3,000 psi concrete with W2.5 X W2.5, 6X6 wire mesh. Place ½ inch expansion joint between back of curb and new concrete. Area beneath restoration shall be mechanically tamped prior to placing concrete.

3.08**CONCRETE SIDEWALK RESTORATION**

Concrete sidewalks across driveways shall be restored with 6 inches of 3,000 psi concrete with W2.5 X W2.5, 6X6 wire mesh. Place ½ inch expansion joint between back of curb and new concrete. Area beneath restoration shall be mechanically tamped prior to placing concrete.

Concrete sidewalks outside of driveways shall be restored with 4 inches of 3,000 psi concrete per FDOT Design Standards, Sections 522 & 310

END OF SECTION

SECTION 03350 CONCRETE FINISHES

PART 1 GENERAL

1.01 SCOPE OF WORK

Furnish all labor, materials, equipment and incidentals required to finish cast-in-place concrete surfaces as specified herein.

1.02 SUBMITTALS

Submit to the County as provided in the Contract Documents, the proposed chemical hardener manufacturer's surface preparation and application procedures.

1.03 SCHEDULE OF FINISHES

- A. Concrete for the Project shall be finished in the various specified manners either to remain as natural concrete or to receive an additional applied finish or material under another Section.
- B. The base concrete for the following conditions shall be finished as noted and as further specified herein:
 - 1. Exterior, exposed concrete slabs and stairs - broomed finish.
 - 2. Interior, exposed concrete slabs - steel trowel finish.
 - 3. Concrete on which process liquids flow or in contact with sludge - steel trowel finish.
 - 4. Concrete where not exposed in the finished work and not scheduled to receive an additional applied finish or material - off-form finish.
 - 5. Provide concrete surfaces to be left exposed such as walls, columns, beams and joists with smooth rubbed finish.

1.04 RESPONSIBILITY FOR CHANGING FINISHES

- A. The surface finishes specified for concrete to receive additional applied finishes or materials are the finishes required for the proper application of the actual products specified under other Sections. Where different products are approved for use, it shall be the Contractor's responsibility to determine if changes in finishes are required and to provide the proper finishes to receive these products.
- B. Changes in finishes made to accommodate product different from those specified shall be performed at no additional cost to the County. Submit the proposed new finishes and their construction methods to the County for approval.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Portland cement and component materials required for finishing the concrete surfaces shall be as specified in the Contract Documents.
- B. Hardener shall be Lapidolith as manufactured by Sonneborn Building Products or approved equal. Hardener shall be used on all floors, stair treads and platforms.

PART 3 EXECUTION

3.01 FORMED SURFACES

- A. Forms shall not be stripped before the concrete has attained a strength of at least 50 percent of the ultimate design strength. This is equivalent to approximately five "100 day-degrees" of moist curing.
- B. Care shall be exercised to prevent damaging edges or obliterating the lines of chamfers, rustications, or corners when removing the forms or doing any work adjacent thereto.
- C. Clean all exposed concrete surfaces and adjoining work stained by leakage of concrete, to the satisfaction of the County.
- D. Off-form finish. Fins and other projections shall be removed as approved. Tie cone holes and other minor defects shall be filled with non-shrink grout specified under the Contract Documents.

3.02 FLOORS AND SLABS

- A. Floors and slabs shall be screeded to the established grades and shall be level with a tolerance of 1/8-inch when checked with a 10 foot straight edge, except where drains occur, in which case floors shall be pitched to drains as indicated. Failure to meet either of above shall be cause for removal, grinding, or other correction as approved by the County.
- B. Following screeding as specified above, power steel trowel as follows:
 - 1. Immediately after final screeding, a dry cement/sand shake in the proportion of 2-sacks of portland cement to 350-pounds of coarse natural concrete sand shall be sprinkled evenly over the surface at the rate of approximately 500 pounds per 1,000 square feet of floor. Neat, dry cement shall not be sprinkled on the surface. This shake shall be thoroughly floated into the surface with an approved disc type power compacting machine weighing at least 200 pounds if a 20-inch disc is used or 300 pounds if a 24-inch disc is used (such as a "Kelly Float" as manufactured by the Weisner-Rapp Corporation of Buffalo, New York). A mechanical blade-type float or trowel is not acceptable for this work.
NOTE: This operation (application of the cement/sand shake) may be eliminated at the discretion of the County if the base slab concrete exhibits adequate fattiness and homogeneity.
 - 2. In lieu of power steel troweling, small areas as defined by the County shall be compacted by hand steel troweling with the dry cement/sand shake as ordered.
 - 3. The floor or slab shall be compacted to a smooth surface and the floating operation continued until sufficient mortar is brought to the surface to fill all voids. The surfaces shall be tested with a straight edge to detect high and low spots which shall be eliminated.
 - 4. Compaction shall be continued only until thorough densification is achieved and a small amount of mortar is brought to the surface. Excessive floating shall be avoided.
- C. After Paragraph 3.02 A and B procedures are accomplished, floors and slabs for particular conditions shall be completed as scheduled in one of the following finishes:
 - 1. Wood float finish. Hand wood float, maintaining the surface tolerance to provide a

- grained, nonslip finish as approved.
 - 2. Broomed finish. Hand wood float maintaining the surface tolerance and then broom with a stiff bristle broom in the direction of drainage to provide a nonslip finish as approved.
 - 3. Steel trowel finish. Hand steel trowel to a perfectly smooth, hard even finish free from high or low spots or other defects as approved.
- D. Floors, stair treads and platforms shall be given a floor hardener. Application shall be according to manufacturer's instructions.

3.03 APPROVAL OF FINISHES

- A. All concrete surfaces will be inspected during the finishing process by the County.
- B. Surfaces which, in the opinion of the County, are unsatisfactory shall be refinished or reworked until approved by the County.

END OF SECTION

SECTION 03410 PRECAST CONCRETE STRUCTURES

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. The Contractor shall furnish all materials, labor and equipment and construct valve vaults, meter vaults, concrete pipe and accessory items, consisting of precast sections as shown on the Drawings and as specified herein.
- B. The forms, dimensions, concrete and construction methods shall be approved by the County in advance of construction.
- C. These Specifications are intended to give a general description of what is required, but do not purport to cover all of the structural design details which will vary in accordance with the requirements of the plans. It is, however, intended to cover the furnishing, shop testing, delivery and complete installation of all precast structures whether specifically mentioned in these Specifications or not.
- D. The supplier of the precast items shall coordinate his work with that of the Contractor to insure that the units will be delivered and installed in the excavation provided by the Contractor, in accordance with the Contractor's construction schedule.
- E. The Contractor will ensure coordination of the precast structures fabrication with the supplier to achieve the proper structural top slab openings, spacings and related dimensions for the selected equipment frames and covers. The top slabs, frames, covers, and subsurface structures outside of roadways shall be capable of live load of 300 pounds per square foot unless noted otherwise.
- F. All interior surfaces of valve vaults and meter vaults shall be painted with two coats of coal tar epoxy paint dry film thickness of 8 mils each coat, as approved by the County.

1.02 SUBMITTALS

- A. Submit to the County in accordance with the Contract Documents, shop drawings showing details of construction, reinforcing, and joints.
- B. Shop Drawings
 - 1. Content
 - a. Dimensions and finishes.
 - b. Estimated camber.
 - c. Reinforcing and connection details.
 - d. Lifting and erection inserts.
 - e. Other items cast into members.
 - 2. Show location of unit by same identification mark placed on member.
 - 3. Include design calculations.
- C. Manufacturer's Literature: Manufacturer's recommended installation instructions.
- D. Manufacturer's certificates of material conformance with Specifications.
- E. Test Reports: Reports of tests on concrete. A minimum of three compression test cylinders

will be required for each pour.

1.03 INSPECTION

- A. The quality of all materials, the process of manufacture and the finished sections shall be subject to inspection and approval by the County, or other representatives of the County. Such inspection may be made at the place of manufacture, or at the site after delivery, or at both places and the sections shall be subject to rejection at any time due to failure to meet any of the Specification requirements; even though sample sections may have been accepted as satisfactory at the place of manufacture. Sections rejected after delivery to the project site shall be marked for identification and shall be removed from the project site at once. All sections which have been damaged after delivery will be rejected and if already installed, shall be acceptably repaired, if permitted, or removed and replaced entirely at the Contractor's expense.
- B. At the time of inspection, the sections will be carefully examined for compliance with the applicable ASTM designation and these Specifications and with the approved manufacturer's drawings.
1. All sections shall be inspected for general appearance, dimension, "scratch-strength", blisters, cracks, roughness, soundness, etc. The surface shall be dense and close-textured.
 2. All sections shall meet the manufacturing tolerance requirements of ASTM C-478 or the following casting tolerances, whichever are more severe:
- | | |
|------------------|------------|
| Wall Thickness | $\pm 3/8"$ |
| Inside Diameter | $\pm 3/8"$ |
| Outside Diameter | $\pm 1/2"$ |
| Height or Length | $\pm 3/8"$ |
- C. Imperfections may be repaired, subject to the approval of the County, after demonstration by the manufacturer that strong and permanent repairs result. Repairs shall be carefully inspected before final approval. Cement mortar used for repairs shall have a minimum compressive strength of 4,000 psi at the end of 7 days and 5,000 psi at the end of 28 days, when tested in 3-inch by 6-inch cylinders stored in the standard manner. Epoxy mortar may be utilized for repairs subject to the approval of the County.

PART 2 PRODUCTS

2.01 PRECAST CONCRETE SECTIONS

- A. Joints between precast concrete sections shall be set by plastic shims and filled with non-metallic non-shrink grout as specified in the Contract Documents and shown on the Drawings.
- B. The top slab sections shall be fitted with water tight hatches as specified in the Construction Drawings. The frames and covers will be sized for the openings shown on the Contract Drawings.
- C. The various precast sections shall have the inside dimensions and minimum thickness of concrete as indicated on the Drawings. All precast and cast-in-place concrete members shall conform to the Building Code Requirements for Reinforced Concrete ACI 318 and applicable ASTM Standards.

- D. Fillets shall be provided and installed in the wet wells as shown on the Drawings. They shall be constructed using concrete fill and shall conform to the Contract Documents.
- E. Precast structures shall be constructed to the dimensions as shown on the Drawings and as specified in these Specifications. Flow channels, inverts, and benches in manholes shall be precast, not constructed after installation. Provide a true curve of the largest radius possible for changes in direction of sewer and entering branch or branches.
- F. Type II cement shall be used, typically at a compressive strength of 4,000 psi, except as otherwise approved.
- G. The date of manufacture and the name or trademark of the manufacturer shall be clearly marked on the inside of each precast section.
- H. Sections shall be cured by an approved method and shall not be shipped until at least seven (7) days after having been fabricated.
- I. Each precast section manufactured in accordance with the Drawings shall be clearly marked to indicate the intended installation location. The Contractor shall be responsible for the installation of the correct precast sections in their designated locations.
- J. Wet wells, and manholes receiving flow from lift stations shall be precast with a cast in place PVC protective liner.
 - 1. The prefabricated wetwell or manhole liner shall be a non-load bearing component installed and adequately anchored inside a new precast concrete wetwell or manhole riser during the concrete casting process at the concrete precaster's manufacturing facility. The liner must be fully supported during the casting process.
 - 2. The liners shall be resistant to the chemical environment normally found in the gravity wastewater transmission systems to which they will be exposed.
 - 3. The liner shall have a warranty against defect in material and workmanship for a period of three years.
 - 4. After assembly and installation, in the field, all internal seams are to be sealed by bonding or welding per the manufacturer's standard method and details.
 - 5. Any repairs or other modifications to the liner, such as patching or sealing PVC sleeves used for pipe penetrations of the structure, shall sealed by bonding or welding per the PVC liner manufacturer's standard methods and details.

PART 3 EXECUTION

3.01 INSTALLATION

- A. The Contractor shall be responsible for handling ground water to provide firm, dry subgrade for the structure, shall prevent water rising on new poured-in-place concrete or grouted joint sections within 24 hours after placing and shall guard against flotation or other damage resulting from ground water or flooding.
- B. A minimum of an 8-inch shell base compacted layer of washed shell or crushed stone shall be placed as a foundation for the wet well base slabs and valve and/or meter vault pits.
- C. Backfill materials around the wet well and above the pipe bedding shall be select material as specified in the Contract Documents.

- D. Precast bases, conforming to all requirements of ASTM C478 and above listed requirements for precast sections, may be used.
- E. The structure shall not be set into the excavation until the installation procedure and excavation have been approved by the County.
- F. The base may be cast-in-place concrete placed on a thoroughly compacted crushed rock subbase. The tops of the cast-in-place bases shall be shaped to mate with the precast barrel section and shall be adjusted in grade so that the top slab section is at the approximately correct elevation.
- G. Precast concrete structure sections shall be set so as to be vertical and with sections in true alignment with a 1/4-inch maximum tolerance to be allowed. The outside and inside joint shall be filled with a non-shrink grout and finished flush with the adjoining surfaces. Allow joints to set for 24 hours before backfilling. Backfilling shall be done in a careful manner, bringing the fill up evenly on all sides. The Contractor shall install the precast sections in a manner that will result in a watertight joint. Leaking joints are not acceptable.
- H. Holes in the concrete sections required for handling or other purposes shall be plugged with a non-shrink grout or by grout in combination with concrete plugs.
- I. Where holes must be cut in the precast sections to accommodate pipes, cutting shall be done prior to setting them in place to prevent any subsequent jarring which may loosen the mortar joints.
- J. Frames and hatches specified and furnished shall be cast in the cover slab prior to setting. Normal installation shall include 6" to 12" of concrete grade rings between the top of the cone section and the cover plate ring slab.

ASTM A48-74, or most recent revision, Specification for Gray Iron Castings, Class 30 or Grade 60-45-10 Ductile Iron meeting the requirements of ASTM A536-72, or most recent revision, Specification for Ductile Iron Castings. Cast in a true symmetrical pattern of tough, dense and even grained iron, free from warping, scales, lumps, blisters, sandholes, or any defects of any kind. Provide indented pattern lids with lettering as shown on the Drawings. Machine or grind frames and lids at touching surfaces to provide firm seats and prevent rocking. Remove and replace any set not matching perfectly. All frames and covers shall be designed to withstand an HS20-44 wheel loading as defined by AASHTO specifications.

- K. Manhole inserts: Watertight manhole inserts shall be required for all sanitary sewer manholes installed. Inserts shall be as manufactured by FRW Industries, Conroe, Texas, or approved equal. Inserts shall be complete with a self-cleaning relief valve. Relief valves shall operate on a pressure differential of 1/2 psi. Neoprene gaskets shall be installed under the insert lip to insure a leakproof seal.
- L. Penetrations and connections into precast or existing structures shall be accomplished by rotary core boring.
- M. Cast in place liners shall be repaired, fitted around penetrations, sealed at joints, etc. in accordance with the manufacturer's recommendations for that liner. As a general rule, repairs, sleeves and patches shall be welded in place, glues and sealants shall not be used unless approved by the manufacturer.

3.04

TESTING

- A. After constructed to its finished height and before being backfilled, each manhole shall be tested for water tightness.
1. Plug pipe lines and perform vacuum test. Observing all recommended safety measures induce a backpressure of 5.0 p.s.i. equivalent to 10" Hg (mercury). The manhole assembly is considered satisfactory if the vacuum loss is less than 1" Hg for the length of time listed in the following table:

Time of Test in Seconds			
Depth Feet	Manhole Diameter in Feet		
	4	5	6
4	10	13	16
8	20	26	32
12	30	39	48
16	40	52	64
20	50	65	80
24	60	78	96
T	5	6.5	8

Note: Add "T" seconds for each additional 2'- of depth.

- B. Failure to pass this test requires the Contractor to correct the problems and retest. The Contractor will replace leaking gaskets and/or concrete sections and retest the completed manhole. No manhole will be accepted without successfully passing this test.

END OF SECTION

SECTION 05550 AIR RELEASE ENCLOSURE

PART 1 GENERAL

1.01 SCOPE OF WORK

The Contractor shall furnish all labor, materials, equipment and incidentals required to install the above ground air release enclosure as listed in the specifications and as shown on the Drawings.

1.02 RELATED WORK

The contractor shall be responsible for any related work necessary for the proper installation of enclosure. This shall include, but is not limited to, any required bypass pumping, any required earthwork and any required concrete work.

1.03 SUBMITTALS

- A. Submit to the County shop drawings and schedules of all enclosure systems and appurtenances required. Submit design data and specification data sheets listing all parameters used in the enclosure system design.
- B. Submit to the County the name of the enclosure supplier and a list of materials to be furnished.

1.04 REFERENCE STANDARDS

- A. American Water Works Association (AWWA).
- B. American Society for Testing and Materials (ASTM).
- C. Where reference is made to the above standard, the revision in effect at the time of bid opening shall apply.

1.05 QUALITY ASSURANCE

The enclosure manufacturer shall be a company specializing in the manufacture of such enclosures with at least five (5) years of successful field experience and being lab certified as meeting A.S.S.E 1060 requirements.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Care shall be taken in shipping, handling and placing to avoid damaging. Any material damaged in shipment shall be replaced as directed by the County.
- B. Any material showing deterioration, or which has been exposed to any other adverse storage condition that may have caused damage, even though no such damage can be seen, shall be marked as rejected and removed at once from the work.

PART 2 PRODUCTS

2.01 GENERAL

All enclosures shall comply with the standard detail for shape and size and shall include a 24"W x 30"H access door with a hasp for a padlock. The enclosure shall be securely attached to a concrete base with anchor brackets installed on the interior of the enclosure, through the flange base of the enclosure itself or through a stainless steel anchor hinge.

2.02 ALUMINUM ENCLOSURE

- A. The roof, walls and access panels shall be constructed of mill finish aluminum, ASTM B209, solid sheet construction, with a wall thickness of one eighth inch.
- B. All structural members shall be aluminum. No wood or "particle board" shall be allowed in assembly.
- C. Multi-sectional enclosures shall fit together with overlapping "tongue and groove" joints and be secured internally with mechanical fasteners.
- D. All assembly fasteners shall be stainless steel or aluminum.

2.03 STAINLESS STEEL ENCLOSURE

- A. The roof, walls and access panels shall be constructed stainless steel, type 316, solid sheet construction, with a wall thickness of one eighth inch.
- B. All structural members shall be stainless steel. No wood or "particle board" shall be allowed in assembly.
- C. Multi-sectional enclosures shall fit together with overlapping "tongue and groove" joints and be secured internally with mechanical fasteners.
- D. All assembly fasteners shall be stainless steel.

2.04 FIBERGLASS ENCLOSURE

- A. Enclosure shall be a 1 piece molded fiberglass enclosure with a base flange for mounting to the concrete slab and a full recessed door opening with a lip. Enclosure shall be by Allied Molded Products, or approved equal. Color shall be as directed by the County.
- B. Full length piano style hinge, door latch, padlock hasp and all bolts and other hardware shall be of stainless steel.

PART 3 EXECUTION

3.01 INSTALLATION

Enclosure shall be assembled and mounted plumb, level and square on the concrete pad according to the manufacturer's instructions and the contract drawings.

END OF SECTION

Structure No.: 138N7, A138N7, B138N7 to 140N4, A140N4, B140N4
 Section, Township, Range: 12, 13-35-18
 Easement No.: 7A-13

RIGHT-OF-WAY CONSENT AGREEMENT
(Governmental Entity)

FLORIDA POWER & LIGHT COMPANY, a Florida corporation, whose mailing address is P.O. Box 14000, Juno Beach, Florida 33408-0420, Attn: Corporate Real Estate Department, hereinafter referred to as "**Company**", hereby consents to MANATEE COUNTY, a political subdivision of the State of Florida, whose mailing address is c/o Manatee County Public Works Utility Engineering Division, 1022 26th Avenue East, Bradenton, FL 34208, hereinafter referred to as "**Licensee**", using an area within Company's right-of-way granted by that certain Order of Taking recorded in O.R. Book 1006, at Page 2513, Public Records of Manatee County, Florida. The said area within Company's right-of-way, hereinafter referred to as "**Lands**", is more particularly described on **Exhibit "A"** attached hereto. The use of the Lands by Licensee shall be solely for the purpose of temporary construction access as shown on the plans and specifications submitted by Licensee, attached hereto as **Exhibit "B"**.

In consideration for Company's consent and for the other mutual covenants set forth below, and for Ten Dollars and No Cents (\$10.00) and other good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, the parties hereto agree as follows:

1. Licensee agrees to obtain all necessary rights from the owners of the Lands in the event Licensee does not own said Lands; to obtain any and all applicable federal, state, and local permits required in connection with Licensee's use of the Lands; and at all times, to comply with all requirements of all federal, state, and local laws, ordinances, rules and regulations applicable or pertaining to the use of the Lands by Licensee pursuant to this Agreement.

2. Licensee understands and agrees that the use of the Lands pursuant to this Agreement is subordinate to the rights and interest of Company in and to the Lands and agrees to notify its employees, agents, and contractors accordingly. Company specifically reserves the right to maintain its facilities located on the Lands; to make improvements; add additional facilities; maintain, construct or alter roads; maintain any facilities, devices, or improvements on the Lands which aid in or are necessary to Company's business or operations; and the right to enter upon the Lands at all times for such purposes. Licensee understands that in the exercise of such rights and interest, Company from time-to-time may require Licensee, to relocate, alter, or remove its facilities and equipment, including parking spaces and areas, and other improvements made by Licensee pursuant to this Agreement which interfere with or prevent Company, in its opinion, from properly and safely constructing, improving, and maintaining its facilities. Licensee agrees to relocate, alter, or remove said facilities, equipment, parking spaces and areas, and other improvements within thirty (30) days of receiving notice from Company to do so. Such relocation, alteration, or removal will be made at the sole cost and expense of Licensee and at no cost and expense to Company; provided however, should Licensee, for any reason, fail to make such relocation, alteration, or removal, Company retains the right to enter upon the Lands and make said relocation, alteration, or removal of Licensee's facilities, equipment, parking spaces and areas, and other improvements and Licensee hereby agrees to reimburse Company for all of its costs and expense incurred in connection therewith upon demand.

