



**INVITATION FOR BID
IFB 17-11090V
LIFT STATION 41A FORCE MAIN REPAIRS
AND MANHOLE REHABILITATION
WHITFIELD AVENUE AND WEST COUNTRY CLUB LANE
(Project 462 5104285)**

Manatee County, a political subdivision of the State of Florida, (hereinafter "County") 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 County's needs, an Information Conference will be held at: **11:00 AM on March 21, 2017** at the **Manatee County Administration Building, 1112 Manatee Avenue, Suite 803, Bradenton, FL 34205**. Attendance is not mandatory, but is highly encouraged.

DEADLINE FOR CLARIFICATION REQUESTS: **5:00 PM on March 27, 2017**
Reference Bid Article A.06

BID OPENING TIME AND DATE DUE: **2:30 PM on April 5, 2017**

This project is subject to funding by a Public Assistance Grant from the Federal Emergency Management Agency (FEMA). There are federal regulations applied for the duration of the project's lifecycle. Bidders shall comply with such requirements, as outlined in Section E, "Compliance with Federal Laws". Federal and State guidelines are in full force for this procurement.

FOR INFORMATION CONTACT:
Olga Valcich, Contract Specialist, CPPB
(941) 749-3055
Olga.Valcich@mymanatee.org
Manatee County Financial Management Department
Procurement Division

AUTHORIZED FOR RELEASE:

A handwritten signature in green ink, appearing to be "MW", is written over a horizontal line.

Table of Contents

IFB 17-1109OV

Section A Information to Bidders.....	A-1-15
Section B Scope of Work	B-1- 2
Section C Bid Summary	C-1-2
Section D Insurance and Bonding Requirements.....	D-1-7
Section E Compliance with Federal Laws.....	E-1-10
Section F Drug Free Work Place Certification.....	1-2
Bid Form	1-5
Minority Business Enterprise / Woman Owned Business Enterprise (MBE/WBE) Certification (dated March 15, 2017)	1-2
Attachments:	
Attachment A Bidder’s Questionnaire	1-3
Attachment B Public Contracting & Environmental Crimes Certification	1-2
Attachment C The Florida Trench Safety Act.....	1
Attachment D ePayables Application	1
Attachment E Scrutinized Company Certification.....	1
Technical Specifications LS 41A Force Main / Manhole Repairs (dated March 2017)	251 pages
Plan Set, Lift Station Force Main /Manhole Repairs (Signed and Sealed) (dated March 8, 2017) (PDF).....	1 page
Home Owners Association (HOA) Photo / Plants.....	1 page
Supporting Documents.....	13 pages
Standard Form of Construction Agreement.....	78 pages

SECTION A
INFORMATION TO BIDDERS

A.01 OPENING LOCATION

Sealed bids will be **publicly opened** at the **Manatee County Procurement Division, 1112 Manatee Avenue West, Suite 803, Bradenton, Florida 34205** in the presence of County 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 Procurement Division for receipt on or before the stated time and date. Bidder shall be solely and strictly responsible for its timely delivery to the Procurement 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 duplicate, one original (marked Original) and one copy/copies (marked Copy) of your signed bid shall be submitted in one sealed package, clearly marked on the outside **"Sealed Bid 17-1109OV, Lift Station 41A Force Main Repairs and Manhole Rehabilitation, Whitfield Avenue and West Country Club Lane (Project 462 5104285)"** 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 Procurement Division
1112 Manatee Avenue West, Suite 803
Bradenton, Florida 34205
Sealed Bid 17-1109OV, Lift Station 41A Force Main Repairs and
Manhole Rehabilitation, Whitfield Avenue and West Country Club Lane (Project 462
5104285).

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 Procurement 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 Procurement 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. County 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 County 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. County 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 County unless otherwise provided in the IFB documents.

Inspection of the Project Site(s) is a **requirement** 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 County in evaluating the request to modify the IFB documents. County 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 Procurement Division. County shall not be responsible for oral interpretations given by any County employee, representative, or others.

The deadline to submit to the Procurement Division, in writing, all inquiries, suggestions, or requests concerning interpretation, clarification or additional information pertaining to this IFB can be located on the cover page of this IFB document.

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, County will post the documents on the Procurement 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 Procurement 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

County recognizes that large and/or complex projects will often result in a variety of methods, sources, and prices. However, where in the opinion of County 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 County 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. County 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 County 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. County 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 Procurement 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 County.

A.13 BID EXPENSES

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

A.14 RESERVED RIGHTS

County reserves the right to accept or reject any and/or all bids, to waive irregularities and technicalities, and to request resubmission. Also, County 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 County. Any sole response received by the first submission date may or may not be rejected by County depending on available competition and current needs of County. 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 County.

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, County reserves the right to make such investigation as it deems necessary to determine the ability of any bidder to furnish the service requested. Information County 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 Procurement Division shall be in accordance with the Manatee County Procurement 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 County 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 County 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 County. 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 County. (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 County.

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 County's sole discretion, be deemed a material breach of the resulting Agreement, and shall constitute grounds for County'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 County harmless from loss on account thereof, including costs and attorney's fees.

A.28 AMERICANS WITH DISABILITIES ACT

County does not discriminate upon the basis of any individual's disability status. This non-discrimination policy involves every aspect of County'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, County 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 bids shall be conducted at the public opening.

Based on the above, County 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.

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

Pursuant to Florida Statutes 119.0701, to the extent Successful Bidder is performing services on behalf of the County, Successful Bidder 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 Successful Bidder 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 Successful Bidder transfers all public records to the public agency upon completion of the contract, the Successful Bidder shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Successful Bidder keeps and maintains public records upon completion of the contract, the Successful Bidder 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.

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

A.34 LOCAL PREFERENCE (IF APPLICABLE)

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 County** 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 Procurement 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 County 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 Procurement staff member assist you.

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

A link to Vendor Registration is listed on the Procurement 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 County 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.

If you are interested in participating in this program, please complete the ePayables Application attached herein and return the completed form via email to Lori Bryan 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

- A. The work included in this contract consists of removal and replacement of force mains, wood, stucco, and concrete wall, chain link fence, sod, sidewalk, pavement, bypass piping and pumping of sewage as necessary, line stops, sewer manhole work, and associated tasks to perform repairs at a lift station site and on County right of way to restore damage from force main leaks. The Contractor shall coordinate his work with County staff and the HOA owning the wall and landscaping in the vicinity.
- 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.
- E. Contract Documents dated March 2017 and Plan Set (LS 41A Force Main / Manhole Repairs dated March 8, 2017).

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. Only one (1) bid shall be considered, **based on a 90 calendar day completion time.** Only one (1) 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 **\$884.00 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 General Contractor or an Underground Utility Contractor pursuant to Chapter 489, Florida Statutes, 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

County may not make award to a bidder who is delinquent in payment of any taxes, fees, fines, contractual debts, judgments, or any other debts due and owed to the County, or is in default on any contractual or regulatory obligation to the County. By submitting this solicitation response, bidder attests that it is not delinquent in payment of any such debts due and owed to the County, nor is it in default on any contractual or regulatory obligation to the County. In the event the bidder's statement is discovered to be false, bidder will be subject to suspension and/or debarment and the County may terminate any award it has with bidder.

Award shall be to the lowest, responsive, responsible bidder meeting specifications and having the lowest total offer **based on a completion time of 90 calendar days** 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.

One schedule for completion of Work shall be considered. Only one (1) 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/ IFB 17-11090V
INSURANCE AND BOND REQUIREMENTS**

The Successful Bidder will not commence work under the resulting Agreement until all insurance coverages indicated herein have been obtained. The Successful Bidder shall obtain and submit to the Procurement 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:	<p>Coverage must be afforded under a per occurrence policy form including coverage for all owned, hired and non-owned vehicles.</p> <p>\$ <u>1,000,000</u> combined single limit, or \$ _____ bodily injury and \$ _____ property damage. Coverage must also include \$10,000 Personal Injury Protection (No Fault), \$ _____ Hired-Non Owned Liability and \$10,000 Medical Payments.</p> <p><i>This policy shall contain severability of interests' provisions.</i></p>
2. <input checked="" type="checkbox"/> Commercial General Liability: (Occurrence Form - patterned after the current ISO form)	<p>Coverage shall be afforded under a per occurrence policy form.</p> <p>\$<u>1,000,000</u> single limit per occurrence; \$<u>1,000,000</u> aggregate \$ _____ Products/Completed Operations Aggregate \$1,000,000 Personal and Advertising Injury Liability \$100,000 Fire Damage Liability \$10,000 Medical Expense, and \$ _____ Third Party Property Damage. \$ _____ Project Specific Aggregate (Required on projects valued at over \$10,000,000)</p> <p><i>This policy shall contain severability of interests' provisions.</i></p>
3. <input checked="" type="checkbox"/> Employer's Liability:	<p>\$<u>100,000</u> each accident \$ _____ disease each employee \$ _____ disease policy limit</p>
4. <input checked="" type="checkbox"/> Worker's Compensation:	<p>Statutory Limits of Chapter 440, Florida Statutes, and all Federal Government Statutory Limits & Requirements.</p> <p>If any operations are to be undertaken on or about navigable waters, coverage must be included for the US Longshoremen & Harbor Workers Act and Jones Act.</p> <p><u>Note:</u> Should "leased employees" be retained for any part of the project or service, the employee leasing agency shall provide evidence of workers' compensation coverage and employee liability coverage for all personnel on the worksite</p>

Insurance / Bond Type	Required Limits
	<p>and in compliance with the above requirements.</p> <p><u>Note:</u> Workers' compensation coverage is a firm requirement. Elective exemptions are considered on a case-by-case basis and are approved in a very limited number of instances.</p>
<p>5. <input type="checkbox"/> Other Insurance, as noted:</p>	<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 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"/> Pollution \$ _____ per occurrence</p> <p>d. <input type="checkbox"/> Professional Liability and/or Errors and Omissions (E&O) Liability Professional (E&O) Liability shall be afforded for the Bodily Injury and Property Damage for not less than \$ _____ Each Claim, \$1,000,000 Policy Aggregate.</p> <p>e. <input type="checkbox"/> Builder's Risk Insurance When this contract or agreement includes the construction of roadways and/or the addition of a permanent structure or building, including the installation of machinery and/or equipment, the following insurance coverage must be afforded: Coverage Form: Completed Value, All Risk (Roadways/Buildings and Machinery/Equipment) in an amount equal to 100% of the value upon completion or the value of the equipment to be installed. Coverage should include, but not be limited to, storage and transport of materials, equipment, supplies of any kind whatsoever to be used on or incidental to the project, theft coverage, and Waiver of Occupancy Clause Endorsement, where applicable. The policy shall not carry a self-insured retention/deductible greater than \$10,000.</p>

Insurance / Bond Type	Required Limits
	<p>f. <input type="checkbox"/> Cyber Liability</p> <p>Coverage must comply with Florida Statute 501.171 and must be afforded under a per occurrence policy form for limits not less than \$_____ Security Breach Liability, \$_____ Security Breach Expense (each occurrence), \$_____ Security Breach Expense (aggregate), \$_____ Replacement or Restoration of Electronic Data, \$_____ Extortion Threats, \$_____ Business Income and Extra Expense, and \$_____ Public Relations Expense.</p> <p>The policy must not carry a self-insured retention/deductible greater than \$_____.</p> <p>g. <input type="checkbox"/> Hazardous Materials Insurance</p> <p>Hazardous materials includes all materials and substances that are now designated or defined as hazardous by Florida or Federal law or by the rules of regulations of Florida or any Federal Agency.</p> <p><i>Pollution Liability</i></p> <p>Coverage must be afforded under a per occurrence policy form for limits not less than the value of the contract, subject to a \$_____ minimum, for Bodily Injury and Property Damage to include sudden and gradual release, each claim and aggregate.</p> <p><i>Asbestos Liability (If handling within scope of Contract)</i></p> <p>Coverage must be afforded under a per occurrence policy form for limits not less than the value of the contract, subject to a \$_____ minimum, for Bodily Injury and Property Damage to include sudden and gradual release, each claim and aggregate.</p> <p><i>Disposal</i></p> <p>Coverage must be afforded under a per occurrence policy form for limits not less than the value of the contract, subject to a \$_____ minimum, for Liability for Sudden and Accidental Occurrences, each claim and an aggregate and not less than the value of the contract, subject to a \$_____ minimum, for Liability for Non-Sudden Occurrences, each claim and aggregate.</p> <p><i>Hazardous Waste Transportation Insurance</i></p> <p>Coverage must be afforded under a per occurrence policy form for limits not less than the value of the contract, subject to a \$_____ minimum, per accident.</p> <p>The Successful Bidder shall designate the hauler and have the hauler furnish a Certificate of Insurance for Automobile Liability Insurance with Endorsement MCS-90 for liability arising out of the transportation of</p>

Insurance / Bond Type	Required Limits
	<p>hazardous materials.</p> <p>The Successful Bidder must also provide the EPA Identification Number.</p> <p>h. <input type="checkbox"/> Liquor Liability Coverage must be afforded under a per occurrence policy form for limits not less than \$ _____ Each Occurrence and Aggregate.</p> <p>i. <input type="checkbox"/> Garage Keeper's Liability Coverage shall be required if the maintenance, servicing, cleaning or repairing of any County motor vehicles is inherent or implied within the provision of the contract. Coverage must be afforded under a per occurrence policy form for limits not less than equal to the full replacement value of the lot or garage.</p> <p>j. <input type="checkbox"/> Bailee's Customer Coverage must be afforded under a per occurrence policy form for limits not less than equal to the full replacement value of the lot or garage.</p> <p>k. <input type="checkbox"/> Watercraft \$ _____ per occurrence</p>
<p>6. <input checked="" type="checkbox"/> Bid Bond:</p>	<p>A construction project over \$150,000 requires a Bid Bond in the amount of 5% of the total bid offer. Bid bond shall be submitted with the sealed bid and shall include project name, location, and / or address and project number.</p> <p>In lieu of the bond, the bidder 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 issued to Manatee County.</p>
<p>7. <input checked="" type="checkbox"/> Payment and Performance Bond:</p>	<p>A construction project over \$150,000 requires a Payment and Performance Bond be submitted by Successful 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>

Reviewed by Risk: _____

INSURANCE REQUIREMENTS

I. THE POLICIES ARE TO CONTAIN, OR BE ENDORSED TO CONTAIN, THE FOLLOWING PROVISIONS:

Commercial General Liability and Automobile Liability Coverages

- a. **“Manatee County, a Political Subdivision of the State of Florida,” is to be named as an Additional Insured in respect to:** Liability arising out of activities performed by or on behalf of the Successful Bidder, his agents, representatives, and employees; products and completed operations of the Successful Bidder; or automobiles owned, leased, hired or borrowed by the Successful Bidder. The coverage shall contain no special limitation(s) on the scope of protection afforded to the County, its officials, employees or volunteers.

In addition to furnishing a Certificate of Insurance, the Successful Bidder shall provide the endorsement that evidences Manatee County being listed as an Additional Insured. This can be done in one of two ways: (1) an endorsement can be issued that specifically lists “Manatee County, a Political Subdivision of the State of Florida,” as Additional Insured; or, (2) an endorsement can be issued that states that all Certificate Holders are Additional Insured with respect to the policy.

- b. The Successful Bidder's insurance coverage shall be primary insurance with respect to the County, its officials, employees and volunteers. Any insurance or self-insurance maintained by the County, its officials, employees or volunteers shall be excess of Successful Bidder's insurance and shall be non-contributory.
- c. The insurance policies must be on an occurrence form.

Workers' Compensation and Employers' Liability Coverages

The insurer shall agree to waive all rights of subrogation against the County, its officials, employees and volunteers for losses arising from work performed by the Successful Bidder for the County.

II. GENERAL INSURANCE PROVISIONS APPLICABLE TO ALL POLICIES:

- a. Prior to the execution of contract or issuance of a Purchase Order, and then annually upon the anniversary date(s) of the insurance policy's renewal date(s) for as long as this contract remains in effect, Successful Bidder shall furnish the County with a Certificate(s) of Insurance (using an industry accepted certificate form, signed by the Issuer, with applicable endorsements, and containing the solicitation or contract number, and title or description) evidencing the coverage set forth above and naming “Manatee County, a Political Subdivision of the State of Florida” as an Additional Insured on the applicable coverage(s) set forth above.
- b. If the policy contains an aggregate limit, confirmation is needed in writing (letter, email, etc.) that the aggregate limit has not been eroded to procurement representative when supplying Certificate of Insurance.

In addition, when requested in writing from the County, Successful Bidder will provide the County with a certified copy of all applicable policies. The address where such certificates and certified policies shall be sent or delivered is as follows:

**Manatee County, a Political Subdivision of the State of Florida
Attn: Risk Management Division
1112 Manatee Avenue West, Suite 969
Bradenton, FL 34205**

- c. The project's solicitation number and title shall be listed on each certificate.
 - d. Successful Bidder shall provide thirty (30) days written notice to the Risk Manager of any cancellation, non-renewal, termination, material change, or reduction in coverage of any insurance policies to procurement representative including solicitation number and title with all notices.
 - e. Successful Bidder agrees that should at any time Successful Bidder fail to meet or maintain the required insurance coverage(s) as set forth herein, the County may terminate this contract.
 - f. The Successful Bidder waives all subrogation rights against Manatee County, a Political Subdivision of the State of Florida, for all losses or damages which occur during the contract and for any events occurring during the contract period, whether the suit is brought during the contract period or not.
 - g. The Successful Bidder has sole responsibility for all insurance premiums and policy deductibles.
 - h. It is the Successful Bidder's responsibility to ensure that his agents, representatives and subcontractors comply with the insurance requirements set forth herein. Successful Bidder shall include his agents, representatives, and subcontractors working on the project or at the worksite as insured under its policies, or Successful Bidder shall furnish separate certificates and endorsements for each agent, representative, and subcontractor working on the project or at the worksite. All coverages for agents, representatives, and subcontractors shall be subject to all of the requirements set forth to the procurement representative.
 - i. All required insurance policies must be written with a carrier having a minimum A.M. Best rating of A- FSC VII or better. In addition, the County has the right to review the Successful Bidder's deductible or self-insured retention and to require that it be reduced or eliminated.
- III.** Successful Bidder understands and agrees that the stipulated limits of coverage listed herein in this insurance section shall not be construed as a limitation of any potential liability to the County, or to others, and the County's failure to request evidence of this insurance coverage shall not be construed as a waiver of Successful Bidder's obligation to provide and maintain the insurance coverage specified.
- IV.** The enclosed Hold Harmless Agreement shall be signed by the Successful Bidder and shall become a part of the contract.

- V. Successful Bidder understands and agrees that the County does not waive its immunity and nothing herein shall be interpreted as a waiver of the County's rights, including the limitation of waiver of immunity, as set forth in Florida Statutes 768.28, or any other statutes, and the County expressly reserves these rights to the full extent allowed by law.
- VI. No award shall be made until the Procurement Division has received the Certificate of Insurance and Hold Harmless Agreement in accordance with this section.

VII. BONDING REQUIREMENTS

Bid Bond/Certified Check. By submitting a bid, the bidder agrees should its 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 County enters into an agreement with a bidder, or if County 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 County, 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 County 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.

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 County. 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 issuance of 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 Procurement Division upon filing. Pursuant to Section 255.05(1)(b), Florida Statutes, County 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 County. 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. County may then contract with the next lowest, responsive and responsible bidder or re-advertise this IFB.

Failure of County 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 County, thereafter, to enforce those provisions.

BIDDER'S INSURANCE STATEMENT

THE UNDERSIGNED has read and understands the aforementioned insurance and bond requirements of this IFB and shall provide the insurance and bonds required by this section within ten (10) days from the date of notice of intent to award.

Bidder Name: _____ Date: _____

Authorized
Bidder's Signature: _____

Print Name: _____

Insurance Agency: _____

Agent Name: _____ Agent Phone: _____

Surety Agency: _____

Surety Name: _____ Surety Phone: _____

Please return this completed and signed statement with your bid.

SECTION E
COMPLIANCE WITH FEDERAL LAWS

E.01 GENERAL PROVISIONS

- ✓ a. Equal Employment Opportunity – Contractor is required to comply with EO 11246, “Equal Employment Opportunity,” as amended by E.O 11246, Equal Employment Opportunity,” as amended by E.O. 11375, “Amending Executive Order 11246 Relating to Equal Employment Opportunity,” and as supplemented by regulations at 41 CFR, Part 60, “Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor.”; and

- ✓ b. Contract Work Hours and Safety Standards Act (40 U.S.C. 327 through 333) Contractor is required to comply with Sections 103 and 107 of the Contract Work Hours Safety Standards Act (40 U.S.C. 327-333), as supplemented by Department of Labor regulations (29 CFR, Part 5). Under Section 102 of the Act, each Contractor shall be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours; and

- ✓ c. Clean Air Act (42 U.S.C. 7401 et seq.) and the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.), as amended – Contractor is required to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401 et seq.) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251 et seq.); and

- ✓ d. Debarment and Suspension – No Contract shall be made to parties listed on the General Services Administration’s List of Parties Excluded from Federal Procurement or Non-procurement Programs in accordance with E.O.s 12549 and 12689, “Debarment and Suspension,” as set forth at 24 CFR part 24. This list contains the names of parties debarred, suspended, or otherwise excluded by agencies, and Contractors declared ineligible under statutory or regulatory authority other than E.O 12549. Contractors with awards that exceed the small purchase threshold shall provide the required certification regarding its exclusion status and that of its principal employees; and

- ✓ e. Byrd Anti-Lobbying Amendment (31 U.S.C., 1352) – Contractor is required to file the required certification for Bids over \$100,000. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal Contract, grant or other award covered by 31 USC 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award.

E.02 FEDERAL REQUIREMENTS FOR CONSTRUCTION PROJECTS

- a. Contracting with small and minority businesses, women's business enterprises, and labor surplus area firms:

- 1) If the prime contractor intends to subcontract any portion of the work, they must take all necessary affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms are used when possible.

Affirmative steps must include:

- i. Placing qualified small and minority businesses and women's business enterprises on solicitation lists;
- ii. Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;
- iii. Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises;
- iv. Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises;
- v. Using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.

- b. Equal Employment Opportunity – Contractor is required to comply with 41 CFR, Part 60-1.4(b), which states:

During the performance of this contract, the contractor agrees as follows:

- 1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:

Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

- 2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
- 3) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- 4) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- 5) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- 6) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- 7) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance.

b. Compliance with the Contract Work Hours and Safety Standards Act:

- 1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
- 2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.
- 3) Withholding for unpaid wages and liquidated damages. The (write in the name of the Federal agency or the loan or grant recipient) shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.
- 4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section.”

c. Compliance with the Clean Air Act and Federal Water Pollution Control Act:

Clean Air Act

- 1) The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq.
- 2) The contractor agrees to report each violation to the (name of the state agency or local or Indian tribal government) and understands and agrees that the (name of the state agency or local or Indian tribal government) will, in turn, report each violation as required to assure notification to the (name of recipient), Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.
- 3) The contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by FEMA.

Federal Water Pollution Control Act

- 1) The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.
- 2) The contractor agrees to report each violation to the (name of the state agency or local or Indian tribal government) and understands and agrees that the (name of the state agency or local or Indian tribal government) will, in turn, report each violation as required to assure notification to the (name of recipient), Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.
- 3) The contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by FEMA.”

d. Suspension and Debarment

- 1) This contract is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such the contractor is required to verify that none of the contractor, its principals (defined at 2 C.F.R. § 180.995), or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).
- 2) The contractor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.
- 3) This certification is a material representation of fact relied upon by manatee County Government. If it is later determined that the contractor did not

comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to the State of Florida and Manatee County Government, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.

- 4) The bidder or proposer agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

e. **Procurement of Recovered Materials**

- 1) In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA- designated items unless the product cannot be acquired—

- (1) Competitively within a timeframe providing for compliance with the contract performance schedule;
- (2) Meeting contract performance requirements; or
- (3) At a reasonable price.

- 2) Information about this requirement, along with the list of EPA-designate items, is available at EPA's Comprehensive Procurement Guidelines web site, <https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program>.

f. Access to Records. The following access to records requirements apply to this contract:

- 1) The contractor agrees to provide (insert name of state agency or local or Indian tribal government), (insert name of recipient), the FEMA Administrator, the Comptroller General of the United States, or any of their authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions.
- 2) The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.
- 3) The contractor agrees to provide the FEMA Administrator or his authorized representatives access to construction or other work sites pertaining to the work being completed under the contract.

g. DHS Seal, Logo, and Flags - The contractor shall not use the DHS seal(s), logos, crests, or reproductions of flags or likenesses of DHS agency officials without specific FEMA pre- approval.

- h. Compliance with Federal Law, Regulations, and Executive Orders- This is an acknowledgement that FEMA financial assistance will be used to fund the contract only. The contractor will comply with all applicable federal law, regulations, executive orders, FEMA policies, procedures, and directives.
- i. No Obligation by Federal Government: The Federal Government is not a party to this contract and is not subject to any obligations or liabilities to the non-Federal entity, contractor, or any other party pertaining to any matter resulting from the contract.
- j. Program Fraud and False or Fraudulent Statements or Related Acts - The successful contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to the contractor's actions pertaining to this contract

CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements (To be submitted with each bid or offer exceeding \$100,000)

The undersigned [Contractor] certifies, to the best of his or her knowledge, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-
3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The Contractor, _____, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. § 3801 *et seq.*, apply to this certification and disclosure, if any.

Signature of Contractor's Authorized Official

Name and Title of Contractor's Authorized Official

Date

CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED
DEBARMENT, AND OTHER RESPONSIBILITY MATTERS

The Bidder certifies, to the best of its knowledge and belief, that--

a. The Bidder and/or any of its Principals--

Are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

Have not, within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property; and

Are not presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in subdivision (a)(1)(i)(B) of this provision.

b. The Bidder has not, within a three-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.

"Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

THIS CERTIFICATION CONCERNS A MATTER WITHIN THE JURISDICTION OF AN AGENCY OF THE UNITED STATES AND THE MAKING OF A FALSE, FICTITIOUS, OR FRAUDULENT CERTIFICATION MAY RENDER THE MAKER SUBJECT TO PROSECUTION UNDER SECTION 1001, TITLE 18, UNITED STATES CODE.

The Bidder shall provide immediate written notice to the University if, at any time prior to subcontract award, the Bidder learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Bidder's responsibility. Failure of the Bidder to furnish a certification or provide such additional information as requested by the County may render the Bidder nonresponsible.

**CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED
DEBARMENT, AND OTHER RESPONSIBILITY MATTERS**

Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of a Bidder is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Bidder knowingly rendered an erroneous certification, in addition to other remedies available to the University, the University may terminate the contract resulting from this solicitation for default.

SIGNATURE: _____

COMPANY NAME: _____

DATE: _____

SECTION F

Drug Free Work Place Certification
SWORN STATEMENT PURSUANT TO SECTION 6-101(7)(B),
MANATEE COUNTY PURCHASING CODE, ON DRUG FREE WORK PLACES

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 a county contract for public improvements, procurement of goods or services (including professional services) or a county lease, franchise, concession or management agreement, or shall receive a grant of county monies unless such person or entity has submitted a written certification to the County that it will provide a drug free work place by:

(1) providing a written statement to each employee notifying such employee that the unlawful manufacture, distribution, dispensation, possession or use of a controlled substance as defined by §893.02(4), Florida Statutes, as the same may be amended from time to time, in the person's or entity's work place is prohibited specifying the actions that will be taken against employees for violation of such prohibition. Such written statement shall inform employees about:

(i) the dangers of drug abuse in the work place;

(ii) the person's or entity's policy of maintaining a drug free environment at all its work places, including but not limited to all locations where employees perform any task relating to any portion of such contract, business transaction or grant;

(iii) any available drug counseling, rehabilitation, and employee assistance programs; and

(iv) the penalties that may be imposed upon employees for drug abuse violations.

(2) Requiring the employee to sign a copy of such written statement to acknowledge his or her receipt of same and advice as to the specifics of such policy. Such person or entity shall retain the statements signed by its employees. Such person or entity shall also post in a prominent place at all of its work places a written statement of its policy containing the foregoing elements (i) through (iv).

(3) Notifying the employee in the statement required by subsection (1) that as a condition of employment the employee will:

- (i) abide by the terms of the statement; and
- (ii) notify the employer of any criminal drug statute conviction for a violation occurring in the work place no later than five (5) days after such a conviction.

(4) Notifying the County within ten (10) days after receiving notice under subsection (3) from an employee or otherwise receiving actual notice of such conviction.

(5) Imposing appropriate personnel action against such employee up to and including termination; or requiring such employee to satisfactorily participate in a drug abuse assistance or rehabilitation program approved for such purposes by a federal, state, or local health, law enforcement, or other appropriate agency.

(6) Making a good faith effort to continue to maintain a drug free work place through implementation of sections (1) through (5) stated above.

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 CONTRACT OR BUSINESS TRANSACTION SHALL PROVIDE FOR SUSPENSION OF PAYMENTS, OR TERMINATION, OR BOTH, IF THE CONTRACTING OFFICER OR THE COUNTY ADMINISTRATOR DETERMINES THAT:

- (1) Such person or entity has made false certification.
- (2) Such person or entity violates such certification by failing to carry out the requirements of sections (1), (2), (3), (4), (5), or (6) or subsection 3-101(7)(B); or
- (3) Such a number of employees of such person or entity have been convicted of violations occurring in the work place as to indicate that such person or entity has failed to make a good faith effort to provide a drug free work place as required by subsection 3-101(7)(B).

[Signature]

STATE OF FLORIDA
COUNTY OF _____

Sworn to and subscribed before me this _____ day of _____,
2009 _____

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

Notary Public Signature My commission expires _____

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

BID FORM

**For: IFB17-1109OV
Lift Station 41A Force Main Repairs and Manhole Rehabilitation
Whitfield Avenue and West Country Club Lane
(Project 462 5104285)**

Total Offer \$ _____
Based on a completion time of 90 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: _____

**BID FORM
SUBMIT IN DUPLICATE**

IFB17-1109OV

IFB 17-1109OV

**Lift Station 41A, Force Main Repairs and Manhole Rehabilitation
Whitfield Avenue and West Country Club Lane
Section / Twnshp/Range: S8 / T35 / R 17 (Project 462 5104285)
Base Bid, Based on a Completion time of 90 Calendar Days**

ITEM #	DESCRIPTION	U/M	QTY	BID PRICE PER UNIT	TOTAL BID PRICE
1	12" PVC Force Main (C-900) DR 14	LF	35	\$	\$
2	10" PVC Force Main (C-900) Pipe DR 14	LF	70	\$	\$
3	12 x 10" Tapping Valve & Sleeve	EA	1	\$	\$
4	10 x 8" Tapping Valve & Sleeve	EA	1	\$	\$
5	Remove and Replace Damaged Wood / Stucco Wall	LS	1		\$
6	Repair Existing Chain Link Fence	LF	40	\$	\$
7	Remove and Restore County Landscaping & Plants	LS	1		\$
8	Replace Manhole Frame and Cover	EA	1	\$	\$
9	Pipe Restraints 12"	EA	15	\$	\$
10	Pipe Restraints 10"	EA	15	\$	\$
11	Erosion Control	LS	1	\$	\$
12	Traffic Control, Signing, & Barricades to FDOT Standards	LS	1		\$
13	Curb Replacement	LF	25	\$	\$
14	Pavement Repair & Road Restoration (Base & Resurface)	SY	40	\$	\$
15	Sidewalk Replacement, Concrete (4" min. thick)	SY	53	\$	\$
16	Line Stop for Force Main 12" Dia. Or Smaller	EA	2	\$	\$

Page 2

IFB 17-1109OV

ForceMain 41A Repairs at LS 41A

90 Calendar

Day Completion Time

Bidder: _____

Authorized Signature: _____

BID FORM

IFB17-1109OV

SUBMIT IN DUPLICATE

IFB 17-1109OV

Lift Station 41A, Force Main Repairs and Manhole Rehabilitation

Whitfield Avenue and West Country Club Lane

Section / Twnshp/Range: S8 / T35 / R 17 (Project 462 5104285)

Base Bid, Based on a Completion time of 90 Calendar Days

ITEM #	DESCRIPTION	U/M	QTY	BID PRICE PER UNIT	TOTAL BID PRICE
17	Sodding	SY	350	\$	\$
18	Grout Fill Abandoned Force Main	CF	35	\$	\$
19	Install & Remove HDPE Temporary Bypass Piping	LS	1	\$	\$
20	DI Fittings, Wastewater	LB	500		\$
21	Flow Thru Bypass	LS	1	\$	\$
22	Mobilization	LS	1		\$
23	Miscellaneous Work and Clean Up, Record Drawings	LS	1		\$
24	TOTAL BASE BID, BASED ON A 90 CALENDAR DAY COMPLETION TIME				
25	CONTRACT CONTINGENCY (ITEMS 1 - 23) (Used only with County Approval)			5%	\$
	TOTAL OFFER BASED ON A COMPLETION TIME OF 90 CALENDAR DAYS INCLUDING CONTRACT CONTINGENCY (ITEMS 1 - 25)				\$

Bidder: _____

Authorized Signature: _____

**BID FORM
 SUBMIT IN DUPLICATE / SUBCONTRACTOR'S %
 IFB 17-11090V**

IFB17-11090V

**Lift Station 41A, Force Main Repairs and Manhole Rehabilitation
 Whitfield Avenue and West Country Club Lane
 Section / Twship/Range: S8 / T35 / R 17 (Project 462 5104285)
 Base Bid, Based on a Completion time of 90 Calendar Days**

ITEM #	DESCRIPTION	%	DB/EM/BE	Description of Work by Subcontractor	Name and Contact Information of Subcontractor
1	12" PVC Force Main (C-900) DR 14				
2	10" PVC Force Main (C-900) Pipe DR 14				
3	12 x 10" Tapping Valve & Sleeve				
4	10 x 8" Tapping Valve & Sleeve				
5	Remove and Replace Damaged Wood / Stucco Wall				
6	Repair Existing Chain Link Fence				
7	Remove and Restore County Landscaping & Plants				
8	Replace Manhole Frame and Cover				
9	Pipe Restraints 12"				
10	Pipe Restraints 10"				
11	Erosion Control				
12	Traffic Control, Signing, & Barricades to FDOT Standards				

Bidder: _____
 Authorized Signature: _____

**BID FORM
 SUBMIT IN DUPLICATE / SUBCONTRACTORS %
 IFB 17-11090V**

IFB17-11090V

**Lift Station 41A, Force Main Repairs and Manhole Rehabilitation
 Whitfield Avenue and West Country Club Lane
 Section / Twship/Range: S8 / T35 / R 17 (Project 462 5104285)
 Base Bid, Based on a Completion time of 90 Calendar Days**

ITEM #	DESCRIPTION	%	DBE/MBE	Description of Work by Subcontractor	Name and Contact Information of Subcontractor
13	Curb Replacement				
14	Pavement Repair & Road Restoration (Base & Resurface)				
15	Sidewalk Replacement, Concrete (4" min. thick)				
16	Line Stop for Force Main 12" Dia. Or Smaller				
17	Sodding				
18	Grout Fill Abandoned Force Main				
19	Install & Remove HDPE Temporary Bypass Piping				
20	DI Fittings, Wastewater				
21	Flow Thru Bypass				
22	Mobilization				
23	Miscellaneous Work and Clean Up, Record Drawings				

Bidder: _____
 Authorized Signature: _____

**IFB 17-1109OV
Lift Station 41A Force Main Repairs and Manhole Rehabilitation**

**MINORITY BUSINESS ENTERPRISE / WOMAN OWNED BUSINESS ENTERPRISE
(MBE/WBE) CERTIFICATION
Utilization of Minority and Women Owned Businesses (MBE/WBE)**

If the bidder intends to subcontract any portion of the work, the bidder must take all necessary affirmative steps to assure that minority businesses, women owned business enterprises, and labor surplus area firms are used when possible. Bidders shall document their efforts to utilize MBE/WBE firms to include information demonstrating the specific firms which were solicited as suppliers and/or subcontractors as applicable and submit this information with their bid.

For additional information, Bidder may seek information about certification or MBE/WBE firms from the following sources:

- o Florida Department of Management Services (Office of Supplier Diversity)
- o Florida Department of Transportation
- o Minority Business Development Centers in most large cities and
- o Local government MBE/DBE programs in many large counties and cities

Completing the information requested below, bidders shall submit documentation of good faith efforts to assure minority businesses, woman owned business enterprises and labor surplus firms are used when possible.

If the bidder intends to utilize MBE/WBE subcontractors for any portion of the work on this project, complete the information below by following these instructions: On the first line, indicate the name of the MBE/WBE firm and person at that firm who you contacted. On the second line indicate the date the firm was contacted and specify the work or expertise rendered by the MBE/WBE firm. Finally, check only one box indicating whether or not the MBE/WBE firm is interested in providing services on this project. If the box "not interested" is checked, provide a brief summary of the MBE/WBE's response. Submit this form with your bid.

If MBE/WBE subcontractors will not to be used on this project, check the box directly above the signature block and submit the form with your bid.

Firm / Person Contacted: _____

Date Contacted: _____ Area of Expertise: _____

Interested Not Interested Response: _____

Firm / Person Contacted: _____

Date Contacted: _____ Area of Expertise: _____

Interested Not Interested Response: _____

Firm / Person Contacted: _____

Date Contacted: _____ Area of Expertise: _____

Interested Not Interested Response: _____

Firm / Person Contacted: _____

Date Contacted: _____ Area of Expertise: _____

Interested Not Interested Response: _____

Firm / Person Contacted: _____

Date Contacted: _____ Area of Expertise: _____

Interested Not Interested Response: _____

MBE/WBE subcontractors will not be used on this project.

The undersigned certifies the above to be true and correct to the best of their knowledge and has been given the authority to act on behalf of the bidder.

Authorized Signature(s): _____

Print Name and Title of Above Signer(s): _____

Date: _____

ATTACHMENT A
BIDDER'S QUESTIONNAIRE / IFB 17-1109OV
Lift Station 41A Force Main Repairs and Manhole Rehabilitation
Whitfield Avenue and West Country Club Lane (Project 462 5104285)
(Submit in Duplicate)

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.

BIDDER: _____

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

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.

BIDDER: _____

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

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

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

15. 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 / IFB17-1109OV
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.

(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.17-11090V
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 / IFB17-1109OV
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: _____

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.: IFB17-1109OV

BID TITLE: Lift Station 41A Force Main Repairs and Manhole
Rehabilitation, Whitfield Avenue and West Country Club Lane
Project No; (462 5104285)

DUE DATE/TIME:

CONTRACT DOCUMENTS

FOR

**Lift Station 41A Force Main Repairs
and Manhole Rehabilitation**

PROJECT # 462 5104285

March 2017

PROJECT OWNER:

County of Manatee, Florida
c/o Manatee County Procurement Division
1112 Manatee Avenue West
Bradenton, Florida 34205
(941) 748-3014

PREPARED BY:

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

INFRASTRUCTURE ENGINEERING STANDARD SPECIFICATIONS

DIVISION 1	GENERAL REQUIREMENTS	4
SECTION 01005	GENERAL REQUIREMENTS	4
SECTION 01010	SUMMARY OF WORK	15
SECTION 01015	CONTROL OF WORK	17
SECTION 01030	SPECIAL PROJECT PROCEDURES	21
SECTION 01045	CUTTING AND PATCHING	25
SECTION 01050	FIELD ENGINEERING AND SURVEYING	27
SECTION 01090	REFERENCE STANDARDS	28
SECTION 01150	MEASUREMENT AND PAYMENT	31
SECTION 01152	REQUESTS FOR PAYMENT	38
SECTION 01153	CHANGE ORDER PROCEDURES	39
SECTION 01200	PROJECT MEETINGS	42
SECTION 01310	CONSTRUCTION SCHEDULE & PROJECT RESTRAINTS	44
SECTION 01340	SHOP DRAWINGS, PROJECT DATA AND SAMPLES	49
SECTION 01370	SCHEDULE OF VALUES	54
SECTION 01380	CONSTRUCTION PHOTOGRAPHS	55
SECTION 01410	TESTING AND TESTING LABORATORY SERVICES	57
SECTION 01510	TEMPORARY AND PERMANENT UTILITIES	59
SECTION 01570	TRAFFIC REGULATION	61
SECTION 01580	PROJECT IDENTIFICATION AND SIGNS	63
SECTION 01600	MATERIAL AND EQUIPMENT	66
SECTION 01620	STORAGE AND PROTECTION	68
SECTION 01700	CONTRACT CLOSEOUT	70
SECTION 01710	CLEANING	73
SECTION 01720	PROJECT RECORD DOCUMENTS	75
SECTION 01730	OPERATING AND MAINTENANCE DATA	78
SECTION 01740	WARRANTIES AND BONDS	81
DIVISION 2	SITE WORK	83
SECTION 02064	MODIFICATIONS TO EXISTING STRUCTURES, PIPING AND EQUIPMENT	83
SECTION 02100	SITE PREPARATION	88
SECTION 02220	EXCAVATION, BACKFILL, FILL AND GRADING FOR STRUCTURES	90
SECTION 02221	TRENCHING, BEDDING AND BACKFILL FOR PIPE	94
SECTION 02223	EXCAVATION BELOW GRADE AND CRUSHED STONE OR SHELL REFILL	100
SECTION 02260	FINISH GRADING	101
SECTION 02276	TEMPORARY EROSION AND SEDIMENTATION CONTROL	103
SECTION 02444	FENCING	105
SECTION 02480	LANDSCAPING	112
SECTION 02485	SEEDING AND SODDING	117
SECTION 02513	ASPHALT CONCRETE PAVING	120
SECTION 02575	PAVEMENT REPAIR AND RESTORATION	129
SECTION 02615	DUCTILE IRON PIPE AND FITTINGS	132
SECTION 02616	DISINFECTING POTABLE WATER PIPE LINES	135
SECTION 02617	INSTALLATION AND TESTING OF PRESSURE PIPE	137
SECTION 02618	PIPELINE CLEANING	141
SECTION 02620	POLYETHYLENE (HDPE) PIPE AND FITTING	144
SECTION 02622	POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS (AWWA SPECIFICATIONS C-900 & C-905)	146
SECTION 02623	POLYVINYL CHLORIDE (PVC) PIPE (GRAVITY SEWER)	149
SECTION 02627	SANITARY SEWER MANHOLE REHABILITATION	158
SECTION 02640	VALVES AND APPURTENANCES	166
SECTION 02720	SANITARY SEWER BYPASS PUMPING	182

DIVISION 3	CONCRETE	185
SECTION 03200	CONCRETE REINFORCEMENT	185
SECTION 03300	CAST-IN-PLACE CONCRETE	188
SECTION 03350	CONCRETE FINISHES	193
SECTION 03410	PRECAST CONCRETE STRUCTURES	196
DIVISION 6	WOOD AND PLASTIC	203
SECTION 06100	ROUGH CARPENTRY	204
SECTION 06200	FINISH CARPENTRY	206
DIVISION 9	PAINTING	209
SECTION 09150	CEMENT PLASTER (STUCCO)	209
SECTION 09900	PAINTING	212
SECTION 09970	SURFACE PROTECTION SPRAY SYSTEM	246

This specification includes by reference the Manatee County Public Works Standards, Part I Utilities Standards Manual approved June 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 neophrene 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 removal and replacement of force mains, wood, stucco, and concrete wall, chain link fence, sod, sidewalk, pavement, bypass piping and pumping of sewage as necessary, line stops, sewer manhole work, and associated tasks to perform repairs at a lift station site and on County right of way to restore damage from force main leaks. The Contractor shall coordinate his work with County staff and the HOA owning the wall and landscaping in the vicinity.
- 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 (NOT USED)

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
AISI	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 179I 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 24th 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. Foundation and borrow materials, except as hereinafter specified.
8. Testing and placing system in operation.
9. Any material and equipment required to be installed and utilized for the tests.
10. Pipe, structures, pavement replacement, asphalt and shell driveways and/or appurtenances included within the limits of lump sum work, unless otherwise shown.
11. Maintaining the existing quality of service during construction.
12. Maintaining or detouring of traffic.
13. Appurtenant work as required for a complete and operable system.
14. Seeding and hydromulching.