3. Licensee agrees that it will not use the Lands in any manner which, in the opinion of Company, may tend to interfere with Company's use of the Lands or may tend to cause a hazardous condition to exist. Licensee agrees that no hazardous substance, as the term is defined in Section 101 (14) of the Comprehensive Environmental Response Compensation and Liability Act ("CERCLA") (42 USC Section 9601 [14]), petroleum products, liquids or flammables shall be placed on, under, transported across or stored on the Lands, which restricts, impairs, interferes with, or hinders the use of the Lands by Company or the

exercise by Company of any of its rights thereto. Licensee agrees further that in the event it should create a hazardous condition, then upon notification by Company, Licensee shall, within seventy-two (72) hours, at its sole cost and expense, correct such condition or situation; provided however that the Company retains the right to enter upon the Lands and correct any such condition or situation at any time and, by its execution hereof, Licensee hereby agrees to indemnify and hold harmless Company from all loss, damage or injury resulting from Licensee's failure to comply with the provisions of this Agreement.

4. Licensee hereby agrees and covenants to prohibit its agents, employees, and contractors from using any tools, equipment, or machinery on the Lands capable of extending greater than fourteen (14) feet above existing grade and further agrees that no dynamite or other explosives shall be used within the Lands and that no alteration of the existing terrain, including the use of the Lands by Licensee as provided herein, shall be made which will result in preventing Company access to its facilities located within said Lands. Unless otherwise provided herein, Licensee agrees to maintain a one hundred and fifty (150) foot wide area, clear of any activities, with a lineal measurement of seventy five (75) feet on each side of the centerline of Company's existing and planned facilities.

5. Licensee understands and agrees that the planting of trees, shrubs, and other foliage capable of exceeding fourteen (14) feet in height at full maturity is not permitted within Company's Lands.

6. Outdoor lighting installed or to be installed upon the Lands by Licensee are not to exceed a height of fourteen (14) feet above existing grade and all poles or standards supporting light fixtures are to be of a non-metallic material.

7. Sprinkler systems installed or to be installed by Licensee upon the Lands are to be constructed of a non-metallic material and sprinkler heads are to be set so the spray height does not exceed fourteen (14) feet above existing grade and does not make contact with any Company's facilities. Aboveground systems shall not be installed within or across Company patrol or finger roads and underground systems crossing said patrol and finger roads are to be buried at a minimum depth of one (1) foot below existing road grade.

8. Licensee agrees to warn its employees, agents, contractors and invitees of the fact that the electrical facilities and appurtenances installed or to be installed by Company within the Lands are of high voltage electricity and agrees to use all safety and precautionary measures when working under or near Company's facilities. Licensee hereby acknowledges the receipt and required execution of Form 360 "Exhibit C" prior to the commencement of construction within the Lands.

9. Licensee agrees, at all times, to maintain and keep the Lands clean and free of debris. Except as provided herein, Licensee further understands and agrees that certain uses of the Lands are specifically prohibited; such uses include but are not limited to recreational purposes, hunting and camping, and Licensee agrees to notify its employees, agents, contractors, and invitees accordingly.

10. The use of the Lands by Licensee shall be at the sole risk and expense of Licensee, and Company is specifically relieved of any responsibility for damage or loss to Licensee or other persons resulting from Company's use of the Lands for its purposes.

11. Notwithstanding any provision contained herein, Licensee agrees to reimburse Company for all cost and expense for any damage to Company's facilities resulting from Licensee's use of the Lands and agrees that if, in the opinion of Company, it becomes necessary as a result of Licensee's use of the Lands for Company to relocate, rearrange or change any of its facilities, to promptly reimburse Company for all cost and expense involved with such relocation, rearrangement or change.

12. Licensee agrees it will exercise its privileges hereunder at its own sole risk and agrees subject to the limitations contained in Section 768.28, Florida Statutes to indemnify and save harmless Company, its parent, subsidiaries, affiliates, and their respective officers, directors, agents and employees (hereinafter referred to as the "FPL Entities"), from all liability, loss, cost, and expense, including attorneys' fees, which may be sustained by FPL Entities to any person, natural or artificial, by reason of the death of or injury to any person or damage to any property, arising out of or in connection with the herein described purposes by Licensee, its contractors, agents, or employees; and Licensee agrees subject to the limitations contained in Section 768.28, Florida Statutes to defend at its sole cost and expense and at no cost and expense to FPL Entities any and all suits or action instituted against FPL Entities, for the imposition of such liability, loss, cost and expense.

13. Licensee shall, and shall cause each of Licensee's contractors and subcontractors performing work in connection with the Project during the period of this Agreement, to procure and maintain at Licensee's and such contractors' and subcontractors' sole expense, the following minimum insurance, with insurers with a rated "A-, VII" or higher by A.M. Best's Key Rating Guide that are licensed to do business in the State of Florida, or as may be approved in writing by COMPANY's Risk Management Department from time to time:

- (i) Workers' Compensation Insurance for statutory obligations imposed by applicable Florida law, including, where applicable, the United States Longshoremen's and Harbor Workers' Act, the Maritime Coverage and the Jones Act;
- (ii) Employers' Liability Insurance, including Occupational Disease, shall be provided with a limit of One Million Dollars (\$1,000,000) for bodily injury by accident, with a limit of One Million Dollars (\$1,000,000) for bodily injury by disease/policy and with a limit of One Million Dollars (\$1,000,000) for bodily injury by disease/employee;
- (iii) Automobile Liability Insurance which shall apply to all owned, non-owned, leased and hired automobiles in an amount with minimum limits of not less than One Million Dollars (\$1,000,000) combined single limit per occurrence for bodily injury and property damage per accident; and
- (iv) General Liability Insurance, written on Insurances Services Office form GC 00 01 1204 (or equivalent) covering liability arising out of premises, operations, bodily injury, property damage, products completed and liability insured under and insured contract (sometimes referred to broad form contractual liability), with minimum limits of One Million Dollars (\$1,000,000) combined single limit per occurrence, which shall insure the indemnity obligations assumed by Licensee under this Agreement.

Except for the Workers' Compensation Insurance, the FPL Entities shall be designated as an additional insured on Licensee and/or Licensee's contractors insurance policies required to be maintained under this Agreement. All policies of insurance required to be maintained by Licensee and Licensee's contractors and subcontractors hereunder shall provide and each of Licensee, and Licensee's contractors and subcontractors, shall cause the insurers of their respective insurance to include, either in its printed text or by endorsement: (i) a severability of interests clause; (ii) an endorsement that Licensee's and Licensee's contractors' and subcontractors' insurance policies are to be primary and non-contributory to any insurance that may be maintained by or on behalf of FPL Entities; and (iii) a waiver of subrogation against FPL Entities.

In the event that any policy furnished by Licensee and/or Licensee's contractors and subcontractors provides for coverage on a "claims made" basis, the retroactive date of the policy shall be the same as the effective date of this Agreement, or such other date, as to protect the interest of FPL Entities. Furthermore, for all policies furnished on a "claims made" basis, Licensee's and Licensee's contractors' and subcontractors' providing of such coverage shall survive the termination of this Agreement, until the expiration of the maximum statutory period of limitations in the State of Florida for actions based in contract or in tort. If coverage is on "occurrence" basis, Licensee and Licensee's contractors and subcontractors shall maintain such insurance during the entire term of this Agreement.

Licensee and Licensee's contractors and subcontractors shall promptly provide evidence of the minimum insurance coverage required under this Agreement in the form of an ACORD certificate or other certificate of insurance acceptable to FPL. Upon FPL's request, Licensee and Licensee's contractors and subcontractors shall provide FPL with complete copies of all required insurance policies under this Agreement. If any of the required insurance is cancelled or non-renewed, Licensee and Licensee's contractors and subcontractors shall file a new Certificate of Insurance or binder with FPL demonstrating to FPL's satisfaction that the required insurance coverages to be maintained hereunder have been extended or replaced. Neither Licensee's nor Licensee's contractors and subcontractors failure to provide evidence of minimum coverage of insurance following FPL's request, nor FPL's decision to not make such request, shall release Licensee and Licensee's contractors and subcontractors from their respective obligations to maintain the minimum coverage provided for in this Section.

Licensee shall be responsible for managing and administering all insurance policies required hereunder, including the payment of all deductibles and self-insured retention amounts, the filing of all claims and the taking of all necessary and proper steps to collect any proceeds on behalf of the relevant insured person or entity. Licensee shall at all times keep FPL informed of the filing and progress of any claim. If Licensee shall fail to perform these responsibilities, FPL may take such action as it determines appropriate under the circumstances. In the event Licensee collects proceeds on behalf of other persons or entities, it shall ensure that these are paid directly from the insurers to the relevant person or entity and, in the event that it receives any such proceeds, it shall, unless otherwise directed by FPL, pay such proceed to such party forthwith and prior thereto, hold the same in trust for the recipient.

Nothing in this Section shall be deemed to limit Licensee's liability under this Agreement regardless of the insurance coverages required hereunder. No limitation of liability provided to Licensee under this Agreement is intended nor shall run to the benefit of any insurance company or in any way prejudice, alter, diminish, abridge or reduce, in any respect, the amount of proceeds of insurance otherwise payable to FPL Entities under coverage required to be carried by Licensee under this Agreement, it being the intent of the parties that the full amount of insurance coverage bargained for be actually available notwithstanding any limitation of liability contained in the Agreement, if any. FPL assumes no responsibility for the solvency of any insurer or the failure of any insurer to settle any claim. In the event that the Licensee self insures, Licensee shall provide Company with a letter of self-insurance in form and substance satisfactory to Company's Risk Management Department. Licensee's contractors and subcontractors may not self-insure. This Section shall survive the expiration of this Agreement

14. This Agreement will become effective upon execution by Company and Licensee and will remain in full force and effect until completion of Licensee's use of the Lands pursuant to this Agreement, unless earlier terminated upon ninety (90) days written notice by Company to Licensee, or at the option of Company, immediately upon Licensee failing to comply with or to abide by any or all of the provisions contained herein.

15. The use granted herein as shown on **Exhibit "B"** shall be under construction by Licensee within one (1) year of the effective date of this Agreement and the construction shall be diligently pursued to completion. Licensee shall give Company ten (10) days prior written notice of its commencement of

construction. "Under construction" is the continuous physical activity of placing the foundation or continuation of construction above the foundation of any structure or improvement permitted hereunder. Under construction does not include application for or obtaining a building permit, a site plan approval or zoning approval from the appropriate local government agency having jurisdiction over the activity, purchasing construction materials, placing such construction materials on the site, clearing or grading the site (if permitted) in anticipation of construction, site surveying, landscaping work or reactivating construction after substantially all construction activity has remained stopped for a period of two (2) months or more. Licensee acknowledges that failure to have the use under construction within the one (1) year time period will result in immediate termination of this Agreement in accordance with Paragraph 14 herein for failing to comply with the provisions contained herein unless Licensor grants a written extension for a mutually agreed upon time. Any request for an extension of time shall be submitted in writing by Licensee no later than thirty (30) days prior to the expiration of the one (1) year period for the project to be under construction.

16. The term "Licensee" shall be construed as embracing such number and gender as the character of the party or parties require(s) and the obligations contained herein shall be absolute and primary and shall be complete and binding as to each, including its successors and assigns, upon this Agreement being executed by Licensee and subject to no conditions precedent or otherwise.

17. Should any provision of this Agreement be determined by a court of competent jurisdiction to be illegal or in conflict with any applicable law, the validity of the remaining provisions shall not be impaired. In the event of any litigation arising out of enforcement of this Consent Agreement, the prevailing party in such litigation shall be entitled to recovery of all costs, including reasonable attorneys' fees.

18. Licensee may assign its rights and obligations under this Agreement to a solvent party upon prior written consent of the company, which consent shall not be unreasonably withheld.

19. Licensee agrees that any review or approval by Company of the plans and/or specifications submitted by Licensee attached hereto as **Exhibit "B"**, the approval of the identity of any contractors, subcontractors and materialmen, or the delivery by Company of any construction specifications to Licensee, is solely for the purpose of processing this Consent, and without any representation or warranty whatsoever to Licensee with respect to the adequacy, correctness or efficiency thereof or otherwise and it is understood that such Company's approval does not absolve Licensee of any liability hereunder. Further, Licensee, in connection with the construction, maintenance and/or removal of improvements depicted on **Exhibit "B"** to the Agreement, agrees to observe and fully comply with all construction, operation and maintenance standards, as well as all applicable laws, rules and regulations of the United States, the State of Florida, and all agencies and political subdivisions thereof, including without limitation, the National Electric Safety Code and the Occupational Safety & Health Administration regulations, standards, rules, registers, directives or interpretations.

20. This Agreement includes and is subject to the provisions described on the attached Addendum.

Executions on Following Page

The parties have executed this Agreement this _____ day of _____, 20____.

Witnesses:

Signature: _____

Print Name: FRANK N. CELE

Signature: _____

Print Name: ANNETTE M. DANN

FLORIDA POWER & LIGHT COMPANY

By: _____

Its: Area Real Estate Manager

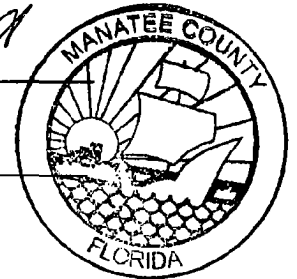
Print Name: Mark L. Byers

BOARD OF COUNTY COMMISSIONERS
OF MANATEE COUNTY, FLORIDA

By: _____

Chair

Date: 9/22/15



ATTEST:

Angelina M. Colonnese, Clerk Ad Interim of the
Circuit Court and Ex-Officio
Clerk to the Board of
County Commissioners
of Manatee County, Florida

By: [Signature]

Deputy Clerk

Approved as to form and correctness:

County Attorney

EXHIBIT "A"

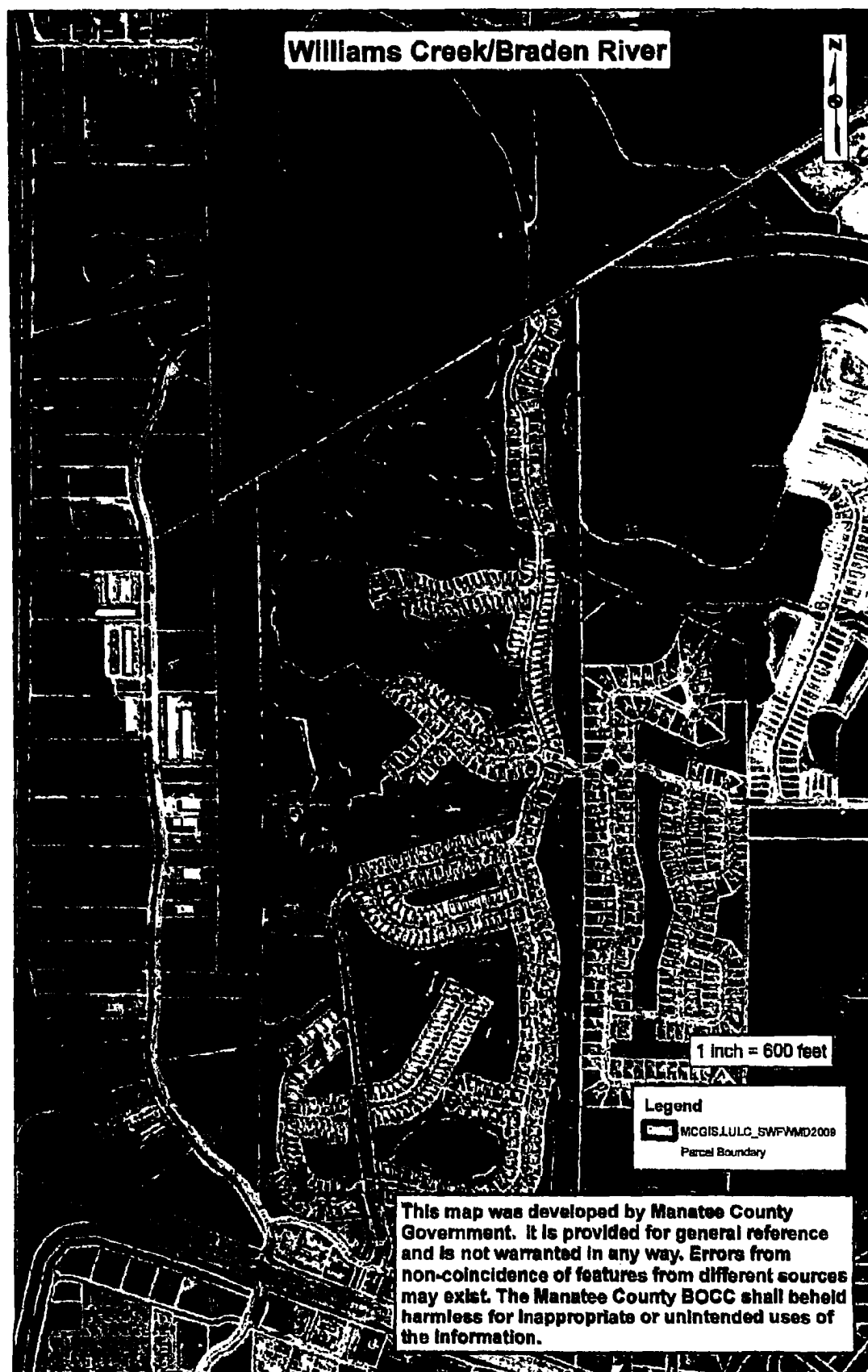
The West 330 feet of the following described property:

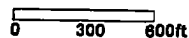
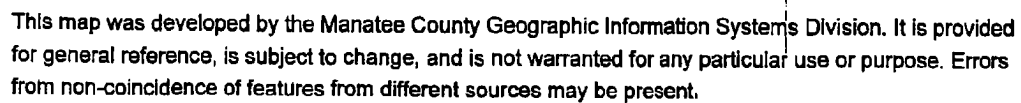
The East ½ of Section 12, Township 35 South, Range 18 East,
and,

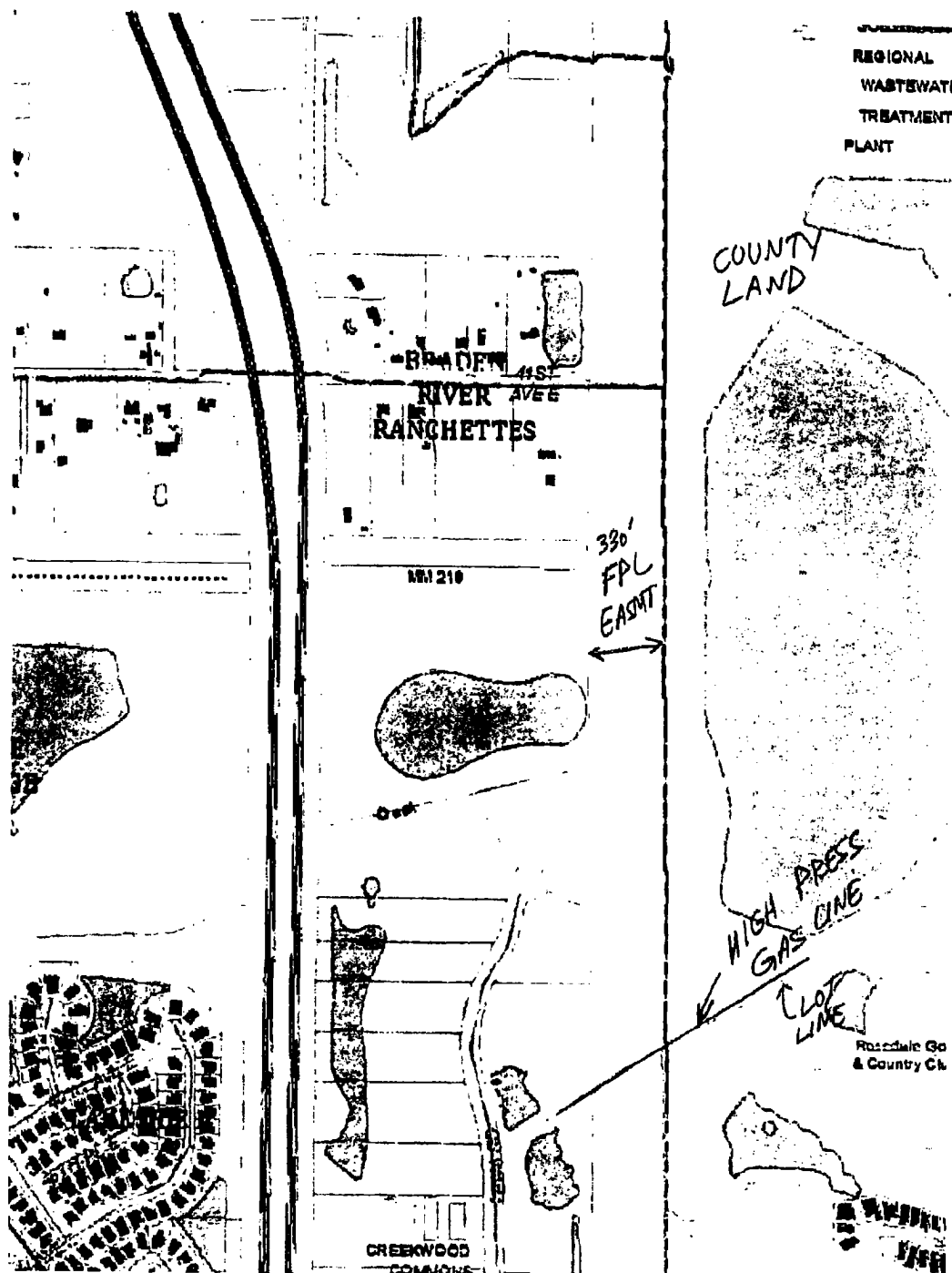
The East ½ of Section 13, Township 35 South, Range 18 East, north of State Road 70, Manatee County,
Florida.

EXHIBIT "B"

Aerial Exhibits as prepared and provided by Licensee and attached hereto.







This map was developed by the Manatee County Geographic Information Systems Division. It is provided for general reference, is subject to change, and is not warranted for any particular use or purpose. Errors from non-coincidence of features from different sources may be present.

0 300 600ft



**TARA 20 FORCE MAIN
PARALLEL TO LENA ROAD
CONSTRUCTION ACCESS & KEY SHEET**

NO.	DATE	BY	REVISION / DESCRIPTION
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

PROJECT #	4079661
SURVEY #	20-43514
DES./APP. DATE	1/28/13/2014
KEY SCALE	1"=15'
VERT. SCALE	1"=15'
VERTICAL CURVE	NOV 25
BY	DATE
DRAWN	2/28/2014
CHECKED	3/13/2014
APPROVED	3/13/2014

ANDERSON ENGINEERING, P.A.
10000 10th Avenue East, Bradenton, FL 34205
TEL: 941-755-1111
FAX: 941-755-1112
www.andersoneng.com

SHEET 23 OF 26

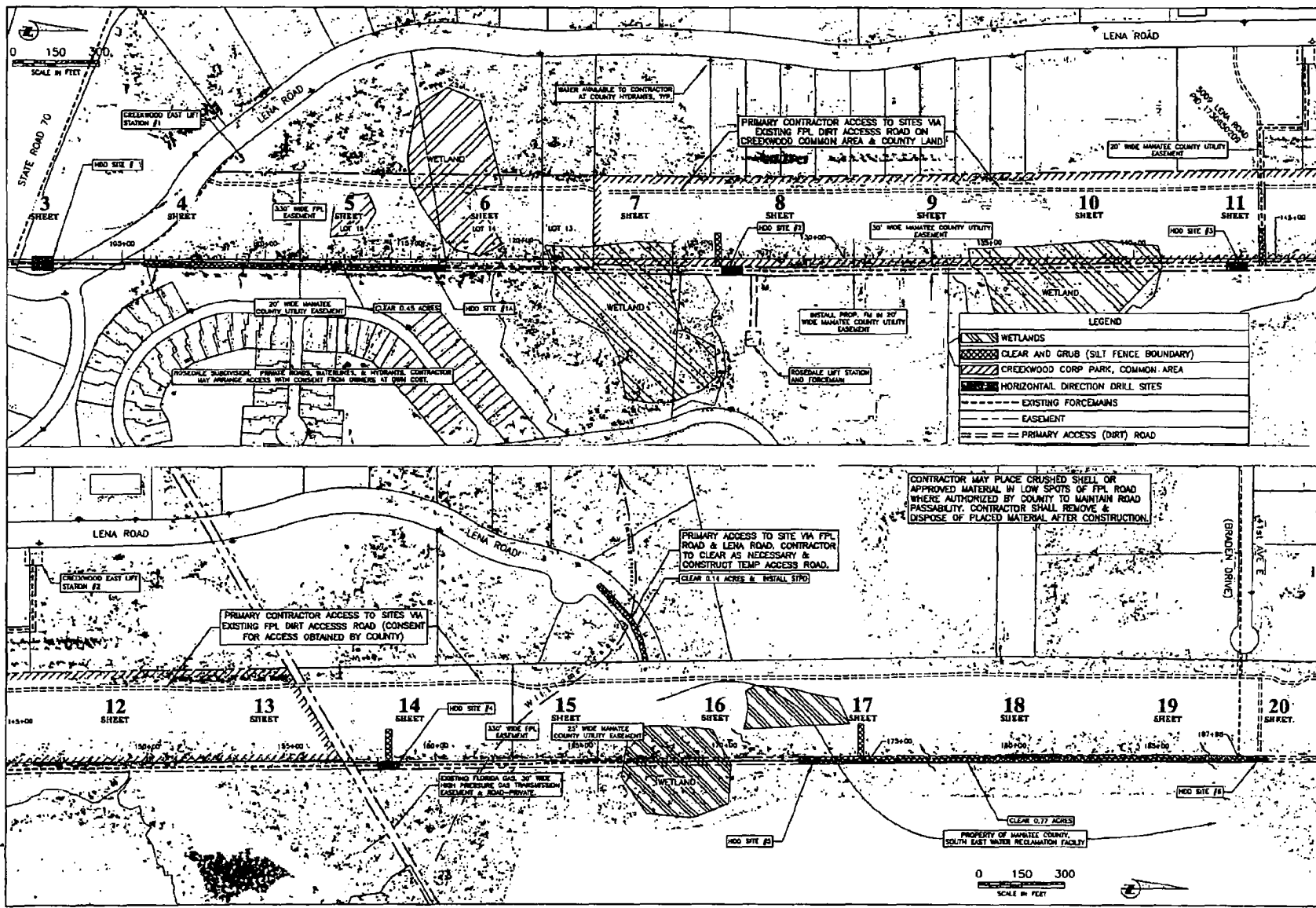


EXHIBIT "C"

Notification of FPL Facilities Form attached hereto.

This Instrument Prepared By and Return To:
Right-of-Way Department/Julie Franklin
Florida Gas Transmission Company
Post Office Box 945100
Maitland, Florida 32794-5100

Thank You - Rec.# 485000007 -
485000007
Case No: 2015 RC 000010 - 2015 RC 000010
Bk./Pg./Doc.# 2590/2426/3430020 -
2590/2437/3430020
10/08/2015 12:15:16
ymckinney RECORDING CASH BOOK
CHECK/MONEY 002156 103.50
ORDER
Total 103.50
Receipt(s) Amount 103.50
Change 0.00

Project No.: 14-312
Tract No.: FLBYA-MANA-045

ENCROACHMENT AGREEMENT

THIS ENCROACHMENT AGREEMENT ("Agreement") is made and entered into this 22nd day of September, 2015, by and between **FLORIDA GAS TRANSMISSION COMPANY, LLC**, a Delaware limited liability company, ("FGT"), with principal offices a 1300 Main Street, Houston, Texas 77002, and, **Manatee County a political subdivision of the State of Florida** ("County"), whose mailing address is Post Office Box 1000, Bradenton, FL 34206.

WITNESSETH THAT:

WHEREAS, FGT is the owner and holder of an easement under the provisions of that certain Easement Grant dated January 10, 1959, and recorded in Book 399 , at Page 117 , Official Records, Manatee County, Florida; and that certain Easement Modification Agreement dated December 15, 1981, and recorded in Book 1020, at Page 1684, Official Records, Manatee County, Florida, (collectively, "Easement Agreement"), covering lands located in Section 12, Township 35 South, Range 18 East, Official Records, Manatee County, Florida as described in the Easement Agreement ("Lands"); and

WHEREAS, pursuant to the authority contained in the Easement Agreement, FGT has constructed and currently operates and maintains an eight-inch (8") natural gas pipeline and related surface and subsurface appurtenances, (collectively, the "Pipeline Facilities"), across and through the Lands; and

WHEREAS, the County is the present owner of the force main pipeline easement described in **Exhibit "A"** attached hereto and made a part hereof for all purposes ("County Easement"), with Pipeline Facilities situated thereon; and

WHEREAS, the County plans to construct the TARA 20 FORCE MAIN PARALLEL TO LENA ROAD crossing the FGT easement ("Easement Area") and the Pipeline Facilities as depicted on **Exhibit "B"** attached hereto and made a part hereof ("Encroachment"), upon and within the boundaries of the existing FGT thirty-foot (30') wide easement ("Easement Area") pursuant to the terms and provisions of this Agreement; and

WHEREAS, the County has been advised by FGT that FGT is a natural gas transmission company and that FGT operates a high pressure underground natural gas Pipeline Facilities through the Easement Area; and

WHEREAS, the County has requested written consent from FGT to construct, maintain, and use the Encroachment upon a portion of the Easement Area and in close proximity to the FGT Pipeline Facilities; and

WHEREAS, FGT is willing to grant such consent upon the terms and conditions hereafter set forth.

NOW, THEREFORE, in consideration of the mutual covenants, terms and conditions set forth in this Encroachment Agreement, FGT and the County agree as follows:

1. To the extent that FGT has the right to do so, FGT hereby grants consent to the County to construct, maintain, operate and use the Encroachment on the County

Easement and the Easement Area, and in close proximity to the Pipeline Facilities, subject to compliance with the following terms and conditions:

A. The County hereby assumes all risks for damages, injuries, or loss to either property or persons, caused by, or arising out of, or resulting from, or in any way associated with the installation, construction, use, maintenance, repair or replacement of the Encroachment.

B. The consent granted herein is limited exclusively to the proposed Encroachment upon the County Easement within the Easement Area. The County shall not alter the grade or permit such alteration anywhere on the Easement Area without the prior express written consent of FGT.

C. The County shall at all times conduct all activities on the Easement Area in such a manner as not to interfere with or impede the operation and maintenance of the Pipeline Facilities, as conducted in the past, present or future, in any manner whatsoever.

D. Except as to the Encroachment, the County shall not construct, plant or create additional improvements of any kind, including but not limited to, fences, sheds, irrigation or drainage systems, utilities, decking, pole barns, parking lots, roadways, pools, ponds, trees or shrubs within the confines of the Easement Area without the prior express written consent of FGT.

E. The County understands and agrees that FGT may not have the authority to grant the County permission to construct the Encroachment in the Easement Area. This Agreement merely defines the terms by which FGT will not object, and that the County will obtain permission for the Encroachment from the underlying fee owner of the Lands or third parties having an interest in the Easement Area. The consent granted by this instrument shall not constitute or be construed as a subordination, merger, assignment, conveyance or relinquishment of any of the right, title and interest of FGT under the provisions of the Easement Agreement.

2. The County agrees that all improvements placed in the Easement Area shall be constructed in accordance with the Engineering and Construction Specifications detailed in **Exhibit "C"** attached hereto and made a part hereof, and that all installation, construction, use, maintenance, repair and replacement or removal of the Encroachment shall be the sole responsibility, and performed at the sole cost and expense of the County.

3. To the extent permitted under Section 768.28, Florida Statutes, and without waiving the right of sovereign immunity, the County shall indemnify, protect, and hold harmless FGT, its parent, affiliates, subsidiaries, and their directors, officers, employees, representatives, and agents (hereinafter "FGT Entities") from and against any and all actions or causes of action, claims, demands, liabilities, loss, damage, injury, suit, proceeding, judgment, cost or expense of whatever kind or nature, including but not limited to reasonable attorneys' fees, caused by, or arising out of, or resulting from, or in any way associated with the negligent installation, construction, use, maintenance, repair or replacement of the Encroachment by the County, its officers, employees and agents, or from the operation, maintenance, use or presence of FGT's Pipeline Facilities upon or in the vicinity of the Easement Area except where such loss, cost, liability, or expense was proximately caused by the negligence of FGT and FGT Entities.

In addition, and as provided for in Section 768.28, Florida Statutes, and without waiving the right of sovereign immunity, the County agrees to indemnify, defend and hold harmless FGT and the FGT Entities from and against any liability, damage, claims, loss, cause of action, suit, proceeding, judgment, cost (including the cost or expense of environmental response, removal or remediation activities), fees or expense, including reasonable attorney's fees, arising from: (a) non-compliance with any laws, regulations and orders applicable to the ownership or the operation and maintenance of the Encroachment on the Easement Area described herein, and (b) any incidents, acts,

releases, negligence, transactions or omissions, or conditions on or affecting the Easement Area caused by, or arising out of, or resulting from, or in any way associated with the negligent installation, construction, use, maintenance, repair or replacement of the Encroachment by the County, its officers, employees and agents that would (i) contribute to or constitute a violation of any local, state or federal environmental rule, regulation, law or judicial order, (ii) result, in whole or in part, in any requirement to clean up or otherwise remedy or remediate a condition, (iii) give rise to any lien, liability, injunction, order, restriction, claim, expense, damage, fine or penalty, (iv) adversely affect human health or the environment at or near the Easement Area, or (v) constitute a violation of the terms of this Encroachment Agreement.

4. The County agrees that the County shall take reasonable steps to protect the Pipeline Facilities at all times during the performance of any work associated with the Encroachment.

5. Should FGT need to remove the Encroachment in whole or in part, within the Easement Area in order to construct, maintain, operate, repair, remove, replace or resize the Pipeline Facilities, the County shall pay the cost of removing and replacing or reinstalling the Encroachment. In addition, all repair and maintenance work performed by FGT on its existing or additional Pipeline Facilities located on the Easement Area, shall be performed in a reasonable workmanlike manner and FGT shall restore the surface and grade of the County Easement where the work is performed, but shall not be liable for loss, or damage to, or replacement of the Encroachment or any associated equipment and facilities that exist within the Easement Area, and in this regard, the County hereby releases FGT and the FGT Entities from any and all liability for any such loss or damage.

6. The County and FGT stipulate, agree, and understand that this Agreement in no way constitutes a waiver by FGT of its rights to the quiet enjoyment of the Easement Area unencumbered by the construction of the Encroachment within the Easement Area.

7. It is expressly agreed by FGT and the County that if the County is in violation of any of the obligations of, or terms or conditions set forth in this Agreement, FGT, at its option, may terminate this Agreement upon ten (10) days' notice to the County; provided however, that any such termination shall not become effective if, within thirty (30) days from the receipt of such notice of termination, the County cures such violation. In the event of such termination, the County shall immediately remove any and all of the Encroachment that may be situated on the Easement Area, or if the County fails to remove any and all of the Encroachment, FGT may, at its option, remove the Encroachment at the expense of the County and without any liability whatsoever. Even so, if such violation constitutes or results in an emergency or a dangerous condition, FGT shall only be required to provide whatever prior notice is reasonable under the circumstances before exercising its rights to remove the Encroachment or otherwise cure the violation. It is further agreed that the failure by FGT to exercise such option as to any such violation shall not constitute a waiver of FGT's future right to exercise such option as to the same or any future violation. The remedies outlined herein are not exclusive and FGT and the County do not waive any legal or equitable remedies.

8. The provisions of the Easement Agreement, and all rights, powers, privileges, and duties, obligations, and liabilities created thereby, shall remain in full force and effect and are not affected hereby except to the extent and in the manner specifically and particularly set forth herein

9. This Agreement and the covenants and agreements herein contained shall extend to and be binding upon the County, FGT and their respective successors and assigns and the benefits of this Agreement shall run with the land.

10. The invalidity of one or more phrases, sentences, clauses or paragraphs contained in this Agreement shall not affect the validity of the remaining portions of the Agreement so long as the material purposes of this Agreement can be determined and effectuated.

IN WITNESS WHEREOF, the parties have executed this instrument the day and year first above written.

WITNESSES:

“FGT”

FLORIDA GAS TRANSMISSION
COMPANY, LLC

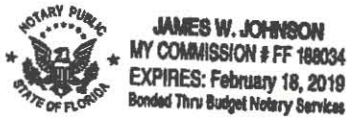
Julie Franklin
Name: Julie Franklin

By David Shellhouse
DAVID SHELLHOUSE
VICE PRESIDENT

Jim Johnson
Name: Jim Johnson

STATE OF FLORIDA
COUNTY OF Orange

The foregoing instrument was acknowledged before me on this 7th day of October, 2015, by **DAVID SHELLHOUSE, VICE PRESIDENT OF FLORIDA GAS TRANSMISSION COMPANY, LLC**, a Delaware limited liability company, on behalf of the company. He is personally known to me or has produced _____ (type of identification) as identification.



(Notary Seal)

James W. Johnson
Notary Public
Name (Printed) JAMES W. JOHNSON

"COUNTY"

**MANATEE COUNTY, a political
subdivision of the State of Florida**

By: Its Board of County Commissioners

By: _____

Chairperson

Date: _____

9/22/15



ATTEST: Angelina M. Colonnese
Clerk Ad Interim of the Circuit Court

By: _____

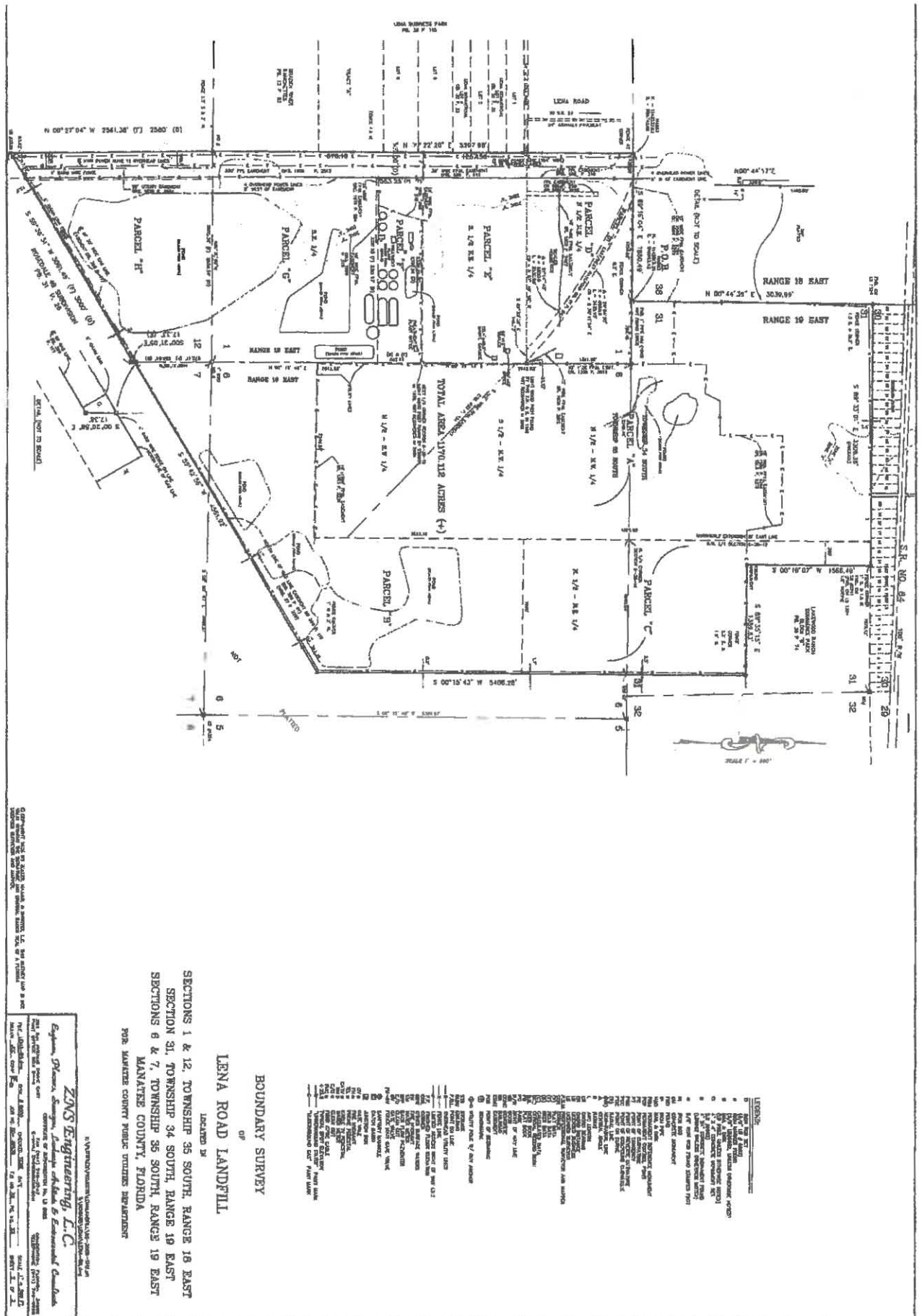
Angelina M. Colonnese
Deputy Clerk

EXHIBIT "A"

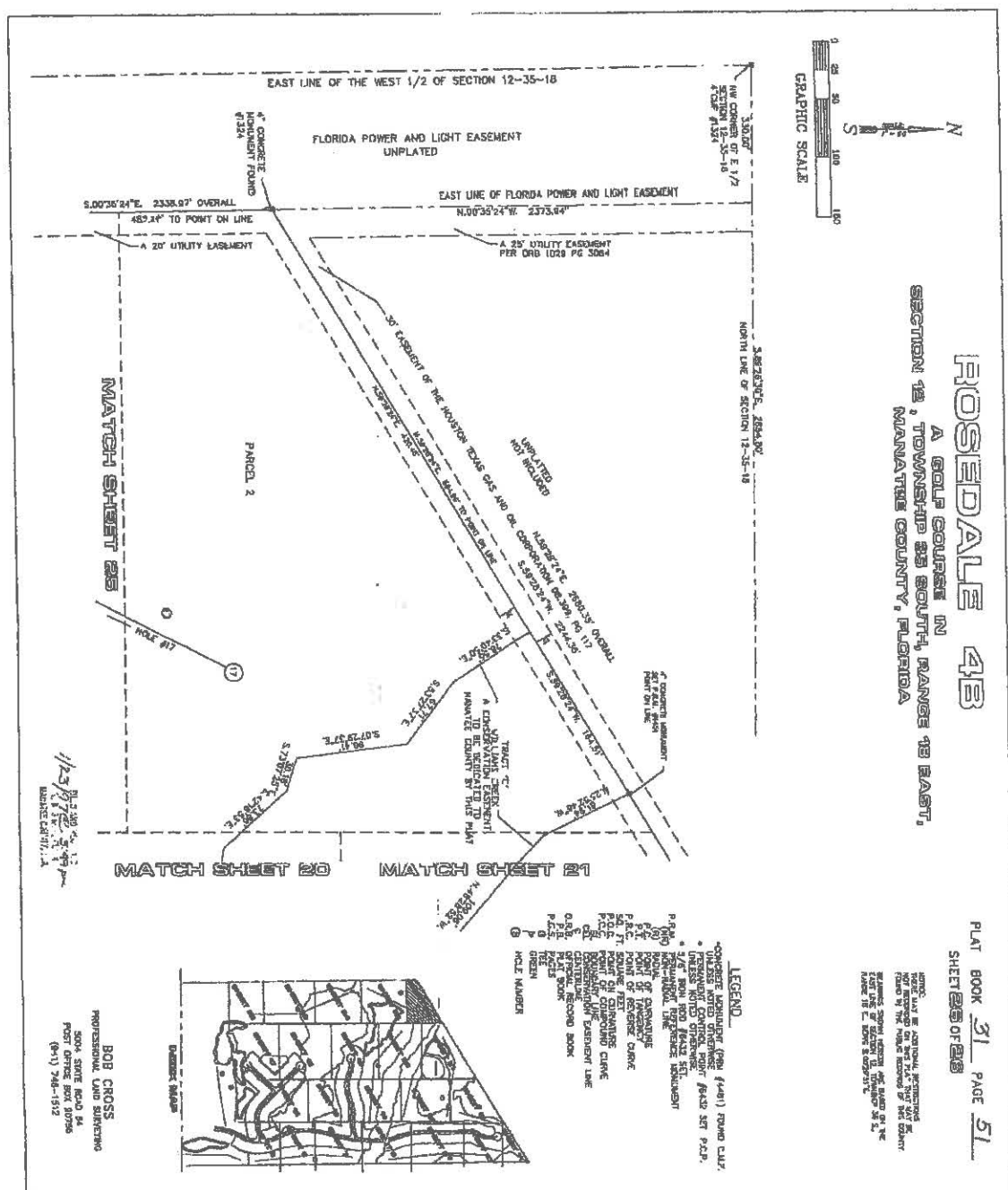
Attached to and made a part of that certain
ENCROACHMENT AGREEMENT
Dated September 22, 2015

By and between
FLORIDA GAS TRANSMISSION COMPANY, LLC
and MANATEE COUNTY

DESCRIPTION OF "COUNTY EASEMENT"



Project No.: 14-312
Tract No.: FLBYA-MANA-045



054011

UTILITY EASEMENT

CREEKWOOD INVESTORS, LTD., a registered Florida Limited Partnership, the mailing address of which is 521 Ninth Street West, Bradenton, Florida 33505, hereinafter referred to as the Grantor, in consideration of Ten Dollars (\$10.00) and other good and valuable consideration, the receipt of which is hereby acknowledged, does hereby grant and set over unto ARISTEK/CHAMPION JOINT VENTURE NO. 2, the mailing address of which is 5573 East North Street, Dayton, Michigan 45426, hereinafter referred to as the Grantees, an easement for the use and benefit of the Grantees for ingress, egress, construction, installation, maintenance and operation of sewer and water utility facilities through and across real property located in Manatee County, Florida, described as follows:

The East 25 feet of the West 355 feet of the North 2383.28 feet of the NE 1/4 of Section 12, Township 35 South, Range 18 East, AND
The East 25 feet of the West 355 feet lying South of the North 30 acres of the Southeast 1/4 of Section 1, Township 35 South, Range 18 East, Manatee County, Florida.