BID ITEM 1, 2 - PVC (C-900) FORCE MAINS

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 PVC force main (AWWA C-900, CL-150 or C-905, CL-235) pipe and fittings as shown on the Contract Drawings and listed on the Bid Form. Measurement and Payment shall be made for the actual length of the listed diameter pipe furnished and installed and will represent full compensation for all labor, materials, excavation, including rock, dewatering, tracer wire, detectable tape, 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. The cost to remove the existing force main segments to be abandoned, for connecting the force mains to the existing manhole and existing mains, and for thrust blocking shall be included in the cost per linear foot.

BID ITEM 3, 4 - TAPPING SLEEVES/VALVES

Payment for all work included in these Bid Items 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 and listed on the Bid Form. Prior to the tapping operation, the Contractor will contact the County as to the date and time of the proposed work. All tapping operations 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 5 - REMOVE AND REPLACE DAMAGED WOOD/STUCCO WALL.

Payment for all work included in this Bid Item will be made at the applicable Contract lump sum price bid for removing and replacing the existing decorative wall to match the existing wall, as shown on the Drawings or where directed by the Project Representative. The existing wall appears to be a wood frame covered in stucco with a concrete foundation and columns. Measurement shall be according to the Schedule of Values. Payment shall represent full compensation for removal and disposal of the existing wall between the limits shown, and constructing a replacement wall including but not limited to all labor, material and equipment, excavation, backfill, compaction, concrete, reinforcement, wood framing and cladding, stucco, trim, painting, connection to the existing wall, permits, wind and building code compliance as required for the original wall, protection of portions of the existing wall to remain, and all incidentals necessary for completion of this Bid Item, ready for approval and acceptance by the Engineer/Owner. The Contractor is responsible for creating and submitting plans as required to acquire a Sign Permit for the wall replacement. The cost for a Sign Permit is \$300. A CBC or CGC Contractor must submit the permit application and construct the wall/sign.

BID ITEM 6 - REPAIR EXISTING CHAIN LINK FENCE

Payment for all work included in this Bid Item will be made at the applicable Contract unit price bid per linear foot for repairing the existing chain link fence to match the existing fence, as shown on the Drawings or where directed by the Project Representative. Measurement shall be per linear foot. Payment shall represent full compensation for repairing the fence, including but not limited to all labor, material and equipment, excavation, backfill, compaction, concrete, all fence parts, connection to the existing fence, and all incidentals necessary for completion of this Bid Item, ready for approval and acceptance by the Engineer/Owner.

BID ITEM 7 - REMOVE AND RESTORE COUNTY LANDSCAPING AND PLANTS

Payment for all work included in this Bid Item will be made at the applicable Contract lump sum price bid for removing and replacing the existing county landscaping and plants as necessary to perform the Work, as shown on the Drawings or where directed by the Project Representative. All landscaping and plants at the site belong to the County except as shown on the photo in the Bid Documents (HOA owns plants in the planter at the outside of the curved wall section). Measurement shall be according to the Schedule of Values. Payment shall represent full compensation for removal and restoration of the existing landscaping and plants, including but not limited to all labor, material and equipment, excavation, backfill, temporary capping of irrigation lines, and all incidentals necessary for completion of this Bid Item, ready for approval and acceptance by the Engineer/Owner.

BID ITEM 8 - REPLACE MANHOLE FRAME AND COVER

Measurement and payment shall be per each manhole frame and cover replaced, furnished, installed and accepted.

The unit price shall include, but is not limited to, removal of existing frame and cover, dewatering, excavation, including rock excavation, backfill, compaction, removal of unsuitable material, furnishing and installing frame and cover, protective coatings, sealing of lift holes, 316 S.S. rainwater protector, testing and any and all other items necessary to complete this bid

item, ready for approval and acceptance by the County.

BID ITEM 9, 10 - PIPE RESTRAINTS

Payment for all work included in this Bid Item shall be made at the applicable Contract unit price bid per each restraint of the listed size required to restrain the piping shown on the Contract Drawings. Measurement will 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 (EBA Iron or equal) used in restraining pipe of the specified type acceptably furnished and installed as shown on the drawings or where directed by the Project Representative. 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 11 - EROSION CONTROL

Payment for all work included in this Bid Item will be made at the applicable Contract lump sum price bid for preparing an Erosion Control Plan, and furnishing and installing erosion control facilities as required by county and state regulations, and removing them after construction as required. Payment shall represent full compensation for all permits, labor, materials, necessary equipment, and incidentals necessary to complete the work

BID ITEM 12 - TRAFFIC CONTROL, SIGNING & BARRICADES TO FDOT STDS.

Payment for all work included in this Bid Item will be made at the applicable Contract lump sum price bid for all traffic control, devices, flaggers, coordination, lighting, temporary markings, preparation of MOT plans, and thermoplastic markings required by FDOT standards as shown on the Drawings or where directed by the Project Representative. Measurement shall be according to the Schedule of Values. Payment shall represent full compensation for traffic control, removal and replacement of existing thermoplastic markings and striping, including but not limited to all labor, material and equipment and all incidentals necessary for completion of this Bid Item, ready for approval and acceptance by the Engineer/Owner..

BID ITEM 13 - CURB 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 curbing and for furnishing and placing the curb as shown on the Drawings or as directed by the Project Representative. Measurement will be per actual number of linear feet of curb installed. Payment shall represent full compensation for removal and disposal of existing curb 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 14 - PAVEMENT REPAIR AND ROAD RESTORATION (BASE AND RESURFACE)

Payment for all work included under this Bid Item will be made at the Contract unit price bid

per square yard for road restoration, including furnishing, preparing and installing the base, subbase and asphalt surface, testing the road restoration pavement section, and removal and disposal of existing pavement where shown on the Drawings or as directed by Project Representative. Measurement will be based on the actual number of square yards of road restoration installed, tested, complete and approved. The measurement will be from face of curb to face of curb or as specified, but not greater than the width of the existing roadway prior to construction. Payment will include complete restoration of the roadway section in accordance with the applicable details on the Contract Drawings, but not less than 2-1/2 inches of FDOT Type III asphaltic concrete, the necessary base, subbase or compacted suitable excavation material all in accordance with these Specifications. Payment shall include all items and incidentals necessary to complete the road restoration in accordance with the requirements of Manatee County ready for approval and acceptance by the County.

BID ITEM 15 - SIDEWALK REPLACEMENT

Payment for all work included in this Bid Item will be made at the applicable Contract unit price bid per square yard for sidewalk replacement, including removal and replacement of existing concrete sidewalk to match the existing 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 removal and disposal of the existing sidewalk, 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 Engineer/Owner

BID ITEM 16 - LINE STOP FOR FORCE MAIN 12" AND SMALLER

Payment for all work included in this Bid Item shall be at the applicable Contract unit price bid for each line stop as shown on the Drawings including all analysis, preparatory work, coordination with County staff, excavation, backfill, compaction, thrust restraint facilities, labor, materials, installation, equipment, pumping, removal of line stop, and repair of pipe, associated with each line stop at locations as shown on the Contract Drawings or as directed by the Project Representative. Permanent saddles and sleeves shall be stainless steel with stainless steel bolts and hardware. The method, schedule, and procedures, including emergency spill plan for the line stop shall be provided to the Engineer of Record as a submittal and is subject to the approval of Manatee County Engineer. The line stops shall not be commenced until the Contractor obtains approval of the full Submittal. Payment shall represent full compensation for all labor, material, and equipment required to complete this Bid Item.

BID ITEM 17 - 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 sodding as directed by the Project Representative, and shall match existing grass. Payment shall represent full compensation for all labor, materials, necessary equipment, and incidentals necessary to complete the work, ready for approval and acceptance by the County.

BID ITEM 18 - GROUT FILL ABANDONED FORCE MAIN

Payment for all work included in this Bid Item shall be made at the applicable Contract unit price

bid per cubic foot for grouting the existing force main as required to complete the work as shown on the Contract Drawings. The work includes cutting and plugging the existing force mains where necessary. Measurement and Payment shall be made when completed and will represent full compensation for all labor, materials, excavation, including rock, dewatering, disposal, backfill, compaction, and equipment required to complete this Bid Item. 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 settlement.

BID ITEM 19 - INSTALL & REMOVE HDPE TEMP BYPASS PIPING

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 or as approved by the County to maintain wastewater flows during construction. This pay item includes coordination with County staff, installation and removal of HDPE bypass pipe and fittings, pumping and disposal of wastewater to the wet well if necessary, provision and operation of tanker trucks if necessary, 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. The Contractor shall submit a plan to the County for approval at least 2 weeks prior to starting work which shows the proposed force main bypass plan details including deadman thrust blocks sizes and details. The Contractor shall be liable for the costs to cleanup all wastewater spills.

BID ITEM 20 - DUCTILE IRON FITTINGS, WASTEWATER

Payment for all work included in this Bid Item will be made at the applicable Contract unit price bid per pound for furnishing and installing ductile iron fittings (Protecto 401 epoxy lined) as shown on the Contract Drawings and as 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 this Bid Item.

BID ITEM 21 - FLOW THRU BYPASS

Payment for all work included in this Bid Item will be made at the applicable Contract lump sum price bid for providing temporary gravity sewer bypass facilities as necessary to maintain wastewater flows during construction. This pay item includes coordination with County staff, bypass pipe and fittings, flow thru plugs in sewer mains, pumping and disposal of wastewater to the wet well if necessary, provision and operation of tanker trucks if necessary, temporary fittings, connections, plugs, restraints, and all other labor, equipment, and materials necessary to divert wastewater flows to allow construction to be performed and completed. The Contractor shall provide on-site staff to monitor the sewage elevation in the upstream manhole at all times that the sewer is bypassed and/or plugged including at night if bypassing occurs overnight, at no additional cost to the County. The flow level at the upstream manhole shall not exceed 2 feet above the existing sewer pipe crown at any time; the bypass piping and plug shall be removed when the flow level reaches this elevation. During and after wet weather, flows could reach 1500gpm or more. The Contractor shall prepare and submit a plan to the showing the proposed flow bypass facilities to the County for approval at least two weeks prior to starting work. The Contractor shall be liable for the costs to cleanup all wastewater spills.

BID ITEM 22 - 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 23 - 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 for 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, but not limited to, full compensation for project photographs, as-builts 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 24 - 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 5% 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: A written order signed by the Owner, the Architect/Engineer and the Contractor authorizing a change in the Project Plans and/or Specifications and, if necessary, a corresponding adjustment in the Contract Sum and/or Contract Time, pursuant to Article V of the General Conditions of the Construction Agreement.
- B. Administrative Change Adjustment: Minor change order under 10% of project cost or 20% time, does not have to be Board approved.
- C. Field Directive: A written order issued by Owner which orders minor changes in the Work not involving a change in Contract Time, to be paid from the Owner's contingency funds.
- D. Field Order: Minor change to contract work that does not require adjustment of contract sum or expected date of completion.

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. Refer to Article V.5.6 of the General Conditions of the Construction Agreement.

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

concurrent 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 no 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. Two 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

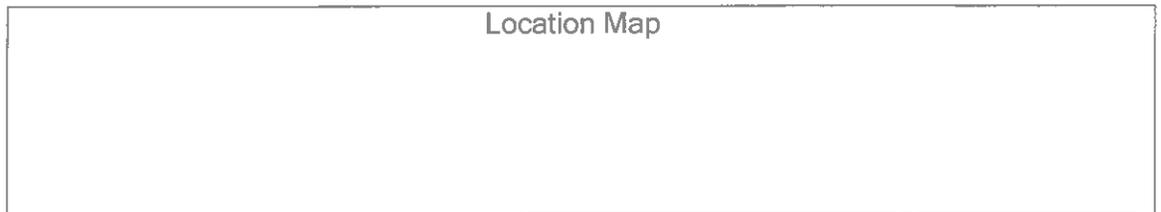
- A. Door Hangers: The Contractor shall generate and distribute door hangers to all residents who will be impacted by project construction.
 - 1. Residents impacted include anyone who resides inside, or within 500 feet of project limits of construction.

- 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 STANDARDS

1.01 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 2.04 D above and as mentioned in Section 1.14 Record Drawings in the Manatee County Public Works Standards, Part I Utilities Standards Manual approved June 2015.

PART 2 STANDARDS

2.01 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.

2.02 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.

2.03 MARKING DEVICES

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

2.04 RECORDING DRAWINGS PREPARATION

- A. Record information concurrently with construction progress.

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

C. 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.

D. 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.
- E. Shop Drawings (after final review and approval):
1. Five sets of record drawings for each process equipment, piping, electrical system and instrumentation system.

2.05 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, external references, 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 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 manufacturer'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

- A. Epoxy mortar shall be fiberglass fiber mixed with an epoxy filler.
- B. Non-shrink grout shall be a sand-cement, non-metallic formulation, having a 28-day strength of 4,000 psi and 0.0 percent shrinkage per ASTM C1090.
- C. Liners to be installed in existing manholes and wetwells shall be spray-applied, monolithic, reinforced urethane resin. Urethane resin-based manhole liner material shall be resistant to hydrogen sulfide gas, and other common contents found in a sanitary sewer environment.
- D. Approved manhole and wet well liner products are Raven 405, SprayWall, Green Monster, or SpectraShield.

PART 3 EXECUTION

3.01 GENERAL

- A. Cut, repair, reuse, excavate, demolish or otherwise remove parts of the existing structures or appurtenances, as indicated on the construction drawings, or as necessary to complete the work as required. 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. Dismantle and remove all existing equipment, piping, and other appurtenances required for the completion of the work. Where called for or required, cut existing pipelines for the purpose of making connections thereto.
- C. Anchor bolts for equipment and structural steel to be removed shall be cut off one inch below the concrete surface. Surfaces shall then be refinished using non-shrink grout or epoxy mortar or as indicated on the construction drawings. Repairs to the interior surfaces of existing concrete structures in sanitary sewers shall be made with epoxy mortar. Repairs to be made on other existing concrete surfaces using non-shrink grout shall be made using a bonding agent such as Acrylbond by Concrete Producers Solutions or an equal approved by the County. Remove all dirt, curing compounds, sealers, paint, rust or other foreign material, and etch with muriatic acid solution. Flush with clean water and while still damp,

apply a coating of the bonding agent. Place the new grout patch onto the treated area immediately.

- D. 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 restraint devices, if required, shall also be installed as required. At the time when a new potable or reclaimed water service is installed, a pipe locator tracer wire shall be installed and connected to the tracer wire at the main.
- E. No existing structure, equipment, or appurtenance shall be shifted, cut, removed, or otherwise altered except with the express approval of and only to the extent approved by the County. All existing valve boxes, fire hydrants, air release valve cabinets, and manholes shall be relocated to meet the new finished grade elevations after construction.
- F. When removing materials or portions of existing utility pipelines or structures or when making openings in walls and partitions, 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 approved by the County, saw-cutting, rotary core-boring, or line drilling will be required in removing material from existing concrete structures or pipes.
- G. 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 be disposed of off the work site.
- H. All alterations to existing utility pipes and structures shall be done at such time and in such a manner as to comply with the approved time schedule. 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 delays.
- 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 Standards covering the new work. When not covered, the work shall be carried on in the manner and to the extent directed by the County or per the construction drawings.
- J. Surfaces of seals visible in the completed work shall be made to match as nearly as possible the adjacent surfaces.
- K. Non-shrink cementitious grout shall be used for setting wall castings, sleeves, leveling pump bases, doweling anchors into existing concrete and elsewhere as shown on the construction drawings. The surface to which grout is to be applied shall be wetted to facilitate good bonding.
- L. Where necessary or required for the purpose of making connections; cut existing pipelines in a manner to provide an approved joint. Where required, use flanges, couplings, or adapters, all as required.
- M. Provide flumes, hoses, piping, pumps and well points, 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.
- N. Care shall be taken not to damage any part of existing buildings or foundations or outside structures.

- O. Prior to entering confined spaces in sanitary sewer structures, conduct an evaluation of the atmosphere within, in accordance with local, state, and federal regulations. Provide ventilation equipment and other equipment as required to assure safe working conditions.

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 County Inspector 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 removal Contractor registered in the State of Florida.
- B. The asbestos Contractor 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 cost for all fees associated with permits, licenses and notices to the governing regulatory agencies shall be borne by the asbestos Contractor.
- 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) Title 40 CFR, Part 61, Subpart M, NATIONAL EMISSION STANDARD FOR ASBESTOS
- (3) Occupational Safety and Health Act, Title 29 CFR
- (4) Title 40 CFR, Part 763, ASBESTOS
- (5) Florida Statute Title XXXII, Chapter 469, ASBESTOS ABATEMENT

- D. All asbestos cement pipe sections indicated on the construction drawings to be removed, and all related tees, valves, fittings and appurtenances shall be removed in their entirety and disposed of by the asbestos Contractor in accordance with this Section. Asbestos cement nipples between tees and valves shall be replaced. After removal of the pipelines, all excavations shall be backfilled in accordance with the applicable provisions of the Trenching and Excavation Section of these Standards. The cost of disposing of the removed materials shall be borne by the asbestos Contractor.
- E. The cutting of existing asbestos-cement (A/C, a.k.a. "Transite") pipe shall be by hand tools only. No powered machine cutting is allowed. Removal of all fragments of pipe shall be double bagged prior to shipment. Longer sections of pipe removed may be shipped without double bagging. An asbestos manifest form must accompany each 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 (telephone (941) 748-5543) is required.

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 nonshrinking sand-cement grout. When such pipes are made of asbestos-cement materials, the abandonment activities shall be performed by a licensed asbestos Contractor. It is completely the Contractor's responsibility to obtain all regulatory clearances and provide documentation in cases where they have determined that an asbestos-cement pipe abandonment activity by in-place grouting does not require a licensed asbestos Contractor.
- B. The ends of the pipe sections to be grout-filled shall be capped or plugged with suitable pipe fittings. The grout material shall be of suitable properties and the pumping pressure shall be such that the pipe sections are filled completely with grout. All above ground features shall be removed: hydrants, meters, valve & meter boxes, pads, vaults, etc. Existing tees, crosses, and valves left in service shall be plugged and restrained.
- C. The County shall be given timely notice so that the County's representative may be present to monitor all pipe grouting operations. Provide standpipes and/or additional means of visual inspection as required to determine if adequate grout material has filled the entire pipe sections.
- D. All tees, crosses, and valves left in service shall be plugged and restrained.

3.05 SPRAY-APPLIED LINERS

- A. Use a high-pressure water spray to remove all foreign material from the walls and bench of the structure. Loose or protruding masonry materials shall be removed using a hammer and chisel. Fill any voids, holes or cracks using a hand trowel with epoxy mortar to form a uniform surface. Place covers over all pipe openings to prevent extraneous material from entering the pipes. Block or divert sewer flow from entering the structure. Any infiltration leaks shall be stopped by using such methods as approved by the County.
- B. The liner material shall be sprayed onto the invert, bench and wall areas. The sprayed-on material shall be applied such that the entire structure is lined with a structurally enhanced monolithic liner. The thickness of the wall liner material shall be such that it will withstand the hydraulic load generated by the surrounding groundwater table, using a factor of safety of two, and using the assumption that the groundwater table is at the level of the top of the structure. The invert and bench liner material shall be the same thickness as that required for the base of the wall.
- C. Special care shall be used to provide a smooth transition between the intersecting pipelines and the manhole inverts such that flow is not impaired. Remove concrete material from the existing manhole base channel in depth to the required thickness of the new liner material.
- D. No active sewer flow shall be allowed in the newly lined structure, nor shall any vacuum tests be performed, until the liner material has had adequate time to cure, as recommended by the liner material manufacturer.
- E. Install the coating systems per manufacturer's recommendation and completely protect the structure from corrosion. The liner or coating systems must extend and seal onto manhole ring, onto and around pipe openings and any other protrusions, and completely cover the bench and flow invert. Provide a five (5)-year unlimited warranty on all workmanship and products. The work includes the surface preparation and application of the coating or liner system, and shall protect the structure for at least five (5) years from all leaks and from failure due to corrosion from exposure to corrosive gases such as hydrogen sulfide.

3.06 CONNECTION TO EXSTING MANHOLE

- A. Where required or as indicated on the construction drawings, make connection of new pipelines to existing manhole structures. If pipe stub-outs of the correct size and position are not available, make connections by removing a portion of the manhole wall by mechanical rotary core boring. The connection between pipe and concrete manhole shall be complete with resilient seals meeting the requirements of ASTM C923.
- B. A new channel shall be formed in the manhole base by removing and reforming or by providing new concrete to convey the new flow into the existing channel in accordance with the standard requirements for new sewer manhole structures. Flow direction shall not change by more than 90 degrees within the manhole base.
- C. Repair internal coating of existing manholes cored during connection of new sewers by applying approved coating material as listed above in accordance with the manufacturer's recommendations. If existing manhole has an internal coating other than that listed above, sandblast the interior of the existing manhole and apply an approved coating in accordance with the manufacturer's recommendations.
- D. When connecting a force main to an existing manhole, the force main termination manhole and the next two manholes downstream shall be rehabilitated and lined with a currently approved liner. If the existing manholes are lined with a non-conforming liner according to Part 2.D above, the existing liner shall be removed and replaced, unless otherwise noted on the plans or with written 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 dewatering, 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 18 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. At all times during the construction operations, the groundwater levels shall be maintained at an elevation 18 inches below the lowest level where structures are being installed.
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 and shall be from an FDOT certified pit. 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. Bedding - shall conform to FDOT Standard Specifications for Road and Bridge Construction, Section 901 Coarse Aggregate, and shall be either coarse aggregate of Size No. 57 or coarse sand of Size No. 9. Washed shell size No.57 may be used as an alternate bedding material.

C. 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. Shall be either soil classification A-1, A-2 or A-3, per AASHTO M-145, and shall be free of organic matter, lumps of clay or marl, muck, compressible materials, and rock exceeding 2.5 inches in diameter. Broken concrete, masonry, rubble or other similar materials shall not be used as backfill. Minimum acceptable density shall be 98 percent of the maximum density as determined by AASHTO T-180.
- D. Selected Common Fill - shall have the same material classification and requirements as Structural Fill, as described above.
- E. Common Fill
1. Shall be either soil classification A-1, A-2, A-3, A-4, A-5 or A-6, per AASHTO M-145, and shall be free of organic matter, lumps of clay or marl, muck, compressible materials and rock exceeding 2.5 inches in diameter. Broken concrete, masonry, rubble or other similar materials shall not be used as backfill.
 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.
- E. Unsuitable Material - soil classification A-7 and A-8, per AASHTO M-145, shall not be used as backfill material.

PART 3 EXECUTION

3.01 EXCAVATION

- A. Excavate trenches and pits for structures to the elevations indicated on the construction drawings. Take special care to avoid over-excavating or disturbing the bottom of the trench or pit, so that the soil at the bottom of the hole remains in a naturally compacted condition. Excavate to widths sufficient to provide adequate working room to install the required structures. Do not excavate the final layer of soil to the designed grade until just before placing the bedding, foundation, pipe, structure, or masonry work required. Remove boulders, rocks, logs or any unforeseen obstacles encountered.
- B. In case the foundation soil found at the bottom of the trench or pit is soft, plastic or mucky, or does not conform to the soils classification specified as suitable foundation material, over-excavation to a greater depth will be required. Soils not meeting the classification required for foundation material shall be removed to a depth at least four inches below the bottom of the pipe, bedding or structure bottom elevation. Rock, boulders or other hard or lumpy material shall be removed to a depth 12 inches below the bottom of the pipe, bedding or structure bottom elevation. Remove muck, clay or other soft material to a depth as needed to establish a firm foundation.
- C. Where possible, the sides of trenches should be vertical up to at least the spring line of the installed pipe.
- D. Trench excavation shall be performed in accordance with Florida Statute Title XXXIII, Chapter 553, Part III, Trench Safety Act.

3.02 BACKFILLING

- A. Backfill materials shall be placed on solid, firm, naturally compacted or compacted to 98 percent of the maximum dry density of the material as determined by AASHTO T-180, dry or dewatered in place soil foundations.
- B. Where over-excavation is required due to nonconforming soil classification or rocky, unstable, or otherwise undesirable soil conditions, place Structural Fill or Selected Common Fill in the over-excavated zone up to the base of the bedding material layer. Compact the over-excavated zone to 98 percent of the maximum dry density of the material as determined by AASHTO T-180.
- C. When backfilling in an over-excavated zone where moist or watery conditions exist, backfill shall be coarse No. 9 sand or a mixture of No. 57 coarse aggregate with either No. 9 coarse sand, A-1, or A-3 material.
- D. After compaction, backfill material in the over-excavation zone shall form a solid and firm foundation on which to build up successive layers of backfill and structures.
- E. Bedding materials shall be placed on solid, firm soil foundations and shall be compacted to 98 percent of the maximum dry density of the material as determined by AASHTO T-180.
- F. Concrete and masonry structures shall be backfilled using Structural Fill. Backfilling and compaction shall be underneath the structure and carried up evenly on all walls of an individual structure simultaneously. The maximum allowable difference in backfill elevations shall be two feet. No backfilling shall be allowed against concrete or masonry walls until the walls and their supporting slabs have been in place at least seven days or until the specified 28-day strength has been attained. Compaction of Structural Fill underneath the base and along the walls shall be 98 percent of the maximum dry density of the material as determined by AASHTO T-180. The Structural Fill shall be either dried or shall have water added so that the moisture content of the material is within a range that will allow the required density to be achieved.
- G. Trenching backfill for pipe installation shall be Selected Common Fill for the pipe bedding zone. The pipe bedding envelope shall begin at the level four inches, six inches, or nine inches, depending on pipe diameter, below the bottom of the pipe, and shall extend vertically up to a level 12 inches above the top of the pipe. Where the in-place soil material within the four inch, six inch, or nine inch pipe bedding zone beneath the bottom of the pipe meets the soil classification for Selected Common Fill, undercutting of the trench below the bottom of the pipe will not be required. In this case, loosen the soil in the bottom of the trench immediately below the middle third of the pipe diameter, and place the pipe upon it. Where the in-place soil material within the pipe bedding zone does not meet the soil classification for Selected Common Fill, undercutting shall be required, and the bedding zone shall be backfilled with Selected Common Fill. In this case, place the pipe bedding material and leave it in a moderately firm uncompacted condition under the middle third of the pipe diameter, and compact the outer portions of the trench bottom to 98 percent of the maximum dry density. Soils that were over-excavated due to rocky, soft or otherwise unsuitable soil foundation conditions shall also be replaced with Selected Common Fill. Compaction of Selected Common Fill shall be 98 percent of the maximum dry density as determined by AASHTO T-180. Such backfill material shall have an optimized moisture content that will allow the required density to be achieved.
- H. Pipe sections for gravity flow systems shall be laid with spigots downstream and bells upstream. Excavate for pipe bells before laying pipe. Lay pipe true to the lines and grades indicated on the construction plans. Place backfill material on both sides of the pipe and

compact to 98 percent of the maximum dry density of the material as determined by AASHTO T-180. Take special care to effectively fill and compact the material in the haunch areas under the sides of the pipe.

- I. For pipes that are not installed under roadways or driveways, trenching backfill for pipe installation shall be Common Fill above the pipe envelope zone, and shall be compacted to 95 percent of the maximum dry density of the material as determined by AASHTO T-180, and shall have moisture content optimized to allow the required density. For pipes that are installed under roadways or driveways, trenching backfill for pipe installation shall be Selected Common Fill above the pipe envelope zone, and shall be compacted to 98 percent of the maximum dry density of the material as determined by AASHTO T-180, and shall have moisture content optimized to allow the required density. Selected Common Backfill shall be placed in layers not to exceed 6 inches. Common Backfill shall be placed in layers not to exceed 12 inches.
- J. Backfill compaction tests shall be performed every 500 feet in pipe line trenches and for every utility structure. Test reports shall be presented to the County Inspector.

3.03 GRADING AND CLEAN UP

- A. Surplus and unsuitable soil materials not used on-site shall be removed and disposed of off-site in a manner that is consistent with state and local regulations. In no case shall surplus or unsuitable material be deposited on-site or on adjacent lands.
- B. The surface of backfilled areas shall be graded smooth and true to the lines and grades indicated on the construction plans. No soft spots or uncompacted areas shall be allowed in the work.
- C. Upon completion of the work, leave the work areas and all adjacent areas in a neat and presentable condition, clear of all temporary structures, rubbish and surplus materials. Pile any salvageable materials that have been removed in neat piles for pickup by County crews, unless otherwise directed.

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. Soils not meeting the classification required for foundation material shall be removed to a depth at least four inches below the bottom of the pipe, bedding or structure bottom elevation. Rock, boulders or other hard or lumpy material shall be removed to a depth 12 inches below the bottom of the pipe, bedding or structure bottom elevation. Remove muck, clay or other soft material to a depth as needed to establish a firm foundation.

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 and shall be compacted to 98 percent of the maximum dry density of the material as determined by AASHTO T-180, and shall have moisture content optimized to allow the required density..
- 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 02444 FENCING

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Furnish all labor, material, equipment and incidentals necessary for complete installation of vinyl coated chain link fence system with privacy decorative slatting. The fencing shall be installed according to manufacturer's specifications unless otherwise directed or authorized by the County.
- B. The Contractor's security fencing is at his expense and option and is not covered in this Section.

1.02 QUALITY ASSURANCE

- A. Standards of Manufacture shall comply with the standards of the Chain Link Fence Manufacturer's Institute for "Galvanized Steel Chain Link Fence Fabric" and as herein specified.
- B. Provide each type of steel fence and gates as a complete unit produced by a single manufacturer, including, but not limited to accessories, fittings, fasteners and appurtenances complete and ready for use.
- C. Acceptable Manufacturers: Anchor, Cyclone, or approved equal
- D. Erector Qualifications: The Contractor or approved subcontractor, must have a minimum of two years experience in similar fence installation.

1.03 SUBMITTALS

A. Product Data:

For Steel Fences and Gates, the Contractor shall submit for review and approval to the County, five (5) copies of the manufacturer's technical data, details of fabrication, installation instructions and procedures for steel fences and gates. The Contractor shall be responsible for a copy of each instruction to be given to the Installer.

B. Samples:

The Contractor shall submit two samples approximate size 6-inches long, or 6-inches square of fabric material, framework members and typical accessories to the County for review and approval.

C. Certificates:

The Contractor shall provide manufacturer's certification that materials meet or exceed the Contract Document requirements.

PART 2 PRODUCTS

2.01 GENERAL

- A. The pipe sizes indicated are commercial pipe sizes.
- B. The tube sizes indicated are nominal outside dimension.
- C. Framework and appurtenances shall be finished with not less than minimum weight of zinc per sq. ft. and shall comply with the following:
 - 1. Pipe: ASTM A53 (1.8 oz. zinc psf)
 - 2. Square tubing: ASTM A 123 (2.0 oz. zinc psf)
 - 3. Hardware and Accessories: ASTM A 153 (zinc weight per Table I).
- D. All fence components shall be galvanically compatible.
- E. Vinyl coatings for fabric, posts, rails, gates, and all other fittings and components shall be thermally fused polyvinyl chloride; heavy mil coating per ASTM F 668.

2.02 FABRIC

Fabric shall be 0.148 inch (9 gage) steel wire, 2-inch diamond mesh and both top and bottom salvages shall be twisted and barbed for fabric over 60-inches high. Finish shall be hot dipped galvanized, ASTM A 392, Class II.

2.03 POSTS, RAILS AND BRACES

- A. End, Corner and Pull Posts:

The Contractor shall furnish end, corner and pull posts of the minimum size of 3" (2-1/2-inch min. OD) pipe weighing 3.65 pounds min. per linear ft.

- B. Line Post:

The Contractor shall furnish line posts of the minimum size of 2.5" Post (2-3/8-inch min. OD) pipe weighing 2.72 pounds min. per linear foot. Post shall be spaced 8 foot o.c. maximum, unless otherwise indicated:

- C. Gate Posts:

The Contractor shall furnish 4" (3-1/2-inch min. OD) gate posts for supporting a 6 feet wide, single gate leaf, or one leaf of a double gate installation, for nominal gate width; weighing 5.79 pounds min. per linear foot.

- D. Top Rails:

The Contractor shall furnish 1-5/8-inch min. Sch 40 vinyl coated top rail pipe weighing 2.27 pounds min. per linear, unless otherwise indicated.

- E. Post Brace Assembly:

The Contractor shall furnish bracing assemblies at the end, gate, at both sides of corner and pull posts, with the horizontal brace located at mid-height of the fabric. Use 1-5/8-inch min. OD pipe weighing 2.27 pounds min. per linear foot for horizontal brace and 3/8-inch diameter rod with turnbuckles for diagonal truss.

F. Tension Wire:

The Contractor shall furnish tension wire consisting of galvanized 0.177 inch (7 gage) coiled spring wire as per ASTM A824 at the bottom of the fabric only.

G. Barbed Wire Supporting Arms (only when specified):

The Contractor shall furnish pressed steel, wrought iron, or malleable iron barbed wire supporting arms, complete with provisions for anchorage to posts and attaching three rows of barbed wire to each arm. Supporting arms may be attached either to posts or integral with post top weather cap. The Contractor shall provide a single 45 degree arm for each post where indicated.

H. Barbed Wire (only when specified):

The Contractor shall furnish barbed wire. It shall be 2 strand, 12-1/2 gauge wire with 14 gauge, 4-point barbs spaced 5-inch o.c., galvanized, complying with ASTM A121, Class 3.

I. Post Tops:

The Contractor shall furnish post tops. Tops shall be pressed steel, wrought iron, or malleable iron of ASTM F626 designed as a weathertight closure cap (for tubular posts). The Contractor shall furnish one cap for each post unless equal protection is afforded by a combination of post top cap and barbed wire supporting arm. The Contractor shall furnish caps with openings to permit through passage of the top rail.

J. Stretcher Bars:

The Contractor shall furnish stretcher bars. Bars shall be one piece lengths equal to the full height of the fabric, with a minimum cross-section of 3/16-inch x 3/4-inch. The Contractor shall provide one stretcher bar for each gate and end post and two bars for each corner and pull post, except where fabric is integrally woven into the post.

K. Stretcher Bar Bands:

The Contractor shall furnish stretcher bar bands. Bands shall be steel, wrought iron, or malleable iron, a maximum space of 15-inch o.c. to secure stretcher bars to end, corner, pull and gate posts.

2.04 GATES

A. The Contractor shall provide a 6 feet high, 6 feet wide fabricated gate perimeter frames of 1-5/8-inch min. OD pipe tubular members weighting 2.27 pounds min. per linear foot. Additional horizontal and vertical members shall ensure proper gate operation and attachment of fabric, hardware and accessories. The maximum space of the frame members shall not be more than 8-inches apart.

B. The Contractor shall assemble gate frames by welding or with special malleable or pressed steel fittings and rivets for rigid connections. He shall use the same fabric width as for the fence, unless otherwise indicated in the Contract Documents or authorized by the County. He shall install the fabric with stretcher bars at vertical edges. The bars may also be used at the top and bottom edges. The contractor shall attach stretchers to the gate frame at a maximum spacing of 15-inch o.c. He shall attach the hardware with rivets or by other means

which will prevent removal or breakage.

- C. The Contractor shall install diagonal cross-bracing consisting of 3/8-inch diameter adjustable length truss rods on gates as necessary to ensure frame rigidity without sag or twist.
- D. The Contractor shall install barbed wire above the gates, (only when specified). He shall extend the end members of gate frames 12-inches above the top member which will be prepared for three strands of wire. The Contractor shall provide necessary clips for securing wire to extensions.
- E. Gate Hardware:
 - 1. The Contractor shall furnish the following hardware and accessories for each gate.
 - a. Hinges: Pressed or forged steel or malleable iron to suit gate size, non-lift-off type, offset to permit 180 degrees gate opening. Provide 1-1/2 pair of hinges for each leaf over six feet nominal height.
 - b. Latch: Forked type of plunger-bar type to permit operation from either side of gate with padlock eye as integral part of latch.
 - c. Keeper: Provide keeper for all vehicle gates, which automatically engages the gate leaf and holds it in the open position until manually released.
 - d. Double Gates: Provide gate stops for double gates, consisting of mushroom type of flush plate with anchors. Set in concrete to engage the center drip drop rod or plunger bar. Include locking device and padlock eyes as an integral part of the latch, using one padlock for locking both gate leaves.
 - e. Where gates are between masonry piers, provide "J" with 4-inch square anchor plate to masonry contractor for building in.

2.05 MISCELLANEOUS MATERIALS AND ACCESSORIES

- A. Wire Ties: The Contractor shall tie fabric to line posts. He shall use 9 gauge wire ties spaced 12-inches o.c. For tying fabric to rails and braces, he shall use 9 gauge wire ties spaced 24-inches o.c. For tying fabric to tension wire, he shall use 11 gauge hog rings spaced 24-inches o.c. The finish of ties shall match the fabric finish.
- B. Concrete: The Contractor shall provide portland cement concrete in compliance with ASTM C-150 and the Contract Documents. Aggregates shall comply with ASTM C-33. The Contractor shall mix the materials to obtain a minimum 28-day compressive strength of 3,000 psi, using a minimum of 4 sacks of cement per cubic yard, a maximum size aggregate of 1-inch, a maximum 3-inch slump and air entrainment of 2 percent to 4 percent.
- C. Privacy Decorative Slatting (PDS) shall be PVC, bottom locking, non-fin type, sized to match the fabric height and color in both the fence and gates.

PART 3 EXECUTION

3.01 INSTALLATION

- A. The Contractor shall not start the fence installation prior to the final grade completion, and the finish elevations established, unless otherwise authorized by the County.

B. The Contractor shall repair damaged coatings in the shop or in the field by recoating utilizing manufacturers recommended repair compounds and as applied per manufacturer's recommendations.

C. Excavation:

1. For post footings, the Contractor shall drill holes in firm, undisturbed or compacted soil of the diameters and spacings shown or called out in the Contract Documents.
 - a. For holes not shown or called out on the Contract Documents, the Contractor shall excavate minimum diameters recommended by the fence manufacturer.
 - b. Post holes shall be in true alignment and of sufficient size to provide a permanent concrete foundation. Concrete shall be poured against undisturbed earth sides and bottom. All holes shall be 48-inches deep with posts and corner posts placed in the concrete to a depth of 36-inches. The gate posts shall be set in the concrete to a depth of 42-inches below the surface in firm, undisturbed soil. Holes shall be well centered on the posts. A minimum diameter of 12-inches shall be required for all corner and line post holes; 18-inches min. shall be required for all gate post holes.
 - c. Excavated soil shall be removed from the County's property.
 - d. If solid rock is encountered near the surface, the Contractor shall drill into rock at least 12-inches for line posts and at least 18-inches for end, pull, corner or gate posts. Hole shall be drilled to at least 1-inch greater diameter than the largest dimension of the post to be place.
 - e. If the Contractor encounters solid rock below solid overburden, he shall drill to the full depth required; however, rock penetration need not exceed the minimum depths specified.

D. Setting Posts:

1. The Contractor shall remove loose and foreign materials from the sides and bottoms of holes, and moisten soil prior to placing concrete.
 - a. Center and align posts in holes above bottom of excavation.
 - b. Place concrete around posts in a continuous pour and vibrate or tamp for consolidation. Check each post for vertical and top alignment and hold in position during placement and finishing operations. The top of concrete shall extend 2-inches above finish grade.
 - c. Trowel finish tops of footings and slope or dome to direct water away from posts. Extend footings for gate posts to the underside of bottom hinge. Set keeps, stops, sleeves and other accessories into concrete as required.
 - d. Keep exposed concrete surfaces moist for at least 7 days after placement, or cure with membrane curing materials, or other acceptable curing method.
 - e. Grout-in posts set into sleeved holes, concrete constructions, or rock excavations with non-shrink portland cement grout, or other acceptable grouting material.

E. Concrete Strength:

The Contractor shall allow the concrete to attain at least 75% of its minimum 28-day compressive strength no sooner than 7 days after placement, before rails, tension wires, barbed wire, or fabric is installed. The Contractor shall not stretch and tension fabric or wires and shall not hang gates until the concrete has attained its full design strength.

F. Top Rails:

The Contractor shall run the rail continuously through post caps or extension arms and bend to radius for curved runs. He shall provide expansion coupling as recommended by fencing manufacturer.

G. Brace Assemblies:

The Contractor shall install braces so that posts are plumb when diagonal rod is under proper tension.

H. Tension Wire:

The Contractor shall install tension wires by weaving through the fabric and tying to each post with not less than 0.177 inch (7 gage) galvanized wire, or by securing the wire to the fabric.

I. Fabric:

The Contractor shall leave approximately 3-inches between finish grade and bottom salvage, except where the bottom of the fabric extends into the concrete. He shall pull the fabric taut and tie it to posts, rails and tension wires. He shall install fabric on the security side of the fence and anchor it to the framework so that the fabric remains in tension after the pulling force is released.

J. Stretcher Bars:

The Contractor shall thread through or clamp the bars to the fabric 4-inches o.c. and secure them to posts with metal bands spaced 15-inches o.c.

K. Barbed Wire (only when specified):

The Contractor shall install 3 parallel wires on each extension arm on the security side of fence, unless otherwise indicated. He shall pull the wire taut and fasten securely to each extension arm.

L. Gate:

The Contractor shall install gates plumb, level and secure for full opening without interference. He shall install ground-set items in concrete for anchorage, as recommended by the fence manufacturer. He shall adjust hardware for smooth operation and lubricate where necessary.

M. Tie Wires:

The Contractor shall use U-shaped wire, conforming to the diameter of the attached pipe,

and shall clasp the pipe and fabric firmly with twisted ends of at least 2 full turns. He shall bend the end of the wire to minimize hazard to persons or clothing.

N. Fasteners:

The Contractor shall install nuts for tension band and hardware bolts on the side of fence opposite the fabric side. Pen ends of bolts or score threads to prevent removal of nuts.