This is a non-exclusive easement, with the Grantor reserving unto itself, its heirs, successors and assigns, the right to continue free use and enjoyment of the property hereinabove described for any purposes which are not inconsistent with the rights granted herein unto the Grantees, or which may be prohibited by Manatee County.

Grantor's reservation specifically includes, but is not limited to, the right to construct roadways and to install utilities and drainage facilities across this easement, provided that Grantor shall pay the cost of any repairs to Grantees' facilities caused by Grantor's use of the easement.

This Utility Easement shall run with the land and shall inure to the benefit of the Grantees, their heirs, successors and assigns.

IN WITNESS WHEREOF, the Grantor has caused these presents

O.R. 1029 PG 3064

Project No.: 14-312
Tract No.: FLBYA-MANA-045

EXHIBIT "B"

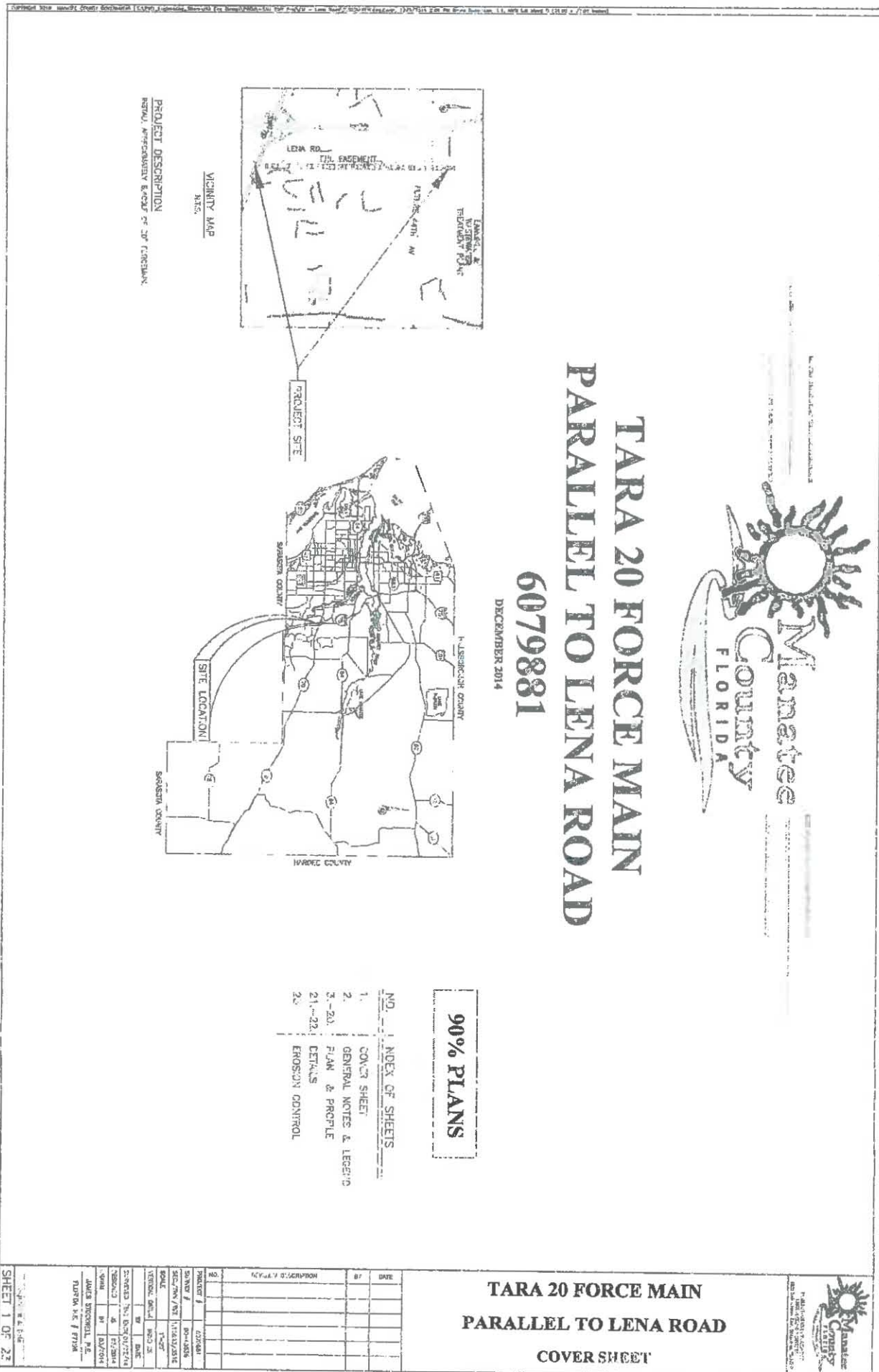
Attached to and made a part of that certain
ENCROACHMENT AGREEMENT

Dated September 22, 2015

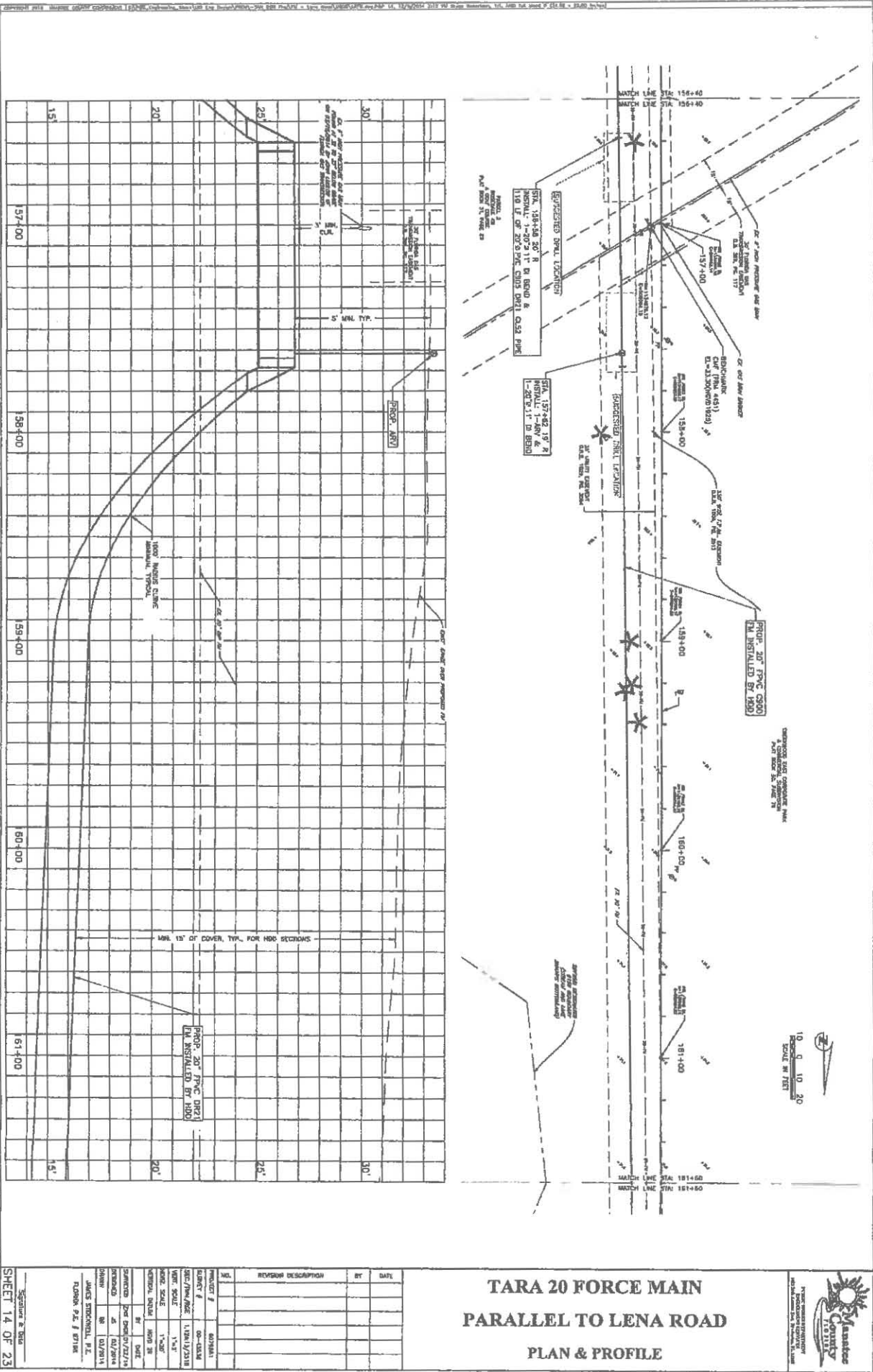
By and between

**FLORIDA GAS TRANSMISSION COMPANY, LLC
and MANATEE COUNTY**

DESCRIPTION AND DRAWINGS OF THE "ENCROACHMENT"



Project No.: 14-312
Tract No.: FLBYA-MANA-045



Project No.: 14-312
Tract No.: FLBYA-MANA-045

EXHIBIT "C"

Attached to and made a part of that certain
ENCROACHMENT AGREEMENT
Dated September 22, 2015
By and between
FLORIDA GAS TRANSMISSION COMPANY, LLC
and **MANATEE COUNTY**

ENGINEERING AND CONSTRUCTION SPECIFICATIONS

1. No work can be done in FGT's easement property unless FGT has reviewed and approved the plans and an agreement in writing has been entered into between the parties.
2. The County shall provide a minimum of forty-eight (48) hours' notice to FGT prior to any installation, construction, excavation, or demolition work on the easement area. To ensure further safety, County must call appropriate ONE CALL for a locate at 1-800-432-4770. An FGT representative must be present when any work is done on the easement area. The onsite FGT representative will have the authority to shutdown work by the County if the County's activities are judged to be unsafe by the FGT representative. The FGT representative will be invited to participate in County's safety meetings. This provision applies each time FGT's pipeline facilities are crossed.
3. Existing ground elevation (a minimum of three feet [3'] of pipeline cover) is to be maintained over the subsurface pipeline facilities within the easement area. Three feet (3') of minimum cover will also be required over the pipeline facilities at all equipment crossings for standard FDOT maximum axle load vehicles (20,000 lbs. per axle; 80,000 lbs. maximum weight).
4. For vehicles and/or construction equipment requesting approval to cross FGT's facilities, each crossing location will be reviewed on a case-by-case, site-specific basis and will require the surveyed elevation of the pipeline and/or facility verified by an FGT field representative to be performed by the party requesting the crossing encroachment and submitted to FGT. The execution of a wheel load calculation must be completed and approved by FGT prior to crossing FGT's facilities for every vehicle and/or construction equipment requesting to cross. FGT may require matting or other suitable material be installed to achieve the necessary support for such crossing. This too will be site specific and case-by-case only.
5. Where consent for roadway crossings has been granted, a minimum of forty-eight inches (48") of cover, including thirty-six (36") of undisturbed or compacted soil, shall be maintained within the easement area. All roads must cross the easement at a ninety degree (90°) angle.
6. When crossing an FGT pipeline (via drill or open lay) County must visually verify the elevation of the pipeline both vertically and horizontally, by means of various methods such as SUE (subsurface utility excavation) etc., with an FGT field representative on-site at all times during this operation. When using direction drill method, a minimum vertical clearance of ten feet (10') from the pipeline is required across the entire easement.
7. Where the encroachment includes utilities, all such utilities crossing the easement area must have a minimum separation of twenty-four inches (24") between the utility and the FGT pipeline(s) at the point of crossing and must cross at a ninety degree (90°) angle. No utilities shall be constructed between the surface of the easement area and the top of the subsurface pipeline facilities unless agreed to in writing by FGT. No parallel utilities, structures, and/or appurtenances are permitted within the easement area. All proposed aerial crossings will be reviewed on a case-by-case basis.
8. Where consent for utility lines has been granted, electric lines must be encased in pvc or steel throughout the entire easement area. All fiber optic, telephone and cable television crossing encasements to be determined by the on-site FGT field representative. Cables energized to 600 volts or more must cross a minimum of three feet (3') below the subsurface pipeline facilities, and also be encased in concrete, color coded red, across the entire easement width, and have external, spiral wound, neutrals grounded on each side of the easement. The cable crossing should be clearly and permanently marked on each side of the easement where permissible.
9. Where consent for fencing has been granted, the County must install and maintain a vehicle access gate at least twelve feet (12') in width at each point in the fence line(s) crossing the easement area. Posthole excavations for fencing placed on the easement area shall not be greater than eighteen inches (18") below the ground surface elevation. No fence posts shall be placed over the pipeline facilities or closer than six feet (6') on either side of the pipeline facilities. Any exceptions will be determined by an FGT field representative. Any such fence shall be constructed and maintained by County in such a manner that does not prevent FGT personnel from viewing the easement area from the ground level.

Project No.: 14-312
Tract No.: FLBYA-MANA-045

through the fence(s) (i.e. no solid fences allowed). No fencing parallel to the FGT pipeline facilities will be allowed within the easement area. FGT's access to its pipeline facilities shall be maintained by County. If the gate is locked with County's lock, County shall provide FGT with keys or allow a FGT lock to enable access.

10. No above or below ground utility appurtenances, junction boxes or retention ponds shall be allowed within the easement area.
11. No roto-mixing or vibrating machinery is allowed within the easement area.
12. When conducting pile driving operations, County shall adhere to a minimum separation of twenty-five feet (25') from the outside edge of the FGT pipeline.
13. Ditches shall be sloped or shoring will be used to allow entry into the excavation. Time will be allowed for a FGT representative to inspect and make coating repairs as the subsurface pipeline facilities are exposed.
14. Twelve inches (12") of backfill around the subsurface pipeline facilities shall be sand or clean fill; free of rocks and debris. Rock Shield will be installed around pipeline facilities.
15. With prior approval, no more than twenty feet (20') of pipe shall be exposed at any given time; if more than twenty feet (20') of pipe is to be exposed, all Standard Operating Procedures (SOP) must be adhered to, pressure reductions must be scheduled at least one (1) year in advance and engineering stress calculations must be performed by FGT Engineering and approved by FGT operations prior to allowing any more than the twenty feet (20') of exposed pipe.
16. With prior approval and an FGT representative on site at all times, excavation equipment equipped with toothless buckets may be allowed to dig or excavate within three (3) feet of the pipeline facilities. All other construction/excavation equipment will not be allowed to perform any excavation within three feet (3') of the pipeline facilities. All mechanical excavation performed within three feet (3') of the pipeline will be performed parallel to the pipeline (i.e. track-hoe may not reach over the pipeline to dig on the opposite side of the pipeline).
17. All excavation within twenty-four (24") from the top or thirty-six inches (36") from the side or bottom of the pipeline shall be by manual means. After top exposure, excavation up to twenty four inches (24") from the side or bottom of the exposed pipeline may proceed by mechanical means if the FGT representative is satisfied it may be done safely with the equipment and operator available.
18. Barriers adequate to prevent vehicular damage to any exposed pipeline facilities shall be installed and maintained at all times.
19. All FGT pipeline facilities, cathodic protection equipment, and test lead wires shall be protected from damage by construction activity at all times.
20. No installation, construction, excavation, or demolition work shall be performed within the easement area on weekends or holidays unless County agrees to reimburse FGT for its cost, including overtime costs, associated with inspection during those periods.
21. The County shall provide and install temporary construction fence along the easement boundaries for the entire length of the proposed work area to preserve and protect the pipeline(s). The fence must be maintained for the duration of the development or construction activity. Access across FGT's easement will be granted at specific locations for vehicle and equipment traffic once a wheel load calculation has been completed. Additional cover or matting may be required. Any changes to this requirement must be approved in writing by FGT prior to start of work.
22. Where consent for landscaping has been granted, County shall not plant shrubs on the easement area which are classified as "deep rooted" or are projected to exceed an eventual growth height of four (4) feet. Shrubs shall be planted so that no part, at its ultimate growth, shall be closer than ten feet (10') to the pipeline facilities. No trees shall be planted on the easement.
23. These Engineering and Construction Specifications may address activities on the easement area for which FGT has not granted consent to County to include as part of the encroachment. Notwithstanding anything to the contrary contained in these Engineering and Construction Specifications, FGT's consent is and shall be limited to the encroachment as described and limited by the Encroachment Agreement to which this Exhibit is attached.

UTILITY PERMIT

PERMIT NO.: 2015-H-194-112		SECTION NO.: 13160000		STATE ROAD 70	COUNTY MANATEE
FDOT construction is proposed or underway.		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Financial Project ID:	
Is this work related to an approved Utility Work Schedule?		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	If yes, Document Number:	
PERMITTEE:	Manatee County				
ADDRESS:	1022 26th Avenue East		TELEPHONE NUMBER: (941) 708-7487 ext.7487		
CITY/STATE/ZIP:	Bradenton, FL 34208-3926				
The above PERMITTEE requests permission from the State of Florida Department of Transportation, hereinafter called the FDOT, to construct, operate and maintain the following: Install valve on 20" force main under North sidewalk at west side Lena Road and install temporary 18" HDPE force main bypass ... (see cont. page)					
FROM: I-75		TO: Lena Road			
Submitted for the PERMITTEE by: Name and Company (Typed or Printed Legibly)	Contact Information Address/Telephone/E-Mail (if applicable)		Signature		Date
SIA MOLLANAZAR	1022 26th Ave E Bradenton, FL 34208-1000		SIA MOLLANAZAR (sig)		06/29/2015

- The Permittee declares that prior to filing this application, the location of all existing utilities that it owns or has an interest in, both aerial and underground, are accurately shown on the plans and a letter of notification was mailed on 05/23/2015 to the following utilities known to be involved or potentially impacted in the area of the proposed installation:
FPL
- The local Maintenance or Resident Engineer, hereafter referred to as the FDOT Engineer, shall be notified a minimum of forty eight (48) hours in advance prior to starting work and again immediately upon completion of work. The FDOT's Engineer is Albert Rosenstein located at 1840 61st Street Sarasota, FL 34243, Telephone Number (941) 359-7356.
The Permittee's employee responsible for MOT is Matt merucci Telephone Number (941) 708-7450 (This name may be provided at the time of the forty eight (48) hour advance notice prior to starting work).
- All work, materials, and equipment shall be subject to inspection and approval by the FDOT Engineer.
- All plans and installations shall conform to the requirements of the FDOT's UAM in effect as of the date this permit is approved by FDOT, and shall be made a part of this permit. This provision shall not limit the authority of the FDOT under Paragraph 8 of this Permit.
- This Permittee shall commence actual construction in good faith within 150 days after issuance of permit, and shall be completed within 7 days after the permitted work has begun. If the beginning date is more than sixty (60) days from the date of permit approval, the Permittee must review the permit with the FDOT Engineer to make sure no changes have occurred to the Transportation Facility that would affect the permitted construction.
- The construction and maintenance of such utility shall not interfere with the property and rights of a prior Permittee.
- It is expressly stipulated that this permit is a license for permissive use only and that the placing of utilities upon public property pursuant to this permit shall not operate to create or vest any property right in said holder, except as provided in executed subordination and Railroad Utility Agreements.
- Pursuant to Section 337.403, Florida Statutes, any utility placed upon, under, over, or along any public road or publicly owned rail corridor that is found by FDOT to be unreasonably interfering in any way with the convenient, safe, or continuous use, or maintenance, improvement, extension, or expansion, of such public road or publicly owned rail corridor shall, upon thirty (30) days written notice to the utility or its agent by FDOT, be removed or relocated by such utility at its own expense except as provided in Section 337.403(1), Florida Statutes, and except for reimbursement rights set forth in previously executed subordination and Railroad Utility Agreements, and shall apply to all successors and assigns for the permitted facility.
- It is agreed that in the event the relocation of said utilities are scheduled to be done simultaneously with the FDOT's construction work, the Permittee will coordinate with the FDOT before proceeding and shall cooperate with the FDOT's contractor to arrange the sequence of work so as not to delay the work of the FDOT's contractor, defend any legal claims of the FDOT's contractor due to delays caused by the Permittee's failure to comply with the approved schedule, and shall comply with all provisions of the law and the FDOT's current UAM. The Permittee shall not be responsible for delay beyond its control.
- In the case of non-compliance with the FDOT's requirements in effect as of the date this permit is approved, this permit is void and the facility will have to be brought into compliance or removed from the R/W at no cost to the FDOT, except for reimbursement rights set forth in previously executed subordination and Railroad Utility Agreements. This provision shall not limit the authority of the FDOT under Paragraph 8 of this Permit.
- It is understood and agreed that the rights and privileges herein set out are granted only to the extent of the State's right, title and interest in the land to be entered upon and used by the Permittee, and the Permittee will, at all times, and to the extent permitted by law, assume all risk of and indemnify, defend, and save harmless the State of Florida and the FDOT from and against any and all loss, damage, cost or expense arising in any manner on account of the exercise or attempted exercises by said Permittee of the aforesaid rights and privileges.
- During construction, all safety regulations of the FDOT shall be observed and the Permittee must take measures, including placing and the display of safety devices that may be necessary in order to safely conduct the public through the project area in accordance with the Federal MUTCD, as amended by the UAM.
- Should the Permittee be desirous of keeping its utilities in place and out of service, the Permittee, by execution of this permit acknowledges its present and continuing ownership of its utilities located between I-75 and Lena Road within the FDOT's R/W as set forth above. Whenever the Permittee removes its facilities, it shall be at the Permittee's sole cost and expense. The Permittee, at its sole expense, shall promptly remove said out of service utilities whenever the FDOT determines said removal is in the public interest.
- In the event contaminated soil is encountered by the Permittee or anyone within the permitted construction limits, the Permittee shall immediately cease work and notify the FDOT. The FDOT shall notify the Permittee of any suspension or revocation of the permit to allow contamination assessment and remediation. Said suspension or revocation shall remain in effect until otherwise notified by FDOT.
- For any excavation, construction, maintenance, or support activities performed by or on behalf of the FDOT, within its R/W, the Permittee may be required by the FDOT or its agents to perform the following activities with respect to a Permittee's facilities: physically expose or direct exposure of underground facilities, provide any necessary support to facilities and/or cover, de-energize or alter aerial facilities as deemed necessary for protection and safety.

UTILITY PERMIT

16. Pursuant to Section 337.401(2), Florida Statutes, the permit shall require the permit holder to be responsible for damage resulting from the issuance of the permit. The FDOT may initiate injunctive proceedings as provided in s. 120.69 to enforce provisions of this subsection or any rule or order issued or entered into pursuant thereto.
17. Pursuant to Section 337.402, Florida Statutes, when any public road or publicly owned rail corridor is damaged or impaired in any way because of the installation, inspection, or repair of a utility located on such road or publicly owned rail corridor, the owner of the utility shall, at his or her own expense, restore the road or publicly owned rail corridor to its original condition before such damage. If the owner fails to make such restoration, the authority is authorized to do so and charge the cost thereof against the owner under the provisions of s.337.404.
18. The Permittee shall comply with all provisions of Chapter 556, Florida Statutes, Underground Facilities Damage Prevention and Safety Act.
19. Special FDOT instructions: _____

1. PERMIT VOID UNLESS DOT SARASOTA OPERATIONS OFFICE IS NOTIFIED 48 HOURS IN ADVANCE OF STARTING WORK.
PHONE: (941) 359-7300. 2. SOD ALL PORTIONS OF DISTURBED RIGHT-OF-WAY.

It is understood and agreed that commencement by the Permittee is acknowledgment and acceptance of the binding nature of all the above listed permit conditions and special instructions.

20. By receipt of this permit, the Permittee acknowledges responsibility to comply with Section 119.07, Florida Statutes.
21. By the below signature, the Permittee hereby represents that no change to the FDOT's standard Utility Permit form, as incorporated by reference into Rule 14-46.001, for this Utility Permit has been made which has not been previously called to the attention of the FDOT (and signified to by checking the appropriate box below) by a separate attached written document showing all changes and the written and dated approval of the FDOT Engineer. Are there attachments reflecting change/s to the standard form? ☒ NO ☐ YES If Yes, _____ pages are attached.

PERMITTEE	Manatee County	SIGNATURE	Manatee County	DATE:	06/29/2015
	Name & Title of Authorized Permittee or Agent (Typed or Printed Legibly)				
APPROVED BY:	Harris Giddens (sig)			ISSUE DATE:	07/06/2015
	District Maintenance Engineer or Designee				

UTILITY PERMIT FINAL INSPECTION CERTIFICATION

DATE:	
DATE WORK STARTED:	
DATE WORK COMPLETED:	
INSPECTED BY:	
(Permittee or Agent)	
CHANGE APPROVED BY: N/A	DATE:
District Maintenance Engineer or Designee	

I the undersigned Permittee do hereby CERTIFY that the utility construction approved by the above numbered permit was inspected and installed in accordance with the approved plans made a part of this permit and in accordance with the FDOT's current UAM. All plan changes have been approved by the FDOT's Engineer and are attached to this permit. I also certify that the work area has been left in as good or better condition than when the work was begun.

PERMITTEE: Manatee County	SIGNATURE: Manatee County	DATE:
Name & Title of Authorized Permittee or Agent (Typed or Printed Legibly)		

CC: District Permit Office
Permittee

APPROVED
2015-07-16 4:11Z
Harris Giddens
7/16/2015

UTILITY PERMIT

PERMIT NO.: 2015-H-194-112			
Financial Project ID:			
COUNTY:			
SECTION NO.:			
STATE ROAD:			
Preferred Contact	Address	Telephone	E-Mail
Ken LaBarr	1022 26th Ave E Bradenton, FL 34208-1000	(941) 708-7450 ext.7323	kenneth.labarr@mymanatee.org
<p>The above PERMITTEE requests permission from the State of Florida Department of Transportation, hereinafter called the FDOT, to construct, operate and maintain the following (continued):</p> <p>Install valve on 20" force main under North sidewalk at west side Lena Road and install temporary 18" HDPE force main bypass pipe approx 10LF from valve to North ROW line. .</p> <p>Location from/to:</p> <p>Utilities notified (continuation of provision 1):</p> <p>FPL (5/23/2015 12:00:00 AM), Verizon (5/26/2015 12:00:00 AM)</p> <p>Ownership of utilities located at (continuation of provision 13):</p> <p>I-75 Lena Road</p> <p>Supporting documents attached:</p> <p>FDOTUtilPermitPlanLenaSR70.pdf</p>			



ZNS ENGINEERING

ENGINEERS | PLANNERS | SURVEYORS | LANDSCAPE ARCHITECTS | ENVIRONMENTAL CONSULTANTS
EB 0027476 LS 0006982 LC 0000385

CERTIFICATE OF AUTHORIZATION # LB6982
201 5th AVENUE DRIVE EAST
BRADENTON, FLORIDA 34208
(941) 748-8080
FAX (941) 748-3747

DESCRIPTION

A UTILITY EASEMENT LOCATED IN SECTION 12, TOWNSHIP 35 SOUTH, RANGE 18 EAST, MANATEE COUNTY, FLORIDA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGIN AT THE NORTHWEST CORNER OF ROSEDALE 4B, A GOLF COURSE, AS RECORDED IN PLAT BOOK 31, PAGES 26 OF THE PUBLIC RECORDS OF MANATEE COUNTY, FLORIDA; THENCE N 00°26'59" W ALONG THE EAST LINE OF A 330 FOOT WIDE FPL EASEMENT, AS RECORDED IN OFFICIAL RECORDS BOOK 1006, PAGE 2513 OF THE PUBLIC RECORDS OF MANATEE COUNTY, FLORIDA, A DISTANCE OF 17.31 FEET TO A POINT ON THE NORTHERLY LINE OF A 30 FOOT WIDE FLORIDA GAS TRANSMISSION EASEMENT, AS RECORDED IN DEED BOOK 399, PAGE 117 OF THE PUBLIC RECORDS OF MANATEE COUNTY, FLORIDA; THENCE N 59°37'23" E, ALONG SAID NORTHERLY LINE, A DISTANCE OF 28.85 FEET TO THE INTERSECTION WITH THE EAST LINE OF A 25 FOOT WIDE UTILITY EASEMENT, AS RECORDED IN OFFICIAL RECORDS BOOK 1029, PAGE 3064 OF THE PUBLIC RECORDS OF MANATEE COUNTY, FLORIDA; THENCE S 00°26'59" E, ALONG SAID EAST LINE, A DISTANCE OF 17.31 FEET TO A POINT ON THE NORTHERLY LINE OF AFORESAID ROSEDALE 4B; THENCE S 59°37'23" W, ALONG SAID NORTHERLY LINE OF ROSEDALE 4B, A DISTANCE OF 5.77 FEET TO THE EXTENSION OF A 20 FOOT WIDE UTILITY EASEMENT SHOWN IN AFORESAID ROSEDALE 4B; THENCE S 00°26'16" E, ALONG SAID EXTENSION, A DISTANCE OF 17.31 FEET TO A POINT ON THE SOUTHERLY LINE OF AFORESAID 30 FOOT WIDE FLORIDA GAS TRANSMISSION EASEMENT; THENCE S 59°37'23" W, ALONG SAID SOUTHERLY LINE, A DISTANCE OF 34.62 FEET TO THE WEST LINE OF A 10 FOOT WIDE DRAINAGE & UTILITY EASEMENT SHOWN ON CREEKWOOD EAST CORPORATE PARK, A COMMERCIAL SUBDIVISION, AS RECORDED IN PLAT BOOK 50, PAGE 79 OF THE PUBLIC RECORDS OF MANATEE COUNTY, FLORIDA; THENCE N 00°26'16" W, ALONG SAID EAST LINE, A DISTANCE OF 17.31 FEET TO THE NORTHERLY LINE OF SAID CREEKWOOD EAST CORPORATE PARK; THENCE N 59°37'23" E, ALONG SAID NORTHERLY LINE, A DISTANCE OF 11.54 FEET TO AFORESAID NORTHWEST CORNER OF ROSEDALE 4B AND AFORESAID EAST LINE OF A 330 FOOT WIDE FPL EASEMENT. SAID POINT ALSO BEING THE POINT OF BEGINNING.

SUBJECT TO PERTINENT EASEMENTS, RIGHTS-OF-WAY AND RESTRICTIONS OF RECORD.

CONTAINING 952 SQUARE FEET.

(SEE SHEET 2 FOR SKETCH)
NOT A BOUNDARY SURVEY
DESCRIPTION SKETCH

OF A

UTILITY EASEMENT

IN

SECTION 12, TOWNSHIP 35 SOUTH, RANGE 18 EAST
MANATEE COUNTY, FLORIDA

REVISIONS:

ADD PARCEL ID'S 3/22/15 JG

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THIS DOCUMENT IS PROTECTED BY SECTION 106 OF THE "UNITED STATES COPYRIGHT ACT". REPRODUCTION OR ALTERATION OF THIS DOCUMENT OR THE INFORMATION CONTAINED HEREON BY ANY MEANS WHATSOEVER IS STRICTLY PROHIBITED WITHOUT THE PRIOR WRITTEN CONSENT OF ZNS ENGINEERING, L.C. CONSENT IS HEREBY GRANTED SPECIFICALLY TO GOVERNMENTAL AGENCIES TO REPRODUCE THIS DOCUMENT IN COMPLIANCE WITH F.S. CHAPTER 119.

NOTE: NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

WE HEREBY CERTIFY THAT THIS SKETCH AND DESCRIPTION HAVE BEEN PREPARED UNDER OUR DIRECT SUPERVISION, THAT THEY ARE A TRUE REPRESENTATION OF THE LAND AS SHOWN AND DESCRIBED HEREON, THAT THEY ARE CORRECT TO THE BEST OF OUR KNOWLEDGE AND BELIEF AND THAT THEY MEET THE "MINIMUM TECHNICAL STANDARDS FOR LAND SURVEYING IN THE STATE OF FLORIDA", CHAPTER 5J-17, FLORIDA ADMINISTRATIVE CODE.

BY: 
JAMES N. GATCH, JR., P.S.M.

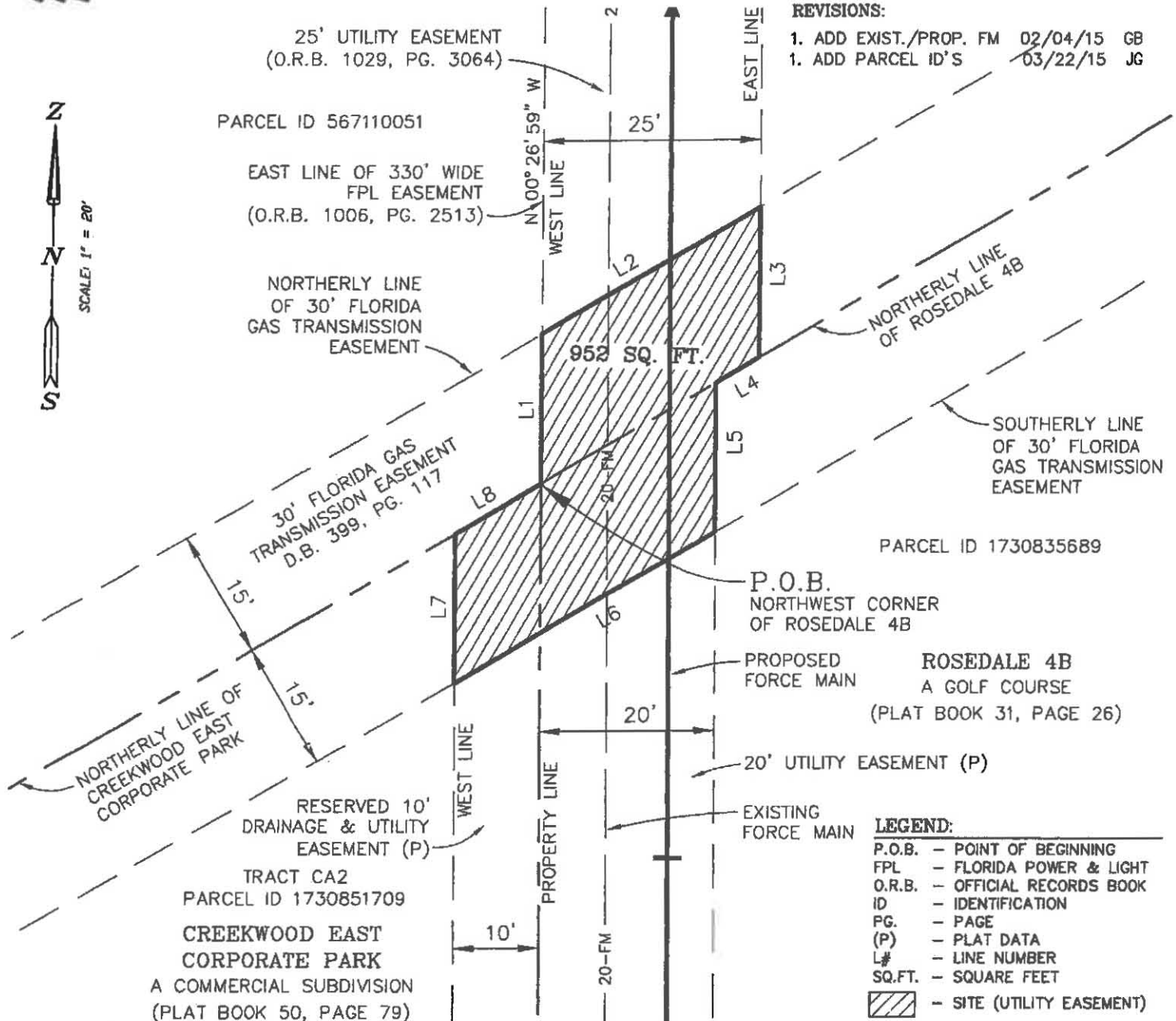
FLORIDA CERTIFICATE NO. LS 4295

DATE OF CERTIFICATION : 01/29/15

SHEET 1 OF 2

REVISIONS:

1. ADD EXIST./PROP. FM 02/04/15 GB
1. ADD PARCEL ID'S 03/22/15 JG



LINE DATA:

L1	N 00°26'59" W	17.31'
L2	N 59°37'23" E	28.85'
L3	S 00°26'59" E	17.31'
L4	S 59°37'23" W	5.77'
L5	S 00°26'16" E	17.31'
L6	S 59°37'23" W	34.62'
L7	N 00°26'16" W	17.31'
L8	N 59°37'23" E	11.54'

(SEE SHEET 1 FOR DESCRIPTION)

NOT A BOUNDARY SURVEY DESCRIPTION SKETCH

OF A

COUNTY EASEMENT

IN

SECTION 12, TOWNSHIP 35 SOUTH, RANGE 18 EAST
MANATEE COUNTY, FLORIDA

NOTES:

1. BEARINGS ARE BASED ON THE EAST LINE OF 330' WIDE FPL EASEMENT, HAVING A BEARING OF N 00° 26' 59" W.
2. THIS DRAWING IS A SKETCH ONLY AND DOES NOT REPRESENT A BOUNDARY SURVEY. (MONUMENTS HAVE NOT BEEN FIELD LOCATED OR SET)

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This instrument prepared by:
Larry Decker, Property Acquisition Division
Manatee County Property Management Department
1112 Manatee Avenue West, Suite 800
Bradenton, Florida 34205

PROJECT NAME: Force Main Tam 20 Parallel to Lena Road
PROJECT # 6079881
PARCEL # N/A
PID # 1730851709

SPACE ABOVE THIS LINE FOR RECORDING DATA

INGRESS/EGRESS ACCESS EASEMENT

THIS INDENTURE, made this _____ day of _____, 2015, between CREEKWOOD EAST CORPORATE PARK, LLC, a Florida limited liability company, by its Manager, VENETIAN LAKES WATER COMPANY, a Florida profit corporation, whose mailing address is 1247 Sea Plume Way, Sarasota, Florida 34242, Grantor, and COUNTY OF MANATEE, a Political Subdivision of the State of Florida, with its mailing address being P.O. Box 1000, Bradenton, Florida 34206, as Grantee,

WITNESSETH

That said Grantor, for and in consideration of the sum of \$1.00 and other valuable consideration in hand paid, the receipt whereof is hereby acknowledged, has granted, bargained, sold and transferred, and by these presents does grant, bargain, sell and transfer unto said Grantee, *a nonexclusive access easement for access over and across the property* situate in the County of Manatee, State of Florida, more particularly described as Parcel #1730851709 in Exhibit "A", attached hereto and incorporated herein by this reference.

This is a nonexclusive access easement with the Grantor reserving unto itself, its heirs, successors, or assigns, the right to the continued free use and enjoyment of the property herein described, for any purposes, which are not inconsistent with the rights granted herein unto the Grantee.

Signed, sealed, and delivered in the presence of:

CREEKWOOD EAST CORPORATE PARK, LLC, a
Florida limited liability company, by its Manager,
VENETIAN LAKES WATER COMPANY, a Florida
profit corporation

[Signature]
Witness Signature

Scarlett Olmeda
Printed Name

[Signature]
Witness Signature

Kristen Castellini
Printed Name

(Signature of two witnesses or secretary required by law)

BY: [Signature]

Wen Y. Chung
Printed Name

President
Title

STATE OF FLORIDA
COUNTY OF SARASOTA

The foregoing instrument was acknowledged before me this 3 day of June, 2015, by Wen Y. Chung, as President of Venetian Lakes Water Company, a Florida profit corporation, as manager for Creekwood East Corporate Park, LLC, a Florida limited liability company, who is () personally known to me or (X) who has produced FDL-0520-899-33-427-0 as identification.



[Signature]
NOTARY PUBLIC Signature
Katherine Saunders-Walters
Printed Name

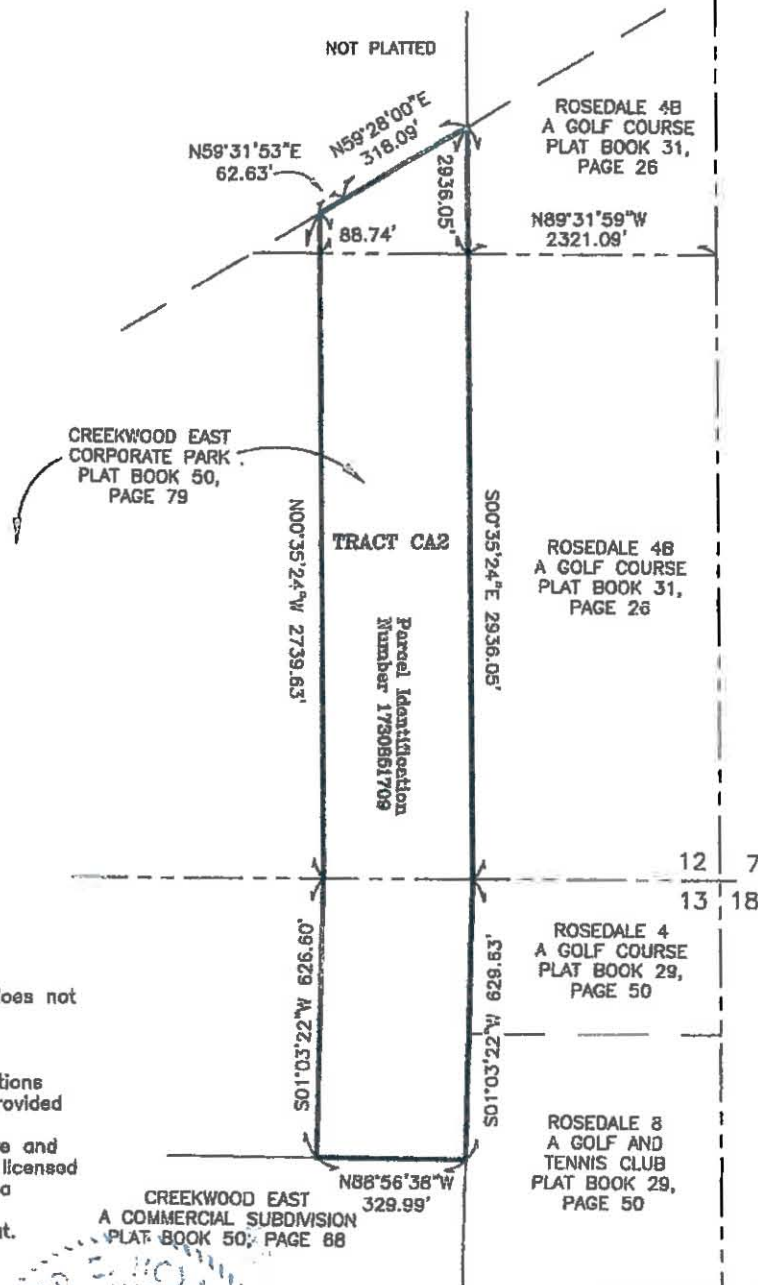
Exhibit "A"

Description and Sketch

(NOT A SURVEY)

Description:

Tract CA2, CREEKWOOD EAST CORPORATE PARK a Commercial Subdivision Plat Book 50, Page 79 of the Public Records of Manatee County, Florida being in Sections 12 and 13, Township 35 South, Range 16 East.