3.02 INSTALLATION

Fence shall be constructed such that each run of fence between corner posts or gate posts has equal spacing between the line posts. Spacing shall not exceed 8 feet.

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 98% 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 98% 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 nor 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 asphaltic concrete repairs shall be in accordance with the Manatee County Public Works Standards, Part I Utilities Standards Manual, Detail UG-12. The 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. The existing asphalt beyond the excavation or damaged section shall be milled 25' back from the saw cut. Final overlay shall match existing with no discernable "bump" at joint.

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 AWWA C150 and AWWA C151. Pipe shall be Pressure Class 350. All ductile iron pipe used in above ground applications shall be Special Thickness Class 53. All pipe materials used in potable water systems shall comply with NSF Standard 61.
- B. Unrestrained joint pipe shall be supplied in lengths not to exceed 21 ft. and shall be either the rubber-ring compression-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 an approved equal.
- C. All mechanical joint fittings shall be pressure rated for 350 psi for sizes 4-24 inches and 250 psi for sizes 30 inches and larger. All flanged fittings shall be pressure rated for 250 psi for all sizes. All fittings shall meet the requirements of AWWA C110 or AWWA C153.
- D. Rubber gaskets shall conform to AWWA C111 for mechanical and push-on type joints and shall be Ethylene Propylene Diene Monomer (EPDM) 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.

- E. Water Main and Reclaimed Water Main Coatings: All ductile iron pipe used in water and reclaimed water systems shall have a standard thickness cement lining on the inside in accordance with AWWA C104 and a standard 1-mil asphaltic exterior coating per AWWA C151. All ductile iron or gray iron fittings used in water and reclaimed water systems shall have standard thickness cement linings on the inside per AWWA C104 and an asphaltic exterior coating or they shall have factory-applied fusion bonded epoxy coatings both inside and outside in accordance with AWWA C550.
- F. Wastewater Main Coatings: All ductile iron pipe and fittings used in wastewater sewer systems shall have a factory applied dry film thickness 40-mil Protecto 401 or 40-mil Novocoat SP2000W amine cured novalac ceramic epoxy lining on the inside. The interior lining application is to be based on the manufacturer's recommendation for long-term exposure to raw sewage. To ensure a holiday-free lining, documentation must be provided, prior to shipment, showing each section of lined pipe has passed holiday testing at the time of production per ASTM G62. The lining shall have a minimum ten year warranty covering failure of the lining and bond failure between liner and pipe.

Exterior coatings for ductile iron pipe and fittings used in wastewater systems shall be either an asphaltic coating per AWWA C151 or a factory-applied epoxy coating per AWWA C550.

- G. Thrust restraint devices shall be provided at all horizontal and vertical bends and fittings, in casings under roads and railroads and at other locations specifically indicated on the construction drawings. Thrust restraint devices shall be either concrete thrust blocks or restraining glands as manufactured by Star Pipe Products, Stargrip 3000 and 3100, Allgrip 3600, or as manufactured by EBAA Iron Sales, Megaflange, 2000 PV, or other approved equal restraining gland products. Restrained joints, where used, shall be installed at bend and fitting locations and at pipe joint locations both upstream and downstream from the bends or fittings at distances as required by these Standards. 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 DETECTION

- A. Pipe shall have a 3-inch wide warning tape of the proper color placed directly above the pipe 12 inches below finished grade or a 6-inch warning tape between 12 inches and 24 inches below finished grade.
- B. Pipe shall have a No. 10 gauge solid, insulated wire of proper color installed along the pipe alignment as detailed in these standards.

2.03 IDENTIFICATION

- A. Each length of pipe and each fitting shall be marked with the name of the manufacturer, size and class, lining type, 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 polyethylene-wrapped blue for water mains, purple (Pantone 522 C) for reclaimed water mains and green for sewer mains, per AWWA C105. Pipe need not be entirely polyethylene wrapped if soil testing, which is performed by the Engineer of Record or the Contractor in accordance with AWWA C105, indicates that the soil at the site is not corrosive. If soil testing indicates that the soil at the site is not corrosive, pipe may be spiral wrapped with color coded polyethylene at a six-inch minimum spacing, or the ductile iron pipe (DIP) may be painted with permanent oil-based paint, dried and cured in advance of installation with a minimum 1-inch wide color coded stripe on the top and both sides of the DIP.
- 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 & BACTERIOLOGICAL TESTING OF 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. After the new potable water pipelines have been hydrostatically tested, or after existing potable water pipelines have been modified or repaired, they shall be cleaned, disinfected and sampled and tested for the presence of coliform organisms in accordance with AWWA C651.
- C. The County Inspector shall have been notified and shall be present at the time of the introduction of the chlorine disinfectant and water from the supply system into the main.
- D. At the end of the chlorine contact period, the chlorine residual shall be determined by sampling and testing, and the results shall be reported to the regulatory agencies with the County and State. The pipelines shall then be flushed thoroughly with clean potable water until chlorine measurements show that the concentration is no higher than the chlorine concentration that is acceptable for domestic use.
- E. Discharge flows from cleaning or flushing operations, and heavily chlorinated water from disinfecting operations, shall be disposed of in a manner consistent with US EPA, FDEP and SWFWMD regulations. Chapter 62-302 F.A.C. water quality standard for residual chlorine in Class III waters is <0.01 mg/L (ppm).
- F. After final flushing and before the new main is connected to the distribution system, sampling and analysis of the replacement water shall be performed by an approved laboratory or by the Department of Health. Sampling locations shall be as required by AWWA C651 or as determined by the FDEP representative. Pipelines that are tested and return an unsatisfactory test result shall be reflashed and resampled, or re-disinfected, or otherwise reconditioned, until a satisfactory result is attained.
- G. No potable water main shall be placed into service until the results of the bacteriological tests are satisfactory and the FDEP has provided the County with a written letter of acceptance. Potable water services, fire service, and fire hydrant leads that are exempt from a permit from the FDEP but still require bacteriological sampling in accordance with Chapter 62-555, Florida Administrative Code, shall not be placed into service until the results of the

bacteriological tests are satisfactory and the Manatee County Public Works Engineering Department has provided written acceptance.

- H. 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

Reference Section 1.9, Installation of Pipelines in the Manatee County Public Works Utility Standards Part 1-Utility Standards Manual.

1.01 GENERAL

- A. Furnish and install pipe, fittings, valves, fire hydrants, services, and all other appurtenances and incidentals complete and in-place as required by the construction drawings.
- B. Where potable or reclaimed water mains are to be installed under pavement, in parking lots, etc., the main shall be DI or protected by a steel casing pipe.
- C. All pipe crossing state or federal roads or local arterials & thoroughfares shall be installed in a casing pipe.
- D. Services under any kind of pavement shall be Type "K" copper or Schedule 40 stainless steel.
- E. Water mains 16-inches and larger shall be ductile iron. High density polyethylene or PVC (for 16" only). The use of HDPE pipe must be authorized by the County prior to ordering and installation.
- F. Ductile iron pipe, with gasket materials as required in these Standards, shall be used in soil that is contaminated with low molecular-weight petroleum products, aromatic hydrocarbons, chlorinated hydrocarbons or organic solvents.
- G. Trees shall not be planted or located within 10 feet of any potable water main, reclaimed water main, sanitary force main or gravity sanitary sewer main that is owned and maintained by County. With prior approval, an approved root barrier may be used with 5 feet of clearance.
- H. All distribution waterlines that enter private property become private lines and shall have a back-flow preventer installed at the right-of-way. BFP can be part of a meter assembly or a BFP / detector check assembly.

1.02 HANDLING AND STORAGE

- A. Prior to installation, all pipe and fittings shall be inspected. Cracked, broken, or otherwise defective materials not in compliance with these standards shall not be used and shall be removed from the project site.
- B. The pipeline installer shall take care in the handling, storage and installation of the pipe and fittings to prevent injury to the materials or coatings. Use proper implements, tools and facilities for the safe and proper protection of the work. Lower the pipe and fittings from the truck to the ground and from the ground into the trench in a manner to avoid any physical damages. Under no circumstances shall the pipe or fittings be dropped onto the ground or into the trenches.
- C. The pipeline installer shall not distribute material on the job site faster than it can be used to good advantage. Unless otherwise approved by the County, installer shall not distribute

more than one week's supply of material in advance of laying. Any materials not to be installed within two weeks of delivery shall be protected from the sunlight, atmosphere and weather by suitable enclosures or protective wrapping until ready for installation. Stored PVC pipe shall be placed on suitable racks with bottom tiers raised above the ground to avoid damage. Storage of pipe on the job site shall be done in accordance with the pipe manufacturer's written instructions.

1.03 SURVEY MARKINGS

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

1.04 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. **HYDROSTATIC TESTING**
 - 1. Refer to Manatee County Public Works Utility Standards Part 1-Utility Standards Manual Section 1.8.7.

1.05 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.

1.06 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

- B. 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 02620 POLYETHYLENE (HDPE) PIPE AND FITTING

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 bimodal PE3408/PE 100/PE4710 polyethylene resin with a minimum cell classification of 445574 per ASTM D3350, Class 160, DR 11, Performance Pipe DriscoPlex 4000, 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 sizing system (DIPS).
- B. Polyethylene pipe 3 inches in diameter (for potable water and reclaimed water), and 3 inches in diameter and smaller (for wastewater grinder pump force mains) shall be high-density PE 3408 polyethylene, per ASTM D2737, Pressure Class 160, iron pipe size (IPS) outside diameter, DR 11, Performance Pipe DriscoPlex 4100 or an approved equal, meeting the requirements of ASTM D 3035 and AWWA C901.
- C. Polyethylene tubing 2 inches in diameter and smaller for potable water and reclaimed water shall be high density PE 3408 polyethylene resin per ASTM D2737, Pressure Class 200, Copper Tube Size (CTS), SDR 9, Performance Pipe DriscoPlex 5100, Endot EndoPure, Charter Plastics or an approved equal, meeting the requirements of AWWA C901. Butt

fusion or CTS brass connections shall be used. All pipe materials used in potable water systems shall comply with NSF Standard 61.

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. Flanged joints, mechanical joints and molded fittings for 4" and larger pipe shall be in accordance with AWWA C906. Mechanical joints and fittings for 3" and smaller pipe & tubing shall meet the requirements of: AWWA C901, ASTM D 3350 and ASTM D 3140.

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 testing. Refer to Manatee County Public Works Utility Standards Part 1-Utility Standards Manual Section 1.8.7.

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

- A. Furnish all labor, materials, equipment and incidentals required to install the PVC piping, iron fittings and other appurtenances complete and ready for use as indicated on the construction drawings.
- B. Provide and install complete all fittings and appurtenances not noted specifically on the construction plans as required to complete the utility system in accordance with 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. Polyvinyl chloride (PVC) pressure pipe, 4 - 12 inches in diameter, shall be Class 235, DR 18, meeting the requirements of AWWA C900 used for potable and reclaimed water. Mains shall be cast-iron-pipe-equivalent outside diameters (also known as ductile iron pipe size (DIPS)). Each length of pipe shall be hydrostatically tested to four times its pressure class of the pipe by the manufacturer in accordance with AWWA C900.

- B. Polyvinyl chloride (PVC) pressure pipe, 14 inches in diameter, shall be ductile iron pipe size (DIPS) outside diameter and shall meet the requirements of AWWA C905. Pipe used in water, sewer, and reclaimed water service shall be DR 18 and Pressure Class 235. Each length of pipe shall be hydrostatically tested at twice its pressure class in accordance with AWWA C905. Pipe shall be furnished in standard lengths of approximately 20 feet.

PVC pipe shall not be used for potable and reclaimed water mains 16 inches and larger.

- C. Polyvinyl chloride (PVC) pressure pipe, 2-3 inches in diameter, shall be Pressure Rated 200, SDR21, conforming to ASTM D2241, and shall have Iron Pipe Size (IPS) outside diameters. SDR 21 PVC pipe 2-3 inches in diameter shall not be used for working pressures greater than 125 psi. PVC pipe shall not be used in applications, which require pipes that are less than 2 inches in diameter for wastewater force mains. PVC Pipe shall not be used in applications which require pipes that are less than 3 inches in diameter for potable water piping and reclaimed water piping.
- D. Standard PVC pressure pipe joints shall be bell and spigot push-on type with elastomeric ring seals. Ring seal gaskets used at push-on joints shall conform to ASTM F 477 and shall be EPDM rubber for potable and reclaimed water pipes.
- E. Lubricant furnished for lubricating the push-on joints in potable water pipes shall be nontoxic, water soluble, 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, and shall be an approved substance per NSF 61.
- F. Thrust restraint devices shall be provided at all horizontal and vertical bends and fittings, in casings under roads and railroads and at other locations as indicated on the construction drawings. Thrust restraint devices for PVC pipe and fittings shall be either concrete thrust blocks or restraining glands as manufactured by Star Pipe Products, Stargrip 3000 and 3100, Allgrip 3600, or as manufactured by EBAA Iron Sales, Megaflange, 2000PV or other approved equal restraining gland products. Restrained joints, where used, shall be installed at bend and fitting locations and at pipe joint locations both upstream and downstream from bends or fittings at distances as required by these Standards.
- G. All fittings for PVC pipe shall be ductile iron or gray iron with mechanical joints and shall conform to AWWA C110 or AWWA C153 and to the applicable sections of these Standards for ductile iron and gray iron fittings.
- H. All pipe materials used in potable water systems shall comply with NSF Standard 61.

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.

3.02 DETECTION

- A. Direct buried pipe shall have 3" warning tape of the proper color placed directly above the pipe 12" below finished grade or 6" warning tape between 12" and 24" below grade.

- B. PVC pipe shall have a No. 10 gauge solid, insulated wire of proper color installed along the pipe alignment as detailed in these Standards.

3.03 IDENTIFICATION

- A. PVC pipe shall bear identification markings in accordance with AWWA C900, AWWA C905 or ASTM D2241.
- B. PVC pipe shall be color coded blue for water, purple (Pantone purple 522C) for reclaimed water or green for pressure sewer using a solid pipe color pigment.

3.04 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 testing. Refer to Manatee County Public Works Utility Standards Part 1-Utility Standards Manual Section 1.8.7. 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 02623 POLYVINYL CHLORIDE (PVC) PIPE (GRAVITY SEWER)

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. The Contractor shall furnish all labor, equipment, materials, pipe and incidentals and shall construct gravity sewers, complete, as shown on the drawings and as herein specified.
- B. The work shall include furnishing, laying and testing gravity sewer pipe.

1.02 SUBMITTALS DURING CONSTRUCTION

- A. The Contractor shall submit prior to construction, Shop Drawings, Working Drawings and Samples for approval to the County.
- B. The Contractor shall submit to the County not less than fourteen (14) calendar days after the date of the Notice to Proceed, a list of materials to be furnished, the names of suppliers and an expected schedule of delivery of materials to the site.
- C. The Contractor shall furnish in duplicate to the County sworn certificates that all tests and inspections required by the Specifications under which the pipe is manufactured have been satisfied.
- D. The pipe manufacturer shall inspect all pipe joints for out-of-roundness and pipe ends for squareness. The Contractor shall furnish to the County, a manufacturer's Notarized Affidavit stating all pipe meets the requirements of ASTM, ASCE, ANSI, the Contract Documents, as well as all applicable standards regarding the joint design with respect to square ends and out-of-round joint surfaces.

1.03 INSPECTION AND TESTS

- A. All pipe and accessories installed under this Contract shall be inspected and tested as required by the Standard Specifications to which the material is manufactured. The pipe shall be tested at the place of manufacture or taken to an independent laboratory by the manufacturer.
- B. Each length of pipe shall be subject to inspection and approval at the factory, point of delivery and site of work. Sample of pipe to be tested shall be selected at random by the County or the testing laboratory and shall be delivered by the Contractor to the testing laboratory approved by the County.
- C. When the specimens tested conform to applicable standards, all pipe represented by such specimens shall be considered acceptable based on the test parameters measured. Copies of test reports shall be submitted to the County prior to the pipe installation. Acceptable pipe shall be stamped with an appropriate monogram under the supervision of the testing laboratory.
- D. All pipe test specimens failing to meet the applicable standards shall be rejected. The Contractor may provide two additional test specimens from the same shipment or delivery for each failed specimen. The pipe shall be acceptable if both of these additional specimens meet the requirements of the applicable standards.

- E. Pipe which has been deemed unacceptable by the County shall be removed from the work site by the Contractor and shall be replaced with acceptable pipe.

PART 2 MATERIALS

2.01 GENERAL

- A. The sizes of gravity sewer pipe shall be shown on the Drawings.
- B. Each length of pipe shall bear the name or trademark of the manufacturer, the location of the manufacturing plant and the class or strength classification of the pipe. The markings shall be plainly visible on the pipe barrel.

2.02 POLYVINYL CHLORIDE (PVC) GRAVITY SEWER PIPE

- A. Polyvinyl chloride (PVC) gravity sewer pipe and fittings, 4-15 inches in diameter, shall be SDR 26, meeting the requirements of ASTM D 3034. Joining of pipe sections and fittings shall be by water-tight push-on joints using elastomeric gaskets in accordance with ASTM D 3212.
- B. Polyvinyl chloride (PVC) pipe, 16-48 inches in diameter, for gravity sewers, shall be DR 25, with cast-iron (CI) outside diameter, meeting the requirements of AWWA C905.
- C. All PVC sewer pipe bell ends shall be field inspected for out-of-roundness and spigot ends shall be field inspected for out-of-roundness and for squareness of the pipe end. Any materials not in conformance with the tolerances of ASTM D 3212 or AWWA C905 shall be removed from the work site.
- D. All PVC sewer pipe sections shall also be field inspected for excessive cross-section deflection. Any pipe section visually found to have a pipe deflection, before installation, of 2 percent of the Base Inside Diameter or greater shall be removed from the work site. After installation and backfill, pipe deflection shall not be allowed to be 5 percent or greater of the Base Inside Diameter. Any length of pipe found installed having excessive deflection shall be dug up and either reinstalled or removed from the work site.
- E. Six inch PVC fittings for sewer laterals shall also be SDR 26, molded in one piece, with elastomeric joints in accordance with ASTM D-3034. Fittings not currently available in molded form may be fabricated in accordance with ASTM D-3034 with manufacturer's standard pipe bells and gaskets.

2.03 JOINING PVC GRAVITY SEWER AND FITTING

- A. The PVC joints shall be of the push-on type with a single rubber gasket conforming to ASTM F 477.
- B. Wyes and riser fittings shall be gasketed connections. Rubber doughnuts are not to be used.
- C. Joints between pipes of different materials shall be made using stainless steel shielded couplings (as provided by Fernco) or Protecto 401 mechanical joint connections. Metal piping shall not be threaded into plastic fittings, valves, or couplings, nor shall plastic piping be threaded into metal valves, fittings, or couplings.

2.04 INDENTIFICATION AND DETECTION

- A. PVC gravity sewer pipe shall bear identification markings in accordance with ASTM D 3034 or AWWA C905.
- B. PVC gravity sewer pipe shall be color-coded green using a solid pipe color pigment.

PART 3 EXECUTION

3.01 PIPE DISTRIBUTION

The Contractor shall not distribute material on the job faster than it can be used to good advantage. He shall unload pipe, which cannot be physically lifted by workers from the trucks, by a forklift or other approved means. He shall not drop pipe of any size from the bed of the truck to the ground. He shall not distribute more than one weeks supply of material in advance of laying, unless otherwise approved by the County.

3.02 PIPE PREPARATION AND HANDLING

- A. The Contractor shall inspect all pipe and fittings prior to lowering them into trench. Cracked, broken, or otherwise defective materials are not acceptable and shall not be used. The Contractor shall clean the ends of the pipe thoroughly. He shall remove foreign matter and dirt from inside of pipe and keep the pipe clean during and after laying.
- B. The Contractor shall use proper implements, tools and facilities for the safe and proper protection of the work. He shall lower the pipe into the trench in a manner to avoid any physical damage to the pipe, remove all damaged pipe from the job site and under no circumstances shall the pipe be dropped or dumped into trenches.

3.03 LINE AND GRADE

- A. The Contractor shall not deviate more than 1/2-inch for line and 1/4-inch for grade from the line design and design grade established by the County provided that such variation does not result in a level or a reverse sloping invert. He shall measure the grade at the pipe invert and not at the top of the pipe. The Contractor shall furnish, set and control the line and grade by laser beam method. Other methods of controlling line and grade may be submitted to the County for approval if using the laser beam method proves to be impractical because of other conditions.
- B. The Contractor shall use the laser beam method of maintaining line and grade. The Contractor shall submit evidence to the County that a qualified operator shall handle the equipment during the course of construction. A "Caution-Laser Light" placard shall be displayed in a conspicuous place. When "in the pipe" method is used, grade boards shall be installed for the first 50 feet of pipe. The Contractor shall check the line and grade at any additional points at which offset stakes have been placed and when requested by the County. A fan shall be provided to circulate the air if bending of the beam due to air temperature variations becomes apparent with "in the pipe" units. However excessive air velocity shall not be permitted to cause pulsating or vibrating of the beam. If, in the opinion of the County, the beam cannot be accurately controlled, this method of setting line and grade shall be discontinued. When the above ground method is used, the set-up shall be checked with the three grade boards including one set at the upstream manhole. If the laser has a gradient indicator, two boards may be used to check the set-up. The grade board at the up-stream manhole shall be retained to check into as pipe laying progresses.

3.04 PREPARATION OF TRENCH

- A. The Contractor shall provide pipe bedding material under all the pipe for the full trench width. The minimum depth of bedding material below the pipe barrel shall be as follows

Minimum Depth of

<u>Pipe Size</u>	<u>Bedding Under Pipe Barrel</u>
15" & Smaller	4 inches
18" to 36"	6 inches
42" & Large	9 inches

- B. The depth of pipe bedding material under the pipe bell shall not be less than three inches under normal trench conditions.
- C. The Contractor shall hand-grade bedding to proper grade ahead of the pipe laying operation. The bedding shall provide a firm, unyielding support along the entire pipe length.
- D. Should the Contractor excavate the trench below the required depth for pipe bedding material placement without direction from the County, the Contractor shall fill the excess depth with pipe bedding material as specified herein to the proper subgrade.
- E. The Contractor shall excavate bell holes at each joint to permit proper assembly and inspection of the entire joint.

3.05 DEWATERING

The Contractor shall prevent water from entering the trench during excavation and pipe laying operations to properly grade the bottom of the trench and allow for proper compaction of the backfill. Pipe shall not be laid in water.

3.06 LAYING AND JOINTING PIPE AND FITTINGS

- A. The Contractor shall lay pipe upgrade with spigot ends pointing in direction of flow. After a section of pipe has been lowered into the prepared trench, he shall clean the end of the pipe to be joined, the inside of the joint and, if applicable, the rubber ring immediately prior to joining the pipe. The Contractor shall assemble the joint in accordance with the recommendations of the manufacturer of the type of joint used. He shall provide all special tools and appliances required for the jointing assembly.
- B. The Contractor shall lay all pipe uniformly to line and grade so that the finished sewer shall present a uniform bore. Variations from line and grade in excess of the tolerances specified under LINE AND GRADE are not acceptable and the work shall be rejected.
- C. The Contractor shall check the pipe for alignment and grade after the joint has been made. The pipe bedding shall form a continuous and uniform bearing and support for the pipe barrel between joints. Sufficient pressure shall be applied to the joint to assure that the joint is "home" as defined in the standard installation instructions provided by the pipe manufacturer. The Contractor shall place sufficient pipe cover material to secure the pipe from movement prior to installing the next joint to assure proper pipe alignment and joint makeup.

- D. Pipe 21" and smaller intended to be in straight alignment shall be laid so that the inside joint space does not exceed 3/8" in width. If interior joints on 24" and larger pipe laid either in straight alignment or on a curve are greater than 3/8", the Contractor shall thoroughly clean the joint surfaces and fill and seal the entire joint with premixed mortar conforming to ASTM C-387 only after the trench has been backfilled, unless otherwise approved by the County. Trowel smooth on the inside surface. Water shall not be allowed to rise in or around, or pass over any joint before it has substantially set.
- E. When the Contractor lays pipe within a movable trench shield, he shall take all necessary precautions to prevent pipe joints from pulling apart when moving the shield ahead.
- F. The Contractor shall prevent excavated or other foreign material from getting into the pipe during the laying operation. He shall close and lock the open end of the last laid section of pipe to prevent entry of foreign material or creep of the gasketed joints when laying operations cease, at the close of the day's work, or whenever the workers are absent from the job.
- G. The Contractor shall plug or close off the pipes which are stubbed off with temporary plugs.
- H. The Contractor shall take all necessary precautions to prevent the "uplift" or floating of the line prior to the completion of the backfilling operation.
- I. The Contractor shall make connections of non-reinforced pipe to manholes or concrete structures, so that a standard pipe joint is located at a minimum of 18" outside the edge of structure.
- J. When field cutting and/or machining the pipe is necessary, the Contractor shall use only tools and methods recommended by the pipe manufacturer and approved by the County.
- K. Service lateral shall be constructed by the Contractor as shown on the standard sewer details and located approximately as shown on the Contract Drawings.

3.07 LAYING PLASTIC PIPE

- A. Polyvinyl chloride (PVC) pipe shall be installed by the Contractor in accordance with the instructions of the manufacturer, as shown on the Drawings and as called out in the Contract Documents.
- B. The Contractor shall lay the pipe, bedding and backfill to lines and grade shown on the Drawings and called out in the Contract Documents. Blocking under the pipe will not be permitted.
- C. The Contractor shall install a green metallic tape as shown in these Standards below finish grade along the entire pipeline PVC sewer main pipe route.
- D. The Contractor shall use care in the handling, storage and installation of pipe. Storage of pipe on the job site shall be done in accordance with the pipe manufacturer's recommendation.

3.08 BACKFILL IN THE PIPE ZONE

- A. The pipe zone shall be considered to include the full width of the excavated trench from the bottom of the trench to a point above the top outside surface of the barrel of the pipe.

- B. The Contractor shall pay particular attention to the area of the pipe zone from the flow line to the springline of the pipe to insure that firm support is obtained to prevent any lateral movement of the pipe during the final backfilling of the pipe zone.
- C. The Contractor shall take care to insure that the pipe does not rest directly on the bell or pipe joint, but is uniformly supported on the barrel throughout its entire length.
- D. After the pipe is laid by the Contractor to line and grade, he shall place and carefully compact pipe bedding material for the full width of the trench to the springline of the pipe. He shall place the material around the pipe in 6-inch layers and thoroughly hand tamp with approved tamping sticks supplemented by "walking in" and slicing with a shovel to assure that all voids are filled.
- E. The Contractor shall backfill and carefully compact the area above the pipe springline with pipe cover material to a point 12" above the top outside surface of the pipe barrel. Pipe bedding material may, at the Contractor's option, be substituted for pipe cover material.

3.09 EXCESS TRENCH WIDTH

- A. Normal trench widths shall be as shown on the Drawings. If the normal trench width below the top of the pipe is exceeded for any reason, the Contractor shall furnish an adequate support for the pipe. The County may determine that the pipe being used is strong enough for the actual trench width or the Contractor may furnish a stronger pipe or a concrete cradle for approval.
- B. Concrete thickness under the pipe shall be one-third of the nominal diameter of the pipe, but not less than four inches. Concrete block or brick may be used for adjusting and maintaining proper grade and elevation of pipe. After the pipe is laid to line and grade, the Contractor shall place 3,000 psi concrete under the pipe for the full width of the trench to form a cradle of the required length and thickness with the concrete brought up to a level equal to 1/4 of the inside pipe diameter below the springline of the pipe. Start and terminate the concrete cradle at the face of a pipe bell or collar. Do not encase pipe joints at the ends of the concrete cradle.
- C. After the concrete has taken initial set, the Contractor shall place cover material over the concrete cradle and up to a level 12" above the pipe barrel and for the full width of the trench. Cover material shall be placed by hand or by equally careful means.

3.10 CONNECTING DISSIMILAR PIPE MATERIALS

The Contractor shall use the following method to connect dissimilar pipe materials. Use concrete closure collars only when approved by the County and then only to make connections between dissimilar pipe when standard rubber gasketed joints or shielded couplings are impracticable. Before the closure collars are poured, wash the pipe to remove all loose material and soil from the surface on which the concrete will be placed. Wet nonmetallic pipe thoroughly prior to pouring the collars. Wrap and securely fasten a light gauge of sheet metal or building-felt around the pipe to insure that no concrete shall enter the line. Place reinforcement as shown on the plans. Make entire collar in one pour using 3,000 psi concrete and extend a minimum 12" on each side of the joint. The minimum thickness around the outside diameter of the pipe shall be 6". No collar shall be poured in water. After the collars are poured and have taken their initial set, cure by covering with well-moistened earth.

3.11 PIPE BULKHEADS

- A. Connections for future sewers shall be bulkheaded by the Contractor in the following manner:
1. All wyes and bell-and-spigot pipe sewers 18" in diameter or smaller shall be bulkheaded with caps or disc stoppers with factory-fabricated resilient joints. The disk or cap shall be banded or otherwise secured to withstand all test pressures without leakage.
 2. Connections 21" and 24" in diameter shall be bulkheaded with a four-inch brick wall, using clay brick or concrete brick. The wall shall be capable of withstanding all test pressures without leakage.
 3. Connections 27" in diameter and larger shall be bulkheaded with an eight-inch wall, using clay brick or concrete brick. The wall shall be capable of withstanding all test pressures without leakage.

3.12 AIR TEST FOR GRAVITY SEWERS - GENERAL

- A. Gravity sewers shall be required to pass the low pressure air test. All pipelines shall remain undisturbed for 24 hours to develop complete strength at all joints. Refer to Manatee County Public Works Utility Standards Part 1-Utility Standards Manual Section 1.8.10.
- B. Air loss rates may be measured by the County. These tests shall be performed by the Contractor under the observation of the County Inspector.
- C. The groundwater height above the installed pipe shall be determined by attaching a transparent plastic tube to a pipe nipple in the manhole and using the plastic tube as a manometer. A test hole may be dug directly above the sewer main for visual inspection.
- D. The ends of branches, laterals, tees, wyes and stubs included in a test section shall be plugged to prevent air leakage. All plugs shall be secured to prevent blowout due to internal pressure. A test section is defined as the length of sewer between manholes.
- E. The Contractor shall repair all visible leaks in manholes and pipe, even if the leakage test requirements are met.

3.13 TELEVISION INSPECTION OF GRAVITY SEWERS

- A. TV inspection of the entire length of the inside of new gravity sewer mains shall be conducted by the Contractor. The County Inspector shall have been notified and shall be present during the TV inspection.
- B. The sewer pipelines shall be thoroughly cleaned of all dirt, debris or obstructions before the TV inspection. Water shall be added to the upstream manhole until it is seen flowing from the most downstream point of the system to be inspected.
- C. The TV camera shall be a self-propelled, 360 degree pan-head, high resolution, color type and shall have dual DVD recording capability. The camera shall be equipped with a depth gauge calibrated to ¼-inch increments to accurately record the depth of the water in the pipeline. A calibration report shall be submitted with each digital video disk (DVD), which shall include a drawing of the depth gauge, indicating the marks on the gauge, and what depth each mark represents.

- D. The County Inspector shall be present and will observe the TV monitor along with the camera operator as the camera progresses through the pipe. All pipelines will be inspected with the camera progressing in an upstream direction when possible. The camera operator shall record the manhole numbers and the distance the camera has progressed from the downstream manhole as the inspection proceeds. The operator shall stop the progress of the camera and record the distance at all locations along the pipeline where unusual or defective features are encountered. The operator shall record the distance and depth of the water in the pipe at all locations where the depth is greater than or equal to 75% of the maximum depth as listed in the table below. The camera operator shall make records where cracked, dented or deformed pipe is found, or at joints that are not properly installed, or where infiltration is observed, or at any other abnormality or where any other defective feature is encountered.
- E. Pipe grade between manholes shall not deviate by more than the maximum depth as list below from the design grade line, as measured with the television (TV) camera's depth gauge during the TV inspection, provided that such deviation does not result in a level or a reverse slope. Joint deflection and longitudinal pipe deflection between manholes that exceeds the maximum depth or more than two deflections that exceed 75% of the maximum depth, as measured with the television camera's depth gauge during the TV inspection, shall not be accepted.

Pipe Sizes	Water Holding Depth (inches)	
		Maximum
8 inch to 15 inch		1.00
18 inch to 21 inch		2.00
24 inch and greater		2.50

- F. At the end of the inspections, or at the end of the day, one original digital video disk (DVD) of the TV record shall be submitted to the County Inspector along with the written inspection report and depth gauge calibration for evaluation. The County's representative shall be the sole judge of whether any information imparted by the TV test DVD will cause the County to accept or reject the pipe test section.

3.14 PIPE RING DEFLECTION TESTING OF GRAVITY SEWERS (MANDREL)

- A. The Contractor shall perform a pipe ring deflection test on all new gravity sanitary sewer mains. The rigid ball or mandrel used for the ring deflection test shall have a diameter not less than 95 percent of the base inside diameter or average inside diameter of the pipe depending on which is specified in the ASTM C 3034, to which the pipe is manufactured. The test shall be performed without mechanical pulling devices.
- B. The allowable ring deflection is 5 percent of the inside pipe diameter. Pipes that have a ring deflection that exceeds this amount shall not be accepted.

3.15 FINAL SEWER CLEANING

- A. Prior to final acceptance and final manhole-to-manhole inspection of the sewer system by the County, the Contractor shall flush and clean all parts of the system, remove all accumulated construction debris, rocks, gravel, sand, silt and other foreign material from

the sewer system at or near the closest downstream manhole.

- B. During the final manhole-to-manhole inspection of the sewer system, the County may require the Contractor to reflush and clean any section or portion of the line if any foreign matter is still present in the system.

END OF SECTION

SECTION 02627 SANITARY SEWER MANHOLE REHABILITATION

PART 1 GENERAL

1.01 DESCRIPTION

- A. This specification consists of all work, materials, labor and equipment required for manhole rehabilitation for the purpose of eliminating infiltration and exfiltration, providing corrosion protection, adjusting final grade of manhole top, repair of voids and restoration of the structural integrity of the manhole. All such work shall comply with these Specifications and the specific product manufacture's recommendations. Any conflict between the product manufacture's recommendations and any portion of the Contract Documents shall be resolved prior to beginning the work.

1.02 PRODUCT AND MANUFACTURER QUALIFICATION REQUIREMENTS

- A. Since sewer products are intended to have a 50 year design life, and in order to minimize the County's risk, only proven products with substantial successful long term track records will be allowed. At a minimum, products and installers must meet all of the following criteria to be deemed commercially acceptable:
1. For a Product to be considered commercially acceptable, the product must have a minimum of two (2) million square feet and ten (10) year history of successful wastewater collection system installations in the United States. In addition, products must provide Third Party Test Results supporting the long-term performance and structural strength of the product and such data shall be satisfactory to the Owner. No product will be allowed without Independent Third Party Testing verification.
 2. For an installing Contractor to be considered commercially acceptable, the installer must have a certification from the manufacturer as a licensed and fully trained installer of the product. The installer must also have a minimum of one (1) million square feet of successful wastewater collection system installations on underground concrete/masonry structures and ten (10) years of rehabilitation experience.

1.03 SUBMITTALS:

- A. Product
1. Technical data sheets showing the physical and chemical properties.
 2. Material Safety Data Sheets (MSDS).
 3. Third Party Testing results.
 4. Verification of minimum installation requirements set forth in section 1.02.A.1 above.
- B. Installer
1. Verification of "certified applicator" status.
 2. Verification of minimum installation requirements set forth in section 1.02.A.2 above.

- C. Written certification from the product manufacturer that each of the proposed rehabilitation products is compatible with each other.
- D. Submit with Each Project:
 - 1. Description, layout, and application sequencing plan.
 - 2. Rehabilitation system application requirements including material handling and storage requirements, mixing and proportioning requirements (as applicable), maximum pot life, film/coating thickness, curing, testing and certification requirements of all rehabilitation materials. Product Material Safety Data Sheets.
 - 3. Detailed instructions and methodology for finishing all pipe and manhole connections to rehabilitated manholes to prevent infiltration and exfiltration.
 - 4. Wastewater Flow Control/Bypassing Plan.
 - 5. Confined Space Entry Plan/Permit.
 - 6. Plan for capturing extraneous debris during rehabilitation processes and debris disposal.

1.04 MATERIALS

- A. Refer to the latest Manatee County Public Works Utility Standards Section 12 Precast Concrete Manholes and Wetwells for material requirements and details.

1.04.1 CEMENTITIOUS MORTAR

- A. Mortar shall be made of one part Portland cement and two parts clean sharp sand. Cement shall be Type 1 and shall conform to ASTM C 150. Sand shall meet the requirements of ASTM C 144.

1.04.2 PATCHING MATERIAL

- A. A quick setting fiber reinforced cementitious material shall be used as a patching material and is to be mixed and applied according to manufacturer's recommendations.

1.04.3 HYDRAULIC CEMENT

- A. A rapid setting, high-early-strength, cementitious product specifically formulated for leak control shall be used to stop water infiltration. The material shall be mixed and applied according to the manufacturer's recommendations.

1.04.4 CHEMICAL GROUT

- A. A chemical grout shall be used for stopping very active infiltration and filling voids.

1.04.5 LINER MATERIAL

- A. CEMENTITIOUS MATERIAL

1. Cementitious liner products shall be used to form a structural monolithic liner covering all interior manhole surfaces and shall have the following minimum requirements:
 - a. Compressive Strength (ASTM C109): 7,000 psi, 28days
 - b. Tensile Strength (ASTM C496): 700 psi, 28 days
 - c. Flexural Strength (ASTM C293): 1,300 psi, 28 days
 - d. Shrinkage (ASTM C596): 0.02% at 28 days
 - e. Minimum Bond (ASTM C952): 200 psi, 28 days
2. Refer to Section 09920 Sewpercoat Surface System of the specifications.

When used as the final rehabilitation liner material (no epoxy liner), product shall be made with calcium aluminate cement. Calcium aluminate is not required when the cementitious liner is used as the underlayment for a protective coating liner application.

B. PROTECTIVE COATING LINER MATERIAL

1. The protective coating liner is to be applied where corrosion is anticipated. The protective coating liner material shall be applied over the completed cementitious liner material (without the calcium aluminate). The liner shall be spray applied or spin cast. The manufacturer of the selected protective coating liner material shall approve in writing that their protective coating liner is compatible with cementitious repair and liner material.
2. The protective coating liner material shall conform to Section 09970 Surface Protection Spray Systems of the specifications.

C. WATER

1. Water shall be clean and potable.

1.04.6 INTERNAL MANHOLE CHIMNEY SEAL MATERIAL

- A. An aromatic urethane rubber material or flexible epoxy mastic used to prevent leakage of water into the manhole through the frame joint area and the area above the manhole cone and shall have the following minimum requirements:
1. Elongation (ASTM D412): 600%
 2. Tensile Strength (ASTM D412): 1,150 psi
 3. Adhesive Strength (ASTM D903): 175 lb. /in.
 4. Tear Resistance (ASTM D1004): 155 lb. /in.

The seal shall extend from the inside of the manhole frame down to the cone or corbel of the manhole.

1.04.7 EXTERNAL MANHOLE SEAL WRAP

- A. External Manhole Seal Wrap: When work consists of adjusting manholes or cone replacements, an external seal wrap shall be installed to the outside of concrete risers, steel risers and joints of the precast manhole in order to eliminate infiltration.

The external seal wrap shall conform with Manatee County Public Works Department Utility Standards Section 12 and be installed in accordance with the details of the Contract Documents and the manufacturer's recommendations.

1.05 PREPARATION

- A. Perform traffic control in accordance with the approved traffic control submittal.
- B. Store materials in accordance with manufacturer's recommendations.
- C. Schedule and perform the work in a manner that does not cause or contribute to overflows or spills of sewage from the sewer system.
- D. Install devices to prevent extraneous material from entering the sewer system and to prevent upstream line from flooding the manhole. If extraneous material or debris falls into a "live" manhole during adjustment operations, the Contractor shall remove debris at no cost to the Owner.
- E. Dispose of wastes in accordance with applicable regulations.
- F. Schedule and perform any bypass pumping that will be necessary to properly rehabilitate the manhole.
- G. If present in the manhole, Contractor shall remove all access steps. Removal shall consist of neatly cutting steps flush with the wall prior to any lining installation. Contractor shall be responsible for proper disposal of steps.
- H. For manholes that are located within pavement areas and require resetting or replacement of concrete riser rings, cones, and /or frames, the Contractor shall sawcut, remove, and replace a 6 ft. x 6 ft. square or round section of pavement and base for rehabilitation operations. Costs for removal and replacement of pavement and base beyond these limits shall be borne by the Contractor.

1.06 INSTALLATION

- A. Prior to any lining all other miscellaneous work must be complete.
- B. Prior to man entry into any structure to be rehabilitated, proper ventilation and strict confined space OSHA regulations shall be followed. Failure to do so shall be grounds for removal from the project.

1.06.1 CONE REPLACEMENT

- A. The Contractor shall replace existing deteriorated manhole cone section with new precast concrete cone section. A preformed rubber gasket shall be placed in all keyways between existing manhole riser section and cone joints. Prior to backfilling, rubber external seal wraps shall be applied to the cone and manhole section joint, riser rings and frame in accordance with Manatee County Public Works Department

Utility Standards. If the existing manhole is of brick construction, the cone shall be set in a full bed of mortar on the top course of bricks.

1.06.2 RISER RINGS

- A. The Contractor shall replace existing, deteriorated riser rings with new precast concrete riser rings. All manholes designated to receive casting adjustment and/or alignment shall be adjusted to meet existing finished grade unless an alternative elevation is specified. A cementitious mortar shall be placed in between individual precast concrete riser rings, and precast concrete riser ring and cone joints. The mortar shall be struck smooth with the interior surface of the manhole and floated with a sponge float to a surface profile of 8-10 mils. Prior to backfilling, rubber external seal wraps shall be applied to the cone and manhole section joint, riser rings and frame in accordance with Manatee County Public Works Department Utility Standards.

1.06.3 MANHOLE FRAME AND COVER

- A. Existing frames and covers which must be removed to facilitate manhole rehabilitation, riser reconstruction, and/or casting alignment or grade adjustments shall be salvaged, cleaned and given two coats of an approved bituminous coating by the Contractor for replacement unless determined to be defective by Engineer. If manhole frame and/or cover are determined to be defective, Contractor shall replace with new frame and/or cover. Replacement frames and/or covers shall be furnished and installed in accordance with the Contract Documents. Frames shall be set in full mortar bed. The mortar shall be struck smooth with the interior surface of the manhole and floated with a sponge float to a surface profile of 8-10 mils.