NOT TO SCALE

NOTES:

1. This Description and Sketch does not certify of warranty: title, zoning, easements, or freedom of encumbrances.
2. Subject to easements, dedications and restrictions of record not provided to the surveyor and mapper.
3. Not valid without the signature and original raised seal of a Florida licensed surveyor & mapper. This is not a survey.
4. Bearings are per recorded plat.

MANATEE COUNTY
PROPERTY MANAGEMENT
SURVEY DIVISION



1112 MANATEE AVENUE WEST
BRADENTON, FLORIDA 34205
(941)748-4501

Todd E. Boyle, RSM

Florida Registered Professional Surveyor & Mapper, 6047

Date

Drawing Path:
S:\SURVEY\2015 Jobs
05_MAY2015
20150501_Tract CA2
Creekwood E Corp Park
D&S\CAD DWGS

Sheet: 1 OF 1

Section 12 & 13, Township
35 South, Range 18 East

Drawing Date: 6/1/15

854011

UTILITY EASEMENT

CREEKWOOD INVESTORS, LTD., a registered Florida Limited Partnership, the mailing address of which is 521 Ninth Street West, Bradenton, Florida 33505, hereinafter referred to as the Grantor, in consideration of Ten Dollars (\$10.00) and other good and valuable consideration, the receipt of which is hereby acknowledged, does hereby grant and set over unto ARISTEK/CHAMPION JOINT VENTURE NO. 2, the mailing address of which is 5573 East South Street, Bayonet, Michigan 48428, hereinafter referred to as the Grantees, an easement for the use and benefit of the Grantees for ingress, egress, construction, installation, maintenance and operation of sewer and water utility facilities through and across real property located in Manatee County, Florida, described as follows:

The East 25 feet of the West 355 feet of the North 2383.28 feet of the NE 1/4 of Section 12, Township 35 South, Range 18 East, AND The East 25 feet of the West 355 feet lying South of the North 30 acres of the Southeast 1/4 of Section 1, Township 35 South, Range 18 East, Manatee County, Florida.

This is a non-exclusive easement, with the Grantor reserving unto itself, its heirs, successors and assigns, the right to continue free use and enjoyment of the property hereinabove described for any purposes which are not inconsistent with the rights granted herein unto the Grantees, or which may be prohibited by Manatee County.

Grantor's reservation specifically includes, but is not limited to, the right to construct roadways and to install utilities and drainage facilities across this easement, provided that Grantor shall pay the cost of any repairs to Grantees' facilities caused by Grantor's use of the easement.

This Utility Easement shall run with the land and shall inure to the benefit of the Grantees, their heirs, successors and assigns.

IN WITNESS WHEREOF, the Grantor has caused these presents

O.R. 1029 PG 3064



**FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION**

SOUTHWEST DISTRICT OFFICE
13051 NORTH TELECOM PARKWAY
TEMPLE TERRACE, FLORIDA 33637-0926

RICK SCOTT
GOVERNOR

CARLOS LOPEZ-CANTERA
LT. GOVERNOR

JONATHAN P. STEVERSON
SECRETARY

March 3, 2015

Manatee County Public Works
c/o Sia Mollanazar, Deputy Director, Engineering
1022 26th Avenue East
Bradenton, Florida 34208
sia.mollanazar@mymanatee.org

File No. 41-0332786-001, Manatee County

Dear Mr. Mollanazar:

On February 20, 2015, 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 install 8,000-linear-feet of 20-inch-diameter PVC force main by trenching in uplands and by directional drilling under three wetland areas. The project is located along Lena Road, east of Interstate 75, from State Road 70 to 41st Avenue, Bradenton, Sections 12 and 13, Township 35 South, Range 18 East, Manatee County.

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 qualifies for all three authorizations. However, this letter does not relieve you from the responsibility of obtaining other federal, state, or local authorizations that may be required for the activity.

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.

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 - SPGP Approved

Your proposed activity as outlined on your notice and attached drawings qualifies for Federal authorization pursuant to the State Programmatic General Permit IV-R1, and a **SEPARATE permit** or authorization **will not be required** from the Corps. Please note that the Federal authorization expires on July 25, 2016. You, as permittee, are required to adhere to all General Conditions and Special conditions that may apply to your project. A copy of the SPGP IV-R1 with all terms and conditions and the General Conditions may be found at <http://www.saj.usace.army.mil/Divisions/Regulatory/sourcebook.htm>.

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 further 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 Rule 28-106.201, 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 email address, any facsimile number, and telephone number of the petitioner; 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 are or 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. 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 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. Under Section 120.60(3), F.S., however, any person who has asked the Department for notice of agency action may file a petition within 21 days of receipt of such notice, regardless of the date of publication. 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.

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, before the applicable 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 Rules 9.110 and 9.190, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 3900

Commonwealth Boulevard, M.S. 35, 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 of Appeal must be filed within 30 days from the date this action is filed with the Clerk of the Department.

Thank you for applying to the Submerged Lands and Environmental Resource Permit Program. If you have any questions regarding this matter, please contact Anthony Pidala at 813-470-5777 or Name@dep.state.fl.us.

Executed in Hillsborough County, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Sincerely,



Lauren Greenfield
Environmental Manager
Permitting and Waste Cleanup Program
Southwest District

LG/ap/admin

Enclosures:

Ch. 62-330.453, F.A.C.

General Conditions for All General Permits, Ch. 62-330.405, F.A.C.

General Conditions for Federal Authorization for SPGP IV-R1

Attachment "A" For Discretionary Publication

Attachment:

Project plans and drawings

Copies furnished to:

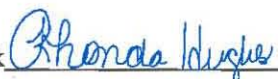
James Stockwell, jim.stockwell@mymanatee.org

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this determination, including all copies, was mailed before the close of business on 3/3/2015, to the above listed persons.

FILING AND ACKNOWLEDGMENT

FILED, on this date, pursuant to 120.52(7),
Florida Statutes, with the designated Department Clerk,
receipt of which is hereby acknowledged.

Clerk  Date 3/3/2015

File Name: Manatee County (Lena Rd - HDD)

File No: 41-0332786-001

Page 4 of 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;

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 24 inches;

2. A minimum of 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. 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.

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.

SPECIAL CONDITIONS FOR USE OF THE SPGP IV-RI

1. The District Engineer reserves the right to require that any request for authorization under this general permit be evaluated as an Individual Permit. Conformance with the terms and conditions of the SPGP IV-RI does not automatically guarantee authorization.
2. No activity is authorized under the SPGP IV-RI which may impact a federally listed threatened or endangered species or a species proposed for such designation, or its designated critical habitat.
3. On a case-by-case basis the Corps may impose additional special conditions which are deemed necessary to minimize adverse environmental impacts.
4. Failure to comply with all conditions of the Federal authorizations under the SPGP IV- RI would constitute a violation of the Federal authorization.
5. The SPGP IV-RI is not applicable in the geographical boundaries of: Monroe County; the Timucuan Ecological and Historical Preserve (Duval County); the St. Mary's River, from its headwaters to its confluence with the Bells River; the Wekiva River from its confluence with the St. Johns River to Wekiwa Springs, Rock Springs Run from its headwaters at Rock Springs to the confluence with the Wekiwa Springs Run, Black Water Creek from the outflow from Lake Norris to the confluence with the Wekiva River; canals at Garfield Point including Queens Cove (St. Lucie County); the Loxahatchee River from Riverbend Park downstream to Jonathan Dickinson State Park; the St. Lucie Impoundment (Martin County); all areas regulated under the Lake Okeechobee and Okeechobee Waterway Shoreline Management Plan, located between St. Lucie Lock (Martin County) and W.P. Franklin Lock (Lee County); American Crocodile designated critical habitat (Miami-Dade and Monroe Counties); Johnson's seagrass designated critical habitat (southeast Florida); piping plover designated critical habitat (throughout Florida); acroporid coral designated critical habitat (southeast Florida); Anastasia Island, Southeastern, Perdido Key, Choctawhatchee, or St. Andrews beach mice habitat (Florida east coast and panhandle coasts); the Biscayne Bay National Park Protection Zone (Miami-Dade County); Harbor Isles (Pinellas County); the Faka Union Canal (Collier County); the Florida panther consultation area (Southwest Florida), the Tampa Bypass Canal (Hillsborough County); canals in the Kings Bay/Crystal River/Homosassa/Salt River system (Citrus County); Lake Miccosukee (Jefferson County).
6. No structure or work shall adversely affect or disturb properties listed in the National Register of Historic Places or those eligible for inclusion in the National Register. Prior to the start of work, the Applicant/Permittee or other party on the Applicant's/Permittee's behalf shall conduct a search of known historical properties by contracting a professional archaeologist, contacting the Florida Master Site File at 850-245-6440 or SiteFile@dos.state.fl.us. The Applicant/Permittee can also research sites in the National Register Information System (NRIS). Information can be found at <http://www.cr.nps.gov/nr/research/>.

If, during the initial ground disturbing activities and construction work, there are archaeological/cultural materials unearthed (which shall include, but not be limited to: pottery, modified shell, flora, fauna, human remains, 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), the permittee shall immediately stop all work in the vicinity and notify the Compliance and Review staff of the State Historic Preservation Office at

850-245-6333 and the Corps Regulatory Project Manager to assess the significance of the discovery and devise appropriate actions, including salvage operations. 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.

In the unlikely event that human remains are identified, they will be treated in accordance with Section 872.05, Florida Statutes; all work in the vicinity shall immediately cease and the local law authority, the State Archaeologist (850-245-6444), and the Corps Regulatory Project Manager shall immediately be notified. Such activity shall not resume unless specifically authorized by the State Archaeologist and the Corps.

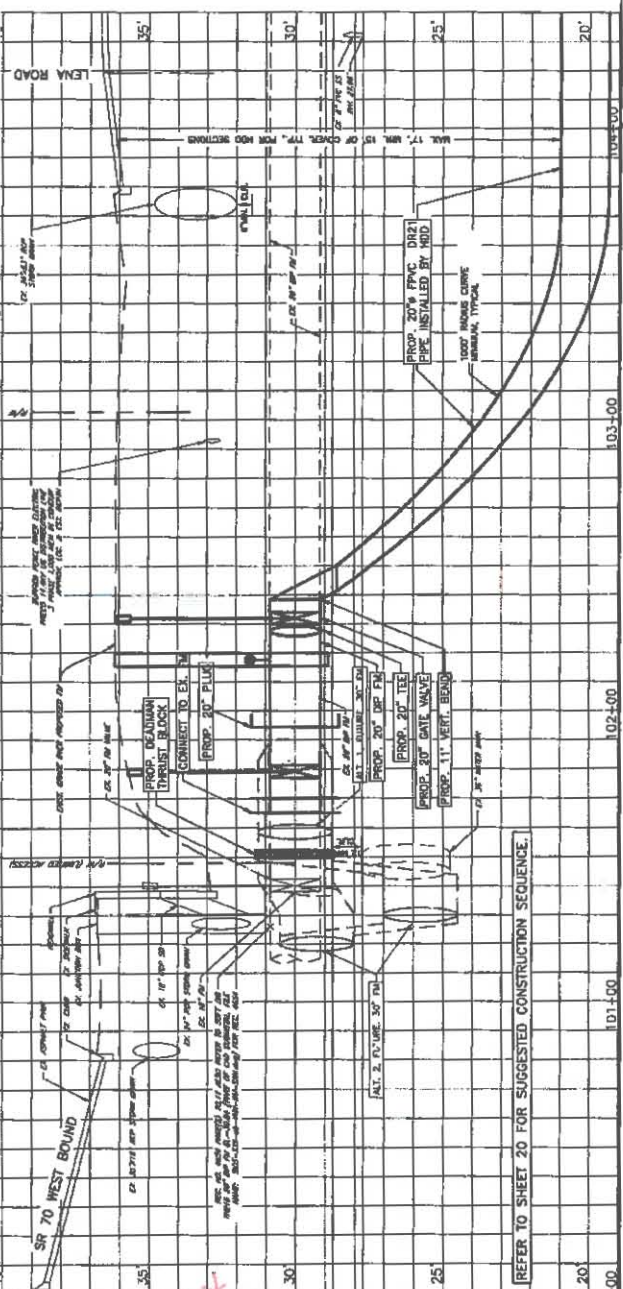
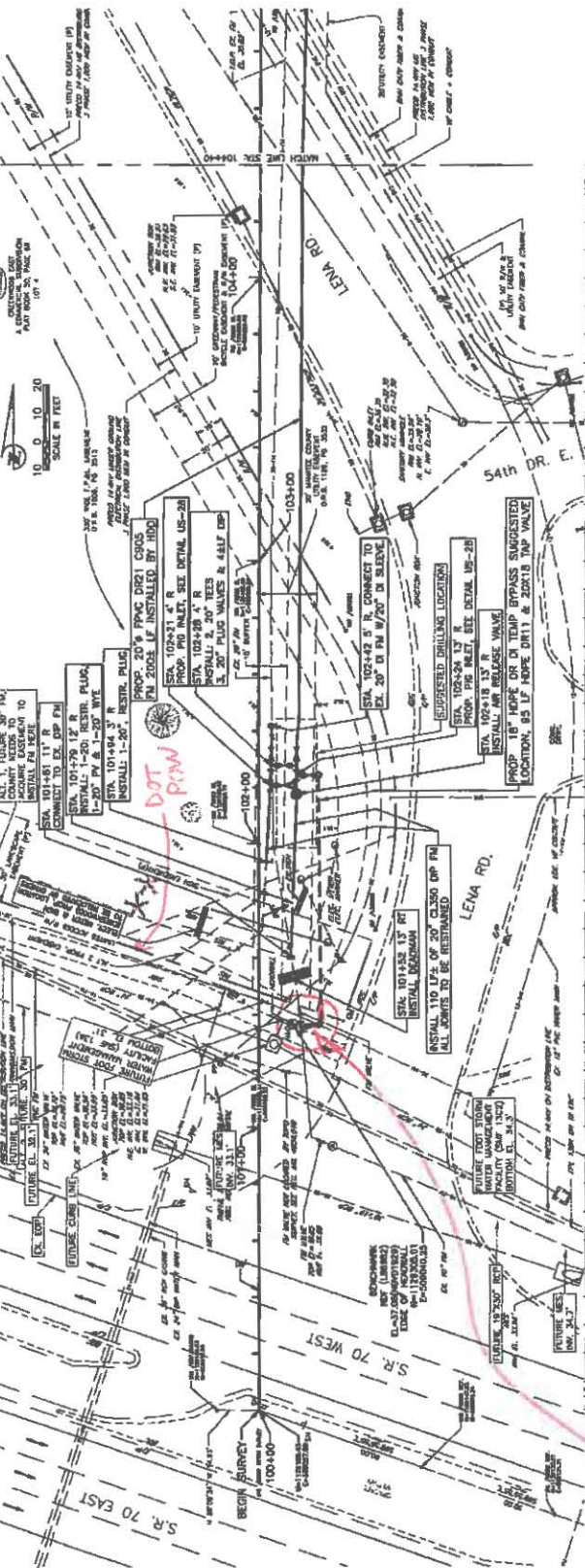
7. No work shall be authorized under the SPGP IV-R1 which proposes the use of prefabricated modules for habitat creation, restoration, or enhancement.
8. No activity shall be authorized under the SPGP IV-R1 which by its size or location may adversely impact water quality, fish and wildlife habitat, wetlands, or emergent or submerged aquatic vegetation. Where aquatic vegetation is present adverse impacts to aquatic vegetation from construction of piling-supported structures may be avoided/minimized by adherence to, or employing alternative construction techniques that provide a higher level of protection than, the protective criteria in the joint U.S. Army Corps of Engineers'/National Marine Fisheries Service's "Construction Guidelines in Florida for Minor Piling-Supported Structures Constructed in or over Submerged Aquatic Vegetation (SAV), Marsh or Mangrove Habitat U.S. Army Corps of Engineers/National Marine Fisheries Service August 2001." (See <http://www.saj.usace.army.mil/Divisions/Regulatory/sourcebook.htm>) Unless otherwise specifically approved by the National Marine Fisheries Service, where aquatic vegetation is present, piling-supported structures authorized under the SPGP IV-R1 must comply with, or provide a higher level of protection than, the criteria contained in the referenced construction guidelines. Additionally, because of concerns about adverse impacts to the endangered Johnson's seagrass (*Halophila johnsonii*), piling-supported structures in the lagoon (as well as canal) systems on Florida's east coast from Sebastian Inlet (Brevard County) south to and including central Biscayne Bay (Miami-Dade County) must also comply with, or provide a higher level of protection than, the criteria contained in the construction guidelines titled "Key for Construction Conditions for Docks or Other Minor Structures Constructed in or Over Johnson's seagrass (*Halophila johnsonii*) National Marine Fisheries Service/U.S. Army Corps of Engineers - February 2002." (See <http://www.saj.usace.army.mil/Divisions/Regulatory/sourcebook.htm>) *Note: Both of the Construction Guidelines may be subject to revision at any time. It is our intention that the most recent version of this technical tool will be utilized during the evaluation of each Department of the Army permit application.*
9. Prior to issuance of authorization, the dichotomous key titled "The Corps of Engineers, Jacksonville District, and the State of Florida Effect Determination Key for the Manatee in Florida," dated March 2011, will be used to determine potential manatee impacts. All projects determined to be "may affect" and certain multi-slip facilities determined to be "may affect, not likely to adversely affect" will be sent to the Corps for consultation with the U.S. Fish and Wildlife Service in accordance with the Endangered Species Act. *Note: The manatee key may be subject to revision at any time. It is our intention that the most recent version of this technical tool will be utilized during the evaluation of each Department of the Army permit application.*



TARA 20 FORCE MAIN PARALLEL TO LENA ROAD PLAN & PROFILE, STA 100+00 TO 104+40

VERTICAL DATUM: NGVD 29

NO.	REVISION	DATE
1	ISSUED FOR CONSTRUCTION	11/11/2015
2	REVISED	11/11/2015
3	REVISED	11/11/2015
4	REVISED	11/11/2015
5	REVISED	11/11/2015
6	REVISED	11/11/2015
7	REVISED	11/11/2015
8	REVISED	11/11/2015
9	REVISED	11/11/2015
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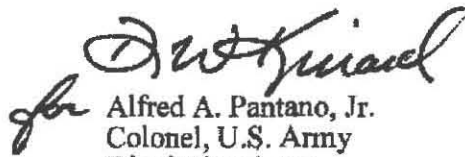
REFER TO SHEET 20 FOR SUGGESTED CONSTRUCTION SEQUENCE.

INSTALL
TO VALVE,
REPLACE
Remain in place
Remove Temp 15' in
Pipe after
Construction

*The current version can be found on the Jacksonville District Regulatory Home Page at:
<http://www.saj.usace.army.mil/Divisions/Regulatory/sourcebook.htm>*

10. For projects in waters accessible to sea turtles, Small tooth sawfish, Gulf sturgeon, or Shortnose sturgeon, the permittee will utilize the "Sea Turtle and Small tooth Sawfish Construction Conditions" (see <http://www.saj.usace.army.mil/Divisions/Regulatory/sourcebook.htm>) and any added requirements, as appropriate for the proposed activity. *Note: These conditions may be subject to revision at any time. It is our intention that the most recent version of these conditions will be utilized during the evaluation of the permit application.*
11. With respect to bald eagles, the permittee should refer to the U.S. Fish and Wildlife Service's "National Bald Eagle Management Guidelines," dated May 2007 (see <http://www.fws.gov/northflorida/BaldEagles/bald-eagles.htm>) for guidance and clearance. *Note: The preceding should be considered an interim condition, after which, new rules may be promulgated. It is the Corps' intention that the most recently approved version of these conditions or ensuing rules will be utilized during the evaluation of permit applications under this general permit.*
12. For projects authorized under this SPGP IV-R1 in navigable waters of the U.S., 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.
13. The SPGP IV-R1 will be valid for five years from the date of issuance unless suspended or revoked by issuance of a public notice by the District Engineer. The Corps, in conjunction with the Federal resource agencies, will conduct periodic reviews to ensure that continuation of the permit during the five-year authorization period is not contrary to the public interest. If revocation occurs, all future applications for activities covered by the SPGP IV-R1 will be evaluated by the Corps.
14. If the SPGP IV-R1 expires or is revoked prior to completion of the authorized work, authorization of activities which have commenced or are under contract to commence in reliance upon the SPGP IV-R1 will remain in effect provided the activity is completed within 12 months of the date the SPGP IV-R1 expired or was revoked.
15. The General conditions attached hereto are made a part of this permit and must be attached to all authorizations processed under this permit.

BY AUTHORITY OF THE SECRETARY OF THE ARMY:


for Alfred A. Pantano, Jr.
Colonel, U.S. Army
District Engineer

ATTACHMENT "A" FOR DISCRETIONARY PUBLICATION OF NOTICE OF DETERMINATION
OF QUALIFICATION FOR A GENERAL PERMIT

In the Matter of an Application
for a Determination of Qualification
for a General Permit by:

Manatee County Public Works
c/o Sia Mollanazar, Deputy Director, Engineering
1022 26th Avenue East
Bradenton, Florida 34208

DEP File No.: 41-0332786-001; County: Manatee

The Department of Environmental Protection gives notice that it has received a request for authorization to install 8,000-linear-feet of 20-inch-diameter PVC force main by trenching in uplands and by directional drilling under three wetland areas. The project is located along Lena Road, east of Interstate 75, from State Road 70 to 41st Avenue, Bradenton, Sections 12 and 13, Township 35 South, Range 18 East, Manatee County. The Department has determined that the project qualifies for a general permit established under 62-330.453, F.A.C.

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 of the F.S. The petition must contain the information set forth below and 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.

Mediation is not available.

If a timely and sufficient petition for an administrative hearing is filed, other persons whose substantial interests will be affected by the outcome of the administrative process have the right to petition to intervene in the proceeding. Intervention will be permitted only at the discretion of the presiding officer upon the filing of a motion in compliance with rule 28-106.205 of the Florida Administrative Code.

In accordance with rule 62-110.106(3), F.A.C., petitions for an administrative hearing must be filed within 21 days of publication of the notice or receipt of written notice, whichever occurs first. Under rule 62-110.106(4) of the 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 prior to the applicable deadline. 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. Upon motion by the requesting party showing that the failure to file a request for an extension of time before the deadline was the result of excusable neglect, the Department may also grant the requested extension of time.

The petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition for an administrative hearing within the appropriate time period shall constitute a waiver of that right.

A petition that disputes the material facts on which the Department's action is based 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, and telephone number of the petitioner; 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 are or 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 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; 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.

A petition that does not dispute the material facts on which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by rule 28-106.301, F.A.C.

Under sections 120.569(2) (c) and (d) of the Florida Statutes, a petition for administrative hearing shall be dismissed by the agency if the petition does not substantially comply with the above requirements or is untimely filed.

Complete copies of all documents relating to this general permit are available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, at the Department's Southwest District Office, 13051 North Telecom Parkway, Temple Terrace, FL 33637-0926.



**FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION**

Southwest District Office
13051 North Telecom Parkway
Temple Terrace, Florida 33637-0926

**RICK SCOTT
GOVERNOR**

**CARLOS LOPEZ-CANERA
LT. GOVERNOR**

**JONATHAN P. STEVERSON
SECRETARY**

NOTIFICATION OF ACCEPTANCE OF USE OF A GENERAL PERMIT

PERMITTEE:

Mr. Sia Mollanazar, P.E.
Deputy Director, Engineering
Manatee County Public Works Division
1022 26th Avenue East
Bradenton, FL 34208
Sia.Mollanazar@mymanatee.org

PERMIT NUMBER: CS41-0182518-449-DWC/CG

ISSUE DATE: January 30, 2015

EXPIRATION DATE: January 29, 2020

COUNTY: Manatee

PROJECT NAME: Tara 20 Forcemain – Lena Road
Section

WASTEWATER TREATMENT FACILITY: Manatee
County Southeast Wastewater Treatment Facility

FACILITY ID: FLA012618

Dear Mr. Mollanazar:

This letter acknowledges receipt of your Notification/Application for Constructing a Domestic Wastewater Collection/Transmission System for the subject project. Our Office received the Notice on January 27, 2015.

This is to advise you that the Department does not object to your use of this general permit for the following: 20-inch diameter forcemain.

Please note the attached requirements apply to your use of this general permit for constructing the proposed domestic wastewater collection/transmission system.

You are further advised that the construction activity must conform to the description contained in your Notification/Application for Constructing a Domestic Wastewater Collection/Transmission System and that any deviation may subject the permittee to enforcement action and possible penalties.

If you have any questions, please contact Vicki McGucken at (813) 470-5755, or via email at Vicki.McGucken@dep.state.fl.us

Sincerely,

for Kelley M. Boatwright
Program Administrator
Permitting & Waste Cleanup Program
Southwest District

KMB/vsm

Attachments: General Conditions
Location of Public Water System Mains

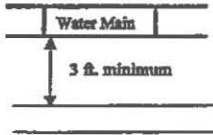
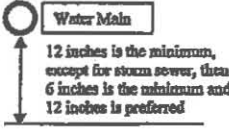

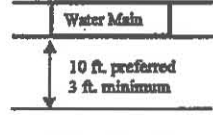
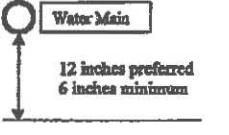
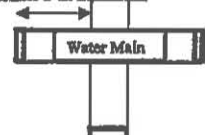
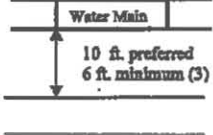
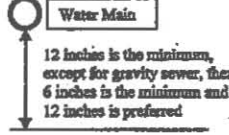
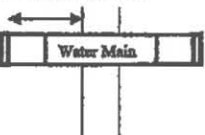
cc: Jim Stockwell, P.E., Manatee County, jim.stockwell@mymanatee.org

PROJECT NAME: Tara 20 Forcemain – Lena Road Section
PERMIT NUMBER: CS41-0182518-449-DWC/CG

REQUIREMENTS FOR USE OF THE GENERAL PERMIT FOR DOMESTIC WASTEWATER COLLECTION/TRANSMISSION SYSTEMS:

1. This general permit is subject to the general permit conditions of Rule 62-4.540, F.A.C., as applicable. This rule is available at the Department's Internet site at:
<http://www.dep.state.fl.us/water/rulesprog.htm#ww> [62-4.540]
2. This general permit does not relieve the permittee of the responsibility for obtaining a dredge and fill permit where it is required. [62-604.600(6)(b)1]
3. This general permit cannot be revised, except to transfer the permit. [62-604.600(6)(b)2]
4. This general 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. [62-4.030]
5. Upon completion of construction of the collection/transmission system project, and before placing the facilities into operation for any purpose other than testing for leaks or testing equipment operation, the permittee shall submit to the Department's Southwest District Office Form 62-604.300(8)(b), Request for Approval to Place a Domestic Wastewater Collection/Transmission System into Operation. This form is available at the Department's Internet site at:
<http://www.dep.state.fl.us/water/wastewater/forms.htm> [62-604.700(2)]
6. The new or modified collection/transmission facilities shall not be placed into service until the Department clears the project for use. [62-604.700(3)]
7. Abnormal events shall be reported to the Department's Southwest District Office in accordance with Rule 62-604.550, F.A.C. For unauthorized spills of wastewater in excess of 1000 gallons per incident, or where information indicates that public health or the environment may be endangered, oral reports shall be provided to the STATE WATCH OFFICE TOLL FREE NUMBER (800)320-0519 as soon as practical, but no later than 24 hours from the time the permittee or other designee becomes aware of the circumstances. Unauthorized releases or spills less than 1000 gallons per incident are to be reported orally to the Department's Southwest District Office within 24 hours from the time the permittee, or other designee becomes aware of the circumstances. [62-604.550]

LOCATION OF PUBLIC WATER SYSTEM MAINS IN ACCORDANCE WITH F.A.C. RULE 62-555.314

Other Pipe	Horizontal Separation	Crossings (1)	Joint Spacing @ Crossings (Full Joint Centered)
Storm Sewer, Stormwater Force Main, Reclaimed Water (2)	 3 ft. minimum	 12 inches is the minimum, except for storm sewer, then 6 inches is the minimum and 12 inches is preferred	 Alternate 3 ft. minimum
Vacuum Sanitary Sewer	 10 ft. preferred 3 ft. minimum	 12 inches preferred 6 inches minimum	 Alternate 3 ft. minimum
Gravity or Pressure Sanitary Sewer, Sanitary Sewer Force Main, Reclaimed Water (4)	 10 ft. preferred 6 ft. minimum (3)	 12 inches is the minimum, except for gravity sewer, then 6 inches is the minimum and 12 inches is preferred	 Alternate 6 ft. minimum
On-Site Sewage Treatment & Disposal System	10 ft. minimum	---	---

(1) Water main should cross above other pipe. When water main must be below other pipe, the minimum separation is 12 inches.

(2) Reclaimed water regulated under Part III of Chapter 62-610, F.A.C.

(3) 3 ft. for gravity sanitary sewer where the bottom of the water main is laid at least 6 inches above the top of the gravity sanitary sewer.

(4) Reclaimed water not regulated under Part III of Chapter 62-610, F.A.C.

Disclaimer - This document is provided for your convenience only. Please refer to F.A.C. Rule 62-555.314 for additional construction requirements.

**SUBSURFACE SOIL EXPLORATION,
ANALYSIS AND RECOMMENDATIONS
FOR TARA 20 FORCE MAIN
PARALLEL TO LENA ROAD,
BRADENTON,
MANATEE COUNTY, FLORIDA
(MANATEE COUNTY PROJECT #6079881)**



Ardaman & Associates, Inc.

OFFICES

FLORIDA

Orlando, 8008 S. Orange Avenue, Orlando, Florida 32809, Phone (407) 855-3860
Bartow, 1525 Centennial Drive, Bartow, Florida 33830, Phone (863) 533-0858
Cocoa, 1300 N. Cocoa Boulevard, Cocoa, Florida 32922, Phone (321) 632-2503
Fort Myers, 9970 Bavaria Road, Fort Myers, Florida 33913, Phone (239) 768-6600
Miami, 2608 W. 84th Street, Hialeah, Florida, 33016, Phone (305) 825-2683
Port St. Lucie, 460 NW Concourse Place, Unit #1, Port St. Lucie, Florida 34986-2248, Phone (772) 878-0072
Sarasota, 78 Sarasota Center Boulevard, Sarasota, Florida 34240, Phone (941) 922-3526
Tallahassee, 3175 West Tharpe Street, Tallahassee, Florida 32303, Phone (850) 576-6131
Tampa, 3925 Coconut Palm Drive, Suite 115, Tampa, Florida 33619, Phone (813) 620-3389
West Palm Beach, 2511 Westgate Avenue, Suite 10, West Palm Beach, Florida 33409, Phone (561) 687-8200

LOUISIANA

Alexandria, 3609 MacLee Drive, Alexandria, Louisiana 71302, Phone (318) 443-2888
Baton Rouge, 316 Highlandia Drive, Baton Rouge, Louisiana 70810, Phone (225) 752-4790
Monroe, 1122 Hayes Street, Monroe, Louisiana 71292, Phone (318) 387-4103
New Orleans, 1305 Distributors Row, Suite 1, Jefferson, Louisiana 70123, Phone (504) 835-2593
Shreveport, 7222 Greenwood Road, Shreveport, Louisiana 71119, Phone (318) 636-3723

MEMBERS:

A.S.F.E.

**American Concrete Institute
American Society for Testing and Materials
Florida Institute of Consulting Engineers**



Ardaman & Associates, Inc.

Geotechnical Engineering and
Construction Services

October 14, 2014
File No. 14-7342

TO: Manatee County Public Works Department
Project Management Division
1022 26th Avenue East
Bradenton, FL 34208

Attention: Brian Bates, P.E.

SUBJECT: Subsurface Soil Exploration, Analysis and Recommendations for
Tara 20 Force Main Parallel to Lena Road, Bradenton, Manatee County, Florida
(Manatee County Project #6079881)

Dear Mr. Bates:

As requested and authorized by you, we have completed a subsurface soil exploration and geotechnical engineering evaluation for the subject project. The purposes of performing this exploration were to evaluate the general subsurface conditions within the water main alignment and to provide recommendations for structure support along cut and cover portions of the pipeline. In addition, we have provided the results of our borings for possible directional drill areas. This report documents our findings and presents our engineering recommendations.

This report has been prepared for the exclusive use of Manatee County Public Works Department for specific application to the subject project, in accordance with generally-accepted geotechnical engineering practices.

We understand that the project consists of approximately 8,700 linear feet of proposed 20-inch water main pipeline. We understand that the majority of this pipeline is planned to be directionally drilled, but that short sections of it may be installed using the cut and cover method.

SCOPE

The scope of our services has included the following items:

1. Conducting six (6) Standard Penetration Test borings to determine the nature and condition of the subsurface soils.

2. Reviewing each soil sample obtained in our field testing program by a geotechnical engineer in the laboratory for further investigation, classification and assignment of laboratory tests, if required.
3. Performing laboratory tests on selected samples.
4. Analyzing the existing soil conditions with respect to the proposed construction.
5. Preparing this report to document the results of our field testing program, engineering analyses and recommendations.

SITE LOCATION AND SITE DESCRIPTION

The subject site is located within Sections 12 and 13, Township 35 South, Range 18 East, in Bradenton, Manatee County, Florida. As shown on Figure 1, the proposed pipe alignment runs in a north-south alignment from the S.R. 70/Lena Road interchange to just east of 41st Avenue East.

The proposed pipeline alignment is in an existing county utility easement. Portions of the alignment were observed by Ardaman & Associates Engineer Mr. Greg Stevens, P.E. on October 6, 2014. The easement alignment has several existing underground and overhead utilities, and is predominantly overgrown with dense underbrush and trees. In some areas the alignment was underwater at the time of observation.

FIELD EXPLORATION PROGRAM

Our field exploration program consisted of conducting six (6) Standard Penetration Test borings at the locations shown on the attached Figure 1. These borings were performed to determine the nature and condition of the subsurface soils to a depth of 30 feet below the existing ground surface. The equipment and procedures used in the borings are described in the Appendix of this report.

Test borings were located in the field by estimating distances from existing site features. Test boring locations should be considered accurate only to the degree implied by the method used. Should more accurate locations be required, a registered land surveyor should be retained.

We note that boring locations were requested by you and that all boring locations were performed in the general vicinity that you requested except for Boring 5. Boring 5 had to be



relocated approximately 650 feet to the north of the requested location, which was the closest accessible drilling location in the pipeline alignment to our off road drilling equipment.

We also note that manual (muck) probes were included in our proposed scope of work at the three wetland locations along the pipeline alignment. However, at the time of exploration, the dense nature of the vegetation and the high water levels made the desired locations inaccessible to our crews. We would be pleased to perform the muck probes after a path has been cleared to these locations, when requested.

GENERAL SUBSURFACE CONDITIONS

General Soil Profile

The general subsurface conditions encountered during the field exploration program are depicted on the graphic soil profiles (boring logs) on Figure 1 of this report. Soil stratification is based on examination of recovered soil samples and interpretation of field boring logs. The stratification lines represent the approximate boundaries between the soil types, while the actual transitions may be gradual. The results of the borings indicate the following general soil profile:

DEPTH		SOIL DESCRIPTION
From (feet)	To (feet)	
0	2	Fine sand (SP), and organic muck (OH)
2	12.5	Very loose to medium dense fine sand (SP), fine sand with silt (SP-SM), fine sand with clay (SP-SC) and clayey fine sand (SC)
12.5	17.5	Loose to dense clayey fine sand (SC), fine sand (SP), fine sand with clay (SP-SC) and very stiff clay (CH)
17.5	22.5	Very loose to dense clayey fine sand (SC) and fine sand with clay (SP-SC) and firm to stiff clay (CH)
22.5	30	Loose to dense fine sand with clay (SP-SC), silty clayey fine sand (SM/SC) and clayey fine sand (SC) and stiff to hard clay (CH)

The depths and/or thicknesses of the organic muck may be greater at unexplored locations.

The above soil profile is outlined in general terms only. Please refer to Figure 1 for soil profile details.



Groundwater Level

On the date of our field exploration program, the groundwater table was encountered at a depth of approximately 1.3 to 4 feet below the existing ground surface. Fluctuations in groundwater levels should be anticipated throughout the year primarily due to seasonal variations in rainfall and other factors that may vary from the time the borings were conducted.

LABORATORY TESTING PROGRAM

Representative soil samples obtained during our field sampling operation were packaged and transferred to our office and, thereafter, examined by a geotechnical engineer to obtain more accurate descriptions of the existing soil strata. Laboratory testing was performed on selected samples as deemed necessary to aid in soil classification and to further define the engineering properties of the soils. The laboratory tests included two organic content tests (ASTM D2974-87), two natural moisture content tests (ASTM D2216), and one percent fines analysis (ASTM D1140) on selected soil samples obtained from the borings. The test results are presented on the graphic soil profiles on Figure 1, at the depths from which the samples were recovered. The soil descriptions shown on the soil profiles are based on the laboratory test results and a visual classification procedure in general accordance with the Unified Soil Classification System (ASTM D-2487 or D-2488).

ENGINEERING EVALUATION AND RECOMMENDATIONS

General

The results of this exploration indicate that the existing soils as encountered in the borings, except the organic muck, are suitable for supporting the proposed cut and cover portions of pipeline.

We have assumed that the pipe and pipeline structure foundation elevations are lower than that of the organic muck. The organic muck should not be used as backfill in the excavations. If the elevation of the pipe or the bottom of foundation is higher than the organic muck layer, the organic muck will need to be removed and replaced with suitable compacted backfill. Ardaman & Associates would be pleased to provide detailed recommendations for organic muck removal, if necessary.



The following are our recommendations for overall site preparation and foundation support which we feel are best suited for the proposed cut and cover sections of pipeline relative to the soil conditions encountered in the borings as shown on Figure 1. The recommendations are made as a guide for the design engineer, parts of which should be incorporated into the project's specifications.

We note that no recommendations are made relative to the jack and bore (directional drill) sections of the pipeline since this construction method is proprietary in nature.

Excavation

Based on the conditions encountered during the field exploration, we anticipate that the sandy soils as encountered in the borings can be excavated with standard earth moving equipment (i.e., front-end loaders and backhoes).

The soils below the bottom of the excavations should not be disturbed by the excavation process. If soils become disturbed and difficult to compact, they should be overexcavated to a depth necessary to remove all disturbed soils. Overexcavated areas should be replaced with compacted backfill meeting the "Backfill Requirements" presented in a following report section.

Excavation should be safely braced to prevent injury to personnel or damage to equipment. Temporary safe slopes should be cut at a minimum 1.5 Horizontal (H) to 1 Vertical (V) in accordance with OSHA, 29 CFR Part 1926 Final Rule, Excavation Requirements or successor regulations. Flatter slopes should be used if deemed necessary. Surcharge loads should be kept at least 5 feet from excavations. Spoil banks adjacent to excavations should be sloped no steeper than 2.0H to 1.0V. Provisions for maintaining workers safety within excavations is the sole responsibility of the Contractor.

Dewatering

The control of groundwater will likely be necessary to achieve the necessary depths of excavation and subsequent construction and backfilling and compaction requirements presented in the following sections. The actual method(s) of dewatering should be determined by the Contractor. However, regardless of the method(s) used, we suggest drawing down the



water table sufficiently; say 2 to 3 feet, below the bottom of the excavation(s) to preclude "pumping" and/or compaction-related problems with the foundation soils.

Pipeline Bedding

Pipe bedding material should be compacted as necessary to achieve a density equivalent to 95 percent of the maximum dry density, as determined by the Modified Proctor (ASTM D-1557), to a minimum depth of 6 inches below the bottom of the pipe (compact deeper if recommended by the pipe manufacturer). If relatively high fines content soils are present at the bedding elevation that are found to be difficult to compact, the contractor may elect at their discretion to import fill with less than 12 percent passing the No. 200 Sieve rather than going to additional effort to moisture condition and compact these soils.

It is our recommendation that the bedding for the pipe be preshaped by means of a template, prior to placement of the structure, to ensure that the upward reaction on the bottom of the pipe will be well distributed over the width of the bedding contact. Based on the cost involved with pre-shaping the bedding material, and the construction time requirements, an alternative procedure may be to utilize a level bed for the pipe and require a higher pipe strength class which will adequately carry the load on a lower class of bedding. It would be prudent to perform an economic analysis of the two alternatives, or specify both design conditions within the contract documents, and allow the Contractor to decide the most efficient method.

If level bedding is utilized, it will be necessary to place and compact the haunching backfill (backfill between the bedding and the centerline of the pipe) to the centerline of the pipe. This material should be placed in simultaneous layers on each side of the pipe and must be compacted in such a manner as to ensure an intimate contact with the sides of the pipe. Do not use blocking to raise the pipe to grade. Provide bell holes at each joint to permit the joint to be assembled while maintaining uniform pipe support.

Backfill Requirements

As a general guide to aid the Contractor, we recommend using fill with less than 12 percent by dry weight of material passing the U.S. Standard No. 200 sieve size. Soils with more than 12 percent passing the No. 200 sieve will be more difficult to compact due to their inherent nature



to retain soil moisture. Based on the soil samples obtained during our subsurface investigation, the fine sand (SP) fine sand with silt (SP-SM) and fine sand with clay (SP-SC) soils without roots and/or organic matter appear suitable for use as structural backfill for the pipe. We note that material removed from below the groundwater table will be wet and will require time to dry sufficiently.

Silty clayey fine sand (SM/SC) and clayey fine sand (SC) soils may be used as backfill. However, these soils will be more difficult to moisture condition and compact than soils discussed in the above paragraph. These soils will be difficult to compact because of their relatively high fines content. They may be used as backfill if it is possible to achieve the required degree of compaction. However, extensive moisture conditioning would likely be required. The contractor may elect at their discretion to import fill with less than 12 percent passing the No. 200 Sieve rather than going to additional effort to moisture condition and compact the clayey soils. Weather conditions during construction may also affect this decision.

Clay (CH) soils are generally considered unsuitable for use as structural fill because of the extreme difficulty in moisture conditioning and compacting these soils.

Organic muck (OH) and organic muck with roots (OH-PT) are not suitable for use as structural fill and should be disposed of as directed by the owner.

The final backfill above the haunching or centerline of the pipe must extend all the way to the trench walls and should be placed in level lifts not exceeding 8 inches. Each lift should be compacted to at least 95 percent of the maximum dry density, as determined by the Modified Proctor (ASTM D-1557). Care should be taken not to damage the pipe or defect it by compacting directly above the pipe where there is insufficient cover material present. Minimum cover criteria should be in accordance with the pipe manufacturer's recommendations.

A soils engineer or a designated representative from Ardaman & Associates, Inc. should observe and test all prepared and compacted areas to verify that all bedding, haunching and final backfill are prepared and compacted in accordance with the aforementioned specifications



Resistance to Horizontal Forces on Pipeline Structures

Horizontal forces which act on structures such as thrust blocks or anchor blocks can be resisted to some extent by the earth pressures that develop in contact with the buried vertical face (buried vertical face is perpendicular and in front of the applied horizontal load) of the block structures and by shearing resistance mobilized along the base of the block structures and subgrade interface.

Allowable earth pressure resistance may be determined using an equivalent fluid density of 100 pounds per cubic foot (pcf) for moist soil and 60 pcf for submerged soils below the water table.

Equivalent fluid density (moist soil) = $K_p \gamma_m / S.F. = 100 \text{ pcf}$

Equivalent fluid density (submerged soil) = $K_p (\gamma_s - \gamma_w) / S.F. = 60 \text{ pcf}$

Where:

K_p = effective coefficient of passive earth pressure = 3.0

S.F. = safety factor = (values given above)

γ_m = unit weight of moist soil = 110 pcf

γ_s = unit weight of saturated soils = 118 pcf

γ_w = unit weight of water = 62.4 pcf

The passive earth pressures are developed from ground surface (assuming there is no excavation in the vicinity of the block structure that would reduce the available passive pressure) to the bottom of the block structure.