1.06.4 CEMENTITIOUS LINER

- A. Active leaks shall be stopped using hydraulic cement or chemical grout as necessary. Installation shall be in accordance with the manufacturer's recommendations.
- B. All manholes to be lined shall be cleaned and scarified with a minimum of 5,000 psi water jet at a minimum water temperature of 180 degrees F. The water jet shall hit the manhole wall surface at as near perpendicular angle as possible. Cleaning the manhole walls from the ground surface without the appropriate angled nozzles will not be accepted. Manhole surface build-up of debris and loose manhole construction materials shall be removed during the cleaning process.
- C. The intent of the surface preparation and cleaning work is to remove debris, films (oil, greases, etc or unsound, deteriorated concrete and to provide a structurally sound, clean surface that will enable lining materials to bond to the original substrate at adhesion strengths of that specified herein, a substrate pH of 8.3 is the minimum pH that will be considered acceptable to demonstrate that the surface preparation and cleaning have been properly performed.

- D. Additional aggressive surface preparation and cleaning methods may be necessary to remove carbonated cementitious lining concrete or contaminants that remain after the cleaning performed as described above. The Contractor shall test the pH of the cleaned manhole interior surface at various locations of the manhole and when the results indicate a pH less than 8.3 then additional surface preparations and cleaning will be required. As a minimum level of effort the Contractor shall either dry sand blasting or pneumatic jackhammering with a bushing bit followed by a minimum 5,000 psi water blast.
- E. Any bench, invert or service line repairs shall be made at this time using quick setting grout or repair mortar per the manufacturer's recommendations.
- F. Invert repair shall be performed on all inverts with visible damage or where infiltration is present. After blocking flow through the manhole and thoroughly cleaning the invert, quick setting patch material shall be applied to the invert in an expeditious manner. The finished invert surfaces shall have a smooth surface and form a continuous monolithic conduit with the sewer pipe entering and leaving the manhole. The bench and invert shall form a watertight seal with the manhole walls, base and pipe seal.
- G. Wastewater flow shall be controlled by methods which prevent contact with the new bench and invert for 6-8 hours after mortar placement. If 6-8 hours set time is not possible, a fast setting, high early strength mortar shall be used with provisions for flow control until concrete has set.
- H. Fill all cracks, holes and joints that have voids using non-shrink grouts in accordance with the manufacturer's recommendations.
- I. Apply Cementitious Liner Material per the Manufacturer's recommendations. Apply Cementitious Liner material so that the final thickness is 0.5-inch minimum or per the thickness required by the manufacturer's minimum specification, whichever is greater. The material shall start at the bottom of the manhole frame and extend to the water level of the invert.
- J. Finishing: Trowel the surface of the liner to create a uniform smooth finish. Caution shall be taken to prevent over working the material. Once the initial cure has taken place, the exposed surface area should be given a broom finish. Thickness may be verified at any point with a wet gage.
- K. If the cementitious lining material is not immediately coated with a protective coating liner, apply a seal coat compatible with the repair material to aid in curing and minimize recontamination of the substrate prior to application of the protective coating liner material.

1.06.5 PROTECTIVE COATING LINER

- A. Prior to any protective coating lining perform all work shown in Section 1.06.4 above.

- B. Remove any curing compounds, sealers or contaminates prior to protective coating lining.
- C. Apply protective coating lining material in accordance with the manufacturer's recommendations over the waterproofing/structural repair material shown in Section 1.06.4.
- D. Apply protective coating lining material to all internal surface area of the structure.
- E. Apply protective coating lining material in accordance to Section 09970 Surface Protection Spray System of the specifications.

1.06.6 INTERNAL MANHOLE CHINMEY SEALANT

- A. Perform all work shown in Sections 1.06.4 and 1.06.5 (if 1.06.5 is required) prior to any Internal Manhole Chimney Sealant.
- B. Clean all contaminates from manhole frame by sandblasting or mechanical methods as recommended by the chimney sealant manufacturer.
- C. Install Internal Manhole Chimney Sealant in accordance with the manufacturer's recommendations. The Contractor shall contact the manufacture for thickness recommendations however; the final liner material shall be made no less than 170 mils.

1.06.7 EXTERNAL MANHOLE SEAL WRAP

- A. When Work consists of adjusting sewer manholes or cone replacement, an external seal wrap shall be installed to the outside of concrete risers, steel risers and joints of the precast manhole in order to eliminate infiltration. Frame and cover shall be completely coated prior to installation of the external seal wrap. The external seal wrap shall be installed in accordance with the details of the Contract Documents and the manufacturer's recommendations.

1.06.8 MANHOLE INSERT

- A. If existing manhole is not equipped with a watertight manhole insert, Contractor shall furnish and install a new manhole insert per Manatee County Public Works Utility Standards Section 12 and in accordance with the manufacturer's recommendations.
- B. If existing manhole is equipped with a watertight manhole insert to prevent intrusion of storm water, the insert shall be cleaned and reinstalled by the Contractor, unless determined to be defective by the County. If insert is determined to be defective, Contractor shall furnish a new watertight manhole insert and install in accordance with manufacturer's recommendations at the completion of manhole rehabilitation operations.

1.07 TESTING

- A. After completion of any rehabilitation operation and prior to backfilling (if required), the Contractor shall conduct the following tests on the manholes:
 - 1. Visual Inspection: The County and Contractor shall make a final visual inspection. Any deficiencies in the finished system shall be marked and repaired.
- B. If a protective coating liner is applied, the following additional tests will be required:
 - 1. Wet Film Thickness Gage: During application a wet film thickness gage, meeting ASTM D4414 - Standard Practice for Measurement of Wet Film Thickness of Organic Coatings by Notched Gages, shall be used to ensure a monolithic coating and uniform thickness during application.

1.08 WARRANTY

- A. The Contractor shall guaranteed the work to be free of defects in materials and workmanship for five-year period, unless otherwise stated, after completion and acceptance of the work. The Contractor shall repair defects in materials or workmanship, which may develop during the warranty period; and any damage to other work caused by such defects or discovered within the same period at no additional cost to the County.

1.08.1 WARRANTY INSPECTIONS

- A. Conduct visual inspection prior to expiration of warranty to determine integrity of rehabilitation materials and water-tightness.
 - 1. Complete post inspection during first high groundwater period (spring or fall) following acceptance of work.
 - 2. Contractor should accompany County on inspections.
 - 3. Inspect a minimum of 25 percent of the manholes rehabilitated at locations selected by County.
 - a. Infiltration and Inflow: None
 - b. Structural Repair: Sound
 - c. If more than one manhole fails warranty inspection, inspect all manholes with similar characteristics.
 - d. Repair defects in accordance with Warranty.

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 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 standards as applicable. Valves used in waterworks applications shall comply with Section 8 of NSF Standard 61 for mechanical devices.
- C. All of the equipment and materials specified herein are intended to be standard for use in controlling the flow of potable water, reclaimed water, wastewater, etc., depending on the applications.
- D. 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 a single manufacturer.
- E. All valves and appurtenances shall have the name of the manufacturer, year of the valve and the working pressure for which they are designed cast in raised letters upon some visible part of the body.
- F. Special tools, if required for the normal operation or maintenance, shall be supplied with the equipment.
- G. All hand actuated buried valves shall have three-piece adjustable valve boxes and 2-inch square AWWA operating nuts. Provide stainless steel extension stems and alignment rings where needed to bring the operating nut to within 4 feet below the box lid.
- H. Water and reclaimed water system isolation valves shall be gate valves for sizes 2-inch through 12-inch and shall be butterfly valves for sizes 16-inch and larger.
- I. Isolation valves for sewer force main pipelines shall be gate valves, unless otherwise noted on the plans. Tapping valves shall be used for tapping force mains. Plug valves shall be full port, have a 100% circular cross section, and must have prior written authorization from the County for use.
- J. Valves shall open when turning the operating nut or wheel counterclockwise and shall close when turning clockwise.
- K. All bonnet bolts, gland bolts, flange connection bolts, nuts, washers, and other trim hardware exposed to the outside environment shall be stainless steel. Thrust collar tie-rod bolts shall be stainless steel. All MJ-type underground bolts, nuts, and washers shall be COR-TEN or stainless steel.

- L. All valves shall have a factory applied, holiday free, fusion bonded epoxy coating on the interior and exterior unless otherwise noted in the plans or the following specification. All other painted items exposed to sunlight, including field painted box lids, etc., shall be painted the appropriate color with an epoxy type paint.
- M. No valves with a break-way stem shall be allowed.
- N. The equipment shall include, but not be limited to, the following:
 - 1. Gate valves (Sec. 2.01)
 - 2. Combination Pressure Reducing and Pressure Sustaining with Check Valves Option (Sec. 2.02)
 - 3. Ball Valves (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 Stops and Saddles (Sec. 2.09)
 - 10. Flange Adapters and Plain End Couplings (Sec. 2.10)
 - 11. Hose Bibs (Sec. 2.11)
 - 12. Swing Check Valves (Sec. 2.12)
 - 13. Hydrants (Sec. 2.13)
 - 14. Restrained Joints (Sec. 2.14)
 - 15. Tapping Sleeves and Tapping Valves (Sec. 2.15)
 - 16. Tracer Wire Boxes (Sec. 2.16)

1.02 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.

1.03 TOOLS

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

PART 2 PRODUCTS

2.01 GATE VALVES

- A. 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.
- B. Gate valves installed underground shall be provided with a box cast in a concrete pad and a box cover. Stainless steel or equivalent valve extension stems shall be provided to place the valve operating nut no more than 4 feet deep. One valve wrench, 6 feet in length, shall be provided for every 15 valves installed.

- C. Gate valves 2 inches to 14 inches in diameter shall be resilient seated, manufactured to meet or exceed the requirements of AWWA C509 or AWWA C515 and shall be UL listed and FM approved where applicable. Valves shall have an unobstructed waterway equal to or greater than the full nominal diameter of the valve.
- D. The valves shall have a non-rising stainless steel stem to eliminate lead content. All bolts, nuts and washers shall be stainless steel to eliminate exterior corrosion and maintain fastener strength. Manufacturer shall use Never-Seez or equivalent during assembly of bolt and nut sets to prevent galling of similar metals. Stem seals shall be provided and shall be of the O-ring type, two above and one below the thrust collar. Valves that are located above grade and located in valve vaults shall be OS&Y with flanged joints.
- E. The wedge shall be ductile iron fully encapsulated with an EPDM rubber. The Elastomer type shall be permanently indicated on the disc or body of the valve. The resilient sealing mechanism shall provide zero leakage at the water working pressure when installed with the line flow in either direction.
- F. The valve body, bonnet, and bonnet cover shall meet or exceed all the requirements of AWWA C515.
- G. Valves meeting AWWA C515 requirements shall be rated for an operating pressure of 250 psi and shall be tested in accordance with AWWA C515.
- H. The valves are to have 2-inch cast or ductile iron AWWA operating nuts and shall open left or counterclockwise.
- I. The valves shall be covered by a Manufacturer's 10 year warranty on manufacturer's defects and reasonable labor costs for replacement. Warranty shall become effective from the date of purchase by the end user and delivered within 30 days from the receipt of the purchase order. For publicly owned and maintained utilities, the end user is Manatee County Government.
- J. Gate valves shall be assembled and tested in a certified ISO 9001:2000 manufacturing facility within the United States and provide their certification of meeting internationally recognized quality control procedures.

2.02 COMBINATION PRESSURE REDUCING & PRESSURE SUSTAINING WITH CHECK VALVE OPTION

- 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. 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 valves 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 stainless steel stem.
- B. Valve shall automatically reduce pressure for the downstream distribution network and sustain a minimum pressure in the high pressure main regardless of distribution demand, and as an option, shall also close when a pressure reversal occurs for check valve

operations. The pilot system shall consist of two direct acting, adjustable, spring loaded diaphragm valves.

- C. Valve shall be cast iron or ductile iron with main valve trim of brass and bronze. The pilot control valves shall be cast brass with 303 stainless steel trim. Valve shall be similar in all respects to Cla-Val Company, Model 92-01 or a similar control valve such as Bermad Model 723, GA Industries Model 4700 or an approved equal.

2.03 BALL VALVES

- A. Ball valves for water and reclaimed water, in sizes 3/4-inch through 2-inch, shall be brass body, stem and ball per ASTM B 62, alloy 85-5-5-5, full port, full flow, 1/4-turn check, ball curb valves, rated for 300 psi, Mueller 300 (as specified in the table below), Ford B-Series, or approved equal, with compression, pack joint, flare, threaded or flanged ends as required. Ball valves for wastewater, 2-inch through 3-inch, shall be 316 stainless steel body, cap, stem and ball per ASTM A351, full port, full flow, 1/4-turn check, ball valves, steam rated for 150 psi, pressure rating 1,000 psi CWT, Apollo 76F or approved equal, with threaded or flanged ends as required.

Curb Stops for Water and Reclaimed Water

Pipe Material	Type of Connection	Model
HDPE	Compression x FIP	B-25170 *
HDPE	Pack Joint x FIP	P-25170 *
Copper	Compression x FIP	B-25170
Copper	Flare x FIP	B-25166
Stainless Steel	FIP x FIP Thread	B-20200
* Insert required, part number per manufacturer product information		

- B. All valves shall be mounted in such a position that valve position indicators are plainly visible. Above grade ball valves shall have a vinyl coated lever handle. Lever handle, handle nut, and lever packing gland shall be 304 or 316 stainless steel.
- C. Potable plastic service pipe material and compression and pack joint connectors shall not be used in soil that is contaminated with low molecular-weight petroleum products, aromatic hydrocarbons, chlorinated hydrocarbons or organic solvents. Appropriate service tubing shall apply.

2.04 BUTTERFLY VALVES

- A. Butterfly valves shall conform to AWWA C504, Class 250 B, Mueller Lineseal XP11, DeZurik AWWA, Pratt HP-250II, or an approved equal.
- B. 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. Valves 20 inches and smaller shall have bonded or mechanically restrained seats as outlined in AWWA C504.
- C. All valves shall be subject to hydrostatic and leakage tests at the point of manufacture. The hydrostatic test for Class 250 valves shall be performed with an internal hydrostatic pressure equal to 500 psi applied to the inside of the valve body of each valve. During the hydrostatic

test, there shall be no leakage through the metal, the end joints or the valve shaft seal. The leakage test for the Class 250 valves shall be performed at a differential pressure of 250 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. All valves shall be leaktight in both directions.

- D. Butterfly valve actuators shall conform to AWWA C504. Gearing for the actuators shall be totally enclosed in a gear case. Actuators shall be capable of seating and unseating the disc against the full design pressure and shall transmit a minimum torque to the valve. Actuators shall be rigidly attached to the valve body.
- E. The valve shaft shall be 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. 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.
- G. 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.
- H. 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.
- I. 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. Plug valves shall be eccentric, non-lubricating type with integral plug and shafts and shall be furnished with end connections and with actuating mechanisms as called for on the construction plans or as otherwise required. Valves shall seal bubble-tight or water drop-tight in both directions when tested according to the Leakage Test method of AWWA C504 with a hydrostatic pressure of 150 psi.
- B. Plug valves shall also be subjected to the internal, full body Hydrostatic Test of AWWA C504 at a pressure two times the rated pressure or a minimum pressure of 300 psi, whichever is greater. During the test, there shall be no leakage through the metal, or through the end joints or shaft seal, nor shall any part of the valve be deformed.
- C. Flanged valve ends shall be faced and drilled according to ANSI B 16.1, Class 125. Mechanical joint valve ends shall conform to AWWA C111. Threaded ends shall conform to the NPT requirements of ANSI B1.20.1.
- D. The plug valve body, bonnet and gland shall be ductile iron per ASTM A 126, Class B. The integral plug and shafts shall be cast iron ASTM A 126, Class B, or 316 stainless steel. The entire plug, except for the shafts, shall be covered with nitrile (Buna N) rubber. The rubber compound shall have been vulcanized to the metal plug and shall have a peel strength of not less than 75 pounds per inch when tested according to ASTM D 429, method B. The

valve seat shall be at least 90 percent pure nickel, welded-in overlay into the cast iron body. The top and bottom bearings shall be 316 stainless steel.

- E. Plug valves shall have a full port area of 100 percent of the nominal pipe size area.
- F. Valves shall have worm gear type actuators with 2-inch square operating nuts.
- G. Plug valves shall be installed side-ways with plug shaft horizontal so that the plug rotates upward when it opens, with the flow entering the seat end of the valve.
- H. Plug valves shall be coated inside with Protecto 401 or amine-cured novolac ceramic epoxy or another two-part epoxy suitable for sanitary sewer service which has been approved by Manatee County.

2.06 VALVE ACTUATORS

- A. Butterfly valve and plug valve actuators.

Butterfly valve and plug valve actuators shall conform to the requirements for actuators presented in AWWA C 504 and shall be either manual or motor operated. 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.

- B. Manual Actuators.

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 or of the worm gear type and shall be designed to hold the valve in any intermediate position between fully open and fully closed without creeping or fluttering. Valves located above grade shall have handwheel and position indicator, and valves located below grade shall be equipped with a 2-inch square AWWA operating nut located at ground level and cast iron extension type valve box.

- 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 key-wayed 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.
- (3) 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.
- (4) The motor shall be prelubricated and all bearings shall be of the anti-friction type.
- (5) 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.
- (6) 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.
- (7) 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.

- (8) 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.
- (9) 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.
- (10) 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.
- (11) Motor operators shall be as manufactured by Limatorque Corporation, Type L120 or approved equal.

2.07 AIR RELEASE VALVES

- A. Air release valves shall be automatic float operated, GA Industries fig-929 for sewer applications, Fig-920 for water and reclaimed water application, or an approved equal, with inlet size and working pressure ratings as required and NPT connections.
- B. Valve bodies shall be ductile iron per ASTM A 126, Class B. The orifice, float and linkage shall be stainless steel. The seat shall be (Buna N) nitrile elastomer.

2.08 VALVE BOXES

- A. Buried valves shall have adjustable cast iron or HDPE valve boxes. Lids shall be cast iron drop type, and 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. Cast iron boxes shall be two-piece, or three-piece, as required, screw type, Tyler Pipe, 6850 Series, Box 461-S through 668-S, with extensions, as required to make the desired box length, or an approved equal. Bottom barrel shall be 5-1/4 inches inside diameter, with a flanged bottom with sufficient bearing area to prevent settling.
- C. HDPE boxes shall be two-piece, adjustable, 1/4-inch thick minimum heavy wall, high density polyethylene, with cast iron top and stainless steel adjustable stem, Trench Adapter, as manufactured by American Flow Control, or an approved equal. Bottom barrel shall have flanged bottom to prevent settling. All bolts, screws and pins shall be stainless steel.
- D. Reclaimed Valve Boxes shall be square 9-inch x 9-inch load bearing marked "Reclaimed Water" and painted Pantone 522C purple.
- E. All valves shall either have operating nuts within 4 feet below the top of the lid or shall have extension stems with centering guides to provide an extended operating nut within 4 feet below the lid. Extension stems shall be fixed to the valve operating nut with a stainless steel fastener.
- F. All potable water, sewer, and reclaimed water grade-adjustment risers shall be cast iron material just like the valve box. No plastic or steel risers shall be allowed.

- G. A centering device BoxLok or equal shall be installed in the valve box.
- H. Stand pipe shall match color code of the system being installed, (blue for potable, Pantone purple 522 C for reclaimed, and green for sanitary sewer).

2.09 CORPORATION STOPS AND SADDLES

- A. Corporation stops for connections to ductile iron and PVC water and reclaimed water mains shall be all red brass, alloy 85-5-5-5, per ASTM B 62, and shall conform to AWWA C800. 1-inch through 2-inch corporation stops shall be ball type, 300 psi working pressure rated, with AWWA MIP threaded inlets and compression, pack joint, flare, or FIP threaded joint outlets, Mueller as shown in the table below, or an approved equal. All joints made to CTS size HDPE tubing shall use stainless steel insert stiffeners.

Corporation Stops

Pipe Material	Type of Connection	Mueller 300 Model
HDPE	Compression x AWWA IP Thread	B-25028 (Saddle) *
HDPE	Compression x AWWA Taper Thread	B-25008 (Direct Tap) *
HDPE	Pack Joint x AWWA IP Thread	P-25028 (Saddle) *
HDPE	Pack Joint x AWWA Taper Thread	P-25008 (Direct Tap) *
Copper	Compression x AWWA IP Thread	B-25028 (Saddle)
Copper	Pack Joint x AWWA Taper Thread	B-25008 (Direct Tap)
Copper	Pack Joint x AWWA IP Thread	P-25028 (Saddle)
Copper	Pack Joint x AWWA Taper Thread	P-25008 (Direct Tap)
Copper	Flare x AWWA IP Thread	B-25028 (Saddle)
Copper	Flare x AWWA Taper Thread	B-25008 (Direct Tap)
Stainless Steel	FIP Thread x AWWA IP Thread	B-20046 (Saddle)
Stainless Steel	FIP Thread x AWWA Taper Thread	B-20045 (Direct Tap)

* Insert required, part number per manufacturer product information

- B. Potable plastic service pipe material and compression and pack joint connectors shall not be used in soil that is contaminated with low molecular-weight petroleum products, aromatic hydrocarbons, chlorinated hydrocarbons or organic solvents. Appropriate service tubing shall apply.
- C. Water and reclaimed water service connections to PVC and DIP mains shall be made using red brass saddles, alloy 85-5-5-5, per ASTM B 62. Straps, washers and nuts shall be brass or stainless steel. No ductile iron, cast iron or steel saddles will be allowed. Saddles shall be Smith Blair 325 Bronze saddles with Stainless Steel or brass extra wide strap or equivalent.
- D. Connections to PVC sanitary force mains for services up to 2 inches shall be made using Romac Style 306 double bolt stainless steel service saddles or equivalent.
- E. Service and air release valve (ARV) connections to HDPE water, reclaimed water and sewer mains may be made using Romac Style 306H saddle or approved equal. All saddles shall be properly sized per the manufacturer product information and be installed according to the manufacturer's written instructions. Connections to HDPE mains shall not be made using narrower saddles similar to the Smith-Blair 325.

2.10 FLANGED ADAPTERS AND PLAIN END COUPLINGS

Plain end couplings and adapters shall be fusion-bonded epoxy coated carbon steel with Ethylene Propylene Diene Monomer (EPDM) rubber gaskets and stainless steel nuts, bolts and spacers. 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 for potable water mains if the soil is contaminated with aromatic hydrocarbons or chlorinated hydrocarbons, and is also contaminated with low molecular-weight petroleum products or organic solvents. Couplings shall be Dresser Style 38, or another approved equal. Flange adapters shall have a plain end compression seal similar to the style 38, with an ANSI 125 Class flange on the opposite end, and shall be Dresser Style 128W or an approved equal. Stainless steel backup rings shall be used for force mains that are located in corrosive environments including wetwells and valve vaults.

2.11 HOSE BIBS

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

2.12 SWING CHECK VALVES

- A. Check valves shall be swing type, weighted lever, conforming to AWWA C508. Valves shall be iron-body, bronze-mounted, single disk, 175 psi working pressure for 2- through 12-inch, 150 psi for 14- through 30-inch, with ANSI B16.1 Class 125 flanged ends, by Mueller; No. A-2600-6-01 (sewer), No. A-2602-6-01 (water), or AVK Series 41, or an approved equal.
- 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 or stainless steel hinge pins and stainless steel nuts and bolts on bolted covers.
- 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.

2.13 HYDRANTS

Hydrants shall be dry barrel, nostalgic style, and shall be AVK Series 2780, American Darling B-84-B, Mueller Super Centurian 250, or approved equal and shall conform to AWWA C502 and UL/FM certified, and shall in addition meet the specific requirements and exceptions which follow:

- A. Hydrants shall be according to manufacturer's standard pattern or nostalgic style and of standard size, and shall have one 5-inch Storz connection or equivalent with two 2½- inch hose nozzles.
- B. Hydrant inlet connections shall have mechanical joints for 6-inch pipe.
- C. Hydrant valve opening shall have an area at least equal to that area of a 5 1/4-inch minimum diameter circle and be obstructed only by the valve rod. Each hydrant shall

be able to deliver 500 gpm minimum through its two 2 1/2 -inch hose nozzles when opened together with a loss of not more than 2 psi in the hydrant per AWWA C502.

- D. The upper and lower stem rod shall be stainless steel and shall have a breakable stem-rod coupling of stainless steel, or cast iron or ductile iron with a fusion bonded epoxy coating, with stainless steel pins and clips.
- E. Hydrants shall be hydrostatically tested as specified in AWWA C502 and shall be rated at 250 psi minimum.
- F. The operating nut shall be 1½ -inch pentagon shaped with a protective weather cover, and open counter clockwise.
- G. All nozzle threads shall be American National Standard.
- H. Each nozzle cap shall be provided with a Buna N rubber washer.
- I. All hydrants shall be traffic break away type and allow for 360 degree rotation to position the Storz connection/nozzle in the desired direction after installation.
- J. Hydrants must be capable of being extended without removing any operating parts.
- K. Hydrant extensions shall be fusion bonded epoxy coated inside and outside with a stainless steel stem. The breakaway coupling can be fusion bonded epoxy coated or stainless steel. Only one hydrant extension is allowed per hydrant.
- L. Weepholes shall be excluded from fire hydrants.
- M. Hydrant main valve closure shall be of the compression type opening against the pressure and closing with the pressure. The main valve shall be faced or covered with EPDM elastomer, which shall seat on a bronze ring.
- N. Hydrant bonnets, weather cover, nozzle section, caps and shoe shall be cast iron or ductile iron, and shall be holiday free fusion-bonded epoxy coated at the factory, per AWWA C550, inside and outside. Lower barrel shall be fusion bonded epoxy coated inside and outside. Aboveground parts shall also have a top coat of Sherwin-Williams Acrolon 218 HS acrylic polyurethane or approved equal; color Safety Yellow for fire hydrants that are connected to the potable water system or Pantone 522C purple for fire hydrants that are connected to the reclaimed water system.
- O. Exterior nuts, bolts and washers shall be stainless steel. Bronze nuts may be used below grade.
- P. All internal operating parts shall be removable without requiring excavation.

2.14 RESTRAINED JOINTS

- A. Pipe joints shall be restrained by poured-in-place concrete thrust blocks or by other mechanical methods, including tie rods, Stargrip and Allgrip, as manufactured by Star Pipe Products or Megaflange and 2000 PV, as manufactured by EBAA Iron Sales. Flanged joints may be used above ground.

- B. All T-bolts, bolts, nuts, washers, and all thread rods shall meet ASTM A-588 requirements (Cor-ten or equivalent) or be stainless steel. The use of rebar with welded thread is prohibited.

A certification from the supplier shall be provided to the County during the shop drawing review process ensuring all T-bolts, bolts, nuts, washers, and all thread rods meet the A-588 requirements and shall state the project name and contractor in the certification letter. If stainless steel is to be used, no certification letter is required.

- C. Restrained joints may also be Lok-Ring, as manufactured by American Cast Iron Pipe Company, or an approved equal.
- D. Restrained joint designs, which require wedges and/or shims to be driven into the joints in order to disassemble the pipe shall not be allowed.

2.15 TAPPING SLEEVES AND VALVES

- A. Tapping valves shall meet the requirements of AWWA C509/C515 with ductile iron body and shall be rated for a pressure of 250 psi. The valves shall be flanged with alignment ring by mechanical joint with a nonrising stainless steel stem. All bolts, nuts and washers shall be stainless steel. Manufacturer shall use Never-Seez or equivalent during assembly of bolt and nut sets to prevent galling of similar metals. Stem seals shall be provided and shall be of the O-ring type, two above and one below the valve's thrust collar. Valve shall be designed for vertical burial and shall open counterclockwise. Operating nut shall be AWWA standard 2-inch square for valves 2 inches and up. Valves shall have an unobstructed waterway equal to or greater than the full nominal diameter of the valve to accommodate full size shell cutter. Gaskets shall cover the entire area of the flange surface and be 1/8-inch minimal thickness of red rubber. The wedge shall be ductile iron fully encapsulated with EPDM rubber. All bolts, nuts and washers between the sleeve and valve shall be stainless steel.
- 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 water lines or 150 psi for sewer force mains for one hour with no leakage in accordance with AWWA C110. A stainless steel 3/4-inch 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 fusion applied epoxy coated, or be made of 18-8 Type 304 stainless steel. Saddle straps shall be 18-8 Type 304 stainless steel.

2.16 TRACER WIRE TEST STATION BOXES

Tracer wire test station boxes shall be provided at plug valves, butterfly valves, blowoff valves, gate valves, fire hydrants and backflow preventers as indicated in these Standards. Tracer wire test station boxes for yard service shall be 2 ½ inch diameter, 15 inch length, ABS plastic with a cast iron rim and lid, P200NFGT as manufactured by Bingham & Taylor, or equal approved by Manatee County. Where test boxes will be in streets or subject to vehicular traffic, use B&T Model P525RD, 5 ¼ -inch diameter or equal, centered in a separate concrete pad similar to a valve box pad.

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 and mechanical joints shall be made with high strength, low alloy Corten or 316 stainless steel bolts, nuts and washers.
- 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 safety blue.

3.05 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 testing. Refer to Manatee County Public Works Utility Standards Part 1-Utility Standards Manual Section 1.8.7. Prior to testing, the pipe lines shall be supported in a manner approved by the County to prevent movement during tests.

All leaks shall be repaired and lines retested as approved by the County.

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

2. grained, nonslip finish as approved. 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. Precast concrete manhole grade rings, flat slab tops, conical tops, risers and base sections shall be fabricated in accordance with the material and design standards of ASTM C478, except as modified herein.
- B. Portland cement shall conform to ASTM C150, Type II, and concrete shall have a minimum compressive 28-day strength of 4,000 psi.
- C. The manufacturer shall make a minimum of four standard test cylinders for each 100 cubic yards of concrete (or part thereof) that is cast each day. These test cylinders, along with sections cast that day, shall be marked in such a way that the test results can be matched with the appropriate castings. Two cylinders shall be cured with the product until the forms

are stripped. At this time, one cylinder shall be broken to ascertain that a minimum strength of 2000 psi has been reached prior to moving the product from the forming location. The remaining two cylinders shall be cured and tested in accordance with ASTM C192 and C39. The average compressive strength for each day's production shall be greater than 4000 psi with no more than 10% of the tested cylinders falling below 4000 psi. In no case shall any cylinder strength fall below 3500 psi. All cylinder strengths shall be certified by a Florida Licensed Professional Engineer. Failure to meet these requirements for any day's production is cause for rejection of all sections cast that day.

- D. Minimum wall thickness for manholes shall be 8 inches or 1/12 the inside diameter of the manhole, whichever is greater. The minimum thickness for the bottom of the base section shall be 8 inches.
- E. Reinforcing steel shall be as specified in ASTM C478.
- F. Precast manhole structures shall be free of cracks, holes, voids, blisters or rough surfaces. Manholes shall be water-tight, and shall be generally sound and free of defects of any sort. Lift holes shall not penetrate through the wall of any manhole tops, risers or base sections. Holes passing part-way through the manhole section walls for lifting devices shall be filled with cement or epoxy grout after the manhole has been set in place.
- G. Pipe openings shall meet the recommended tolerances of the individual manufactured pipe to manhole connectors; however, the horizontal location shall be within +/- 2 degrees of arc of that detailed on the shop drawings.

2.02 MANHOLE INVERTS

- A. Benched inverts shall be provided and shall be monolithically cast or shall be a secondary casting in a cured base section as per ASTM C478.
- B. The width of the invert channel shall be the same as the inside diameter of the connected sewer pipes and shall have a "U" - shaped cross-section with the bottom of the channel shaped to correspond with the lower half of the pipe. The depth of the channel shall be a minimum of half the inside diameter of the connected pipes.
- C. The channel shall be formed smooth and streamlined, and, where the flow changes directions, shall have true curves of the largest radius possible within the manhole base. The maximum change of direction of flow within a manhole shall be 90 degrees.
- D. The channel invert slope shall be uniform through the manhole and shall have a minimum vertical drop of 1 inch from the inlet(s) to the outlet.
- E. For all manholes with pipes 16 inches in diameter and larger, the base section and invert channels shall have a pre-molded plastic liner as described in subsection 1.12.6, "Concrete Manholes and Wetwells with Protective Liners."

2.03 RESILIENT PIPE CONNECTORS

- A. Connections of manholes to pipes shall be made using resilient boot or seal connectors manufactured in accordance with ASTM C923 and shall maintain a resilient, hydrostatic seal between the pipe and the connector and between the connector and the manhole structure.

- B. Connectors shall be installed in strict accordance with the written installation instructions of the manufacturer. Non-shrink grout shall be placed in the gap between the boot or seal and the manhole invert channel, to make a smooth transition, unless otherwise directed by the manufacturer's instructions.

2.04 MANHOLE AND WETWELL JOINTS

- A. Joints between manhole sections and wetwell sections shall be modified tongue and groove, or modified bell and spigot, with a continuous elastomeric ring gasket (o-ring) joint conforming to the requirements of ASTM C443. In addition to the ring gasket, an additional sealing device shall be provided as follows:
 - (1) A minimum of six-inches wide of Rub'R-Nek RU116 elastomeric based plastic joint wrap shall be centered over the joint, on the outside of the manhole, or
 - (2) A minimum of ½-inch x ¾-inch bead of Adeka Ultra Seal P-201 hydrophilic urethane paste applied to the interior of the joint just before manhole section assembly.
- B. In addition to the requirements in subsection A, above, all joints between manhole sections, for manholes receiving turbulent flow and wetwells with a liner, shall also have a continuous strip of liner material that is a minimum of 6 inches wide weld-fused all around the inside face of the joint, per manufacturer's recommendations, or they shall have the joint filled at the inside face with a butyl rubber sealant meeting Fed. Spec A-A-272B to form a bead across the joint, so that no bare concrete inside the joint is left exposed.
- C. For standard manholes without liners, fill the joint at the inside face with non-shrink grout and strike the joint smooth and uniform with the manhole interior walls.
- D. For manholes with and without plastic liners and with concrete grade-adjustment rings, joints between the top section and the grade ring, and between grade rings, and between the grade ring and the cast iron ring frame shall be made with non-shrink cement mortar.

2.05 CONCRETE MANHOLES AND WETWELLS WITH PROTECTIVE LINERS

- A. Drop manholes, manholes with opposing flows, manholes immediately upstream of a lift station wetwell, manholes with gravity sewers greater than 12 inches in diameter, force main termination manholes and the first two manholes downstream from a force main termination manhole, and pumping station wetwells shall have a full plastic liner. The liners shall be integrally cast into the concrete tops, risers and base sections, which shall be in all other respects manufactured in accordance with ASTM C478 using Type II Portland Cement per ASTM C150. The plastic liner shall be generally chemically resistant to the wastewater environment and shall be mechanically affixed to the precast concrete manhole sections so that there can be no separation of the liner from the manhole sections during the service lifetime.
- B. The plastic liner shall have no surface degradation when exposed to nitric acid, hydrochloric acid, ammonia, sodium hydroxide, sulfuric acid, acetone, unleaded gasoline and turpentine in accordance with test method ASTM D1308, and shall not be attacked when immersed in acetone according to test method ASTM D2152.
- C. The manhole liner shall be FRP GU Liners, as manufactured by GU Florida or an approved equal. The base liner for manholes shall have preformed flow channels with water-tight gasketed pipe bell connections or boot holes that extend to the outside profile of the precast

concrete structure. FRP GU, HDPE AGRU, or PVC DURA-PLATE liners shall be installed with the remaining sections, including the cone section of the manhole.

- D. The wall thickness for manholes and wetwells with liners, including the liner thickness, shall be 8 inches minimum or 1/12 of the inside diameter, whichever is greater. The minimum thickness of the bottom of the base section shall be 8 inches under the bottom of the flow channel.
- E. Manhole cast iron frames shall be adjusted to grade with concrete grade rings same as for un-lined manholes. Lined manholes shall be equipped with a GU Liner Convertible Collar as manufactured by GU Florida or an approved equal. The collar shall form a water-tight seal to the manhole top with a GU Lip Seal rubber gasket, or approved equal. The collar shall be sealed water-tight against the base of the cast iron frame using a butyl rubber sealant.

2.06 MANHOLE RINGS AND COVERS

Rings and covers shall be gray iron castings, conforming to ASTM A48, Class 30B, and shall be pattern USF 170-CE-1, as manufactured by U.S. Foundry, with the words "MANATEE COUNTY", "SANITARY SEWER", and "(YEAR)" cast into them. Frame and cover castings shall be dense and even grained, and shall be free of blowholes, warping, or any other defects not true to pattern. Seating surfaces of covers and frames shall be machined true to prevent rocking. Castings shall be designed and tested to bear an AASHTO H-20 wheel loading with and added 30 percent impact factor and shall be Class Heavy Duty traffic bearing.

2.07 MANHOLE INSERTS

Watertight manhole inserts shall be stainless steel and are required for all sanitary sewer manholes installed. Neoprene gaskets shall be installed under the insert lip to insure a leak proof seal.

2.08 PRECAST CONCRETE MANHOLE INSTALLATION

- A. Manholes shall be installed at the end of each line; at all change in grade, size, or alignment; at all intersections; and at distances not greater than 400 feet for sewers 15 inches or less and 500 feet for sewers 18 inches or larger. Cleanouts may be used only for special conditions with approval by the County and shall not be substituted for manholes.
- B. Drop manholes shall be provided for sewers entering a manhole at an elevation 24 inches or more above the manhole lowest invert. Where the drop is less than 24 inches, the invert shall have an elevated U-channel to prevent solids deposition. Drop manholes shall be constructed with an outside drop connection and the entire outside drop connection shall be encased in concrete.
- C. Precast concrete sections shall be set vertical and in true alignment as indicated by the construction plans. Excavation, bedding foundation and backfill shall be done in accordance with the Trenching and Excavation section of these Standards. All manholes shall meet the following installation tolerances:
 - 1. The finished manholes shall not be out of plumb by more than 3/8 inch per 10 feet of height.
 - 2. Any jog or offset of the inside wall surface at a joint shall not exceed 1/2 inch.

3. Variation in the joint width around the circumference of the manhole shall not exceed 1/4 inch.

2.09 SETTING MANHOLE RINGS

Manhole rings and covers shall be set to conform accurately to the finished ground or pavement grade as indicated on the construction drawings or as directed by the County. Rings on manholes shall be set concentric with the adjusting rings and sealed so that the space between the top of the adjustment rings and the bottom flanges of the rings will be made watertight. A ring of mortar shall be placed around the outside of the bottom flange at least one inch thick and pitched to shed water away from the frame. Mortar shall be extended to the outer edge of the masonry and finished smooth and flush with the top of the flange.

2.10 SPRAY-APPLIED MANHOLE LINERS

Existing concrete or brick and mortar manhole structures that are to be modified or rehabilitated by adding a manhole liner shall have a spray-applied liner installed according to the material and procedural requirements of the "Modifications to Existing Structures, Piping and Equipment," Section 1.2 of this Manual. All recommendations of the product's manufacturer shall be followed.

2.11 PROTECTION FROM FLOODWATER INFLOW

Wastewater sewer systems shall be designed to prevent flood or surface waters from entering the collection system. Manhole rims and clean-out tops shall be elevated 4 inches above the 100-year flood level, or 8 inches above the 25-year flood level, or 4 inches above the surrounding unpaved ground surface within a 20-foot radius, whichever is highest, or the manhole covers and clean-out lids shall be designed and installed with factory-made watertight, tamper proof, sealing devices. Manholes with rims less than the above required elevations shall be PAMTIGHT as manufactured by CertainTeed, or equal as approved by Manatee County.

Cleanouts not at or above the required elevations shall have the clean-out adapter solvent welded watertight to the clean-out riser. Plugs are to be recessed square key with Teflon plumber's tape wrapped on threads to make a watertight seal.

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 structure's base slabs and valve and/or meter vault pits.
- C. Backfill materials around the structures 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, (98 percent of the maximum density as determined by AASHTO T-180. 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 joints shall be prepared as in 2.04 above 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 316 stainless steel and are required for all sanitary sewer manholes installed. Inserts shall be as manufactured by FRW Industries, Conroe, Texas, or approved equal. 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 must be visually inspected and shall meet the satisfaction of the County.
- B. If the visual inspection reveals defects, poor workmanship, or suspect installation, it shall

be at the sole discretion of the County to have the structure vacuum tested for water tightness.

1. Plug pipelines 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.

- C. 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

DIVISION 6 WOOD AND PLASTIC

SECTION 06100 ROUGH CARPENTRY

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment, and incidentals necessary and install all items of carpentry work complete as shown on the Drawings and as specified herein including nailers, grounds and cants.
- B. The following list of work items is intended only as a guide to that required, the full scope being determined by the actual job conditions.
 - 1. Rough carpentry and framing, as indicated or required, including grounds, blocking, rough frames, nailing strips and strapping.
 - 2. Rough hardware, anchors and bolts, not specifically included elsewhere.
 - 3. Temporary closures.
 - 4. Installation of metal doors.
 - 5. Installation of metal wall frames and louvers.

1.02 JOB CONDITIONS

Deliver, handle and store lumber and plywood to prevent damage. Stack lumber off the ground in a manner to ensure ventilation and protection from the weather.

1.03 QUALITY ASSURANCE

Grade and Treatment Markings shall appear on lumber with seal and stamp of the inspection agency or bureau having jurisdiction.

PART 2 PRODUCTS

2.01 MATERIALS

- A. All lumber shall be of sound stock, delivered dry, and shall be fully protected at all times from injury and dampness. Split, broken, or otherwise damaged pieces will not be allowed in the work.
- B. Lumber for Blocking, Grounds and Nailers shall be S4S, either No. 2 Southern Pine, or standard grade Douglas fir, with moisture content of not more than 19%.
- C. Wood members that will contact masonry or concrete, or any wood framing or blocking member shown on the Drawings and labeled "P.T." shall be pressure treated with chromated copper arsenate or flouchrome arsenate phenol. Minimum net retention of solids preservation shall be 0.35 lbs. per cu. ft. All other permanent wood in place shall be pressure treated with any of the following: Celcure, Wolman Salts, Copperized Chromated Zinc Arsenate or Pentachlorophenol dissolved in a volatile mineral spirits solvent and bear an approved AWP1-LP-2 or LP-3 quality mark. Clear heart Redwood may be substituted for pressure treated lumber.
- D. All treatment shall be performed in accordance with the requirements of the Standard

Specifications of the American Wood Preservers Association for treating wood. Apply a heavy coat of the same preservation used in treating to all surfaces cut after treatment.

- E. Nails and spikes, where sizes are not indicated or specified, shall be of suitable size and number to securely fasten and hold members in place.
- F. Plywood for project sign shall be A-A EXT-APA grade and 1-inch thick. Posts shall be same as for nailers specified in subparagraph B above.