The values presented above presume that the block structures are surrounded by well compacted sand backfill extending at least 5 feet horizontally beyond the vertical buried face. In addition, it is presumed that the block structures can withstand horizontal movements on the order of one-quarter (1/4) to three-eighths (3/8) inch before mobilizing full passive resistance. The factors of safety assumed in the above recommendations are 2.5 for passive pressure with submerged conditions, and 3.0 for passive pressure without submerged conditions.



The sliding shearing resistance mobilized along the base of the block structure may be determined by the following formula:

$$\text{Allowable Shearing Resisting Force, } P = V \tan(2/3\phi) / F.S.$$

Where:

- P = Shearing Resistance Force (pounds)
- V = Net Vertical Force (total weight of block and soil overlying the structure minus uplift forces including buoyancy forces) (pounds)
- ϕ = Angle of Internal Friction of Soil = 30 degrees
- S.F. = Safety Factor = 1.5

The vertical earth pressures developed by the overburden weight of soil can be calculated using the following unit weights:

- Compacted moist soil = 110 pcf
- Saturated soil = 118 pcf

Vertical pressure distributions in accordance with the above do not take into account vertical forces from construction equipment, wheel loads or other surcharge loads.

Foundation Support and Estimated Settlements - Pipeline Elements

The permanent structures such as anchor blocks, thrust blocks, air release valves, blow offs, etc., bearing at least 18 inches below adjacent grade can be designed for the maximum vertical bearing capacities presented below.

- 1,500 psf on undisturbed natural granular soils.
- 2,000 psf on compacted natural or backfilled subgrade; this value assumes compaction of 95 percent of the standard Proctor maximum density (ASTM D-698, AASHTO T-99) for a depth of 2 feet below the structure.

Pipe settlement during and after construction should be negligible (less than ½-inch), provided the bedding and backfilling criteria in the above sections are satisfied. The volume of soil



displaced by the pipe, compared to the weight of the pipe when full, will result in little if any net increase in bearing stress to the subsurface soils.

Uplift Resistance

Permanent structures submerged below the groundwater table will be subjected to uplift forces caused by buoyancy. The components resisting this buoyancy include: 1) the total weight of the pipe or structure divided by an appropriate factor of safety; 2) the buoyant weight of soil overlying the pipe or structure; and 3) the shearing forces that act on shear planes that radiate vertically upward from the perimeter of the pipe or the edges of the structure to the ground surface. The allowable unit shearing resistance may be determined by the following formula:

Allowable Unit Shearing Resistance, $F = K_o \gamma_m h (2/3 \tan \phi) / S.F.$ (above groundwater table)

Allowable Unit Shearing Resistance, $F = K_o [\gamma_m h_w + \gamma_b (h - h_w)] (2/3 \tan \phi) / S.F.$ (below groundwater table)

Where:

F = unit shearing resistance (psf)

K_o = coefficient of earth pressure at rest = 0.5

γ_m = unit weight of moist soil = 110 pcf

γ_b = buoyant unit weight of soil = 55.6 pcf

h = vertical depth (feet) below grade at which shearing resistance is determined

h_w = vertical depth (feet) below grade to groundwater table

ϕ = angle of internal friction of the soil = 30 degrees

S.F. = safety factor = 2

The values given for the above parameters assume that the permanent structures are covered by clean, well compacted granular backfill that extends horizontally at least 2 feet beyond the structures.

Earth Pressure on Shoring and Bracing

If temporary shoring and bracing is required for any excavations, the system should be designed to resist lateral earth pressure. The design earth pressure will be a function of the



flexibility of the shoring and bracing system. For a flexible system restrained laterally by braces placed as the excavation proceeds, the design earth pressure for shoring and bracing can be computed using a uniform earth pressure distribution with depth. It is recommended that soils be de-watered around the excavations. For such de-watered excavations, we recommended using the following uniform pressure distribution over the full braced height as follows:

$$\text{Uniform Soil Pressure Distribution, } p = 0.65K_a\gamma_s H$$

Where:

p = uniform pressure distribution for design of braced excavation

K_a = coefficient of active earth pressure = 0.33

γ_s = unit weight of saturated soils = 118 pcf

H = depth of excavation

An appropriate factor of safety should be applied for the design of the braced excavations.

Lateral pressure distributions determined in accordance with the above do not take hydrostatic pressures or surcharge loads into account. To the extent that such pressures and forces may act on the walls, they should be included in the design.

Construction equipment and excavated fill should be kept a minimum distance of 5 feet from the edge of the braced or shored excavation. Backfill material placed adjacent to (maintaining a minimum 5-foot horizontal clearance) the braced or shored excavation should have a minimum slope of 2.0H:1.0V, or flatter if required by site specific conditions and/or to meet OSHA requirements.

Means and methods of excavation and bracing should be the responsibility of the Contractor; however, excavation and/or bracing should at a minimum adhere to the requirements of the Occupational Safety Health Administration (OSHA).



Lateral Earth Pressures

Lateral loads acting on the embedded structure will include at-rest earth pressures as well as hydrostatic pressures and surcharge loads. The lateral earth pressure will be a function of both the depth below ground surface and the soil unit weight (submerged or moist) plus hydrostatic pressure (if applicable). The following equations can be used to determine the lateral at-rest earth pressure:

$$\sigma_h = K_o \gamma_m h \text{ (above groundwater table)}$$

$$\sigma_h = K_o [\gamma_m h_w + \gamma_b (h - h_w)] \text{ (below groundwater table)}$$

Where:

σ_h = lateral earth pressure (psf)

K_o = coefficient of at rest earth pressure (0.5) (this value assumes that the backfill is lightly compacted yet not overcompacted)

γ_m = effective moist unit weight of soil = 110 pcf for compacted moist soil above the water table.

γ_b = buoyant unit weight of soil = 55.6 pcf for compacted saturated soil below the water table.

h = vertical depth (feet) below grade at which lateral earth pressure is determined

h_w = vertical depth (feet) below grade to groundwater table

For design, an appropriate factor of safety should be applied to the lateral earth pressure calculated using the above equation. Lateral pressure distributions determined in accordance with the above do not include hydrostatic pressures or surcharge loads. Where applicable, they should be incorporated in the design.



GENERAL COMMENTS

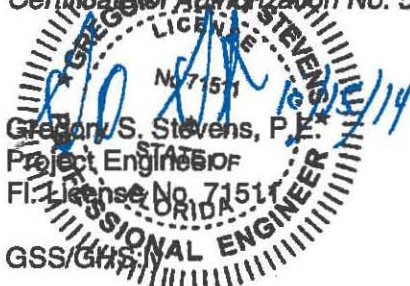
The analysis and recommendations submitted in this report are based upon the data obtained from six (6) test borings performed at the locations indicated on the attached Figure 1. This report does not reflect any variations which may occur between the borings. While the borings are representative of the subsurface conditions at their respective locations and within their respective vertical reaches, local variations characteristic of the subsurface materials of the region are anticipated and may be encountered. The nature and extent of variations may not become evident until during the course of construction. If variations then appear evident, it will be necessary to reevaluate the recommendations of this report, after performing on-site observations during the construction period and noting the characteristics of any variations. The boring logs and related information are based upon the driller's logs and visual examination of selected samples in the laboratory. The delineation between soil types shown on the logs is approximate, and the description represents our interpretation of the subsurface conditions at the designated boring location on the particular date drilled.

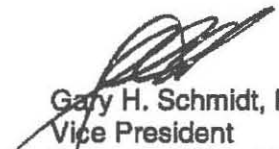
The groundwater table depths shown on the boring logs represent the groundwater surfaces encountered on the dates shown. Fluctuation of the groundwater table should be anticipated throughout the year.

It has been a pleasure to be of assistance to you with this project. Please contact us when we may be of further service to you, or should you have any questions concerning this report.

Very truly yours,

ARDAMAN & ASSOCIATES, INC.
Certificate of Authorization No. 5950


Gregory S. Stevens, P.E.
Project Engineer
Fl. License No. 71511
GSS/GHS


Gary H. Schmidt, P.E.
Vice President
Fl. License No. 12305



Ardaman & Associates, Inc.

APPENDIX

SOIL BORING, SAMPLING AND TESTING METHODS

Standard Penetration Test

The Standard Penetration Test (SPT) is a widely accepted method of in situ testing of foundation soils (ASTM D-1586). A 2-foot long, 2-inch O.D. split-barrel sampler attached to the end of a string of drilling rods is driven 18 inches into the ground by successive blows of a 140-pound hammer freely dropping 30 inches. The number of blows needed for each 6 inches of penetration is recorded. The sum of the blows required for penetration of the second and third 6-inch increments of penetration constitutes the test result or N-value. After the test, the sampler is extracted from the ground and opened to allow visual examination and classification of the retained soil sample. The N-value has been empirically correlated with various soil properties allowing a conservative estimate of the behavior of soils under load. The following tables relate N-values to a qualitative description of soil density and, for cohesive soils, an approximate unconfined compressive strength (Q_u):

Cohesionless Soils:	<u>N-Value</u>	<u>Description</u>
	0 to 4	Very loose
	4 to 10	Loose
	10 to 30	Medium dense
	30 to 50	Dense
	Above 50	Very dense

Cohesive Soils:	<u>N-Value</u>	<u>Description</u>	<u>Q_u (ton/ft²)</u>
	0 to 2	Very soft	Below 0.25
	2 to 4	Soft	0.25 to 0.50
	4 to 8	Medium stiff	0.50 to 1.0
	8 to 15	Stiff	1.0 to 2.0
	15 to 30	Very stiff	2.0 to 4.0
	Above 30	Hard	Above 4.0

The tests are usually performed at 5-foot intervals. However, more frequent or continuous testing is done by our firm through depths where a more accurate definition of the soils is required. The test holes are advanced to the test elevations by rotary drilling with a cutting bit, using circulating fluid to remove the cuttings and hold the fine grains in suspension. The circulating fluid, which is a bentonitic drilling mud, is also used to keep the hole open below the water table by maintaining an excess hydrostatic pressure inside the hole. In some soil deposits, particularly highly pervious ones, NX-size flush-coupled casing must be driven to just above the testing depth to keep the hole open and/or prevent the loss of circulating fluid.

Representative split-spoon samples from each sampling interval and from every different stratum are brought to our laboratory in air-tight jars for further evaluation and testing, if necessary. After thorough examination and testing of the samples, the samples are discarded unless prior arrangements have been made. After completion of a test boring, the hole is kept open until a steady state groundwater level is recorded. The hole is then sealed, if necessary, and backfilled.

A hammer with an automatic drop release (auto-hammer) is sometimes used. In this case, a correction factor is applied to the raw blow counts, since the energy efficiency of the auto-hammer is greater than that of the safety hammer. The auto-hammer blow counts are corrected to equivalent safety hammer "N" values, based upon calibration of the auto-hammer (per ASTM D4633) and standard practice.

Auger Borings

Auger borings are used when a relatively large, continuous sampling of soil strata close to ground surface is desired. A 4-inch diameter, continuous flight, helical auger with a cutting head at its end is screwed into the ground in 5-foot sections. It is powered by the rotating action of the Kelly bar of a rotary drill rig. The sample is recovered by withdrawing the auger out of the ground without rotating it. The soil sample so obtained is classified and representative samples put in bags or jars and brought back to the laboratory for further classification and testing.

Hand Auger Borings

Hand auger borings are used, if soil conditions are favorable, when the soil strata are to be determined within a shallow (approximately 5 to 9 feet) depth or when access is not available to power drilling equipment. A 3-inch diameter, hand bucket auger with a cutting head is simultaneously turned and pressed into the ground. The bucket auger is retrieved to the surface at approximately 6-inch intervals and its contents emptied for inspection. The soil sample so obtained is classified and representative samples put in bags or jars and transported to the laboratory for further classification and testing.

Laboratory Test Methods

Soil samples returned to our laboratory are examined by a geotechnical engineer or geotechnician to obtain more accurate descriptions of the soil strata. Laboratory testing is performed on selected samples as deemed necessary to aid in soil classification and to further define engineering properties of the soils. The test results are presented on the soil boring logs at the depths at which the respective sample was recovered, except that grain size distributions or selected other test results may be presented on separate tables, figures or plates as described in this report. The soil descriptions shown on the logs are based upon a visual-manual classification procedure in general accordance with the Unified Soil Classification System (ASTM D-2488-84) and standard practice. Following is a list of abbreviations which may be used on the boring logs or elsewhere in this report.

-200	- Fines Content (percent passing the No. 200 sieve); ASTM D1140
DD	- Dry Density of Undisturbed Sample; ASTM D2937
Gs	- Specific Gravity of Soil; ASTM D854
k	- Hydraulic Conductivity (Coefficient of Permeability)
LL	- Liquid Limit; ASTM D423
OC	- Organic Content; ASTM D2974
pH	- pH of Soil; ASTM D2976
PI	- Plasticity Index (LL-PL); ASTM D424
PL	- Plastic Limit; ASTM D424
Qp	- Unconfined Compressive Strength by Pocket Penetrometer;
Qu	- Unconfined Compressive Strength; ASTM D2166 (soil), D7012 (rock)
SL	- Shrinkage Limit; ASTM D427
ST	- Splitting Tensile Strength; ASTM D3967 (rock)
USCS	- Unified Soil Classification System; ASTM D2487, D2488
w	- Water (Moisture) Content; ASTM D2216

Soil Classifications

The soil descriptions presented on the soil boring logs are based upon the Unified Soil Classification System (USCS), which is the generally accepted method (ASTM D-2487 and D-2488) for classifying soils for engineering purposes. The following modifiers are the most commonly used in the descriptions.

For Sands:	<u>Modifier</u>	<u>Fines, Sand or Gravel Content*</u>
	with silt or with clay	5% to 12% fines
	silty or clayey	12% to 50% fines
	with gravel or with shell	15% to 50% gravel or shell
For Silts or Clays:	<u>Modifier</u>	<u>Fines, Sand or Gravel Content*</u>
	with sand	15% to 30% sand and gravel; and % sand > % gravel
	sandy	30% to 50% sand and gravel; and % sand > % gravel
	with gravel	15% to 30% sand and gravel; and % sand < % gravel
	gravelly	30% to 50% sand and gravel; and % sand < % gravel

- * May be determined by laboratory testing or estimated by visual/manual procedures.
Fines content is the combined silt and clay content, or the percent passing the No. 200 sieve.

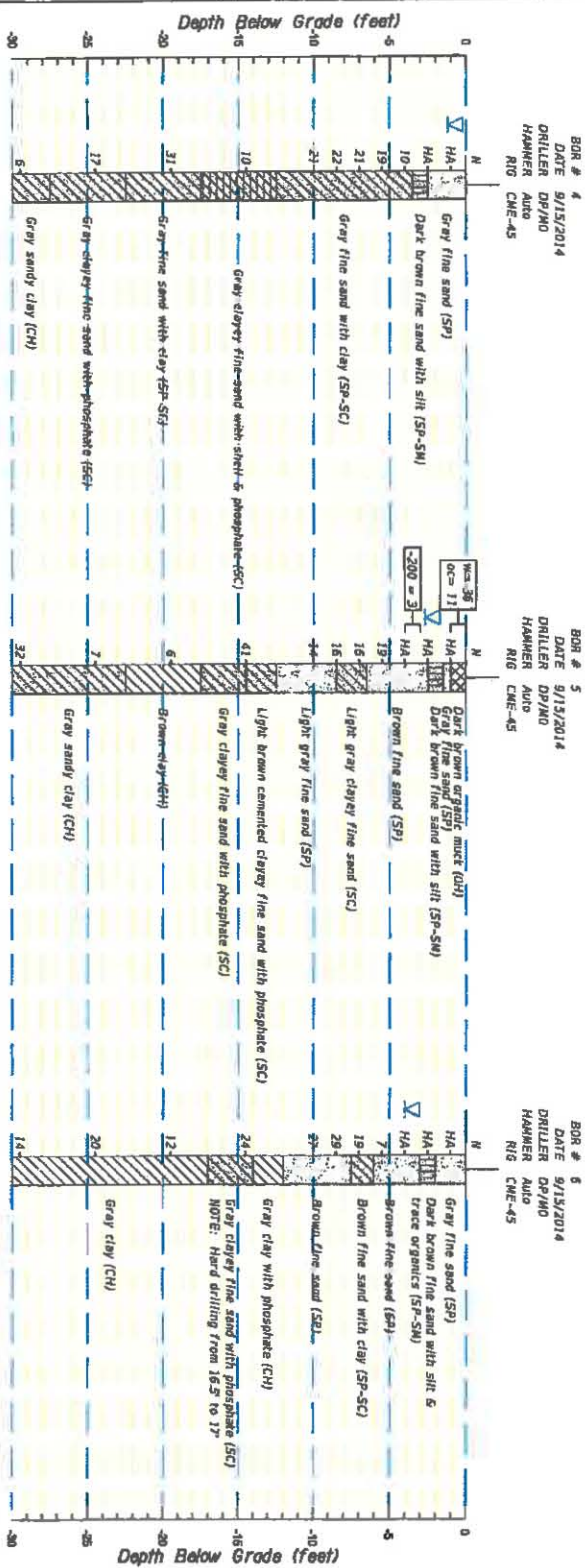
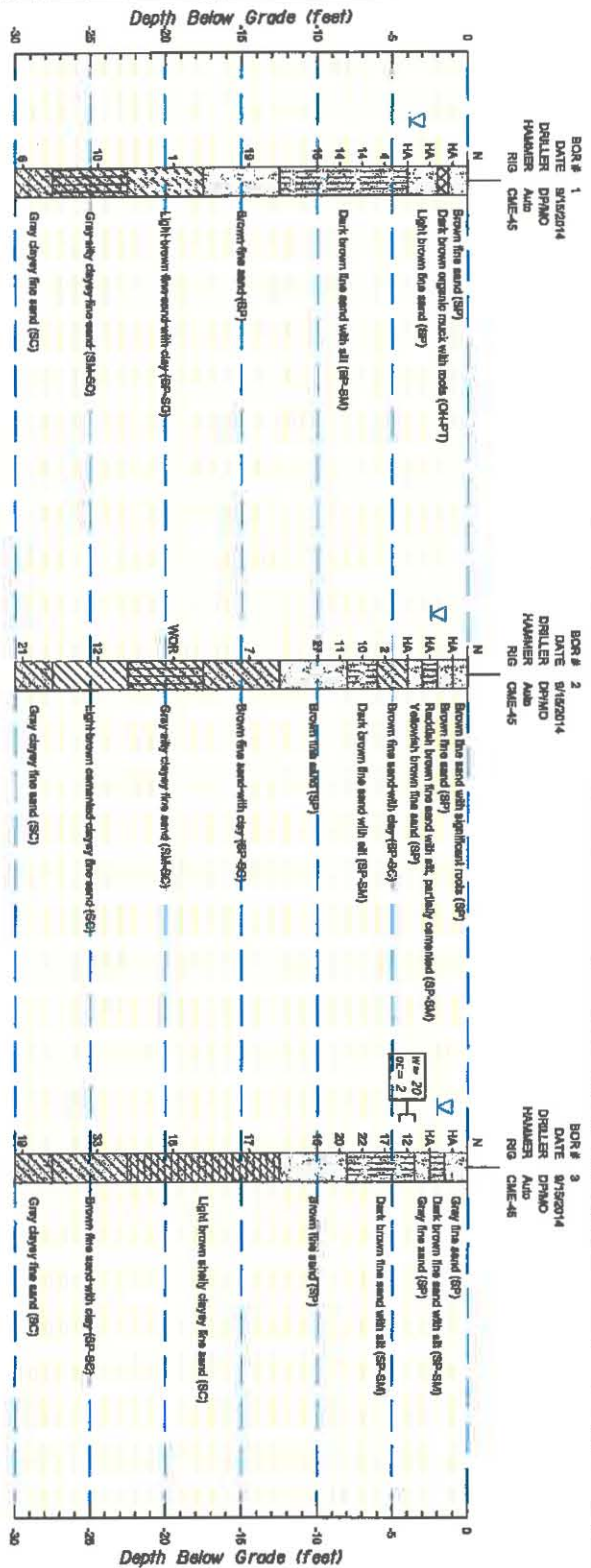
Other soil classification standards may be used, depending on the project requirements. The AASHTO classification system is commonly used for highway design purposes and the USDA soil textural classifications are commonly used for septic (on-site sewage disposal) system design purposes.



Ardaman & Associates, Inc.
Geotechnical, Environmental and
Materials Consultants

Test Locations
Tara Force Main
Parallel to Lena Rd., North of S.R. 70
Bradenton, Manatee County, Florida

DRAWN BY: KGS	CHECKED BY:	DATE: 9/19/14
FILE NO. 14-7342	APPROVED BY:	SHEET: 1



1406241

12 GROUNDWATER LEVEL, MEASURED
 ON DATE DRILLED
 N SPT N-VALUE IN BLANKS PER FOOT
 (VALUES OTHERWISE NOTED)
 SPT N-VALUES CONNECTED TO
 EQUIVALENT SAFETY HAZARD
 14. HAZD ALONG
 15. WEIGHT OF ROD
 16. WATER CONTENT (%)
 17. ORGANIC CONTENT (%)
 18. 200 PAGES MISSING THE NO. 200 SHEET (%)

GENERAL INFORMATION - BASIC ACTIVITY		PER (MIN/MIN/100)
TYPE OF WORK	LESS THAN 4	
1. TYPE OF WORK	1-10-35	
2. DURATION OF WORK	10-35	
3. TYPE OF WORK	GREATER THAN 35	
N/A IN AND CLAY CONCRETEWORK		PER (MIN/MIN/100)
TYPE OF WORK	LESS THAN 4	
1. TYPE OF WORK	1-10-35	
2. DURATION OF WORK	10-35	
3. TYPE OF WORK	GREATER THAN 35	

Adelman & Associates, Inc.
Geotechnical, Environmental and
Materials Consultants

**Soil Boring Logs
Terra Force Mason
Parallel to Lane Rd., North of S.R. 70
Bradenton, Manatee County, Florida**

Drawn by **KGS** (checked in)
P.L. M. (checked in)
14-7342

Scale: **8/18/14**
Revised: **2**