PART 3 EXECUTION

3.01 INSTALLATION

- A. All carpentry shall be accurately cut, fitted and installed as detailed on the Drawings.
- B. Anchors shall be installed, where indicated or required, to anchor carpentry or other items securely to masonry or concrete.
- C. Forms for structural concrete work shall be as shown on the Drawings. Provide all other miscellaneous wood form work as may be required for the completion of the Work.
- D. Temporary wood doors and cloth or transparent plastic covered framed shall be provided for exterior wall openings during winter constructions.
- E. Provide wood members in lengths as long as practicable.
- F. For bolted work, bore holes of same diameter as bolts and drive bolts into place with snug fit with washers between bolt head and wood surface. Make tight at time of installation bolts and lag screws and retighten just before being enclosed by other work or at completion of work. Length of bolts shall be length to suit the condition. Embed bolts in concrete and solid masonry where possible and use expansion shields in drilled holes where not possible.
- G. Use number and size of nails to achieve rigid connections and prevent splitting. Bore holes at least one drill size smaller than nails to prevent splitting if necessary.
- H. Anchor nailers to adjacent construction with bolts 6 inches from ends and at intervals not more than 48 inches o.c. between.
- I. Install project sign where directed by the County. Sign shall remain in position for the duration of construction.
- J. Install, maintain and remove all staging for all trades required to reach all work.
- K. At completion, remove all excess materials and all resultant debris from the operations of work of this section. Leave work in neat, clean condition satisfactory for receipt of other related items of work which are to be installed under other sections.

END OF SECTION

SECTION 06200 FINISH CARPENTRY

PART 1 GENERAL

1.01 SCOPE OR WORK

Furnish all labor, materials, equipment and incidentals required to install all finish carpentry work complete as shown on the Drawings and as specified herein including wood shelving, cabinets, countertops and installing finish hardware on wood and hollow metal doors.

1.02 QUALITY STANDARDS

Architectural woodwork quality standards and guide specifications of the Architectural Woodwork Institute (AWI) shall apply and by reference are made part of this Specification.

1.03 SUBMITTALS

Submit shop drawings drawn in related or dimensional position with sections shown either half size of 3-inch scale. Indicate rough blocking and other work to which finish work is attached.

1.04 DELIVERY AND STORAGE

Do not deliver materials to job site until building and/or storage area is sufficiently conditioned to prevent damage by moisture, dampness, excessive humidity, extreme dryness, extreme heat and cold. Store materials and/or stack in such a way as to provide ventilization; minimize warping or twisting and otherwise provide protection recommended by fabricator.

1.06 JOB ASSEMBLED WORK

The General Contractor, when installing items not shipped assembled, shall distribute best over-all advantage the defects allowed in the quality grade specified.

PART 2 PRODUCTS

2.01 COUNTERS AND BUILT-IN CABINETS

- A. Counters and cabinets shall be in accordance with AWI casework Custom Grade Standards, Section 400.
- B. Counters and cabinets shall receive plastic laminate on all exposed surface and laminate shall be premium grade as defined in AWI Standards 400-16 and 400-17.
- C. Plastic Laminate: Comply with the requirements of "Publication No. LDI" by the National Manufacturer's Association (NEMA) for the following:
 - 1. All exposed surfaces: NEMA General - Purpose Type, nominal 0-062" thickness.
 - 2. Surface Finish: Provide plastic laminate having a gloss reading of 20 or less in colors as shown on the color schedule on the Drawings.
- D. Exposed Edges: Fabricate with plastic laminate matching other exposed surfaces, unless otherwise shown.

- E. Cut openings in plastic laminate finished tops for equipment which is to be installed under other Sections of these Specifications. Verify size of openings with actual size of equipment to be used, prior to making openings. Form inside corners to a radius of not less than 1/8-in. After sawing, rout and file cutouts to ensure smooth, crack-free edges. Seal exposed edges after cutting with a waterproofing material recommended by the plastic laminate manufacturer.

PART 3 EXECUTION

3.01 WORKMANSHIP

- A. Accurately set and rigidly secure finish woodwork to required lines and levels in accordance with final shop drawings and applicable standards or AWI Manual..
- B. Hand sand finish surfaces to free them of machine or tool marks that would show through transparent finish.
- C. Install all members in as long lengths as practicable. Cope internal joints and returns and miter external corners.

3.02 INSTALLATION OF HOLLOW METAL AND WOOD DOORS, AND FINISH HARDWARE

- A. Doors and finish hardware shall be as installed under the work of this Section, except where specifically designated otherwise herein.
- B. As soon as the hardware is delivered to the job site, receive, verify and check each set, and report to the County any defect or shortage. Give notice to the hardware supplier for all such items which may be defective or missing.
- C. Finish hardware, after checking, shall be the responsibility of the Contractor until it is installed and the project is accepted in its entirety by the County.
- D. Hardware shall be attached and placed by skilled mechanics in accordance with approved hardware templates provided with the hardware, and shall be accurately fitted and adjusted. Lever handles shall be kept covered with heavy cloth, and other hardware shall be protected from damage until final acceptance of the entire project by the County.
- E. For fire-rated doors, provide clearances complying with NFPA and local Fire Marshall's limitations.
- F. Set each edge and joint of threshold in a seal strip of polysulphide sealant.
- G. Adjust and check each operating item of hardware and each door, to ensure proper operation and function of every unit. Lubricate moving parts with type lubrication recommended by manufacturer (graphite-type if no other recommended). Replace units which cannot be adjusted and lubricated to operate freely and smoothly as intended for the application made.
- H. Wherever hardware installation is made more than one month prior to acceptance, return to the work during the week prior to acceptance or occupancy, and make a final check and adjustment of all hardware items in such space or area. Clean and relubricate operating items as necessary to restore proper function and finish of hardware and doors. Adjust door

control devices to compensate for final operation of heating and ventilating equipment.

END OF SECTION

DIVISION 9 PAINTING

SECTION 09150 CEMENT PLASTER (STUCCO)

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required to install cement plaster (stucco).

1.02 QUALITY ASSURANCE

- A. Portland Cement Plastering Standards - ASTM A42.2 and A42.3.

1.03 SUBMITTALS

- A. Submit to the County, as provided in Section 01340, a listing of brand names and types of materials proposed for use in the work of this Section.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in sealed containers and bundles, fully identified with manufacturer's name, brand, type and grade; store on pallets in dry, well ventilated space, protected from the weather, under cover and handle in accordance with manufacturer's recommendations.

1.05 JOB CONDITIONS

- A. Examine the substrates of the areas to receive the stucco and the conditions under which the work is to be performed. Notify the County, in writing, of conditions detrimental to the proper completion of the work. Do not proceed with the installation until unsatisfactory conditions have been corrected in an acceptable manner.
- B. Environmental conditions: Maintain a minimum temperature of 50 degrees F in spaces being plastered. Maintain adequate continuous ventilation in plastered spaces until plaster is dry. Protect plaster from freezing and too rapid drying. Do not plaster on rusted metal materials.
- C. Protect other work from soiling, spattering, moisture deterioration and other harmful effects which may result from plastering operations.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Stucco Accessories
 - 1. Stucco accessories shall be produced from weatherproof PVC as manufactured by VinylTech Accessories, Plastic Components, Inc., or equal.
 - 2. Corner beads shall be No. 1 Corner Bead.
 - 3. Soffit external corner beads shall be No. 540 Drip Screed.
 - 4. Casing beads shall be No. 10 Casing Bead.

5. Control joints shall be No. 20M Joint.

B. Plaster Materials

1. Portland cement shall conform with ASTM C150, Type I or IA.
2. Lime shall be special finishing hydrated lime conforming to ASTM C206, Type S.
3. Sand shall be clean, sharp, washed, natural and free from soluble salts and organic matter. Sand shall comply with ASTM C35 and when dry, shall pass No. 4 sieve.
4. Fiber shall be pure manilla, glass or synthetic fiber, good quality 1/2" to 2" in length, free from grease, oil, dirt and other impurities. No asbestos will be allowed.
5. Water shall be clean, fresh, potable water.

PART 3 EXECUTION

3.01 THREE COAT PLASTERING

A. Portland cement plaster shall be three-coat work on CMU walls with a minimum thickness of 3/4". Exterior three-coat cement plaster (stucco) shall be made waterproof during and/or after application of one or more coats. Waterproofing materials shall be a product of Thoro System Products, Miami, Florida, or equal. Contractor shall be responsible for scheduling a review meeting with the supplier's technical representative and the County to determine the specific product and application techniques most appropriate for the masonry walls prior to the beginning of the stucco work.

B. Proportions and Mixing

1. All plaster shall be proportioned by weight. The materials shall be weighed by an approved weighing device. Measuring with a shovel will not be permitted.
2. All plaster shall be mechanically mixed. Hand mixing will not be permitted. Mixer to be cleaned after each batch is dumped. Retempering of partially set material is not permitted. Discard plaster which has begun to stiffen.
3. Scratch and brown coats shall be 100 lbs. Portland cement, 10 lbs. hydrated lime and not more than 300 lbs. sand. Add 2 lbs. fiber to scratch coat.
4. Finish coat shall be mixed in proportions of 100 lbs. Portland cement to 10 lbs. hydrated lime mixed with 200 lbs. sand.

C. Moisture Retention and Curing

1. Dampen previous plaster coats which have dried out prior to time for applications of next coat. Dampen with water as required for uniform suction.
2. Determine the most effective procedure for curing and the time lapse between application of coats based on climatic and job conditions. Plaster which is cracked or crazed due to improper timing and curing will not be accepted. Remove and replace defective plaster including plaster base materials, if damaged during removal of defective plaster.

3.03 CUTTING AND PATCHING

A. Cut, patch, point-up and repair plaster as necessary to accommodate other work and to restore cracks, dents and imperfections. Repair or replace work to eliminate blisters, excessive crazing and check cracking, dryouts, efflorescence, sweat-outs and similar defects, including areas of the work which do not comply with specified tolerances, and where bonding to the substrate has failed.

- B. Provide approved procedures for protection of plaster from deterioration and damage during the remainder of the construction period.

END OF SECTION

SECTION 09900 PAINTING

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. The Contractor shall furnish all labor, tools, materials, equipment, scaffolding or other structures and incidentals necessary to complete this Contract in its entirety.
- B. The work includes painting and finishing of all new interior and exterior exposed items above and below grade and surfaces, such as structural steel, miscellaneous metals, ceilings, walls, floors, doors, frames, transoms, roof fans, construction signs, guardrails, posts, fittings, valves, tanks, equipment and all other work obviously required to be painted unless otherwise specified herein or on the Drawings. The omission of minor items in the Schedule of Work shall not relieve the Contractor of his obligation to include such items where they come within the general intent of the Specification as stated herein.
- C. The following items shall not be painted:
1. Any code-requiring labels, such as Underwriter's Laboratories and Factory Mutual, or any equipment identification, performance rating, name or nomenclature plates.
 2. Any moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sinkages, sensing devices, motor and fan shafts, unless otherwise indicated.
 3. Aluminum handrails (except where in contact with concrete) walkways, windows, louvers and grating unless otherwise specified herein.
 4. Signs and nameplates.
 5. Finish hardware.
 6. Chain link fence.
 7. Piping buried in the ground or embedded in concrete.
 8. Concealed surfaces of pipe or crawl space.
 9. Nonferrous metals, unless specifically noted otherwise.
 10. Electrical switchgear and motor control centers.
 11. Stainless steel angles, tubes, pipe, etc.
 12. Products with polished chrome, aluminum, nickel or stainless steel finish.
 13. Plastic switch plates and receptacle plates.
 14. Flexible couplings, lubricated bearing surfaces, insulation and metal and plastic pipe interior.
 15. Sprinkler heads.
 16. Lifting chain on cranes and hoists
 17. Electrical cable, festooned conductor system, cables, collector pole brackets, etc.
- D. All work shall be done in strict accordance with this Specification, the Design Drawings and the painting package, including manufacturer's printed instructions.
- E. The Contractor will obtain, at its own expense, all permits, licenses and inspections and shall comply with all laws, codes, ordinances, rules and regulations promulgated by authorities having jurisdiction which may bear on the Work. This compliance will include Federal Public Law 91-596 more commonly known as the "Occupational Safety and Health Act of 1970".

1.02 DEFINITIONS

- A. Field Painting is the painting of new or rebuilt items at the job site. Field painting shall be the responsibility of the Contractor.
- B. Shop Painting is the painting of new or rebuilt items in the shop prior to delivery to the jobsite.
- C. Abbreviations The abbreviations and definitions listed below, when used in this specification, shall have the following meanings:
 - 1. SSPC - Steel Structures Painting Council
 - 2. Exterior - Outside, exposed to weather
 - 3. Interior Dry - Inside, concealed or protected from weather
 - 4. Interior Wet - Inside, subject to immersion services
 - 5. ASTM - American Society of Test Materials
 - 6. NACE - National Association of Corrosion Engineers
 - 7. NSF - National Sanitation Foundation
 - 8. AWWA - American Water Works Association
- D. Dry Film Thickness shall be in Mils.

1.03 RESOLUTION OF CONFLICTS

- A. It shall be the responsibility of the Contractor to arrange a meeting prior to the start of painting, or flooring installation between the Contractor, the Paint Manufacturer, whose products are to be used, and the County. All aspects of surface preparation, application and coating systems as covered by this Specification will be reviewed at this meeting.
- B. Clarification shall be requested promptly from the County when instructions are lacking, conflicts occur in the Specifications, or the procedure seems improper or inappropriate for any reason.
- C. Copies of all manufacturer's instructions and recommendations shall be furnished to the County by the Painting Contractor.
- D. It shall be the responsibility of the Coating Manufacturer to have their factory representative meet in person with the Contractor and County a minimum of three times during the job as a consultant on surface preparation, mil thickness of coating and proper application of coating unless meeting is determined to be unnecessary by the County.

1.04 SUBMITTALS

- A. Contractor shall submit catalog data and cut sheets for the painting system being used if not the TNEMEC materials specified.
- B. Samples as detailed in 3.01 B shall be submitted regardless of system being used, showing each color to be used.
- C. Hazardous Material Disposal documentation shall be submitted if applicable.

PART 2 PRODUCTS

2.01 EQUIPMENT

- A. Effective oil and water separators shall be used in all compressed air lines serving spray

painting and sandblasting operations to remove oil or moisture from the air before it is used. Separators shall be placed as far as practicable from the compressor.

- B. All equipment for application of the paint and the completion of the work shall be furnished by the Contractor in first-class condition and shall comply with recommendations of the paint manufacturer.
- C. Contractor will provide free of charge to the County a "Nordson-Mikrotest" or "Positest" dry film thickness gauge for ferrous metal and an OG232 "Tooke" gauge or equal for non-ferrous and cementitious surface, to be used to inspect coatings by the County and Contractor. The gauges may be used by the Contractor and returned each day to the County. County will return gauges to Contractor at completion of job.

2.02 MATERIALS

- A. All materials specified herein are manufactured by the TNEMEC Company, Inc., North Kansas City, Missouri. These products are specified to establish standards of quality and are approved for use on this Project.
- B. Equivalent materials of other manufacturers may be substituted on approval of the County. Requests for substitution shall include manufacturer's literature for each product giving the name, generic type, descriptive information and evidence of satisfactory past performance and an independent laboratory certification that their product meets the performance criteria of the specified materials.
- C. Abrasion - Fed. Test Method Std. No. 141, Method 6192, CS-17 Wheel, 1,000 grams load.
- D. Adhesion - Elcometer Adhesion Tester.
- E. Exterior Exposure - Exposed at 45 degrees facing the ocean (South Florida Marine Exposure)
- F. Hardness - ASTM D3363-74
- G. Humidity - ASTM D2247-68
- H. Salt Spray (Fog) - ASTM B117-73
- I. Substitutions which decrease the total film thickness, change the generic type of coating, or fail to meet the performance criteria of the specified materials shall not be approved. Prime and finish coats of all surfaces shall be furnished by the same manufacturer.
- J. All coatings to be shop applied must meet the requirements for volatile organic compounds (VOC) of not more than 3.5 lbs/gallon after thinning.
- K. Colors, where not specified, shall be as selected by the County or their Representative.
- L. All coatings in contact with potable water need to be NSF Certified in accordance with ANSI/NSF Standard 61.
- M. All above ground potable water mains and appurtenances shall be painted safety blue.

PART 3 EXECUTION

3.01 INSPECTION OF SURFACES

- A. Before application of the prime coat and each succeeding coat, all surfaces to be coated shall be subject to inspection by the County. Any defects or deficiencies shall be corrected by the Contractor before application of any subsequent coating.
- B. Samples of surface preparation and of painting systems shall be furnished by the Contractor to be used as a standard throughout the job, unless omitted by the County.
- C. When any appreciable time has elapsed between coatings, previously coated areas shall be carefully inspected by the County, and where, in his opinion, surfaces are damaged or contaminated, they shall be cleaned and recoated at the Contractor's expense. Recoating times of manufacturer's printed instructions shall be adhered to.
- D. Coating thickness shall be determined by the use of a properly calibrated "Nordson-Mikrotest" "Positest" Coating Thickness Gauge (or equal) for ferrous metal or an OG232 "Tooke" Paint Inspection gauge (or equal) for non-ferrous and cementitious surfaces. Please note that use of the "Tooke" gauge is classified as a destructive test.

3.02 SURFACE PREPARATION

The surface shall be cleaned as specified for the paint system being used. All cleaning shall be as outlined in the Steel Structures Painting Council's Surface Preparation Specification, unless otherwise noted. If surfaces are subject to contamination, other than mill scale or normal atmospheric rusting, the surfaces shall be pressure washed, and acid or caustic pH residues neutralized, in addition to the specified surface preparation.

3.03 STANDARDS FOR SURFACE PREPARATION

- A. Chemical and/or Solvent Cleaning: Remove all grease, oil, salt, acid, alkali, dirt, dust, wax, fat, foreign matter and contaminates, etc. by one of the following methods: steam cleaning, alkaline cleaning, or volatile solvent cleaning.
- B. Hand Tool Cleaning: Removal of loose rust, loose mill scale and loose paint to a clean sound substrate by hand chipping, scraping, sanding and wire brushing.
- C. Power Tool Cleaning: Removal of loose rust, loose mill scale and loose paint to a clean sound substrate by power tool chipping, descaling, sanding, wire brushing and grinding.
- D. Flame Cleaning: Dehydrating and removal of rust, loose mill scale and some light mill scale by use of flame, followed by wire brushing.
- E. White Metal Blast Cleaning: Complete removal of all mill scale, rust, rust scale, previous coating, etc., leaving the surface a uniform gray-white color.
- F. Commercial Grade Blast Cleaning: Complete removal of all dirt, rust scale, mill scale, foreign matter and previous coating, etc., leaving only shadows and/or streaks caused by rust stain and mill scale oxides. At least 66% of each square inch of surface area is to be free of all visible residues, except slight discoloration.
- G. Brush-Off Blast Cleaning: Removal of rust scale, loose mill scale, loose rust and loose

coatings, leaving tightly-bonded mill scale, rust and previous coatings. On concrete surfaces, brush-off blast cleaning shall remove all laitance, form oils and solid contaminants. Blasting should be performed sufficiently close to the surface so as to open up surface voids, bugholes, air pockets and other subsurface irregularities, but so as not to expose underlying aggregate.

- H. Pickling: Complete removal of rust and mill scale by acid pickling, duplex pickling or electrolytic pickling (may reduce the resistance of the surface to corrosion, if not to be primed immediately).
- I. Near-White Blast Cleaning: Removal of all rust scale, mill scale, previous coating, etc., leaving only light stains from rust, mill scale and small specks of previous coating. At least 95% of each square inch of surface area is to be free of all visible residues and the remainder shall be limited to slight discoloration.
- J. Power Tool Cleaning to Bare Metal: Complete removal of rust, rust scale, mill scale, foreign matter and previous coatings, etc., to a standard as specified on a Commercial Grade Blast Cleaning (SSPC-SP-6, NACE-3) by means of power tools that will provide the proper degree of cleaning and surface profile.
- K. Visual standards "Pictorial Surface Preparation Standards for Painting Steel Surfaces", and the National Association of Corrosion Engineer, "Blasting Cleaning Visual Standards" TM-01-70 and TM-01-75 shall be considered as standards for proper surface preparation.
- L. Oil, grease, soil, dust, etc., deposited on the surface preparation that has been completed shall be removed prior to painting according to Solvent Cleaning under this Specification.
- M. Weld flux, weld spatter and excessive rust scale shall be removed by Power Tool Cleaning as per these Specifications.
- N. All weld seams, sharp protrusions and edges shall be ground smooth prior to surface preparation or application of any coatings.
- O. All areas requiring field welding shall be masked off prior to shop coating, unless waived by the County.
- P. All areas which require field touch-up after erection, such as welds, burnbacks, and mechanically damaged areas, shall be cleaned by thorough Power Tool as specified in these Specifications.
- Q. Touch-up systems will be same as original specification except that approved manufacturer's organic zinc-rich shall be used in lieu of inorganic zinc where this system was originally used. Also strict adherence to manufacturer's complete touch-up recommendations shall be followed. Any questions relative to compatibility of products shall be brought to the County's attention; otherwise, Contractor assumes full responsibility.

3.03 PRETREATMENTS

When specified, the surface shall be pretreated in accordance with the specified pretreatment prior to application of the prime coat of paint.

3.04 STORAGE

Materials shall be delivered to the job site in the original packages with seals unbroken and with legible unmutilated labels attached. Packages shall not be opened until they are inspected by the County and required for use. All painting materials shall be stored in a clean, dry, well-ventilated place, protected from sparks, flame, direct rays of the sun or from excessive heat. Paint susceptible to damage from low temperatures shall be kept in a heated storage space when necessary. The Contractor shall be solely responsible for the protection of the materials stored by himself at the job site. Empty coating cans shall be required to be neatly stacked in an area designated by the County and removed from the job site on a schedule determined by the County. County may request a notarized statement from Contractor detailing all materials used on the Project.

3.05 PREPARATION OF MATERIALS

- A. Mechanical mixers, capable of thoroughly mixing the pigment and vehicle together, shall mix the paint prior to use where required by manufacturer's instructions; thorough hand mixing will be allowed for small amounts up to one gallon. Pressure pots shall be equipped with mechanical mixers to keep the pigment in suspension, when required by manufacturer's instructions. Otherwise, intermittent hand mixing shall be done to assure that no separation occurs. All mixing shall be done in accordance with SSPC Vol. 1, Chapter 4, "Practical Aspects, Use and Application of Paints" and/or with manufacturer's recommendations.
- B. Catalysts or thinners shall be as recommended by the manufacturer and shall be added or discarded strictly in accordance with the manufacturer's instruction.

3.06 APPLICATION

- A. Paint shall be applied only on thoroughly dry surfaces and during periods of favorable weather, unless otherwise allowed by the paint manufacturer. Except as provided below, painting shall not be permitted when the atmospheric temperature is below 50 deg F, or when freshly painted surfaces may be damaged by rain, fog, dust, or condensation, and/or when it can be anticipated that these conditions will prevail during the drying period.
- B. No coatings shall be applied unless surface temperature is a minimum of 5deg above dew point; temperature must be maintained during curing.
- C. See coating schedule for actual coating systems to be used on this project.

3.07 DEW POINT CALCULATION CHART

DEW POINT CALCULATION CHART

Ambient Air Temperature - Fahrenheit

Relative Humidity	20	30	40	50	60	70	80	90	100	110	120
90%	18	28	37	47	57	67	77	87	97	107	117
85%	17	26	36	45	55	65	76	84	95	104	113
80%	16	25	34	44	54	63	73	82	93	102	110
75%	15	24	33	42	52	62	71	80	91	100	108
70%	13	22	31	40	50	60	68	78	88	96	105
65%	12	20	29	38	47	57	66	76	85	93	103

60%	11	29	27	36	45	55	64	73	83	92	101
55%	9	17	25	34	43	53	61	70	80	89	98
50%	6	15	23	31	40	50	59	67	77	86	94
45%	4	13	21	29	37	47	56	64	73	82	91
40%	1	11	18	26	35	43	52	61	69	78	87
35%	-2	8	16	23	31	40	48	57	65	74	83

SURFACE TEMPERATURE AT WHICH CONDENSATION OCCURS

Dew Point

Temperature at which moisture will condense on surface. No coatings should be applied unless surface temperature is a minimum of 5deg above this point. Temperature must be maintained during curing.

Example

If air temperature is 70 deg F and relative humidity is 65%, the dew point is 57 deg F. No coating should be applied unless surface temperature is 62 deg F minimum.

- A. No coating shall be applied unless the relative humidity is below 85%.
- B. Suitable enclosures to permit painting during inclement weather may be used if provisions are made to control atmospheric conditions artificially inside the enclosure, within limits suitable for painting throughout the painting operations.
- C. Field painting in the immediate vicinity of, or on, energized electrical and rotating equipment, and equipment and/or pipes in service shall not be performed without the approval of the County.
- D. Extreme care shall be exercised in the painting of all operable equipment, such as valves, electric motors, etc., so that the proper functioning of the equipment will not be affected.
- E. The Contractor's scaffolding shall be erected, maintained and dismantled without damage to structures, machinery, equipment or pipe. Drop cloths shall be used where required to protect buildings and equipment. All surfaces required to be clear for visual observation shall be cleaned immediately after paint application.
- F. Painting shall not be performed on insulated pipe within three (3) feet of insulation operations or on insulation whose covering and surface coat have not had time to set and dry. Painting shall not be performed on uninsulated pipe within one (1) foot of any type of connection until the connection has been made, except as directed by the County.
- G. The prime coat shall be applied immediately following surface preparation and in no case later than the same working day. All paint shall be applied by brushing, paint mitt and roller, conventional spraying, or airless spraying, using equipment approved by the paint manufacturer.
- H. Each coat of paint shall be recoated as per manufacturer's instructions. Paint shall be considered recoatable when an additional coat can be applied without any detrimental film irregularities such as lifting or loss of adhesion.
- I. Surfaces that will be inaccessible after assembly shall receive either the full specified paint

system or three shop coats of the specified primer before assembly.

- J. Finish colors shall be in accordance with the COLOR SCHEDULE and shall be factory mixed (i.e., there shall be no tinting by the Contractor, unless authorized by the County).
- K. All edges and weld seams in immersion service shall receive a "stripe coat" (applied by brush) of the 2nd coat prior to application of the full 2nd coat.
- L. All open seams in the roof area of tanks shall be filled after application of the topcoat with a flexible caulking such as Sika Flex 1A.

3.08 WORKMANSHIP

- A. The Contractor must show proof that all employees associated with this Project shall have been employed by the Contractor for a period not less than six (6) months.
- B. Painting shall be performed by experienced painters in accordance with the recommendations of the paint manufacturer. All paint shall be uniformly applied without sags, runs, spots, or other blemishes. Work which shows carelessness, lack of skill, or is defective in the opinion of the County, shall be corrected at the expense of the Contractor.
- C. The Contractor shall provide the names of at least three other projects of similar size and scope that they have successfully completed under their current company name.

3.09 APPLICATION OF PAINT

- A. By Brush and/or Rollers
 - 1. Top quality, properly styled brushes and rollers shall be used. Rollers with a baked phenol core shall be utilized.
 - 2. The brushing or rolling shall be done so that a smooth coat as nearly uniform in thickness as possible is obtained. Brush or roller strokes shall be made to smooth the film without leaving deep or detrimental marks.
 - 3. Surfaces not accessible to brushes or rollers may be painted by spray, by dauber or sheepskins, and paint mitt.
 - 4. It may require two coats to achieve the specified dry film thickness if application is by brush and roller.
- B. Air, Airless or Hot Spray
 - 1. The equipment used shall be suitable for the intended purpose, shall be capable of properly atomizing the paint to be applied and shall be equipped with suitable pressure regulators and gauges.
 - 2. Paint shall be applied in a uniform layer, with a 50% overlap pattern. All runs and sags should be brushed out immediately or the paint shall be removed and the surface resprayed.
 - 3. High build coatings should be applied by a cross-hatch method of spray application to ensure proper film thickness of the coating.
 - 4. Areas inaccessible to spray shall be brushed; if also inaccessible to brush, daubs or sheepskins shall be used, as authorized by the manufacturer.
 - 5. Special care shall be taken with thinners and paint temperatures so that paint of the correct formula reaches the receiving surface.
 - 6. Nozzles, tips, etc., shall be of sizes and designs as recommended by the

- manufacturer of the paint being sprayed.
7. The first coat on concrete surfaces in immersion service should be sprayed and back rolled.

3.10 PROTECTION AND CLEANUP

- A. It shall be the responsibility of the Contractor to protect at all times, in areas where painting is being done, floors, materials of other crafts, equipment, vehicles, fixtures, and finished surfaces adjacent to paint work. Cover all electric plates, surface hardware, nameplates, gauge glasses, etc., before start of painting work.
- B. At the option of the County during the course of this project, the Contractor will contain all spent abrasives, old paint chips, paint overspray and debris by means suitable to the County, including, but not limited to, full shrouding of the area.
- C. If shrouding is required, the Contractor must provide a complete design of the intended shroud or cover. Care must be taken not to modify or damage the structure during the use of the shroud. If damage should occur, the Contractor is held responsible for all repairs.
- D. At completion of the work, remove all paint where spilled, splashed, spattered, sprayed or smeared on all surfaces, including glass, light fixtures, hardware, equipment, painted and unpainted surfaces.
- E. After completion of all painting, the Contractor shall remove from job site all painting equipment, surplus materials and debris resulting from this work.
- F. The Contractor is responsible for the removal and proper disposal of all hazardous materials from the job site in accordance with Local, State and Federal requirements as outlined by the Environmental Protection Agency.
- G. A notarized statement shall be presented to the County that all hazardous materials have been disposed of properly including, but not limited to: name of disposal company, disposal site, listing of hazardous materials, weights of all materials, cost per pound and EPA registration number.

3.11 TOUCH-UP MATERIALS

The Contractor shall provide at the end of the Project at least one (1) gallon of each generic topcoat in each color as specified by the County for future touch-up. Two gallons may be required for (2) component materials.

3.12 ON-SITE INSPECTION

During the course of this Project, the County will reserve the option of incorporating the services of a qualified inspection service. The inspection service will be responsible for assuring the proper execution of this Specification by the successful Contractor.

3.13 STEEL - STRUCTURAL, TANKS, PIPES AND EQUIPMENT

- A. EXTERIOR EXPOSURE (NON-IMMERSION)
 1. System No. 73-1: Epoxy/High Build Urethane

This system is highly resistant to abrasion, wet conditions, corrosive fumes and chemical contact. Provides 3-4 times the color and gloss retention of conventional paints. Second coat to be same color or close to finish color. Specify Series 74 Endura-Shield for gloss finish.

Surface Preparation: SSPC-SP6 Commercial Blast Cleaning

Shop Coat: 66-1211 Epoxoline Primer	3.0 - 4.0		
2nd Coat: 66-Color Hi-Build Epoxoline	2.0 - 3.0		
3rd Coat: 73-Endura-Shield III	<u>2.0 - 3.0</u>		
		Dry Film Thickness	7.0 - 10.0
		Minimum	8.0 Mils

2. System No. 73-2: High Build Urethane for Marginally Cleaned Surfaces or Topcoating Existing System

This system can be used over factory finish paint or cover non-sandblasted steel and offer the high performance of a urethane coating. Specify Series 74 Endura-Shield for gloss finish.

Surface Preparation: SSPC-SP6 Commercial Blast Cleaning or SSPC-SP3 Power Tool Cleaning

Shop Coat: Manufacturer Standard Primer (or existing coating)	1.5 - 2.0		
2nd Coat: 135 Chembuild	3.0 - 5.0		
3rd Coat: 73-Color Endura-Shield	<u>2.0 - 3.0</u>		
		Dry Film Thickness	6.5 - 10.0
		Minimum	7.5 Mils

3. System No. 82-1: Silicone Alkyd Enamel - Gloss

Coating system for outstanding color and gloss retention and weatherability. This system will provide better performance than alkyd enamel, but not as good as a urethane. Series 82 includes a minimum of 30% silicone resin and conforms to SSPC-Paint 21-78, Type 1.

Surface Preparation: SSPC-SP6 Commercial Blast Cleaning

Shop Coat: 37H-77 Chem Prime	2.0 - 3.5		
2nd Coat: 23-Color Enduratone	2.0 - 3.0		
3rd Coat: 82-Color Silicone Alkyd Enamel	<u>1.0 - 2.0</u>		
		Dry Film Thickness	5.0 - 8.5
		Minimum	6.0 Mils

4. System 90-97: Zinc/Epoxy/Urethane

This system offers the added corrosion protection of a zinc rich primer. Series 90-97 Theme-Zinc is an organic zinc-rich primer that can be used for field touch up of a zinc primer or for touch up of galvanized surfaces that are damaged.

Surface Preparation: SSPC-SP6 Commercial Blast Cleaning

Shop Coat: 90-97 Theme-Zinc	2.5 - 3.5		
2nd Coat: 66-Color Hi-Build Epoxoline	2.0 - 3.0		
3rd Coat: 73 Endurashield III	<u>2.0 - 3.0</u>		
		Dry Film Thickness Minimum	6.5 - 9.5 8.0 Mils

B. INTERIOR EXPOSURE (NON-IMMERSION)

1. System No. 69.1: High Solids Epoxy

This coating will provide maximum protection. It offers chemical and corrosion resistance for long-term protection against salt spray, moisture, corrosive fumes, and chemical attack. Series 69 is a polyamidoamine cured epoxy. Primer coat must be touched-up before second coat is applied.

Surface Preparation: SSPC-SP6 Commercial Blast Cleaning

Shop Coat: 69-1211 Epoxoline Primer II	3.0 - 5.0		
2nd Coat:			
69-Color Hi-Build Expoxoline II	<u>4.0 - 6.0</u>		
		Dry Film Thickness Minimum	7.0 - 11.0 9.0 Mils

2. System No.66-2: High Build Epoxy

This system will provide chemical and corrosion resistance against abrasion, moisture, corrosion fumes, chemical contact and immersion in non-potable water. Primer coat must be touched-up before second coat is applied. Substitute Series 161 for low temperature cure or quick recoats.

Surface Preparation: SSPC-SP6 Commercial Blast Cleaning

Shop Coat: 69-1211 Epoxoline Primer	3.0 - 5.0		
2nd Coat: 69-Color Hi-Build Expoxoline	<u>4.0 - 6.0</u>		
		Dry Film Thickness Minimum	7.0 - 11.0 9.0 Mils

3. System No. 66-6: High Build Epoxy (Over OEM Finishes)

This system is to be used over standard manufacturer's primer to offer a high performance epoxy finish. Excellent for areas of rust not able to be completely cleaned.

Surface Preparation: Spot SSPC-SP6 Commercial Blast Cleaning or SSPC- SP11 Power Tool Cleaning to Bare Metal

Shop Coat: Manufacturer's Standard (or existing coating)	1.0 - 2.0		
2nd Coat: 50-330 Poly-Ura-Prime	2.0 - 3.0		
3rd Coat: 66-Color Hi-Build Expoxoline	<u>2.0 - 4.0</u>		
		Dry Film Thickness Minimum	5.0 - 9.0 7.0 Mils

C. IMMERSION

1. System No. 69-2: High Solids Epoxy (Non-Potable Water)

This system provides maximum protection in immersion service. Scarify the surface before topcoating if the Series 69 has been exterior-exposed for 90 days or longer. If primer coat is damaged, it must be touched-up before second coat is applied.

Surface Preparation: SSPC-SP10 Near-White Blast Cleaning

Shop Coat:

69-1211 Hi-Build Epoxoline II 3.0 - 5.0

2nd Coat:

69-Color Hi-Build Expoxoline II 6.0 - 8.0

Dry Film Thickness 9.0 - 13.0
Minimum 11.0 Mil

2. System No. 66-2: High Solids Epoxy (Non-Potable Water)

This system will provide chemical and corrosion resistance for protection against abrasion, moisture, corrosive fumes, chemical contact and immersion. Primer coat must be touched-up before second coat is applied. Scarify the surface before topcoating if the Series 66 has been exterior-exposed for 60 days or longer. Substitute Series 161 for low temperature cure or quick recoats.

Surface Preparation: SSPC-SP10 Near-White Blast Cleaning

Shop Coat: 66-1211 Epoxoline Primer 3.0 - 5.0

2nd Coat: 66-Color Hi-Build Expoxoline 3.0 - 5.0

3rd Coat: 66-Color Hi-Build Expoxoline 3.0 - 5.0

Dry Film Thickness 9.0 - 15.0
Minimum 11.0 Mil

3. System No. 20-1: Epoxy-Polyamide (Potable Water)

This system meets American Water Works Association AWWA D 102 Inside Paint System Number 1. Series 20 meets the new requirements of approval for potable water use as established by the National Sanitation Foundation Standard 61. Substitute Series FC20 for low temperature cure or quick recoats.

Surface Preparation: SSPC-SP10 Near-White Blast Cleaning

Shop Coat:

20-WH02 Pota-Pox (Tank White) 3.0 - 5.0

2nd Coat: 20-1255 Pota-Pox (Beige) 4.0 - 6.0

3rd Coat: 20-WH02 Pota-Pox (Tank White) 4.0 - 6.0

Dry Film Thickness 11.0 - 17.0
Minimum 12.0 Mil

4. System No. 140: High Solids Epoxy (Potable Water)

Series 140 meets the new requirements of approval for potable water use as

established by the National Sanitation Foundation Standard 61.

Surface Preparation: SSPC-SP10 Near-White Blast Cleaning

Shop Coat: 140-1255 Pota-Pox II (Beige)	6.0 - 8.0		
2nd Coat:			
140-WH02 Pota-Pox II (Tank White)	<u>6.0 - 8.0</u>		
		Dry Film Thickness	12.0 - 16.0
		Minimum	14.0 Mils

5. System No. 46-30: Coal Tar-Epoxy (Non-Potable Water Only)

May be applied in a two-coat application. Review critical recoat time if utilized.

Surface Preparation: SSPC-SP10 Near-White Blast Cleaning*

One Coat: 46H-413 Hi-Build Tneme Tar
Minimum Dry Film Thickness 14.0 - 20.0

*SSPC-SP-6 Commercial Blast Cleaning may be used for non-immersion service.

6. System No. 46-26: Coal Tar Epoxy (Non-Potable Water Only)

Must be recoated within four days at 75deg F. Higher temperature will shorten recoat time.

Surface Preparation: SSPC-SP10 Near-White Blast Cleaning*

1st Coat: 46-413 Tneme Tar	8.0 - 10.0		
2nd Coat: 46-413 Tneme Tar	<u>8.0 - 10.0</u>		
		Dry Film Thickness	16.0 - 20.0
		Minimum	16.0 Mils

*SSPC-6 Commercial Blast Cleaning may be used for non-immersion service.

3.14 OVERHEAD METAL DECKING, JOIST

A. INTERIOR EXPOSURE

System No. 15-1: Uni-Bond

This system should be used on ceiling areas where a one-coat system is desired. Can be applied over steel, galvanized and aluminum decking, joist, beams, conduits and concrete.

Surface Preparation: Surfaces must be dry, clean and free of oil, grease and other contaminates. Allow concrete to cure 28 days.

Coating: 15-Color Uni-Bond
Dry Film Thickness 2.5 - 3.5

B. EXTERIOR EXPOSURE

System No. 135-1: Chembuild

This system can be applied over a wide variety of coatings and factory finishes. It can also be applied direct to galvanized aluminum decking, joists, conduits and tight rust.

Surface Preparation: Pressure clean to remove all dirt, oil, grease, chemicals and foreign contaminates. Remove loose paint and all rust by hand and power tool cleaning (SSPC-SP 2 & 3)

Coating: 135-Color Chembuild

Dry Film Thickness 3.0 - 5.0

3.15 MILL COATED STEEL PIPE

A. EXTERIOR/INTERIOR EXPOSURE (NON-IMMERSION)

System No. 66-3: Epoxy-Polyamide

This system can be applied directly to mill coated steel pipe without sandblasting for use in non-immersion. There may be some bleed through with the 1st coat. Do not apply over glossy varnish type mill coatings.

Surface Preparation: Surface shall be clean and dry.

1st Coat: 66-1211 Epoxoline Primer	3.0 - 4.0		
2nd Coat: 66-Color Hi-Build Epoxoline	4.0 - 6.0		
3rd Coat: (If required)	(4.0 - 6.0)		
	Dry Film Thickness	11.0 - 16.0	
	Minimum	11.0 Mils	

3.16 GALVANIZED STEEL - PIPE AND MISCELLANEOUS FABRICATIONS

A. EXTERIOR / (NON-IMMERSION)

System No. 73-1: Epoxy/High Build Urethane

Series 66 has excellent adhesion to galvanized steel. This system is highly resistant to abrasion, wet conditions, corrosive fumes and chemical contact. Provides 3-4 times the color and gloss retention of conventional paints. First coat to be same color as or close to the finish color. Specify Series 74 Endura-Shield for gloss finish.

Surface Preparation: SSPC-SP1 Solvent Cleaning

1st Coat: 66-Color Hi-Build Epoxoline	2.0 - 4.0		
2nd Coat: 73-Color Endura-Shield	2.0 - 4.0		
	Dry Film Thickness	4.0 - 8.0	
	Minimum	5.0 Mils	

B. INTERIOR EXPOSURE (NON IMMERSION) AND ALUMINUM IN CONTACT WITH CONCRETE

System No. 66-6: Polyamide Epoxy

Surface Preparation: SSPC-SP1 Solvent Cleaning

1st Coat: 66-Color Hi-Build Epoxoline	2.0 - 4.0		
2nd Coat: 66-Color Hi-Build Epoxoline	<u>2.0 - 4.0</u>		
		Dry Film Thickness	4.0 - 8.0
		Minimum	5.0 Mils

C. IMMERSION (POTABLE WATER)

System No. 20-1: Epoxy-Polyamide (Potable Water)

Series 20 meets the new requirements of approval for potable water use as established by the National Sanitation Foundation Standard 61. Substitute Series FC20 for low temperature cure of quick recoat.

Surface Preparation: SSPC-SP 7 Brush Off Blast Cleaning

1st Coat: 20-1255 Pota-Pox Primer	3.0 - 5.0		
2nd Coat: 20-WH02 Pota-Pox Finish	<u>4.0 - 6.0</u>		
		Dry Film Thickness	7.0 - 11.0
		Minimum	9.0 Mils

3.17 CHAIN-LINK FENCES

A. GALVANIZED STEEL & NON-FERROUS METAL

System No. 22-1: Oil-Cementitious

Surface Preparation: Surface shall be clean and dry

One Coat: 22-Color Galv-Gard

Dry Film Thickness 3.0 - 4.0

3.18 CONCRETE

A. EXTERIOR - ABOVE GRADE

1. System No. 52-1 Modified Epoxy - Sand Texture

Series 52 is a high build, decorative sand texture finish that hides minor surface irregularities and gives long-term protection against weather, driving rain, ultraviolet exposure, alternate freezing and thawing. Series 52 will actually become part of the concrete. Available in Series 55, Tneme-Crete smooth finish. For porous substrates, a second coat of Series 52 is required. Substitute Series 180 or 181 W.B. Tneme-Crete when specified over existing acrylic or latex coatings.

Surface Preparation: Surface shall be clean and dry.

One Coat: 52-Color Tneme-Crete

Dry Film Thickness 8.0 - 10.0

2. System No. 6-1: Acrylic Emulsion Low Sheen

If semi-gloss finish is desired, use Series 7 Tneme-Cryl SG as the second coat.

Surface Preparation: Surface must be clean and dry.

1st Coat: 6-Color Tneme-Cryl	2.0 - 3.0		
2nd Coat: 6-Color Tneme-Cryl	<u>2.0 - 3.0</u>		
		Dry Film Thickness	4.0 - 6.0
		Minimum	5.0 Mils

3. System No. 156-1: Modified Acrylic Elastomer

If texture is needed, use 157 Enviro-Crete TX (medium texture) or 159 Enviro-Crete XTX (coarse texture). For application over previously applied coatings, use TNE MEC Series 151 Elasto-Grip at 1.0 - 2.5 mils DFT prior to the application of Series 156 Enviro-Crete.

Surface Preparation: Surface must be clean and dry.

1st Coat: 156-Color Enviro-Crete	4.0 - 8.0		
2nd Coat: 156-Color Enviro-Crete	<u>4.0 - 8.0</u>		
		Dry Film Thickness	8.0 - 16.0
		Minimum	10.0 Mils

B. EXTERIOR - BELOW GRADE

1. System No. 46-61: Coal Tar Pitch Solution

Surface Preparation: Surface must be clean and dry, Level all protrusions.

1st Coat: 46-465 H.B. Tnemecol	8.0 - 12.0		
2nd Coat: 46-465 H.B. Tnemecol	<u>8.0 - 12.0</u>		
		Dry Film Thickness	16.0 - 24.0
		Minimum	16.0 Mils

2. System No. 46-31: Coal Tar-Epoxy

Surface Preparation: Surface shall be clean and dry.

One Coat: 46H-413 Hi-Build Tneme-Tar		Dry Film Thickness	14.0 - 20.0
--------------------------------------	--	--------------------	-------------

3. System No. 100-1: Crystalline Waterproofing

This system can be applied to concrete that is still wet or has not developed final cure. It can be used where wet surface conditions exist or where there is the potential for water intrusion due to hydrostatic pressure. Application shall be per Xypex specification manual.

Surface Preparation: Surface to be clean and roughened by Brush Blasting or Acid Etching.

1st Coat: XYPEX Concentrate at 1.5 lbs/SY	
2nd Coat: XYPEX Modified at 1.5 lbs/SY	

C. EXTERIOR/INTERIOR EXPOSURE (NON-IMMERSION)

1. System No. 6-1: Acrylic Emulsion, Low Sheen (Interior/Exterior)

This system will provide a decorative coating with good exterior durability, color retention, and a high vapor transmission rate. For Semi-Gloss finish, use 7-Color Tneme-Cryl S/G.

Surface Preparation: Surface shall be clean and dry. Allow concrete to cure for 28 days.

1st Coat: 6-Color Tneme-Cryl	2.0 - 3.0		
2nd Coat: 6-Color Tneme-Cryl	<u>2.0 - 3.0</u>		
		Dry Film Thickness	4.0 - 6.0
		Minimum	5.0 Mils

2. System No. 66-4: Epoxy-Polyamide (Interior/Exterior)

Series 66 provides excellent protection from abrasion, moisture, corrosive fumes and chemical contact. For exterior exposures, topcoat with Series 73, or 74 Endura-Tone for gloss and color retention.

Surface Preparation: Surfaces shall be clean and dry. Allow concrete to cure for 28 days. SSPC-SP-7 Brush-Off Blast Clean.

1st Coat: 66-Color Hi-Build Epoxoline	3.0 - 5.0		
2nd Coat: 66-Color Hi-Build Epoxoline	<u>4.0 - 6.0</u>		
		Dry Film Thickness	7.0 -11.0
		Minimum	9.0 Mils

3. System No. 83-1: High Solids Catalyzed Epoxy (Interior)

Surface Preparation: Surface shall be clean and dry. Allow concrete to cure for 28 days. SSPC-SP-7 Brush Off Blast Clean. Concrete block surfaces: Allow to cure 28 days. Level fins, protrusions and mortar splatter.

1st Coat: 83-Color Ceramlon II	6.0 - 10.0		
2nd Coat: 83-Color Ceramlon II	<u>6.0 - 10.0</u>		
		Dry Film Thickness	12.0 - 20.0
		Minimum	14.0 Mils

D. IMMERSION - POTABLE & NON-POTABLE WATER

1. System No. 66-4: Epoxy Polyamide (Non-Potable Water)

Surface irregularities and bug holes should be filled to a smooth uniform appearance as required with TNEMEC Series 63-1500 Filler and Surfacer.

Surface Preparation: SSPC-SP-7 Brush-Off Blast Cleaning

1st Coat: 66-Color Hi-Build Epoxoline	4.0 - 6.0
---------------------------------------	-----------

2nd Coat: 66-Color Hi-Build Epoxoline	<u>4.0 - 6.0</u>		
		Dry Film Thickness	8.0 -12.0
		Minimum	10.0 Mils

2. System No. 104-5: High Solids Epoxy (Non-Potable Water)

Surface irregularities and bug holes should be filled to a smooth uniform appearance as required with TNEMEC Series 63-1500 Filler and Surfacer.

Surface Preparation: SSPC-SP-7 Brush-Off Blast Cleaning

1st Coat: 104-1255 H.S. Epoxy Primer	<u>6.0 - 10.0</u>		
2nd Coat: 104 Color H.S. Epoxy	<u>6.0 - 10.0</u>		
		Dry Film Thickness	12.0 - 20.0
		Minimum	14.0 Mils

3. System No. 46-31: Coal Tar-Epoxy (Non-Potable Water)

May be applied in a two-coat application. Review critical recoat time is utilized. Surface irregularities and bugholes should be filled to a smooth uniform appearance as required with TNEMEC Series 63-1500 Filler and Surfacer.

Surface Preparation: Brush-Off Blast Cleaning

One Coat: 46H-413 Hi-Build Tneme-Tar		Dry Film Thickness	14.0-20.0
--------------------------------------	--	--------------------	-----------

4. System No. 45-27: Coal Tar Epoxy (Non-Potable Only)

Must be recoated within four days at 75deg F. Higher temperature will shorten recoat time.

Surface Preparation: Brush-Off Blast Cleaning

1st Coat: 46-413 Tneme Tar	<u>8.0 - 10.0</u>		
2nd Coat: 46-413 Tneme Tar	<u>8.0 - 10.0</u>		
		Dry Film Thickness	16.0 - 20.0
		Minimum	16.0 Mils

5. System No. 20-2 Epoxy-Polyamide (Potable Water)

This system meets American Water Works Association AWWA D 102 Inside System No. 1. Series 20 meets the new requirements of approval for potable water use as established by the National Sanitation Foundation Standard 61. Surface irregularities and bug holes should be filled to a smooth uniform appearance as required with TNEMEC Series 63-1500 Filler and Surfacer. (NSF Standard 61 approved). Substitute Series FC20 for low temperature cure or quick recoats.

Surface Preparation: SSPC-SP10 Near White Blast Cleaning

1st Coat: 20-1255 Pota-Pox	<u>4.0 - 6.0</u>		
2nd Coat: 20-WH02 Pota-Pox Finish	<u>4.0 - 6.0</u>		
		Dry Film Thickness	8.0 - 12.0

Minimum 10.0 Mils

6. System No. 139-2: Epoxy-Polyamine (Potable Water)

Series 139 meets the new requirements of approval for potable water use as established by the National Sanitation Foundation Standard 61. Surface irregularities and bug holes should be filled to a smooth uniform appearance as required with TNEMEC Series 63-1500 Filler and Surfacer. (NSF Standard 61 approved.)

Surface Preparation: SSPC-SP10 Near-White Blast Cleaning

1st Coat: 139-1255 Pota-Pox II	6.0 - 8.0		
2nd Coat: 139-WH02 Pota-Pox II	<u>6.0 - 8.0</u>		
		Dry Film Thickness	12.0 - 16.0
		Minimum	14.0 Mils

E. INTERIOR EXPOSURE (NON-IMMERSION)

1. System No. 104-3: High Solids Epoxy

This system will produce a slick, tile-like finish that has excellent chemical and water resistance. Surface will be easy to clean.

Surface Preparation: Surface to be clean and dry.

1st Coat: 104-Color H.S. Epoxy	6.0 - 8.0		
2nd Coat: 104-Color H.S. Epoxy	<u>6.0 - 8.0</u>		
		Dry Film Thickness	12.0 - 16.0
		Minimum	14.0 Mils

2. System No. 113-1: Acrylic-Epoxy Semi-Gloss

This system will provide high performance and can be applied directly over existing coatings without lifting. Can be used when low odor is required during application. Specify Series 114 Tneme-Tuffcoat for Gloss Finish.

Surface Preparation: Surface must be clean and dry.

One Coat: 113-Color Tneme-Tuffcoat		Dry Film Thickness	4.0 - 6.0
------------------------------------	--	--------------------	-----------

3.19 CONCRETE FLOORS

A. EPOXY FLOOR COATINGS

1. System No. 67-1: Epoxy-Polyamide

This system will provide a durable, long-wearing coating that bonds tightly to concrete and stands up under heavy foot traffic, frequent cleaning and spillage of water, oil, grease, or chemical.

Surface Preparation: Acid Etch or Brush-Off Blast Cleaning

1st Coat: 67-Color Tnema-Tread	2.0 - 3.0		
2nd Coat: 67-Color Tnema-Tread	<u>2.0 - 3.0</u>		
		Dry Film Thickness	4.0 - 6.0
		Minimum	5.0 Mils

2. System No. S67-1: Epoxy-Polyamide (Non-Skid)

This system will provide the same protection and durability as System 67-1 with the addition of a non-skid finish.

Surface Preparation: Acid Etch or Brush-Off Blast Cleaning

1st Coat: S67-Color Tneme-Tread	2.0 - 3.0		
2nd Coat: 67-Color Tneme-Tread	<u>2.0 - 3.0</u>		
		Dry Film Thickness	4.0 - 6.0
		Minimum	5.0 Mils

3. System No. 73-12: Epoxy/Urethane

This system will provide maximum protection against chemical splash and spillage, wet conditions and abrasion. Specify Series 70 Endura-Shield for Gloss finish. First coat must be thinned 20% prior to application. For non-skid finish, specify Series S67 Tneme-Tread for the first and second coat.

Surface Preparation: Acid Etch or Brush-Off Blast Cleaning

1st Coat: 67-Color Tneme-Tread	2.0 - 3.0		
2nd Coat: 67-Color Tneme-Tread	2.0 - 3.0		
3rd Coat: 71-Color Endura-Shield	<u>1.5 - 2.5</u>		
		Dry Film Thickness	5.5 - 8.5
		Minimum	6.5 Mils

4. System No. 281-1: High Build Polyamine-Epoxy Floor

Please refer to manufacturer's Installation Guide and Technical Data for proper installation.

Surface Preparation: Abrasive blast cleaning (refer to Installation Guide of manufacturer).

1st Coat: 201 Epoxoprime	6.0 - 8.0		
2nd Coat: 281 Tneme-Glaze	<u>6.0 - 8.0</u>		
		Dry Film Thickness	12.0 - 16.0
		Minimum	14.0 Mils

5. System No. 221/281: Functional Flooring (Non-Slip)

Please refer to manufacturer's Installation Guide and Technical Data for proper installation.

Surface Preparation: Abrasive blast cleaning (refer to Installation Guide of manufacturer).

1st Coat: 201 Epoxoprime	6.0 - 8.0
2nd Coat: 221 Lami-Tread (2 cts. @ 1/16" ea.)	1/8"
3rd Coat: 281 Tneme-Glaze	<u>8.0 - 12.0</u>
	Minimum Dry Film Thickness 1/4"+

3.20 POROUS MASONRY

A. EXTERIOR/INTERIOR EXPOSURE

1. System No. 52-2: Modified Epoxy - Sand Texture

First coat of Tneme-Crete will act as a filler coat while the second coat will completely seal and finish. Long-term life and high performance. Available in Series 55 Tneme-Crete smooth finish.

Surface Preparation: Surface shall be clean and dry.

1st Coat: 52-Color Tneme-Crete 60 - 80 SF
2nd Coat: 52-Color Tneme-Crete Per Gal/Per Coat

2. System No. 6-2: Acrylic Emulsion, Low Sheen

This system will fill the block and provide a sealed surface. For Semi-Gloss Finish, use 7-Color Tneme-Cryl S/G.

Surface Preparation: Surface shall be clean and dry.

1st Coat: 54-562 Modified Epoxy Masonry Filler

80 SF Gal

2nd Coat: 6-Color Tneme-Cryl 2.0 - 3.0
3rd Coat: 6-Color Tneme-Cryl 2.0 - 3.0

*4.0 - 6.0

*Total Dry Film Thickness of Topcoats Only.

3. System No. 66-15: Epoxy-Polyamide (Interior)

Block Filler is a modified epoxy designed for high moisture.

Surface Preparation: Surface shall be clean and dry.

1st Coat: 54-660 Epoxy Masonry Filler 100 SF/Gal
2nd Coat: 66-Color Hi-Build Epoxoline 4.0 - 6.0
3rd Coat: 66-Color Hi-Build Epoxoline 4.0 - 6.0

*8.0 - 12.0

*Total Dry Film Thickness of Topcoats Only.

4. System No. 104-6: High Solids Epoxy (Interior Only)

This system will produce a film thickness of 16 mils. The surface will be tile-like for

easy cleaning and will provide protection against chemical attack, corrosive fumes, high humidity and wash down. Backfold first coat to fill porosity.

Surface Preparation: Surface to be clean and dry.

1st Coat: 104-Color H.S. Epoxy	6.0 - 10.0		
2nd Coat: 104-Color H.S. Epoxy	<u>6.0 - 10.0</u>		
		Dry Film Thickness	12.0 - 20.0
		Minimum	14.0 Mils

5. System No. 113-1: Acrylic-Epoxy Semi-Gloss (Interior Only)

Series 113 Tneme-Tufcoat has very low odor and can be used when painting in occupied areas. Specify Series 114 Tneme-Tufcoat for a gloss finish.

Surface Preparation: Surface must be clean and dry.

1st Coat: 130 Envirofill	100 SF/Gal		
2nd Coat: 113-Color Tnema-Tufcoat*	<u>4.0 - 6.0</u>		
			**4.0 - 6.0

* Two coats may be required if applied by roller

** Total Dry Film Thickness of Topcoats Only

6. System No. 156-1: Modified Acrylic Elastomer

If texture is needed, use 157 Enviro-Crete TX (medium texture of 159 Enviro-Crete XTX - coarse texture). For application over previously applied coatings, use TNEMEC 151 Elasto-Grip at 1.0 - 2.5 mils DFT.

Surface Preparation: Surfaces must be clean and dry.

1st Coat: 130 Envirofill	100 SF/Gal		
2nd Coat: 156-Color Enviro-Crete	4.0 - 8.0		
3rd Coat: 156-Color Enviro-Crete	<u>4.0 - 8.0</u>		
		Dry Film Thickness	8.0 - 16.0
		Minimum	10.0 Mils
			(For 2nd & 3rd Coats)

3.21 GYPSUM WALLBOARD

A. INTERIOR EXPOSURE

1. System No. 111-5: Acrylic-Epoxy

Surface Preparation: Surface must be clean and dry.

1st Coat: 51-792 PVA Sealer	1.0 - 2.0		
2nd Coat: 113 H.B. Tnemetufcoat*	<u>4.0 - 5.0</u>		
		Dry Film Thickness	5.0 - 7.0
		Minimum	6.0 Mils

*Two coats may be required if application is by brush and roller.

2. System No. 66-22: Hi-Build Epoxoline

Surface Preparation: Surface must be clean and dry.

1st Coat: 51-792 PVA Sealer	1.0 - 2.0		
2nd Coat: 66-Color Hi-Build Epoxoline*	<u>4.0 - 6.0</u>		
		Dry Film Thickness	5.0 - 8.0
		Minimum	5.0 Mils

*Two coats may be required if applied by roller

3. System No. 6-1: Acrylic Emulsion, Low Sheen
(Interior/Exterior Exposure)

This system is designed for mild use areas like office walls, laboratory ceilings, stairwells, etc. For Semi-Gloss finish, use 7-color Tneme-Cryl S/G.

Surface Preparation: Surface must be dry and clean.

1st Coat: 6-Color Tneme-Cryl	2.0 - 3.0		
2nd Coat: 6-Color Tneme-Cryl	<u>2.0 - 3.0</u>		
		Dry Film Thickness	4.0 - 6.0
		Minimum	5.0 Mils

3.22 WOOD

A. EXTERIOR/INTERIOR EXPOSURE

1. System No. 23-4: Alkyd Semi-Gloss

Specify Series 2H Hi-Build Tneme-Gloss for High Gloss finish.

Surface Preparation: Surface shall be clean and dry.

1st Coat: 36-603 Undercoater	2.5 - 3.5		
2nd Coat: 23 Enduratone	1.5 - 3.5		
3rd Coat: 23 Enduratone	<u>1.5 - 3.5</u>		
		Dry Film Thickness	5.5 - 10.5
		Minimum	6.0 Mils

2. System No. 6-5: Acrylic Latex

Substitute Series 7 if semi gloss finish is desired.

Surface Preparation: Surface shall be clean and dry.

1st Coat: 36-603 Undercoater	2.0 - 3.5		
2nd Coat: 6-Color Tneme-Cryl	2.0 - 3.0		
3rd Coat: 6-Color Tneme-Cryl	<u>2.0 - 3.0</u>		
		Dry Film Thickness	6.0 - 9.5
		Minimum	7.5 Mils

3.23 PVC PIPE

A. EXTERIOR OR INTERIOR

System No. 66-23: Epoxy-Polyamide

Optional topcoat of Series 73/74 Endura-Shield would give long-term color and gloss retention for exterior exposure.

Surface Preparation: Surface shall be clean and dry.

One Coat: 66-Color Hi-Build Epoxoline

Dry Film Thickness 4.0 - 6.0

3.24 INSULATED PIPE

A. INTERIOR EXPOSURE

System No. 6-1: Acrylic Emulsion, Low Sheen

For semi-gloss finish, use 7-Color Tneme-Cryl S/G.

Surface Preparation: Surface shall be clean and dry.

1st Coat: 6-Color Tneme-Cryl

2.0 - 3.0

2nd Coat: 6-Color Tneme-Cryl

2.0 - 3.0

Dry Film Thickness 4.0 - 6.0
Minimum 5.0 Mils

3.25 HIGH HEAT COATING

A. EXTERIOR/INTERIOR EXPOSURE

1. System No. 39-2: Silicone Aluminum (1200deg F Maximum)

Surface Preparation: SSPC-SP10 Near-White Blast Cleaning - 1.0 Mil Surface Profile

1st Coat: 39-1261 Silicone Aluminum

1.0 - 1.5

2nd Coat: 39-1261 Silicone Aluminum

1.0 - 1.5

Dry Film Thickness 2.0 - 3.0
Minimum 2.0 Mils

2. System No. 39-4: Silicone Aluminum (600deg F Maximum)

Surface Preparation: SSPC-SP10 Near-White Blast Cleaning - 1.0 Mil Surface Profile

1st Coat: 39-661 Silicone Aluminum

1.0 - 1.5

2nd Coat: 39-661 Silicone Aluminum

1.0 - 1.5

Dry Film Thickness 2.0 - 3.0
Minimum 2.0 Mils

3.26 SURFACES EXPOSED TO H2S/H2SO4 (SEVERE EXPOSURE/IMMERSION)

A. CEMENTITIOUS SURFACES

System No. 120-1: Vinester

Surface Preparation: Abrasive blast clean to remove all laitance, fines and contamination.

1st Coat: 120-5002 Vinester	6.0 - 10.0*		
2nd Coat: 120-5003 Vinester F&S	As Required**		
3rd Coat: 120-5002 Vinester	12.0 - 18.0		
4th Coat: 120-5001 Vinester	<u>12.0 - 18.0</u>		
	Dry Film Thickness	30.0 - 46.0	
	Minimum	36.0 Mils+	

*First coat is to be applied by roller application or spray applied followed by backrolling.

**All surface voids, cracks, pinholes and other defects must be filled flush with the adjacent surfaces by putty knife, trowel, float, squeegee, or other suitable method.

B. FERROUS METAL SURFACES

System No. 120-2: Vinyl Ester

Surface Preparation: SSPC-SP-5 White Metal Blast Cleaning (3.0 Mil Profile)

1st Coat: 120-5002 Vinester	12.0 - 18.0		
2nd Coat: 120-5001 Vinester	<u>12.0 - 18.0</u>		
	Dry Film Thickness	24.0 - 36.0	
	Minimum	30.0 Mils	

3.27 EXTERIOR OF PRESTRESSED CONCRETE TANKS

A. System No. 156-1: New Tanks

Surface Preparation: Surface to be clean and dry.

1st Coat: 156-Color Envirocrete	4.0 - 6.0		
2nd Coat: 156-Color Envirocrete	<u>4.0 - 6.0</u>		
	Dry Film Thickness	8.0 - 12.0	
	Minimum	10.0 Mils	

B. System No. 156-2: Existing Tanks (Previously Painted)

Major cracks (wider than 1/64") can be repaired with TNEMEC Series 152 Theme-Tape per instructions.

Surface Preparation: Remove all dirt, oil, grease, chalk, and loose paint per high pressure water blast (min. 3500 psi).

1st Coat: 151 Elasto-Grip	1.0 - 2.5		
Stripe Coat: Stripe all hairline cracks with a brushed coat of Series	3.0 - 5.0		

156 Envirocrete	
Topcoat: 156-Envirocrete	<u>4.0 - 6.0</u>
	Dry Film Thickness (Cracks) 8.0 - 13.5
	Dry Film Thickness (Other) 5.0 - 8.5

3.28 SECONDARY CONTAINMENT AREAS

A. System No. 66-4: Epoxy Polyamide

This system will provide excellent resistance to most chemicals including petrochemicals.

Surface Preparation: Surfaces shall be clean and dry. Allow new concrete to cure for 28 days. Abrasive Blast Clean per SSPC-SP7 (Brush Off Blast)

Primer: 66-Color Hi-Build Epoxoline	4.0 - 6.0	
Topcoat: 66-Color Hi-Build Epoxoline	<u>4.0 - 6.0</u>	
	Dry Film Thickness	8.0 - 12.0
	Minimum	10.0 Mils

B. System No. 61-1: Amine Epoxy

This system offers superior chemical resistance to a wide range of chemicals. Use TNEMEC Series 63-1500 between coats as a filler and surfacer wherever it is required.

Surface Preparation: Surfaces shall be clean and dry. Allow new concrete to cure for 28 days. Abrasive Blast Clean per SSPC-SP7 (Brush Off Blast).

Primer: 61-5002 Tneme-Liner (Beige)	8.0 - 12.0	
Topcoat: 61-5001 Tneme-Liner (Gray)	<u>8.0 - 12.0</u>	
	Dry Film Thickness	16.0 - 24.0

C. System 262-1: Flexible Polyurethane

Multiple passes may be required to achieve recommended film thickness. See Elasto-Shield application guide for additional instructions. This product is only available in black.

Surface Preparation: Surfaces shall be clean and dry. Allow new concrete to cure for 28 days. Abrasive Blast Clean per SSPC-SP7 (Brush Off Blast)

Coating: 262 Elasto Shield (Black)	Minimum Dry Film Thickness 50.0
------------------------------------	---------------------------------

3.29 CLEAR WATER REPELLENT FOR CONCRETE, MASONRY AND BRICK

A. Silane Sealer (Min. 20% Solids)

Surface Preparation: Allow new concrete to cure 28 days. Clean surfaces to be sealed by abrasive blasting or waterblasting.

COATING: BRICK, CONCRETE
HULS Chem-Trete BSM 20....75-200 SF/GAL

SPLIT FACED OR POROUS MASONRY

HULS Chemtrete PB.....35-100 SF/GAL

3.30 MANHOLES, WET WELLS AND LIFT STATIONS

A. System No. 120-1: Vinester

Surface Preparation: Abrasive blast clean to remove all laitance, fines and contamination.

1st Coat: 120-5002 Vinester	6.0 - 10.0*	
2nd Coat: 120-5003 Vinester F&S	As Required**	
3rd Coat: 120-5002 Vinester	12.0 - 18.0	
4th Coat: 120-5001 Vinester	<u>12.0 - 18.0</u>	
	Dry Film Thickness	30.0 - 46.0
	Minimum	36.0 Mils+

*First coat to be applied by roller application or spray applied followed by backrolling.

**All surface voids, cracks, pinholes and other defects must be filled flush with the adjacent surfaces by putty knife, trowel, float, squeegee, or other suitable method.

B. System No. 100-1: Crystalline Waterproofing

This system can be applied to concrete that is still wet or has not developed final cure. It can be used where wet surface conditions exist or where there is the potential for water intrusion due to hydrostatic pressure.

Surface Preparation: Surface to be clean and roughened by Brush Blasting or Acid Etching.

1st Coat: XYPEX Concentrate @ 1.5 lbs./SY
2nd Coat: XYPEX Modified @ 1.5 lbs./SY

3.31 CANAL PIPE CROSSINGS

A. System 90-97: Zinc/Epoxy/Urethane for New Pipe or Pipe Requiring Removal of Existing Coatings

Surface Preparation: SSPC-SP6 Commercial Blast Cleaning

Primer: 90-97 Tneme-Zinc	2.5 - 3.5	
2nd Coat: 66-Color Hi-Build Epoxoline	2.0 - 3.0	
3rd Coat: 74-Color Endurashield	<u>2.0 - 3.0</u>	
	Dry Film Thickness	6.5 - 9.5
	Minimum	8.0 Mils

B. System No. 135-2: High Build, High Gloss Urethane for Marginally Cleaned Surfaces or Topcoating Over Existing Systems

Surface Preparation: High Pressure Water Blast (min. 3500 psi) or Solvent Clean (SSPC-SP1) and Spot Hand and Power Tool Clean (SSPC-SP 2 & 3) or Brush Blast (SSPC-SP7). Existing coatings must be clean, dry and tightly adhering prior to application of coatings.

1st Coat: 135-Color Chembuild	3.0 - 4.0
2nd Coat: 74-Color Endurashield	<u>2.0 - 3.0</u>

C. Ductile Iron Pipe (Above grade)

A test patch is always recommended to insure proper adhesion to existing coatings without lifting of existing coatings.

Surface Preparation: Clean and dry. (Do not solvent clean.)

1st Coat: TNEMEC Series 66*	3.0 - 5.0
2nd Coat: TNEMEC Series 66	3.0 - 5.0
Minimum Dry Film Thickness 6.0 - 10.0	

*Allow the black asphaltic coating to "bleed" through the first coat. After the first coat is cured, apply second coat.

3.32 PROJECT DESIGNER SYSTEMS REFERENCE GUIDE

A. STEEL

EXTERIOR (NON-IMMERSION)

- A.1 System No. 73-1: Epoxy/High Build Urethane
- A.2 System No. 73-2: High Build Urethane
- A.3 System No. 2H-3: Alkyd Gloss
- A.4 System 90-97: Zinc/Epoxy/Urethane

INTERIOR EXPOSURE (NON-IMMERSION)

- B.1 System No. 69-1: High Solids Epoxy
- B.2 System No. 66-2: High Build Epoxy
- B.3 System No. 66-6: High Build Epoxy

IMMERSION

- C.1 System No. 69-2: High Solids Epoxy (Non-Potable)
- C.2 System No. 66-2: High Build Epoxy (Non-Potable)
- C.3 System No. 20-1: Epoxy-Polyamide (Potable)
- C.4 System No. 140: High Solids Epoxy (Potable Water)
- C.5 System No. 46-30: High Build Coat Tar Epoxy (Non-Potable Only)
- C.6 System No. 46-26: Coal Tar Epoxy (Non Potable Water Only)

B. OVERHEAD METAL DECKING, JOIST (INTERIOR EXPOSURE)

System No. 15-1: Uni-Bond

C. OVERHEAD METAL DECKING, JOINT (EXTERIOR EXPOSURE)

System No. 135-1: Chembuild

D. MILL COATED STEEL PIPE

System No. 66-3: Epoxy Polyamide

E. GALVANIZED STEEL-PIPE AND MISCELLANEOUS FABRICATORS

System No. 73-1: Epoxy/High Build Urethane

F. GALVANIZED STEEL-INTERIOR EXPOSURE (NON-IMMERSION) AND ALUMINUM IN CONTACT WITH CONCRETE

System No. 66-6: Polyamide Epoxy

G. GALVANIZED STEEL - IMMERSION (POTABLE WATER)

System No. 20-1: Epoxy Polyamide (Potable Water)

H. CHAIN LINK FENCES

System No. 22-1: Oil-Cementitious

I. CONCRETE

EXTERIOR-ABOVE GRADE

- A.1 System No. 52-1: Modified Epoxy-Sand Texture
- A.2 System No. 6-1: Acrylic Emulsion Low Sheen
- A.3 System No. 156-1: Modified Acrylic Elastomer

EXTERIOR-BELOW GRADE

- B.1 System No. 46-61: Coal Tar Pitch Solution
- B.2 System No. 46-31: Coal Tar Epoxy
- B.3 System No. 100-1: Crystalline Waterproofing

EXTERIOR/INTERIOR EXPOSURE (NON-IMMERSION)

- C.1 System No. 6-1: Acrylic Emulsion Low Sheen
- C.2 System No. 66-4: Epoxy-Polyamide
- C.3 System No. 83-1: High Solids Catalyzed Epoxy

IMMERSION (POTABLE & NON-POTABLE)

- D.1 System No. 66-4: Epoxy-Polyamide (Non-Potable)
- D.2 System No. 104-5: High Solids Epoxy (Non-Potable)
- D.3 System No. 46-31: High Build Coal Tar Epoxy (Non-Potable Only)
- D.4 System No. 46-27: Coal Tar Epoxy (Non Potable Only)
- D.5 System No. 20-2: Epoxy Polyamide (Potable)
- D.6 System No. 139-2: Epoxy Polyamide (Potable)

INTERIOR EXPOSURE (NON-IMMERSION)

- E.1 System No. 104-3: High Solids Epoxy
- E.2 System No. 113-1: Acrylic Epoxy Semi-Gloss

J. CONCRETE FLOORS

- A.1 System No. 67-1: Epoxy-Polyamide
 - A.2 System No. S67-1: Epoxy-Polyamide (Non-Skid)
 - A.3 System No. 73-12: Epoxy/Urethane
 - A.4 System No. 281-1: High Build Polyamide-Epoxy Flooring
 - A.5 System No. 221/281: Functional Flooring (Non-Slip)
- K. POROUS MASONRY - EXTERIOR/INTERIOR EXPOSURE
- A.1 System No. 52-2: Modified Epoxy-Sand Texture
 - A.2 System No. 6-2: Acrylic Emulsion, Low Sheen
 - A.3 System No. 66-15: Epoxy-Polyamide (Interior)
 - A.4 System No. 104-6: High Solids Epoxy (Interior Only)
 - A.5 System No. 113-1: Acrylic Epoxy Semi-Gloss (Interior Only)
 - A.6 System No. 156-1: Modified Acrylic Elastomer
- L. GYPSUM WALLBOARD
- A.1 System No. 111-5: Acrylic Epoxy
 - A.2 System No. 66-22: Hi-Build Epoxoline
 - A.3 System No. 6-1: Acrylic Emulsion, Low Sheen
- M. WOOD EXTERIOR/INTERIOR EXPOSURE
- A.1 System No. 23-4: Alkyd Semi-Gloss
 - A.2 System No. 6-5: Acrylic Latex
- N. PVC PIPE EXTERIOR/INTERIOR EXPOSURE
- A.1 System No. 66-23: Epoxy-Polyamide
- O. INSULATED PIPE-INTERIOR EXPOSURE
- A.1 System No. 6-1: Acrylic Emulsion, Low Sheen
- P. HIGH HEAT SURFACES-FERROUS METAL
- A.1 System No. 39-2: Silicone Aluminum (1200deg F Maximum)
 - A.2 System No. 39-4: Silicone Aluminum (600deg F Maximum)
- Q. SURFACES EXPOSED TO H₂S/H₂SO₄ (SEVERE EXPOSURE/IMMERSION)
- A.1 System No. 120-1: Vinester
- R. EXTERIOR OF PRESTRESSED CONCRETE TANKS
- A. System 156-1: New Tanks
 - B. System 156-2: System 156-2 Existing Tanks (Previously Painted)
- S. SECONDARY CONTAINMENT AREAS
- A. System No. 64-4: Epoxy Polyamide
 - B. System No. 61-1: Amine Epoxy

C. System No. 262-1: Flexible Polyurethane

T. CLEAR WATER REPELLENT FOR CONCRETE, MASONRY AND BRICK

A. Silane Sealer (Min. 20% Solids)

U. MANHOLES, WET WELLS & LIFT STATIONS

A. System No. 120-1: Vinester

B. System No. 100-1: Crystalline Waterproofing

V. CANAL PIPE CROSSINGS

A. System No. 90-97: Zinc/Epoxy/Urethane

B. System No. 135-2: High Build/High Gloss Urethane

C. Ductile Iron Pipe Above Grade: Series 66 High Build Epoxy

3.33 COATING SCHEDULE - TO BE DEVELOPED BY PROJECT AS NEEDED

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 22" square by 24" tall enclosure 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 one-piece molded fiberglass/resin enclosure with polyester coating; 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 equivalent. 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

SECTION 09970 SURFACE PROTECTION SPRAY SYSTEM

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. The Contractor shall furnish all labor, materials, equipment and incidentals required to install and test the coating system complete and ready for operation for the structures listed in the specifications and as shown on the Drawings.
- B. The work includes coating of all surfaces as shown and specified on the Drawings. This includes, but is not limited to stairs, walls, floors, concrete divider, concrete slabs, manholes wet wells, and all other work obviously required to be coated unless otherwise specified herein or on the Drawings. The omission of minor items in the Schedule of Work shall not relieve the Contractor of his obligation to include such items where they come within the general intent of the Specification as stated herein.

1.02 RELATED WORK

- A. Bypass pumping is the responsibility of the General Contractor.
- B. Concrete surface cleaning in each lift station is the responsibility of the General contractor.
- C. Removal and offsite disposal of rubble is the responsibility of the General Contractor.

1.03 SUBMITTALS

- A. Submit to the County shop drawings and schedules of all surfacing systems and appurtenances required. Submit design data and specification data sheets listing all parameters used in the surfacing system design and thickness calculations based on applicable provisions of ASTM.
- B. Submit to the County the name of the surfacing supplier, a list of materials to be furnished, and the qualification (per 1.05 A) of the application contractor.

1.04 REFERENCE STANDARDS

- A. American Society for Testing and Materials (ASTM)

ASTM D-638
ASTM D-790
- B. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

1.05 QUALIFICATIONS

- A. The Contractor performing the surfacing work shall be fully qualified, experienced a minimum of seven years and equipped to complete this work expeditiously and in a satisfactory manner. The Contractor shall submit the following information to the County for review and approval before any surfacing work is performed.
 - 1. The number of years of experience in performing this type of specialized work must

be seven years minimum.

2. Name of the surfacing manufacturer and supplier for this work and previous work listed below. The Contractor shall be an approved installer as certified and licensed by the surfacing manufacturer and equipment supplier.
3. A list of clients that the Contractor has performed this type of work.
 - a. The list shall contain names and telephone numbers of persons who can be called to verify previous satisfactory performance.
 - b. Installation dates and a description of the actual work performed.
 - c. The surfacing manufacturer shall provide an installation list of his product used for similar sewer rehabilitation projects. The list shall provide the same information as required in paragraphs 3.a and 3.b above.

- B. The County reserves the right to approve or disapprove the Contractor, based on the submitted qualifications.

1.06 GUARANTEE

All surfacing shall be guaranteed by the Contractor for a period of five years from the date of acceptance. During this period, all defects discovered in the surfacing, as determined by the County, shall be repaired or replaced in a satisfactory manner at no cost to the County, this shall include, but is not limited to, all work and costs associated with the shut down of any pump stations and all bypass operations needed for the proper repairs to be made.

1.07 QUALITY ASSURANCE

- A. All surfacing products shall be from a single manufacturer. The supplier shall be responsible for the provisions of all test requirements specified in ASTM Standards D-638 and D-790 as applicable.
- B. The Contractor shall employ specialty workers who have proven ability to perform the Work included herein. This will consist of a minimum of two years or two project experiences installing this product. This is a requirement for each and every employee.

1.08 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

- A. The material sprayed onto the surface shall be a urethane resin system formulated for the application within a sanitary sewer environment. The urethane will exhibit suitable corrosion

resistance to corrosive gases and fluids found within domestic sanitary sewage. Unless dictated by varying effluent, the spray system shall be a urethane and exhibit the cured physical strengths specified herein.

- B. When cured, the surface coating shall form a continuous, tight-fitting, hard, impermeable surfacing data which is suitable for sewer system service and chemically resistant to any chemicals or vapors normally found in domestic sewage.
- C. The surface shall be an integral part of the structure being rehabilitated after being placed and cured. The surface shall cover the complete interior of the existing structure. The surface shall provide a continuous watertight seal or barrier.
 - 1. The surface shall effectively seal the interior surfaces of the structure and prevent any penetration or leakage of groundwater infiltration.
 - 2. Provide water resistance data on surface based on ASTM Standards.
 - 3. The surface shall be compatible with the thermal conditions of existing sewer lift stations and manholes. Surface temperature will range from 30 to 80 degrees F. Provide test data on thermal compatibility based on ASTM Standards.

2.02 MATERIALS

- A. Approved materials include
 - 1. Aquatapoxy A-6 and Raven 405 epoxy by Raven Lining Systems
 - 2. Green Monster
 - 3. Sauereisen 210 system (210T & 210GL - Manatee County Light Brown Formula)
 - 4. SpectraShield system
 - 5. Spraywall Urethane by Sprayroq

- B. Polyurethane spray application shall comply with the following specifications:

The cured urethane system shall conform to the minimum physical standards, as listed below. The long-term data is for a 50-year design life of the process.

<u>Cured Urethane</u>	<u>Standard</u>	<u>Long-Term Data</u>
Tensile Stress	ASTM D-638	5,000 psi
Flexural Stress	ASTM D-790	10,000 psi
Flexural Modulus	ASTM D-790	550,000 psi

- C. Epoxy spray application shall be 100% VOC free / 100% solids.

PART 3 EXECUTION

3.01 SURFACE PREPARATION

- A. The contractor shall clean each structure and shall dispose of any resulting material.
- B. All contaminants including: oils, grease, incompatible existing coatings, waxes, form release, curing compounds, efflorescence, sealers, salts, or other contaminants shall be

removed.

- C. All concrete or mortar that is not sound or has been damaged by chemical exposure shall be removed to a sound concrete surface or replaced.
- D. Surface preparation method(s) should be based upon the conditions of the substrate, service environment and the requirements of the protective coating to be applied.
- E. Surfaces to receive protective coating shall be cleaned and abraded to produce a sound surface with adequate profile and porosity to provide a strong bond between the protective coating and the substrate. Generally, this can be achieved with a high pressure water cleaning using equipment capable of 5,000 psi at 4 gpm. Other methods such as abrasive blasting, shotblasting, grinding, scarifying or acid etching may also be used. Detergent water cleaning and hot water blasting may be necessary to remove oils, grease or other hydrocarbon residues from the concrete. Whichever method(s) are used, they shall be performed in a manner that provides a uniform, sound clean neutralized surface that is not excessively damaged.
- F. All infiltration shall be stopped by using a material which is compatible with and is suitable for topcoating with the specified protective coating.
- G. The area between the manhole and the manhole ring and any other area that might exhibit movement or cracking due to expansion and contraction, shall be grouted with a flexible grout or gel before surface coating spray application.
- H. All surfaces should be inspected by the Inspector during and after preparation and before the repair material is applied.
- I. No separate payment shall be made for any preparatory work required prior to application of the surface coating.

3.02 INSTALLATION

- A. The Contractor shall notify the Project Manager at least 48 hours in advance, giving the date, start time and estimated completion time for the work being conducted.
- B. The Contractor shall provide bypass pumping of sewage flows (as required) where and when the rehabilitation work is being performed. No flows will be permitted in the structure until the spray coating has properly cured to the manufacturer's specifications.
- C. The installation of the surface coating shall be in complete accordance with the applicable provisions of ASTM and the manufacturer's specifications. A representative of the manufacturer shall be present during the actual installation.
 - 1. Prior to placing the surface coating, the manufacturer's representative must approve the surface preparation work and installation conditions including temperatures.
 - 2. All surfaces shall be sufficiently smooth and even, to ensure good flow handling characteristics when complete.
 - 3. All surfaces shall have the surface coating applied to the required thickness by spray application.

- D. Application procedures shall conform to the recommendations of the protective coating manufacturer, including material handling, mixing, environmental controls during application, safety, and spray equipment.
- E. The spray equipment shall be specifically designed to accurately ratio and apply the specified protective coating materials and shall be regularly maintained and in proper working order.
- F. The protective coating material must be spray applied by a Certified Applicator of the protective coating manufacturer.
- G. Polyurethane spray application shall be applied such that all surfaces shall be coated in accordance with the manufactures recommended thickness but not be less than 125 mils.
- H. Epoxy spray application shall be applied such that all surfaces shall be coated in accordance with the following:
 1. Specified surfaces shall be coated by spray application of a moisture tolerant, solvent-free, 100% solids, epoxy protective coating as further described herein. Spray application shall be to a minimum wet film thickness in accordance with the following table or manufacturer's recommendation, whichever is greater:

Concrete, New/Smooth	80-100 mils for immersion, 60-80 mils for atmospheric, splash and spill exposure
Concrete, Rough	100-125+ mils
Masonry/Brick	125-150+ mils
Steel	16-80 mils for immersion, 16-40 mils for atmospheric, splash and spill exposure; also profile dependent
Fiberglass Systems	40-60 mils tack coat, 9 oz/yd ² fabric, 40-60 mils top coat. Varies with circumstances

2. Airless spray application equipment approved by the coating manufacturer shall be used to apply each coat of the protective coating. Air assisted spray application equipment may be acceptable, especially for thinner coats (<10 mils), only if the air source is filtered to completely remove all oil and water.
3. If necessary, subsequent topcoating or additional coats of the protective coating should occur as soon as the basecoat becomes tack free, ideally within 12 hours but no later than the recoat window for the specified products. Additional surface preparation procedures will be required if this recoat window is exceeded.

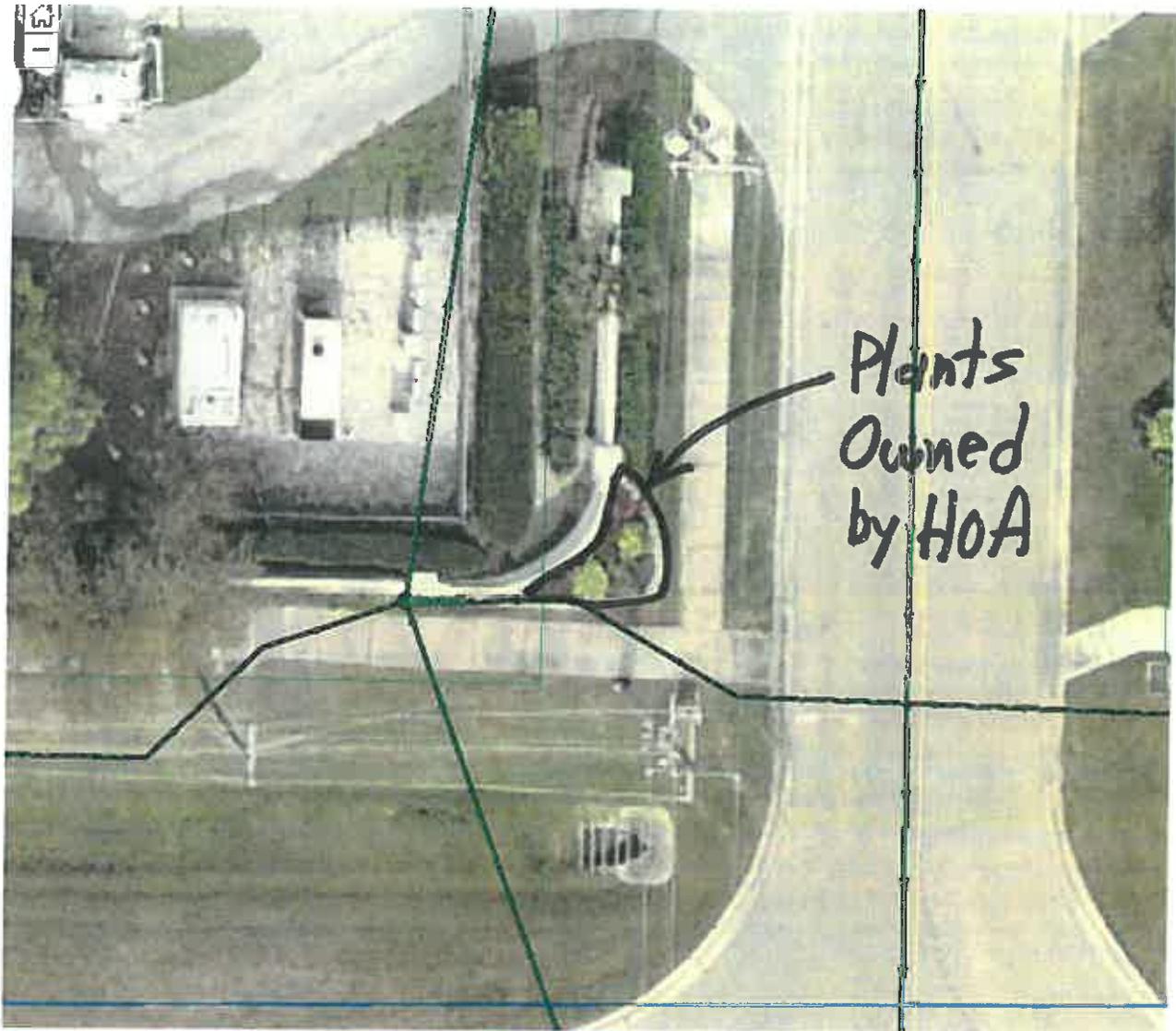
3.03 FIELD TESTING AND ACCEPTANCE

- A. Field acceptance of surface coatings shall be based on the County's evaluation of the proper surfacing of the structure and the appropriate installation and curing test data along with

review of the structure inspections.

- B. The surface coatings shall provide a continuous monolithic surfacing with uniform thickness throughout the structure interior. If the thickness of the coating surface is not uniform or is less than specified, it shall be repaired or replaced at no additional cost to the County.
 - 1. The County will measure the surface cured thickness from a specimen retrieved by the Contractor. The Contractor shall retrieve the specimen by physically cutting through the surfacing (by drilling or coring). There will be up to three thickness measurement locations in each structure. A suitable non-destructive type of thickness measurement may also be used.
 - 2. All the surface coating thickness measurement locations shall be repaired by the Contractor in accordance with the manufacturer's recommendations. These repairs shall be included in the five year surface coating guarantee.
- C. All pipe connections shall be open, clear, and watertight.
- D. There shall be no cracks, voids, pinholes, uncured spots, dry spots, lifts, delaminations or other type defects.
- E. If any defective surface coating is discovered after it has been installed, it shall be repaired or replaced in a satisfactory manner within 72 hours and at no additional cost to the County. This requirement shall apply for the entire five year guarantee period.

END OF SECTION



FM 41A Repairs
Bid Docs - Photo

-pages
1 of 5

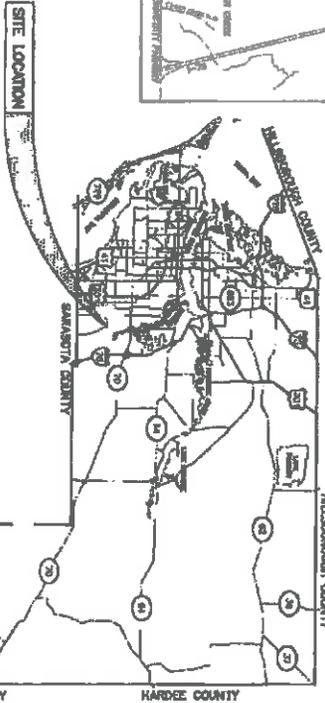
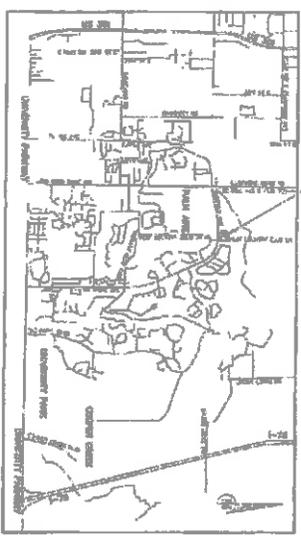


MANATEE COUNTY, FLORIDA LIFT STATION 41-A (RTU #454) REHABILITATION

PROJECT NO. 402-0019707

NOVEMBER 2003

RECORD DRAWINGS



NO. INDEX OF SHEETS

1	COVER SHEET
2	GENERAL NOTES & LOCATION MAP
3-4	MISCELLANEOUS DETAILS
5	EROSION CONTROL DETAILS

SEC-22, TWP-35S, RGE-18E

PLAN/PRIORITY or ROAD NO. By: [Signature] Date: _____ Checked: _____ Title: _____ State Hwy: N/A State Sect: N/A	DATE: _____ BY: [Signature] DATE: _____ CHECKED: _____ TITLE: _____	APPROVAL: _____ PROJECT MANAGER: _____ 	<p style="text-align: center;">COVER SHEET</p>	NO. 11/28/03 DATE: 11/28/03 TIME: 11:28 AM BY: [Signature] TITLE: [Signature]
--	--	---	---	---

GENERAL NOTES

- SCORES:**
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING SHOWER FLANS OF ALL TYPES DURING CONSTRUCTION.
 2. ALL PIPING SHALL INCLUDE ALL LEAKS, HISS AND DISCHARGE RESULTING TO BECAUSE OF THE LEAK POSITION DURING RECONSTRUCTION AND SHALL BE REPAIRED FROM THE EXISTING SERVICE SYSTEM TO THE NEW SERVICE SYSTEM.
 3. THE PLUMBING SYSTEMS SHALL BE INSTALLED TO THE EXISTING SERVICE SYSTEM TO THE EXISTING SERVICE SYSTEM.
 4. THE CONTRACTOR SHALL OBTAIN A DETAIL DRAWING FROM THE PLUMBING ENGINEER OF THE EXISTING SERVICE SYSTEM. APPROVAL OF THE PLUMBING ENGINEER SHALL BE OBTAINED BEFORE THE CONTRACTOR PROCEEDS WITH THE RECONSTRUCTION OF THE EXISTING SERVICE SYSTEM. APPROVAL OF THE PLUMBING ENGINEER SHALL BE OBTAINED BEFORE THE CONTRACTOR PROCEEDS WITH THE RECONSTRUCTION OF THE EXISTING SERVICE SYSTEM.
 5. THE INSTALLATION OF ALL NEW PIPING SHALL INCLUDE ALL COSTS ASSOCIATED WITH THE RECONSTRUCTION OF THE EXISTING SERVICE SYSTEM.
 6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND OBTAINING ALL NECESSARY APPROVALS FROM THE PLUMBING ENGINEER.
 7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND OBTAINING ALL NECESSARY APPROVALS FROM THE PLUMBING ENGINEER.
 8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND OBTAINING ALL NECESSARY APPROVALS FROM THE PLUMBING ENGINEER.
 9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND OBTAINING ALL NECESSARY APPROVALS FROM THE PLUMBING ENGINEER.
 10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND OBTAINING ALL NECESSARY APPROVALS FROM THE PLUMBING ENGINEER.
 11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND OBTAINING ALL NECESSARY APPROVALS FROM THE PLUMBING ENGINEER.
 12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND OBTAINING ALL NECESSARY APPROVALS FROM THE PLUMBING ENGINEER.
 13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND OBTAINING ALL NECESSARY APPROVALS FROM THE PLUMBING ENGINEER.
 14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND OBTAINING ALL NECESSARY APPROVALS FROM THE PLUMBING ENGINEER.
 15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND OBTAINING ALL NECESSARY APPROVALS FROM THE PLUMBING ENGINEER.
 16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND OBTAINING ALL NECESSARY APPROVALS FROM THE PLUMBING ENGINEER.
 17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND OBTAINING ALL NECESSARY APPROVALS FROM THE PLUMBING ENGINEER.
 18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND OBTAINING ALL NECESSARY APPROVALS FROM THE PLUMBING ENGINEER.

RECONSTRUCTION:

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE CONTRACT DOCUMENTS.
2. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE CONTRACT DOCUMENTS.
3. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE CONTRACT DOCUMENTS.
4. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE CONTRACT DOCUMENTS.
5. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE CONTRACT DOCUMENTS.
6. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE CONTRACT DOCUMENTS.
7. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE CONTRACT DOCUMENTS.
8. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE CONTRACT DOCUMENTS.
9. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE CONTRACT DOCUMENTS.
10. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE CONTRACT DOCUMENTS.
11. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE CONTRACT DOCUMENTS.
12. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE CONTRACT DOCUMENTS.
13. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE CONTRACT DOCUMENTS.
14. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE CONTRACT DOCUMENTS.
15. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE CONTRACT DOCUMENTS.
16. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE CONTRACT DOCUMENTS.
17. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE CONTRACT DOCUMENTS.
18. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE CONTRACT DOCUMENTS.

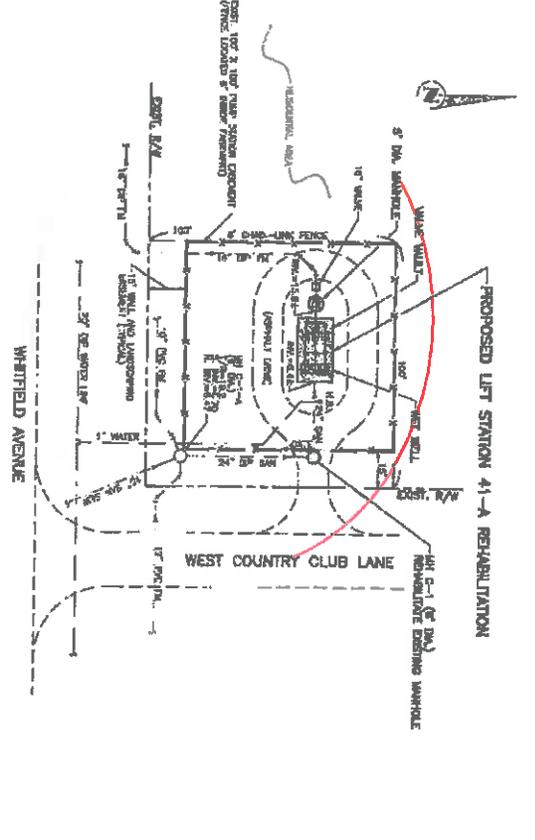
SUMMARY OF WORK IN THIS PROJECT

1. DEMOLITION AND RECONSTRUCTION OF THE EXISTING PLUMBING SYSTEM.
2. DEMOLITION AND RECONSTRUCTION OF THE EXISTING PLUMBING SYSTEM.
3. DEMOLITION AND RECONSTRUCTION OF THE EXISTING PLUMBING SYSTEM.
4. DEMOLITION AND RECONSTRUCTION OF THE EXISTING PLUMBING SYSTEM.
5. DEMOLITION AND RECONSTRUCTION OF THE EXISTING PLUMBING SYSTEM.
6. DEMOLITION AND RECONSTRUCTION OF THE EXISTING PLUMBING SYSTEM.
7. DEMOLITION AND RECONSTRUCTION OF THE EXISTING PLUMBING SYSTEM.
8. DEMOLITION AND RECONSTRUCTION OF THE EXISTING PLUMBING SYSTEM.
9. DEMOLITION AND RECONSTRUCTION OF THE EXISTING PLUMBING SYSTEM.
10. DEMOLITION AND RECONSTRUCTION OF THE EXISTING PLUMBING SYSTEM.
11. DEMOLITION AND RECONSTRUCTION OF THE EXISTING PLUMBING SYSTEM.
12. DEMOLITION AND RECONSTRUCTION OF THE EXISTING PLUMBING SYSTEM.
13. DEMOLITION AND RECONSTRUCTION OF THE EXISTING PLUMBING SYSTEM.
14. DEMOLITION AND RECONSTRUCTION OF THE EXISTING PLUMBING SYSTEM.
15. DEMOLITION AND RECONSTRUCTION OF THE EXISTING PLUMBING SYSTEM.
16. DEMOLITION AND RECONSTRUCTION OF THE EXISTING PLUMBING SYSTEM.
17. DEMOLITION AND RECONSTRUCTION OF THE EXISTING PLUMBING SYSTEM.
18. DEMOLITION AND RECONSTRUCTION OF THE EXISTING PLUMBING SYSTEM.

PLAN/SECTION	NO.	DATE	BY	CHECKED	DATE	PROJECT MANAGER
Site Plan	1	11/26/03	JL	JL		
General Notes	1	11/26/03	JL	JL		



LIFT STATION 41-A (RTU #454)
REHABILITATION
GENERAL NOTES AND LOCATION MAP



NO.	DATE	BY	CHECKED	DATE	PROJECT MANAGER
1	11/26/03	JL	JL		
2	11/26/03	JL	JL		

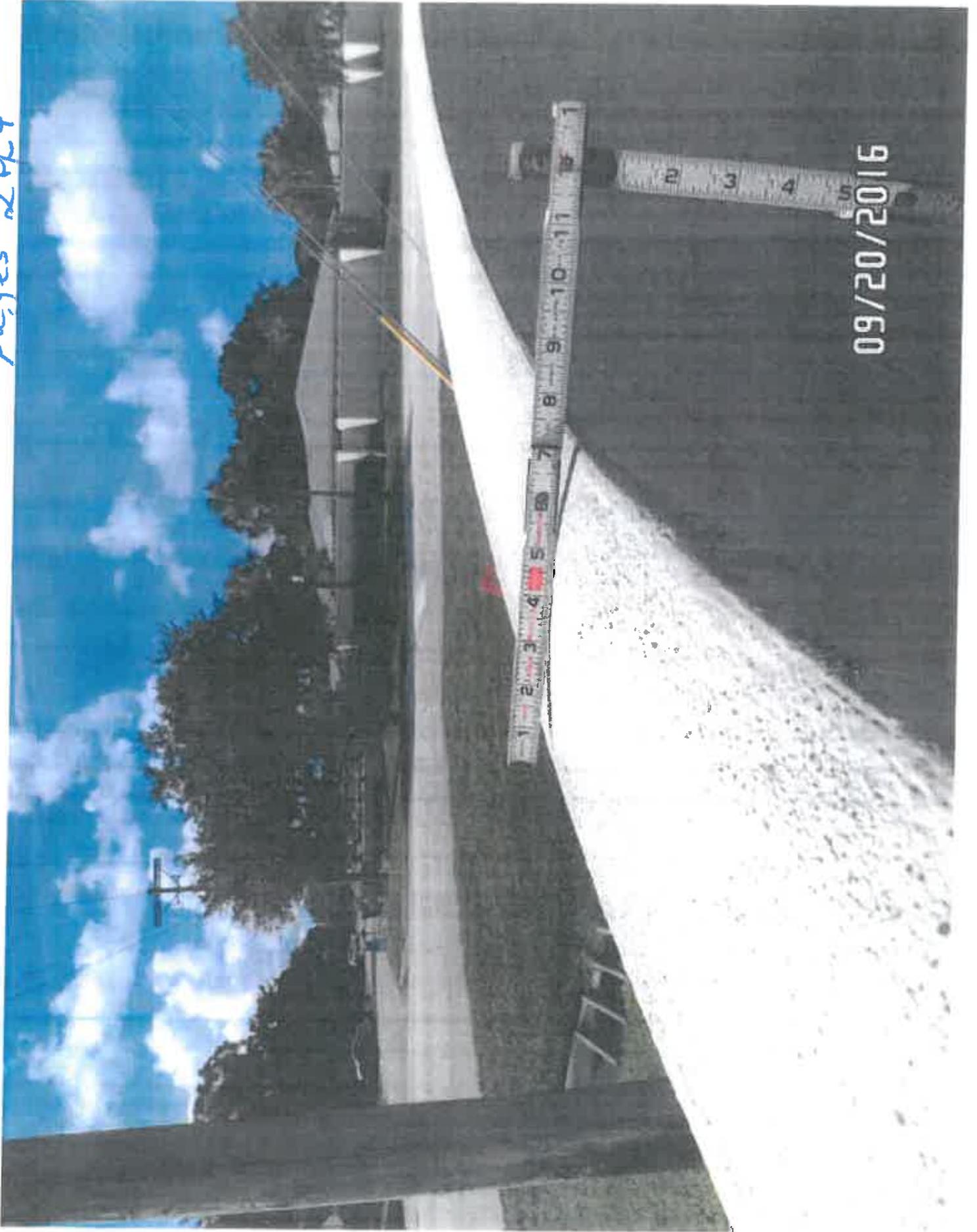
Pages 1 of 4



ATTACHMENT 'G'

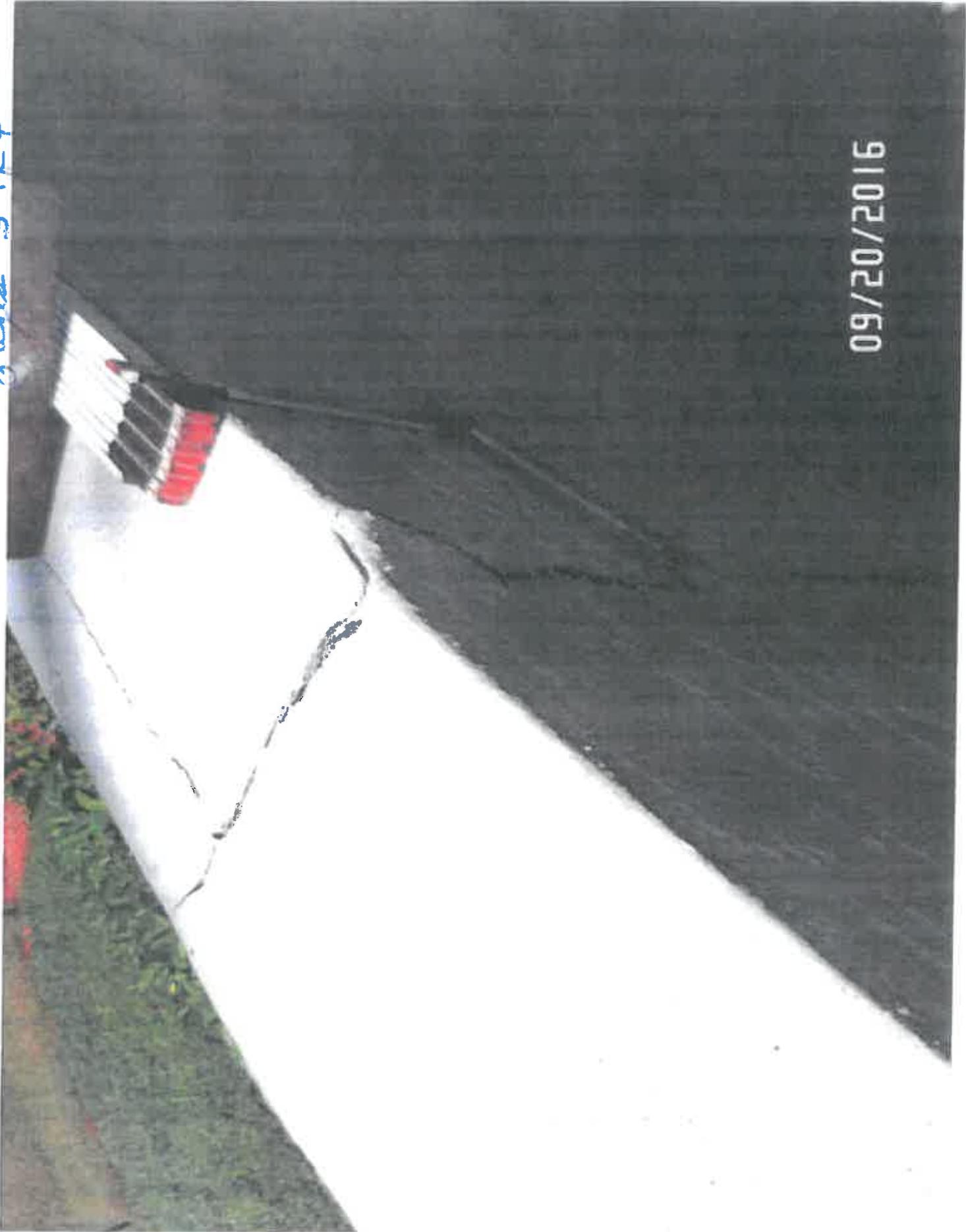
09/20/2016

Pages 2 & 4



09/20/2016

Bay 3 N4

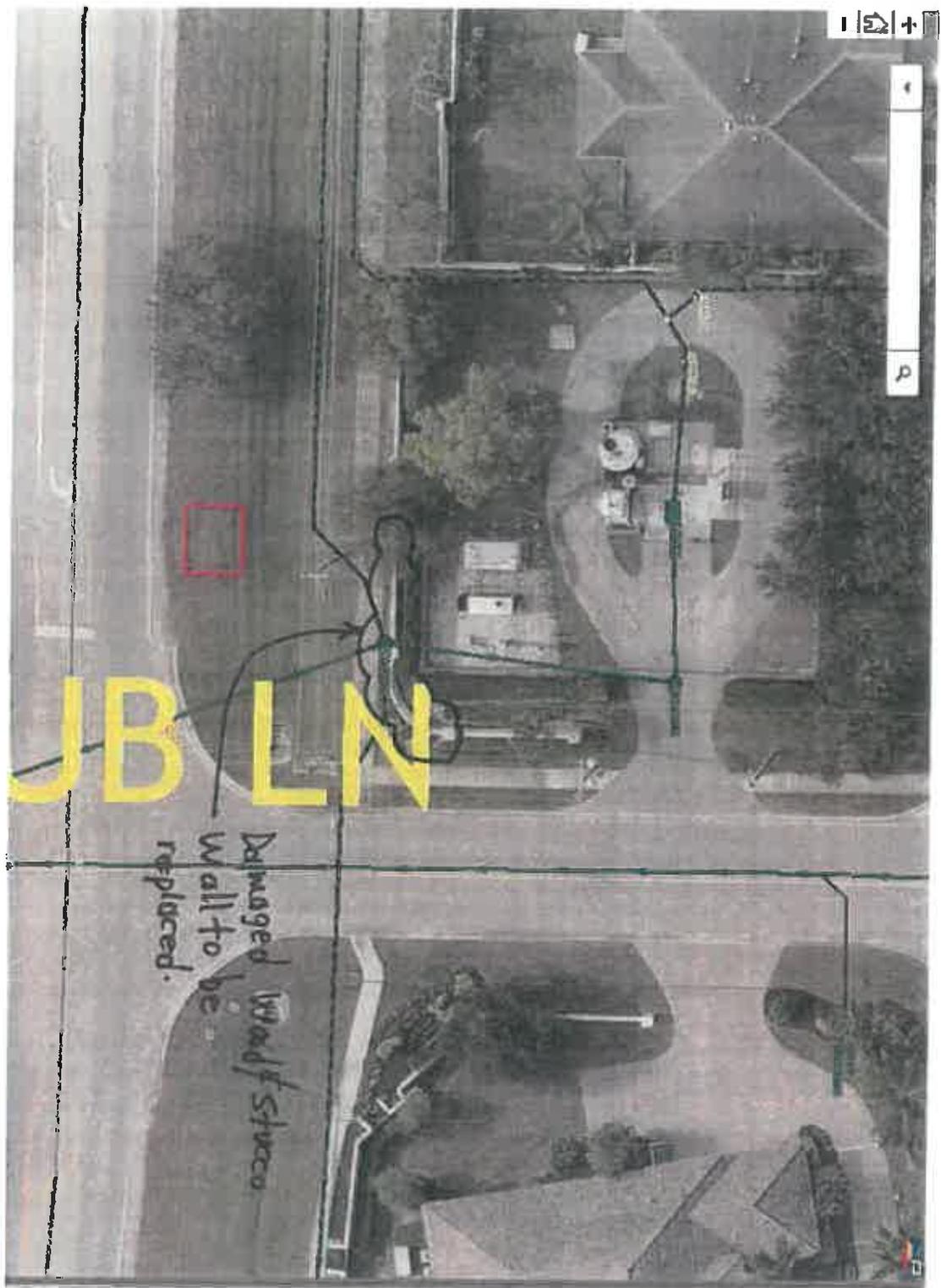


09/20/2016



09/20/2016

Page 4 of 4



ATTACHMENT 'I'

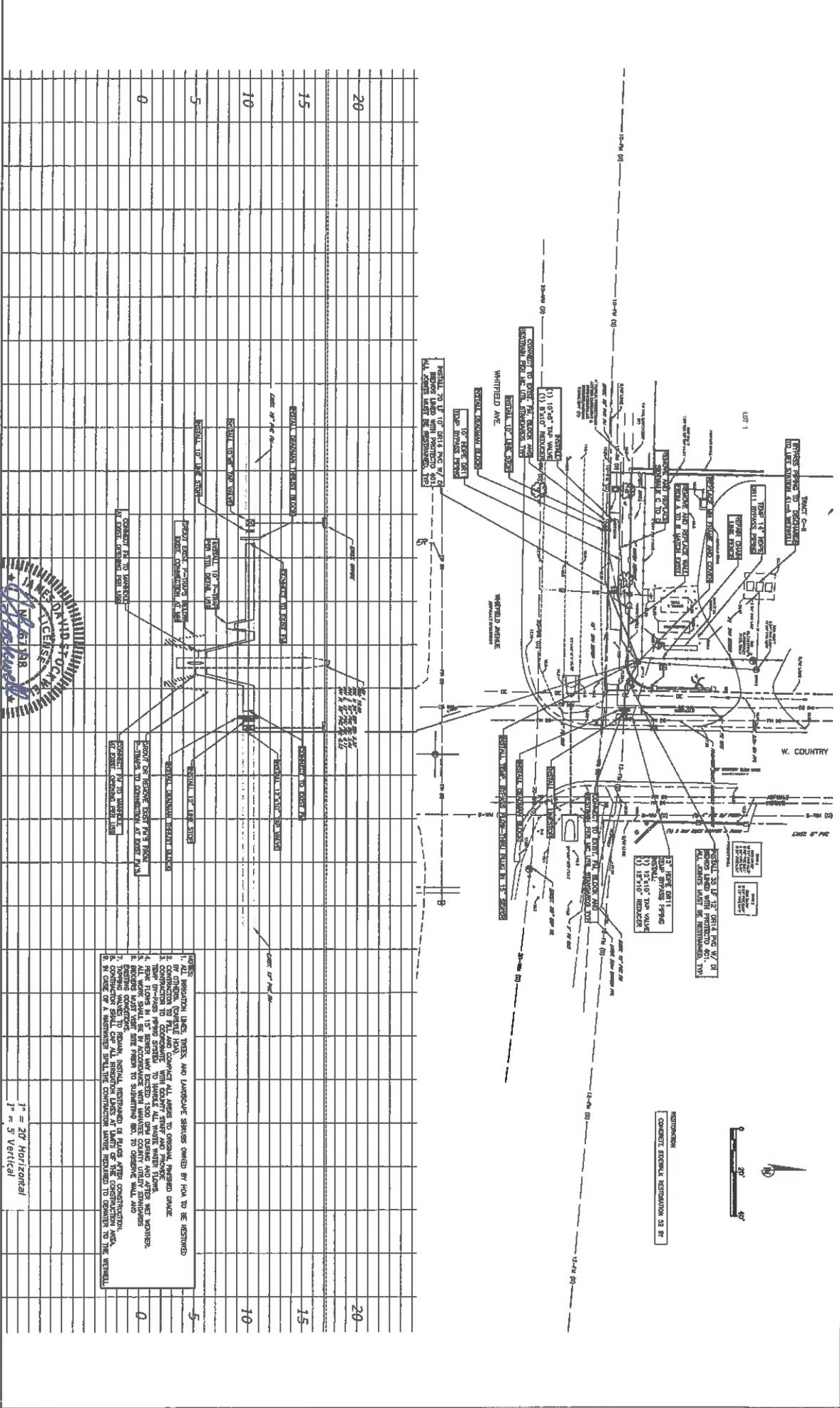


DATE	DESCRIPTION	DATE	PROJECT #	SUBMITTED	DATE
			482-5104285	DESIGNED	02/10/17
			N/A	DRAWN	02/11/17
			36/348/18E	CHECKED	03/01/17
			1"=20'		

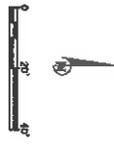


LS 41A FORCEMAIN/MIH REPAIRS

SHEET NO. 1



- NOTES:**
1. ALL PROVISION LINES, TIEES, AND LANSQUET SHAKES OWNED BY IOA TO BE RESTORED BY OTHER CONTRACTOR.
 2. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS WITH COUNTY STAFF AND PROVIDE CORRECTIVE MEASURES TO BE ACCORDANCE WITH MANATEE COUNTY UTILTY STANDARDS.
 3. ALL WORK SHALL BE IN ACCORDANCE WITH MANATEE COUNTY UTILTY STANDARDS EXISTING CONDITIONS.
 4. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND PROVIDE CORRECTIVE MEASURES TO BE ACCORDANCE WITH MANATEE COUNTY UTILTY STANDARDS.
 5. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND PROVIDE CORRECTIVE MEASURES TO BE ACCORDANCE WITH MANATEE COUNTY UTILTY STANDARDS.
 6. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND PROVIDE CORRECTIVE MEASURES TO BE ACCORDANCE WITH MANATEE COUNTY UTILTY STANDARDS.
 7. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND PROVIDE CORRECTIVE MEASURES TO BE ACCORDANCE WITH MANATEE COUNTY UTILTY STANDARDS.
 8. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND PROVIDE CORRECTIVE MEASURES TO BE ACCORDANCE WITH MANATEE COUNTY UTILTY STANDARDS.
 9. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND PROVIDE CORRECTIVE MEASURES TO BE ACCORDANCE WITH MANATEE COUNTY UTILTY STANDARDS.
 10. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND PROVIDE CORRECTIVE MEASURES TO BE ACCORDANCE WITH MANATEE COUNTY UTILTY STANDARDS.



RESTORATION COMMENT: RESTORATION AS SHOWN

CONSTRUCTION AGREEMENT

for

STIPULATED SUM

between

MANATEE COUNTY (AS OWNER)

and

_____ (AS CONTRACTOR)

Agreement: 17-1109OV
Lift Station 41A Force Main Repairs
And
Manhole Rehabilitation
Whitfield Avenue and Country Club Lane
(Project 462 5104285)

**CONSTRUCTION AGREEMENT FOR
STIPULATED SUM
Solicitation Title**

THIS AGREEMENT (“Agreement”) is made and entered into by and between Manatee County, a political subdivision of the State of Florida, referred to herein as “Owner”, and the firm of _____, incorporated in the State of _____ and registered and licensed to do business in the State of Florida (license # _____), referred to herein as “Contractor.”

WHEREAS, the Owner intends to perform Force Main Repairs at Lift Station 41A and Rehabilitate Manhole at Whitfield Avenue and Country Club Lane (Project 462 5104285) the aforementioned improvements being hereinafter referred to and defined as the “Project”; and

WHEREAS, in response to Owner’s Invitation for Bid No. 17-1109OV (the “IFB”), Contractor has submitted its Bid (the “Contractor’s Bid”) to provide the aforementioned construction services.

NOW THEREFORE, the Owner and the Contractor, in consideration of the mutual covenants hereinafter set forth, the sufficiency of which is hereby acknowledged, agree as follows:

1. Contract Documents. The Contract Documents consist of this Agreement and attached Exhibits, the attached General Conditions of the Construction Agreement, Supplementary Conditions (if any), Special Conditions (if any), Drawings (the titles of which are attached hereto as Exhibit A), Specifications (the titles of which are attached hereto as Exhibit B), Addenda issued prior to execution of this Agreement, the Invitation for Bid (including any Instructions to Bidders, Scope of Work, Bid Summary, Supplements, and Technical Specifications), any interpretations issued pursuant to the Invitation for Bid, the Contractor’s Bid, permits, notice of intent to award, Notice to Proceed, purchase order(s), any other documents listed in this Agreement, and Modifications [to include written Amendment(s), Change Order(s), Work Directive Change(s) and Field Directive(s)] issued after execution of this Agreement. These form the Agreement, and are as fully a part of the Agreement as if attached or repeated herein. This Agreement represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. No other documents shall be considered Contract Documents.

2. Work. The Contractor shall fully execute the Work described in the Contract Documents, except to the extent specifically indicated in the Contract Documents to be the responsibility of others.

3. Date of Commencement and Substantial Completion.

A. Date of Commencement. The date of commencement of the Work shall be the date fixed in a Notice to Proceed issued by the Owner.

B. Contract Time. The Contract Time shall be measured from the date of commencement.

C. Substantial Completion. The Contractor shall achieve Substantial Completion of the entire Work not later than 90 days from the date of commencement, or as follows:

Portion of Work	Substantial Completion Date
------------------------	------------------------------------

subject to adjustments of this Contract Time as provided in the Contract Documents.

Time is of the essence in the Contract Documents and all obligations thereunder. If the Contractor 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 Contractor, as liquidated damages and not as a penalty, the sum of **\$884 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 Contractor under this Agreement. Any liquidated damages not so deducted from any unpaid amounts due the Contractor 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.

4. Contract Sum.

A. Payment. The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be _____ Dollars and Zero Cents (\$ _____), subject to additions and deductions as provided in the Contract Documents.

B. Alternates. The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner. *(State the numbers or other identification of accepted alternates. If decisions on other alternates are to be made by the Owner subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)*

C. Unit Prices. Unit prices, if any, are reflected in the Contractor's Bid.

5. Payments.

A. Progress Payments.

(1) Based upon Applications for Payment submitted to the Architect/Engineer by the Contractor and Certificates for Payment issued by the Architect/Engineer, the Owner shall make progress payments on account

of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

- (2) The period covered by each Application for Payment shall be one calendar month ending on the last day of the month.
- (3) Payments shall be made by Owner in accordance with the requirements of Section 218.735, Florida Statutes.
- (4) Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form and supported by such data to substantiate its accuracy as the Architect/Engineer may require. This schedule, unless objected to by the Owner or Architect/Engineer, shall be used as a basis for reviewing the Contractor's Applications for Payment.
- (5) Applications for Payment shall indicate the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.
- (6) Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:
 - i. Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of ten percent (10.00%). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 3.3.B. of the General Conditions;
 - ii. Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), supported by paid receipts, less retainage of ten percent (10.00%);
 - iii. Subtract the aggregate of previous payments made by the Owner; and
 - iv. Subtract amounts, if any, for which the Architect/Engineer has withheld or nullified an Application for Payment, in whole or in part as provided in Section 3.3.C. of the General Conditions.

- (7) The progress payment amount determined in accordance with Section 5.A(6) shall be further modified under the following circumstances:
- i. Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to the full amount of the Contract Sum, less such amounts as the Architect/Engineer shall determine for incomplete Work, retainage applicable to such work and unsettled claims.
 - ii. Add, if final completion of the Work is thereafter materially delayed through no fault of the Contractor, any additional amounts payable in accordance with Section 3.2.B. of the General Conditions.
- (8) Reduction or limitation of retainage, if any, shall be as follows:

Notwithstanding the foregoing, upon completion of at least 50% of the Work, as determined by the Architect/Engineer and Owner, the Owner shall reduce to five percent (5%) the amount of retainage withheld from each subsequent progress payment.

- (9) Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

B. Final Payment. Final Payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when:

- (1) The Contractor has fully performed the Work except for the Contractor's responsibility to correct Work as provided in Section 2.4.C. of the General Conditions, and to satisfy other requirements, if any, which extend beyond final payment; and
- (2) A final Application for Payment has been approved by the Architect/Engineer.

6. Termination or Suspension.

A. Termination. The Agreement may be terminated by the Owner or the Contractor as provided in Article XIV of the General Conditions.

B. Suspension by Owner. The Work may be suspended by the Owner as provided in Article XIV of the General Conditions.

7. Other Provisions.

A. Substantial Completion Defined. Substantial Completion shall be defined as provided in Article I of the General Conditions. In the event a temporary certificate of

occupancy or completion is issued establishing Substantial Completion, the Contractor shall diligently pursue the issuance of a permanent certificate of occupancy or completion.

B. Project Meetings. There shall be a project meeting, at the jobsite or other location acceptable to the parties, on a regularly scheduled basis. The meeting will be attended by a representative of the Contractor, Architect/Engineer and Owner. These representatives shall be authorized to make decisions that are not otherwise contrary to the requirements of this Agreement.

C. Weather. Any rainfall, temperatures below 32 degrees Fahrenheit or winds greater than 25 m.p.h. which actually prevents Work on a given day, shall be considered lost time and an additional day added to the Contract Time, provided no work could be done on site, and provided written notice has been submitted to the Owner by the Contractor documenting same.

D. Shop Drawings; Critical Submittals. In consideration of the impact of timely review of submittals and shop drawings on the overall progress of the Work, it is hereby agreed that the Owner shall cause his agents and design professionals to accomplish the review of any particular "critical" submittals and/or shop drawings and return same to the Contractor within fourteen (14) days.

E. Applications for Payment. Applications for Payment shall be submitted once monthly at regular intervals and shall include detailed documentation of all costs incurred.

F. Punch List. Within 30 days after obtainment of Substantial Completion, the Owner shall generate a "punch list" of all work items requiring remedial attention by the Contractor. Within 5 days thereafter the Architect/Engineer shall assign a fair value to the punch list items, which sum shall be deducted from the next scheduled progress payment to the Contractor. Upon satisfactory completion of the punch list items, as certified by the Architect/Engineer, the previously deducted sum shall be paid to the Contractor.

G. Closeout documentation. Within 30 days after obtainment of Substantial Completion and before final payment, Contractor shall gather and deliver to Owner all warranty documentation, all manufacturer's product and warranty literature, all manuals (including parts and technical manuals), all schematics and handbooks, and all as-built drawings.

H. Governing Provisions; Conflicts. In the event of a conflict between this Agreement and the Specifications or as between the General Conditions and the Specifications, the Specifications shall govern.

I. E-Verify. The Contractor's employment of unauthorized aliens is a violation of Section 274(e) of the Federal Immigration and Employment Act. The Contractor shall utilize the U.S. Department of Homeland Security E-Verify system to verify the employment eligibility of all new employees hired during the term of this Agreement, and shall require the same verification procedure of all Subcontractors.

8. Insurance and Bonding. If and to the extent required by the Invitation for Bid documents, the Contractor shall furnish insurance coverage for (but not necessarily limited to)

workers' compensation, commercial general liability, auto liability, excess liability, and builder's risk. The Contractor shall furnish to the Owner all appropriate policies and Certificate(s) of Insurance. The Contractor shall also post a Payment and Performance Bond for the Contract Sum, within ten () days following notification of intent to award, and otherwise in accordance with the Invitation for Bid documents.

9. Independent Contractor. The Contractor acknowledges that it is functioning as an independent contractor in performing under the terms of this Agreement, and it is not acting as an employee of the Owner.

10. Entire Agreement. This Agreement (inclusive of the Contract Documents incorporated herein by reference) represents the full agreement of the parties.

11. Amendments; Waivers; Assignment.

A. Amendments. This Agreement may be amended only pursuant to an instrument in writing that has been jointly executed by authorized representatives of the parties hereto.

B. Waivers. Neither this Agreement nor any portion of it may be modified or waived orally. However, each party (through its governing body or properly authorized officer) shall have the right, but not the obligation, to waive, on a case-by-case basis, any right or condition herein reserved or intended for the benefit or protection of such party without being deemed or considered to have waived such right or condition for any other case, situation, or circumstance and without being deemed or considered to have waived any other right or condition. No such waiver shall be effective unless made in writing with an express and specific statement of the intent of such governing body or officer to provide such waiver.

C. Assignment. The rights and obligations of either party to this Agreement may be assigned to a third party only pursuant to a written amendment hereto.

12. Validity. Each of the Owner and Contractor represents and warrants to the other its respective authority to enter into this Agreement.

13. Covenant To Defend. Neither the validity of this Agreement nor the validity of any portion hereof may be challenged by any party hereto, and each party hereto hereby waives any right to initiate any such challenge. Furthermore, if this Agreement or any portion hereof is challenged by a third party in any judicial, administrative, or appellate proceeding (each party hereby covenanting with the other party not to initiate, encourage, foster, promote, cooperate with, or acquiesce to such challenge), the parties hereto collectively and individually agree, at their individual sole cost and expense, to defend in good faith its validity through a final judicial determination or other resolution, unless all parties mutually agree in writing not to defend such challenge or not to appeal any decision invalidating this Agreement or any portion thereof.

14. Disclaimer of Third-Party Beneficiaries; Successors and Assigns. This Agreement is solely for the benefit of the parties hereto, and no right, privilege, or cause of action shall by reason hereof accrue upon, to, or for the benefit of any third party. Nothing in this Agreement is intended or shall be construed to confer upon or give any person, corporation,

partnership, trust, private entity, agency, or other governmental entity any right, privilege, remedy, or claim under or by reason of this Agreement or any provisions or conditions hereof. This Agreement shall be binding upon, and its benefits and advantages shall inure to, the successors and assigns of the parties hereto.

15. Construction.

A. Headings and Captions. The headings and captions of articles, sections, and paragraphs used in this Agreement are for convenience of reference only and are not intended to define or limit their contents, nor are they to affect the construction of or be taken into consideration in interpreting this Agreement.

B. Legal References. All references to statutory sections or chapters shall be construed to include subsequent amendments to such provisions, and to refer to the successor provision of any such provision. References to “applicable law” and “general law” shall be construed to include provisions of local, state and federal law, whether established by legislative action, administrative rule or regulation, or judicial decision.

16. Severability. The provisions of this Agreement are declared by the parties hereto to be severable. In the event any term or provision of this Agreement shall be held invalid by a court of competent jurisdiction, such invalid term or provision should not affect the validity of any other term or provision hereof; and all such terms and provisions hereof shall be enforceable to the fullest extent permitted by law as if such invalid term or provision had never been part of this Agreement; provided, however, if any term or provision of this Agreement is held to be invalid due to the scope or extent thereof, then, to the extent permitted by law, such term or provision shall be automatically deemed modified in order that it may be enforced to the maximum scope and extent permitted by law.

17. Governing Law; Venue. This Agreement shall be governed by the laws of the State of Florida. Venue for any petition for writ of certiorari or other court action allowed by this Agreement shall be in the Circuit Court of the Twelfth Judicial Circuit in and for Manatee County, Florida.

18. Attorney’s Fees and Costs. In any claim dispute procedure or litigation arising from this Agreement, each party hereto shall be solely responsible for paying its attorney’s fees and costs.

19. Notices. All notices, comments, consents, objections, approvals, waivers, and elections under this Agreement shall be in writing and shall be given only by hand delivery for which a receipt is obtained, or certified mail, prepaid with confirmation of delivery requested, or by electronic mail with delivery confirmation. All such communications shall be addressed to the applicable addressees set forth below or as any party may otherwise designate in the manner prescribed herein.

To the Owner:

Eric Shroyer, Project Manager
Public Works Department, Project Management Division
1022 26th Avenue East, Bradenton, FL 34208
Phone: 941-708-7450, Ext. 7344
Email: Eric.Shroyer@mymanatee.org

To the Contractor:

Email: _____

Notices, comments, consents, objections, approvals, waivers, and elections shall be deemed given when received by the party for whom such communication is intended at such party's address herein specified, or such other physical address or email address as such party may have substituted by notice to the other.

20. Exhibits. Exhibits to this Agreement are as follows:

Exhibit A—Title(s) of Drawings

Exhibit B—Title(s) of Specifications

Exhibit C—Affidavit of No Conflict

Exhibit D—Certificate(s) of Insurance

Exhibit E—Payment and Performance Bond

Exhibit F—Standard Forms

- 1—Application for Payment
- 2—Certificate of Substantial Completion
- 3—Final Reconciliation / Warranty / Affidavit
- 4—Change Order
- 5—Public Construction Bond Form

WHEREFORE, the parties hereto have executed this Agreement as of the date last executed below.

Name of Contractor

By: _____

Printed Name: _____

Title: _____

Date: _____

**MANATEE COUNTY, a political subdivision
of the State of Florida**

By: _____

Printed Name: Melissa Wendel, CPPO

Title: Purchasing Official

Date: _____

GENERAL CONDITIONS
of the
CONSTRUCTION AGREEMENT

TABLE OF CONTENTS FOR GENERAL CONDITIONS

	<u>Page</u>
Article I-- Definitions	GC-1
1.1 Definitions.....	GC-1
<i>A. Acceptance</i>	GC-1
<i>B. Application for Payment</i>	GC-1
<i>C. Architect/Engineer</i>	GC-1
<i>D. Change Order</i>	GC-1
<i>E. Compensable Delay</i>	GC-1
<i>F. Contractor's Personnel</i>	GC-1
<i>G. Construction Services</i>	GC-1
<i>H. Contract Sum</i>	GC-1
<i>I. Construction Team</i>	GC-1
<i>J. Contract Time</i>	GC-1
<i>K. Days</i>	GC-1
<i>L. Defective</i>	GC-2
<i>M. Excusable Delay</i>	GC-2
<i>N. Field Directive</i>	GC-2
<i>O. Final Completion Date</i>	GC-2
<i>P. Float or Slack Time</i>	GC-2
<i>Q. Force Majeure</i>	GC-2
<i>R. Inexcusable Delay</i>	GC-2
<i>S. Non-prejudicial Delay</i>	GC-2
<i>T. Notice to Proceed</i>	GC-2
<i>U. Owner</i>	GC-2
<i>V. Owner's Project Representative</i>	GC-2
<i>W. Payment and Performance Bond</i>	GC-3
<i>X. Permitting Authority</i>	GC-3
<i>Y. Prejudicial Delay</i>	GC-3
<i>Z. Progress Report</i>	GC-3
<i>AA. Project</i>	GC-3
<i>BB. Project Costs</i>	GC-3
<i>CC. Project Manager</i>	GC-3
<i>DD. Project Plans and Specifications</i>	GC-3
<i>EE. Project Schedule</i>	GC-3
<i>FF. Project Site</i>	GC-3
<i>GG. Pre-operation Testing</i>	GC-3
<i>HH. Procurement Ordinance</i>	GC-4
<i>II. Punch List Completion Date</i>	GC-4
<i>JJ. Subcontractor</i>	GC-4
<i>KK. Substantial Completion and Substantially Complete</i>	GC-4
<i>LL. Substantial Completion Date</i>	GC-4
<i>MM. Substitute</i>	GC-4
<i>NN. Unit Price Work</i>	GC-4
<i>OO. Work</i>	GC-4
<i>PP. Work Directive Change</i>	GC-4

Article II-- Relationship and Responsibilities GC-5

- 2.1 Relationship between Contractor and OwnerGC-5
 - A. PurposeGC-5
 - B. Construction Team.....GC-5
 - C. Owner’s Reliance on Bid (or GMP)GC-5
- 2.2 General Contractor ResponsibilitiesGC-5
 - A. PersonnelGC-5
 - B. Cooperation with Architect/EngineerGC-6
 - C. Timely PerformanceGC-6
 - D. Duty to Defend Work.....GC-6
 - E. Trade and Industry TerminologyGC-6
- 2.3 Project Schedule.....GC-6
- 2.4 Construction ServicesGC-7
 - A. Construction of ProjectGC-7
 - B. Notice to ProceedGC-7
 - C. Quality of WorkGC-8
 - D. MaterialsGC-8
 - E. Accountability for Work.....GC-8
 - F. Contract SumGC-8
 - G. Governing SpecificationsGC-8
 - H. Adherence to Project ScheduleGC-8
 - I. SuperintendentGC-9
 - J. Work HoursGC-9
 - K. Overtime-Related CostsGC-9
 - L. Insurance, Overhead and UtilitiesGC-9
 - M. CleanlinessGC-9
 - N. Loading.....GC-10
 - O. Safety and ProtectionGC-10
 - P. Emergencies.....GC-10
 - Q. SubstitutesGC-10
 - R. Surveys and Stakes.....GC-11
 - S. Suitability of Project SiteGC-11
 - T. Project Specification ErrorsGC-12
 - U. Remediation of ContaminationGC-12
 - V. InterfacingGC-13
 - W. Job Site FacilitiesGC-13
 - X. Weather Protection.....GC-14
 - Y. Performance and Payment BondGC-14
 - Z. Construction Phase; Building Permit; Code InspectionGC-14
 - (1) Building PermitGC-14
 - (2) Code InspectionsGC-14
 - (3) Contractor’s PersonnelGC-15
 - (4) Lines of AuthorityGC-15
 - AA. Quality ControlGC-15
 - BB. Management of SubcontractorsGC-15
 - CC. Job Requirements.....GC-16
 - DD. As-Built DrawingsGC-17
 - EE. Progress ReportsGC-18

<i>FF. Contractor's Warranty</i>	GC-18
<i>GG. Apprentices</i>	GC-18
<i>HH. Schedule of Values</i>	GC-18
<i>II. Other Contracts</i>	GC-19
Article III-- Compensation	GC-19
3.1 Compensation.....	GC-19
<i>A. Adjustments</i>	GC-19
<i>B. Valuation</i>	GC-19
<i>C. Unit Price Work</i>	GC-19
3.2 Schedule of Compensation.....	GC-20
<i>A. Periodic Payments for Services</i>	GC-20
<i>B. Payment for Materials and Equipment</i>	GC-20
<i>C. Credit toward Contract Sum</i>	GC-20
3.3 Invoice and Payment.....	GC-20
<i>A. Invoices</i>	GC-20
<i>B. Additional Information; Processing of Invoices</i>	GC-20
<i>C. Architect/Engineer's Approval</i>	GC-21
<i>D. Warrants of Contractor with Respect to Payments</i>	GC-21
<i>E. All Compensation Included</i>	GC-21
Article IV-- Subcontractors	GC-21
4.1 Subcontracts.....	GC-21
<i>A. Subcontracts Generally</i>	GC-21
<i>B. No Damages for Delay</i>	GC-22
<i>C. Subcontractual Relations</i>	GC-22
<i>D. Insurance; Acts & Omissions</i>	GC-22
4.2 Relationship and Responsibilities.....	GC-22
4.3 Payments to Subcontractors; Monthly Statements.....	GC-22
<i>A. Payment</i>	GC-23
<i>B. Final Payment of Subcontractors</i>	GC-23
4.4 Responsibility for Subcontractors.....	GC-23
4.5 Contingent Assignment of Subcontracts.....	GC-23
Article V-- Changes in Work	GC-24
5.1 General.....	GC-24
5.2 Minor Changes in the Work.....	GC-24
5.3 Emergencies.....	GC-24
5.4 Concealed Conditions.....	GC-24
5.5 Hazardous Materials.....	GC-25
5.6 Change Orders; Adjustments to Contract Sum.....	GC-25
<i>A. Change Orders Generally</i>	GC-25
5.7 Unit Prices.....	GC-26
5.8 Owner-Initiated Changes.....	GC-26
5.9 Unauthorized Work.....	GC-26
5.10 Defective Work.....	GC-26
5.11 Estimates for Changes.....	GC-26

5.12 Form of Proposed Changes	GC-26
5.13 Changes to Contract Time.....	GC-26
Article VI-- Role of Architect/Engineer	GC-27
6.1 General	GC-27
<i>A. Retaining</i>	GC-27
<i>B. Duties</i>	GC-27
<i>C. Termination</i>	GC-27
6.2 Administration.....	GC-27
<i>A. Site Visits</i>	GC-27
<i>B. Reporting</i>	GC-28
6.3 Interpretation of Project Plans and Specifications.....	GC-28
6.4 Rejection of Non-Conforming Work	GC-28
6.5 Correction of Work	GC-28
6.6 Timely Performance of Architect/Engineer	GC-28
Article VII-- Owner's Rights and Responsibilities	GC-29
7.1 Project Site; Title	GC-29
7.2 Project Plans and Specifications; Architect/Engineer	GC-29
7.3 Surveys; Soil Tests and Other Project Site Information	GC-29
7.4 Information; Communication; Coordination.....	GC-30
7.5 Governmental Body	GC-30
7.6 Pre-Completion Acceptance.....	GC-30
7.7 Ownership and Use of Drawings, Specifications and Other Instruments of Service	GC-30
7.8 Owner's Project Representative.....	GC-31
<i>A. Responsibilities</i>	GC-31
<i>B. Limitations</i>	GC-31
Article VIII-- Resolution of Disagreements; Claims for Compensation.....	GC-32
8.1 Owner to Decide Disputes	GC-32
8.2 Finality	GC-32
8.3 No Damages for Delay.....	GC-32
8.4 Permitted Claims Procedure.....	GC-32
8.5 Contract Claims and Disputes.....	GC-33
8.6 Claims for Consequential Damages	GC-33
Article IX—Indemnity.....	GC-34
9.1 Indemnity	GC-34
<i>A. Indemnification Generally</i>	GC-34
<i>B. Claims by Employees</i>	GC-34
9.2 Duty to Defend.....	GC-34
Article X-- Accounting Records; Ownership of Documents	GC-35
10.1 Accounting Records	GC-35

10.2 Inspection and Audit	GC-35
10.3 Access	GC-35
10.4 Ownership of Documents.....	GC-35
Article XI-- Public Contract Laws	GC-35
11.1 Equal Opportunity Employment	GC-35
<i>A. Employment</i>	GC-35
<i>B. Participation</i>	GC-36
11.2 Immigration Reform and Control Act of 1986.....	GC-36
11.3 No Conflict of Interest	GC-36
<i>A. No Interest in Business Activity</i>	GC-36
<i>B. No Appearance of Conflict</i>	GC-36
11.4 Truth in Negotiations	GC-36
11.5 Public Entity Crimes	GC-37
Article XII-- Force Majeure, Fire or Other Casualty	GC-37
12.1 Force Majeure	GC-37
<i>A. Unavoidable Delays</i>	GC-37
<i>B. Concurrent Contractor Delays</i>	GC-37
<i>C. Notice; Mitigation</i>	GC-37
12.2 Casualty; Actions by Owner and Contractor	GC-37
12.3 Approval of Plans and Specifications	GC-38
12.4 Notice of Loss or Damage.....	GC-38
Article XIII-- Representations, Warranties and Covenants	GC-38
13.1 Representations and Warranties of Contractor	GC-38
13.2 Representations of the Owner	GC-41
Article XIV-- Termination and Suspension.....	GC-42
14.1 Termination for Cause by Owner.....	GC-42
<i>A. Nonperformance</i>	GC-42
<i>B. Insolvency</i>	GC-42
<i>C. Illegality</i>	GC-43
<i>D. Rights of Owner</i>	GC-43
14.2 Termination without Cause by Owner	GC-43
<i>A. Release of Contractor</i>	GC-43
<i>B. Waiver of Protest</i>	GC-44
14.3 Suspension without Cause	GC-44
14.4 Termination Based Upon Abandonment, Casualty or Force Majeure.....	GC-44
14.5 Vacation of Project Site; Delivery of Documents.....	GC-44
14.6 Termination by the Contractor	GC-44

GENERAL CONDITIONS
ARTICLE I
DEFINITIONS

1.1 Definitions. For purposes of the Contract Documents, the following terms shall have the following meanings.

A. Acceptance: The acceptance of the Project into the Owner's operating public infrastructure.

B. Application for Payment: The form approved and accepted by the Owner, which is to be used by Contractor in requesting progress payments or final payment and which is to include such supporting documentation as is required by the Contract Documents.

C. Engineer: Scott May, a Florida registered professional engineer in the employ of the Owner, licensed to do business in the State of Florida.

D. Change Order: A written order signed by the Owner, the Architect/Engineer and the Contractor authorizing a change in the Project Plans and/or Specifications and, if necessary, a corresponding adjustment in the Contract Sum and/or Contract Time, pursuant to Article V.

E. Compensable Delay: Any delay beyond the control and without the fault or negligence of the Contractor resulting from Owner-caused changes in the Work, differing site conditions, suspensions of the Work, or termination for convenience by Owner.

F. Contractor's Personnel: The Contractor's key personnel designated by Contractor.

G. Construction Services: The Construction Services to be provided by Contractor pursuant to Section 2.4, in accordance with the terms and provisions of the Contract Documents.

H. Contract Sum: The total compensation to be paid to the Contractor for Construction Services rendered pursuant to the Contract Documents, as set forth in Contractor's Bid (or Guaranteed Maximum Price Addendum), unless adjusted in accordance with the terms of the Contract Documents.

I. Construction Team: The working team established pursuant to Section 2.1.B.

J. Contract Time: The time period during which all Construction Services are to be completed pursuant to the Contract Documents, to be set forth in the Project Schedule.

K. Days: Calendar days except when specified differently. When time is referred to in the Contract Documents by days, it will be computed to exclude the first and

include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or legal holiday, such day will be omitted from the computation.

L. Defective: When modifying the term “Work”, referring to Work that is unsatisfactory, faulty or deficient, or does not conform to the Contract Documents, or that does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract Documents, or that has been damaged prior to Owner’s approval of final payment (unless responsibility for the protection thereof has been assumed by Owner).

M. Excusable Delay: Any delay beyond the control and without the negligence of the Contractor, the Owner, or any other contractor caused by events or circumstances such as, but not limited to, acts of God or of a public enemy, fires, floods, freight embargoes, acts of government other than Owner or epidemics. Labor disputes and above average rainfall shall give rise only to excusable delays.

N. Field Directive: A written order issued by Owner which orders minor changes in the Work not involving a change in Contract Time, to be paid from the Owner’s contingency funds.

O. Final Completion Date: The date upon which the Project is fully constructed and all Work required on the Project and Project Site is fully performed as verified in writing by the Owner.

P. Float or Slack Time: The time available in the Project Schedule during which an unexpected activity can be completed without delaying substantial completion of the Work.

Q. Force Majeure: Those conditions constituting excuse from performance as described in and subject to the conditions described in Article XII.

R. Inexcusable Delay: Any delay caused by events or circumstances within the control of the Contractor, such as inadequate crewing, slow submittals, etc., which might have been avoided by the exercise of care, prudence, foresight or diligence on the part of the Contractor.

S. Non-prejudicial Delay: Any delay impacting a portion of the Work within the available total Float or Slack Time and not necessarily preventing Substantial Completion of the Work within the Contract Time.

T. Notice to Proceed: Written notice by Owner (after execution of Contract) to Contractor fixing the date on which the Contract Time will commence to run and on which Contractor shall start to perform the Work.

U. Owner: Manatee County, a political subdivision of the State of Florida.

V. Owner’s Project Representative: The individual designated by Owner to perform those functions set forth in Section 7.8.

W. Payment and Performance Bond: The Payment and Performance Bond security posted pursuant to Section 2.4.Y to guarantee payment and performance by the Contractor of its obligations hereunder.

X. Permitting Authority: Any applicable governmental authority acting in its governmental and regulatory capacity which is required to issue or grant any permit, certificate, license or other approval which is required as a condition precedent to the commencement or approved of the Work, or any part thereof, including the building permit.

Y. Prejudicial Delay: Any excusable or compensable delay impacting the Work and exceeding the total float available in the Project Schedule, thus preventing completion of the Work within the Contract Time unless the Work is accelerated.

Z. Progress Report: A report to Owner that includes all information required pursuant to the Contract Documents and submitted in accordance with Section 2.4.EE, hereof.

AA. Project: The total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by Owner and by separate contractors. For the purposes of the Contract Documents, the term Project shall include all areas of proposed improvements and all areas which may reasonably be judged to have an impact on the Project.

BB. Project Costs: The costs incurred by the Contractor to plan, construct and equip the Project and included within, and paid as a component of, the Contract Sum.

CC. Project Manager: Subject to the prior written consent of Owner, the individual designated to receive notices on behalf of the Contractor, or such other individual designated by the Contractor, from time to time, pursuant to written notice in accordance with the Contract Documents.

DD. Project Plans and Specifications: The one hundred percent (100%) construction drawings and specifications prepared by the Architect/Engineer, and any changes, supplements, amendments or additions thereto approved by the Owner, which shall also include any construction drawings and final specifications required for the repair or construction of the Project, as provided herein.

EE. Project Schedule: The schedule and sequence of events for the commencement, progression and completion of the Project, developed pursuant to Section 2.3., as such schedule may be amended as provided herein.

FF. Project Site: The site depicted in the Project Plans and Specifications, inclusive of all rights of way, temporary construction easements or licensed or leased sovereign lands.

GG. Pre-operation Testing: All field inspections, installation checks, water tests, performance tests and necessary corrections required of Contractor to demonstrate that

individual components of the Work have been properly constructed and do operate in accordance with the Contract Documents for their intended purposes.

HH. Procurement Ordinance: The Manatee County Procurement Code, Chapter 2-26 of the Manatee County Code of Laws, as amended from time to time.

II. Punch List Completion Date: The date upon which all previously incomplete or unsatisfactory items, as identified by the Contractor, the Architect/Engineer and/or the Owner are completed in a competent and workmanlike manner, consistent with standards for Work of this type and with good building practices in the State of Florida.

JJ. Subcontractor: Any individual (other than a direct employee of the Contractor) or organization retained by Contractor to plan, construct or equip the Project pursuant to Article IV.

KK. Substantial Completion and Substantially Complete: The stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use; provided, however, that as a condition precedent to Substantial Completion, the Owner has received all certificates of occupancy or completion and other permits, approvals, licenses, and other documents from any governmental authority which are necessary for the beneficial occupancy of the Project.

LL. Substantial Completion Date: The date on which the Project is deemed to be Substantially Complete, as evidenced by receipt of (i) the Architect/Engineer's certificate of Substantial Completion, (ii) written Acceptance of the Project by the Owner, and (iii) approvals of any other authority as may be necessary or otherwise required.

MM. Substitute: Materials or equipment offered by the Contractor as an alternative to that set forth in the Project Plans and Specifications, where (i) the Project Plans and Specifications do not authorize an "approved equal", or (ii) the Owner, in its reasonable discretion, determines that a pre-authorized "approved equal" will result in a substantial change to the Work because of cost, quality or other difference in comparison to the materials or equipment specified.

NN. Unit Price Work: Work to be paid for on the basis of unit prices.

OO. Work: The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

PP. Work Directive Change: A written directive to Contractor, issued on or after the effective date of the Agreement pursuant to Section 5.8 and signed by Owner's Project Representative, ordering an addition, deletion or revision in the Work, or responding to differing or unforeseen physical conditions under which the Work is to be performed or responding to emergencies.

ARTICLE II RELATIONSHIP AND RESPONSIBILITIES

2.1 Relationship between Contractor and Owner. The Contractor accepts the relationship of trust and confidence established with Owner pursuant to the Contract Documents. The Contractor shall furnish its best skill and judgment and cooperate with Owner and Owner's Project Representative in furthering the interests of the Owner. The Contractor agrees to provide the professional services required to complete the Project consistent with the Owner's direction and the terms of the Contract Documents. All services provided hereunder by Contractor, either directly or through Subcontractors, shall be provided in accordance with sound construction practices and applicable professional construction standards.

A. Purpose. The purpose of the Contract Documents is to provide for the provision of construction services for the Project on the Project Site by the Contractor, and construction of the Project by the Contractor in accordance with the Project Plans and Specifications. The further purpose of the Contract Documents is to define and delineate the responsibilities and obligations of the parties to the Contract Documents and to express the desire of all such parties to cooperate together to accomplish the purposes and expectations of the Contract Documents.

B. Construction Team. The Contractor, Owner and Architect/Engineer shall be called the "Construction Team" and shall work together as a team commencing upon full execution of the Contract Documents through Substantial Completion. As provided in Section 2.2, the Contractor and Architect/Engineer shall work jointly through completion and shall be available thereafter should additional services be required. The Contractor shall provide leadership to the Construction Team on all matters relating to construction. The Contractor understands, acknowledges and agrees that the Architect/Engineer shall provide leadership to the Construction Team on all matters relating to design.

C. Owner's Reliance on Bid (or Guaranteed Maximum Price Addendum). The Contractor acknowledges that the representations, statements, information and pricing contained in its Bid (or Guaranteed Maximum Price Addendum) have been relied upon by the Owner and have resulted in the award of this Project to the Contractor.

2.2 General Contractor Responsibilities. In addition to the other responsibilities set forth herein, the Contractor shall have the following responsibilities pursuant to the Contract Documents:

A. Personnel. The Contractor represents that it has secured, or shall secure, all personnel necessary to perform the Work, none of whom shall be employees of the Owner. Primary liaison between the Contractor and the Owner shall be through the Owner's Project Representative and Contractor's Project Manager. All of the services required herein shall be performed by the Contractor or under the Contractor's supervision, and all personnel engaged in the Work shall be fully qualified and shall be authorized or permitted under law to perform such services.

B. Cooperation with Architect/Engineer. The Contractor's services shall be provided in conjunction with the services of the Architect/Engineer. In the performance of professional services, the Contractor acknowledges that time is critical for Project delivery. The Contractor acknowledges that timely construction utilizing the services of an Architect/Engineer and a Contractor requires maximum cooperation between all parties.

C. Timely Performance. The Contractor shall perform all services as expeditiously as is consistent with professional skill and care and the orderly progress of the Work, in accordance with the Project Schedule. Verification of estimated Project Schedule goals will be made as requested by the Owner.

D. Duty to Defend Work. In the event of any dispute between the Owner and any Permitting Authority that relates to the quality, completeness or professional workmanship of the Contractor's services or Work, the Contractor shall, at its sole cost and expense, cooperate with the Owner to defend the quality and workmanship of the Contractor's services and Work.

E. Trade and Industry Terminology. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any Work, materials or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result will be supplied whether or not specifically called for. When words which have a well-known technical or trade meaning are used to describe Work, materials, or equipment, such words shall be interpreted in accordance with that meaning. Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code or laws or regulations in effect at the time of opening of Bids (or at the time of execution of the Guaranteed Maximum Price Addendum), except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of Owner or Contractor, or any of their agents or employees from those set forth in the Contract Documents. Computed dimensions shall govern over scaled dimensions.

2.3 Project Schedule. The Contractor, within ten (10) days after being awarded the Contract, shall prepare and submit for the Owner's and Architect/Engineer's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of Work.

- A. The Project Schedule shall show a breakdown of all tasks to be performed, and their relationship in achieving the completion of each phase of Work, subject to review of Owner and Architect/Engineer and approval or rejection by Owner. The Project Schedule shall show, at a minimum, the approximate dates on which each segment of the Work is expected to be started and finished, the proposed traffic flows during each month, the anticipated earnings by the Contractor for each month and the approximate

number of crews and equipment to be used. The Project Schedule shall include all phases of procurement, approval of shop drawings, proposed Change Orders in progress, schedules for Change Orders, and performance testing requirements. The Project Schedule shall include a construction commencement date and Project Substantial Completion Date, which dates shall accommodate known or reasonably anticipated geographic, atmospheric and weather conditions.

- B. The Project Schedule shall serve as the framework for the subsequent development of all detailed schedules. The Project Schedule shall be used to verify Contractor performance and to allow the Owner's Project Representative to monitor the Contractor's efforts.
- C. The Project Schedule may be adjusted by the Contractor pursuant to Article V. The Owner shall have the right to reschedule Work provided such rescheduling is in accord with the remainder of terms of the Contract Documents.
- D. The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Architect/Engineer's approval. The Architect/Engineer's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect/Engineer reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.
- E. The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect/Engineer.

2.4 Construction Services. The Contractor shall provide the following Construction Services:

A. Construction of Project. The Contractor shall work from the receipt of a Notice to Proceed through the Substantial Completion of the Project in accordance with the terms of the Contract Documents to manage the construction of the Project. The Construction Services provided by the Contractor to construct the Project shall include without limitation (1) all services necessary and commensurate with established construction standards, and (2) all services described in the Invitation for Bid (or Request for Proposal) and the Bid (or Guaranteed Maximum Price Addendum).

B. Notice to Proceed. A Notice to Proceed may be given at any time within thirty (30) days after the effective date of the Agreement. Contractor shall start to perform the Work on the date specified in the Notice to Proceed, but no Work shall be done at the site prior to the issuance of the Notice to Proceed.

C. Quality of Work. If at any time the labor used or to be used appears to the Owner as insufficient or improper for securing the quality of Work required or the required rate of progress, the Owner may order the Contractor to increase its efficiency or to improve the character of its Work, and the Contractor shall conform to such an order. Any such order shall not entitle Contractor to any additional compensation or any increase in Contract Time. The failure of the Owner to demand any increase of such efficiency or any improvement shall not release the Contractor from its obligation to secure the quality of Work or the rate of progress necessary to complete the Work within the limits imposed by the Contract Documents. The Owner may require the Contractor to remove such personnel as the Owner deems incompetent, careless, insubordinate or otherwise objectionable, or whose continued employment on the Project is deemed to be contrary to the Owner's interest. The Contractor shall provide good quality workmanship and shall promptly correct construction defects without additional compensation. Acceptance of the Work by the Owner shall not relieve the Contractor of the responsibility for subsequent correction of any construction defects.

D. Materials. All materials and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. If required by Architect/Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instruction of the applicable supplier except as otherwise provided in the Contract Documents.

E. Accountability for Work. The Contractor shall be solely accountable for its Work, including plans review and complete submittals. The Contractor shall be solely responsible for means, methods, techniques, sequences and procedures of construction. In the event that a specific means, method, technique, sequence or procedure of construction is required by the Contract Documents, the Contractor may utilize an alternative means, method, technique, sequence or procedure acceptable to the Architect/Engineer if the Contractor submits sufficient information to allow the Architect/Engineer to determine that the alternative is equivalent to that required by the Contract Documents.

F. Contract Sum. The Contractor shall construct the Project so that the Project can be built for a cost not to exceed the Contract Sum.

G. Governing Specifications. The Project shall be constructed in accordance with applicable Owner design standards and guidelines. In the absence of specified Owner design standards or guidelines, the Architect/Engineer shall use, and the Contractor shall comply with, the most recent version of the applicable FDOT or AASHTO design standards. In general, the Project shall be constructed by the Contractor in accordance with applicable industry standards. The Contractor shall be responsible for utilizing and maintaining current knowledge of any laws, ordinances, codes, rules, regulations, standards, guidelines, special conditions, specifications or other mandates relevant to the Project or the services to be performed.

H. Adherence to Project Schedule. The development and equipping of the Project shall be undertaken and completed in accordance with the Project Schedule, and within the Contract Time described therein.

I. Superintendent. The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project Site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

(1) The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect/Engineer the name and qualifications of the proposed superintendent. The Architect/Engineer may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect/Engineer has reasonable objection to the proposed superintendent or (2) that the Architect/Engineer requires additional time to review. Failure of the Architect/Engineer to reply within 14 days shall constitute notice of no reasonable objection.

(2) The Contractor shall not employ a proposed superintendent to whom the Owner or Architect/Engineer has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not be unreasonably withheld or delayed.

J. Work Hours. Contractor shall provide competent, suitable qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the site. Except in connection with the safety or protection of persons or the Work or property at the site or adjacent thereto and except as otherwise indicated in the Contract Documents, all Work at the site shall be performed during regular working hours, and Contractor shall not permit overtime work or the performance of Work on a Saturday, Sunday or legal holiday without Owner's written consent given after prior notice to Architect/Engineer (at least seventy-two (72) hours in advance).

K. Overtime-Related Costs. Contractor shall pay for all additional Architect/Engineering charges, inspection costs and Owner staff time for any overtime work which may be authorized. Such additional charges shall be a subsidiary obligation of Contractor and no extra payment shall be made by Owner on account of such overtime work. At Owner's option, such overtime costs may be deducted from Contractor's monthly payment request or Contractor's retainage prior to release of final payment.

L. Insurance, Overhead and Utilities. Unless otherwise specified, Contractor shall furnish and assume full responsibility for all bonds, insurance, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up and completion of the Work.

M. Cleanliness. The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project Site. Contractor shall restore to original conditions all property not designated for alteration by the Contract Documents. If the Contractor fails to clean up as provided in the

Contract Documents, the Owner may do so and Owner shall be entitled to reimbursement from Contractor.

N. Loading. Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

O. Safety and Protection. Contractor shall comply with the Florida Department of Commerce Safety Regulations and any local safety regulations. Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Contractor shall take all necessary precautions for the safety of and shall provide the necessary protection to prevent damage, injury or loss to:

- (1) All employees on the Work and other persons and organizations who may be affected thereby;
- (2) All the Work and materials and equipment to be incorporated therein, whether in storage on or off the Project Site; and
- (3) Other property at the Project Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities and underground facilities not designated for removal, relocation or replacement in the course of construction.

Contractor shall comply with all applicable laws and regulations of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss, and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall provide and maintain all passageways, guard fences, lights and other facilities for the protection required by public authority or local conditions. Contractor shall provide reasonable maintenance of traffic for the public and preservation of the Owner's business, taking into full consideration all local conditions. Contractor's duties and responsibilities for safety and protection with regard to the Work shall continue until such time as all the Work is completed.

P. Emergencies. In emergencies affecting the safety or protection of persons or the Work or property at the Project Site or adjacent thereto, Contractor, without special instruction or authorization from Architect/Engineer or Owner, shall act to prevent threatened damage, injury or loss. Contractor shall give Owner prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby. If Owner determines that a change in the Project is required because of the action taken in response to an emergency, a Work Directive Change or Change Order will be issued to document the consequences of the changes or variation.

Q. Substitutes. For Substitutes not included with the Bid (or Guaranteed Maximum Price Addendum), but submitted after the effective date of the Agreement (or Guaranteed Maximum Price Addendum), Contractor shall make written application to Architect/Engineer for acceptance thereof, certifying that the proposed Substitute will perform adequately the functions and achieve the results called for by the general design, be similar and of equal substance to that specified and be suited to the same use as that specified. The

application will also contain an itemized estimate of all costs and delays or schedule impacts that will result directly or indirectly from review, acceptance and provision of such Substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which will be considered by the Architect/Engineer in evaluating the proposed Substitute. Architect/Engineer may require Contractor to furnish at Contractor's expense, additional data about the proposed Substitute. In rendering a decision, Owner, Architect/Engineer and Contractor shall have access to any available Float Time in the Project Schedule. In the event that Substitute materials or equipment not included as part of the Bid (or Guaranteed Maximum Price Addendum), but proposed after the effective date of the Agreement, are accepted and are less costly than the originally specified materials or equipment, then the net difference in cost shall be credited to the Owner and an appropriate Change Order executed to adjust the Contract Sum.

- (1) Architect/Engineer will be allowed a reasonable time within which to evaluate each proposed Substitute. Architect/Engineer will be the sole judge of acceptability and no Substitute will be ordered, installed or utilized without Architect/Engineer's prior written acceptance which will be evidenced by either a Change Order or an approved shop drawing. Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any Substitute.
- (2) Contractor shall reimburse Owner for the charges of Architect/Engineer and Architect/Engineer's Consultants for evaluating each proposed Substitute submitted after the effective date of the Agreement and all costs resulting from any delays in the Work while the Substitute was undergoing review.

R. Surveys and Stakes. The Contractor shall furnish, free of charge, all labor, stakes, surveys, batter boards for structures, grade lines and other materials and supplies and shall set construction stakes and batter boards for establishing lines, position of structures, slopes and other controlling points necessary for the proper prosecution of the Work. Where rights-of-way, easements, property lines or any other conditions which make the lay-out of the Project or parts of the Project critical are involved, the Contractor shall employ a competent surveyor who is registered in the State of Florida for lay-out and staking. These stakes and marks shall constitute the field control by and in accord with which the Contractor shall govern and execute the Work. The Contractor shall be held responsible for the preservation of all stakes and marks and if for any reason any of the stakes or marks or batter boards become destroyed or disturbed, they shall be immediately and accurately replaced by the Contractor.

S. Suitability of Project Site. The Contractor has, by careful examination, satisfied itself as to the nature and location of the Work and all other matters which can in any way affect the Work, including, but not limited to details pertaining to borings, as shown on the drawings. Such boring information is not guaranteed to be more than a general indication of the materials likely to be found adjacent to holes bored at the Project Site, approximately at the locations indicated. The Contractor has examined boring data, where available, made its own interpretation of the subsurface conditions and other preliminary data, and has based its Bid (or Guaranteed Maximum Price Addendum) on its own opinion of the conditions likely to be encountered. Except as specifically provided in Sections 2.4.U., 5.4 and 5.5, no extra

compensation or extension of time will be considered for any Project Site conditions that existed at the time of bidding (or at the time of execution of the Guaranteed Maximum Price Addendum). No verbal agreement or conversation with any officer, agent or employee of the Owner, before or after the execution of the Agreement, shall affect or modify any of the terms or obligations herein contained.

T. Project Specification Errors. If the Contractor, in the course of the Work, finds that the drawings, specifications or other Contract Documents cannot be followed, the Contractor shall immediately inform the Owner in writing, and the Owner shall promptly check the accuracy of the information. Any Work done after such discovery, until any necessary changes are authorized, will be done at the Contractor's sole risk of non-payment and delay.

U. Remediation of Contamination: Owner and Contractor recognize that remediation of subsurface conditions may be necessary due to potential hazardous materials contamination. Because the presence or extent of any contamination is not known, Contractor shall include no cost in the Contract Sum, and no time in the Project Schedule, for cost or delays that might result from any necessary remediation. The Project Schedule will provide a period of time between demolition activities and the start of the next activity to commence any remediation if needed. Contractor shall use all reasonable efforts in scheduling the Project to minimize the likelihood that remediation delays construction. Any hazardous materials remediation Work which Contractor agrees to perform shall be done pursuant to a Change Order or amendment consistent with the following:

- (1) The dates of Substantial Completion shall be equitably adjusted based on delays, if any, incurred in connection with remediation efforts.
- (2) Contractor, and any Subcontractors which have mobilized on the Project Site, shall be paid for demonstrated costs of overhead operations at the Project Site during any period of delay in excess of seven (7) days, except to the extent that Work proceeds concurrently with remediation. The categories of costs to be reimbursed are limited to those reasonably incurred at the jobsite during the delay period (such as trailers or offices, telephones, faxes, and the like); equipment dedicated to the Project and located at the Project Site; salaries and associated costs of personnel dedicated to the Project to the extent that they do not perform Work on other projects; and other jobsite costs that are reasonable and which are incurred during the delay period. Subcontractors and suppliers which have not mobilized are limited to the costs set forth in Section 2.4.U(3).
- (3) Contractor and any Subcontractor or supplier on the Project who is eligible for compensation shall be paid any demonstrated costs of escalation in materials or labor, and reasonable costs of off-site storage of materials identified to the Project, arising as a result of any delay in excess of seven (7) days. Such Contractor, Subcontractors and suppliers are obligated to take all reasonable steps to mitigate escalation costs, such as through early purchase of materials.

- (4) Contractor, for itself and all Subcontractors and suppliers on the Project, hereby agrees that the extension of time for delays under Section 2.4.U(1), and payment of the costs identified in Sections 2.4.U(2) and/or Section 2.4.U(3), are the sole remedies for costs and delays described in this Section, and waives all claims and demands for extended home office overhead (including, but not limited to, "Eichleay" claims), lost profit or lost opportunities, and any special, indirect, or consequential damages arising as a result of delays described in this Section. The Contract Sum shall be adjusted to reflect payment of allowable costs.
- (5) If any delay described in this section causes the time or cost for the Project to exceed the Contract Time or the Contract Sum, then the Owner may terminate the Agreement pursuant to Section 14.2.
- (6) Contractor and any Subcontractor or supplier seeking additional costs under this Section 2.4.U. shall promptly submit estimates or any costs as requested by Owner, and detailed back-up for all costs when payment is sought or whenever reasonably requested by Owner. All costs are auditable, at Owner's discretion. Bid, estimate and pricing information reasonably related to any request for additional compensation will be provided promptly upon request.
- (7) Contractor shall include provisions in its subcontracts and purchase orders consistent with this Section.

V. Interfacing.

- (1) The Contractor shall take such measures as are necessary to ensure proper construction and delivery of the Project, including but not limited to providing that all procurement of long-lead items, the separate construction Subcontractors, and the general conditions items are performed without duplication or overlap to maintain completion of all Work on schedule. Particular attention shall be given to provide that each Subcontractor bid package clearly identifies the Work included in that particular separate subcontract, its scheduling for start and completion, and its relationship to other separate contractors.
- (2) Without assuming any design responsibilities of the Architect/Engineer, the Contractor shall include in the Progress Reports required under this Section 2.4 comments on overlap with any other separate subcontracts, omissions, lack of correlation between drawings, and any other deficiencies noted, in order that the Architect/Engineer may arrange for necessary corrections.

W. Job Site Facilities. The Contractor shall arrange for all job site facilities required and necessary to enable the Contractor and Architect/Engineer to perform their respective duties and to accommodate any representatives of the Owner which the Owner may choose to have present on the job.

X. Weather Protection. The Contractor shall provide temporary enclosures of building areas in order to assure orderly progress of the Work during periods when extreme weather conditions are likely to be experienced. The Contractor shall also be responsible for providing weather protection for Work in progress and for materials stored on the Project Site. A contingency plan shall be prepared upon request of the Owner for weather conditions that may affect the construction.

Y. Payment and Performance Bond. Prior to the construction commencement date, the Contractor shall obtain, for the benefit of and directed to the Owner, a Payment and Performance Bond satisfying the requirements of Section 255.05, Florida Statutes, covering the faithful performance by the Contractor of its obligations under the Contract Documents, including but not limited to the construction of the Project on the Project Site and the payment of all obligations arising thereunder, including all payments to Subcontractors, laborers, and materialmen. The surety selected by the Contractor to provide the Payment and Performance Bond shall be approved by the Owner prior to the issuance of such Bond, which approval shall not be unreasonably withheld or delayed provided that the surety is rated A or better by Best's Key Guide, latest edition. For Changes in the Work that result in an increase in the Contract Sum, Owner reserves the right to require the Contractor to secure and deliver additive riders to the Payment and Performance Bond.

Z. Construction Phase; Building Permit; Code Inspections. Unless otherwise provided, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work.

- (1) Building Permit. The Owner and Architect/Engineer shall provide such information to any Permitting Authority as is necessary to obtain approval from the Permitting Authority to commence construction prior to beginning construction. The Contractor shall pull any required building permit, and shall be responsible for delivering and posting the building permit at the Project Site prior to the commencement of construction. The cost of the building permit is included in the Contract Sum. The Owner and Architect/Engineer shall fully cooperate with the Contractor when and where necessary.
- (2) Code Inspections. The Project requires detailed code compliance inspection during construction in disciplines determined by any Permitting Authority. These disciplines normally include, but are not necessarily limited to, structural, mechanical, electrical, plumbing, general building and fire. The Contractor shall notify the appropriate inspector(s) and the Architect/Engineer, no less than 24 hours in advance, when the Work is ready for inspection and before the Work is covered up. All inspections shall be made for conformance with the applicable ordinances and building codes. Costs for all re-inspections of Work found defective and subsequently repaired shall not be included as Project Costs and shall be borne by the Contractor or as provided in the contract between Contractor and Subcontractor.

- (3) Contractor's Personnel. The Contractor shall maintain sufficient off-site support staff and competent full-time staff at the Project Site authorized to act on behalf of the Contractor to coordinate, inspect, and provide general direction of the Work and progress of the Subcontractors. At all times during the performance of the Work, the Owner shall have the right to demand replacement of Contractor Personnel to whom the Owner has reasonable objection, without liability to the Contractor.

- (4) Lines of Authority. To provide general direction of the Work, the Contractor shall establish and maintain lines of authority for its personnel and shall provide this information to the Owner and all other affected parties, such as the code inspectors of any Permitting Authority, the Subcontractors, and the Architect/Engineer. The Owner and Architect/Engineer may attend meetings between the Contractor and his Subcontractors; however, such attendance is optional and shall not diminish either the authority or responsibility of the Contractor to administer the subcontracts.

AA. Quality Control. The Contractor shall develop and maintain a program, acceptable to the Owner and Architect/Engineer, to assure quality control of the construction. The Contractor shall be responsible for and supervise the Work of all Subcontractors, providing instructions to each when their Work does not conform to the requirements of the Project Plans and Specifications, and the Contractor shall continue to coordinate the Work of each Subcontractor to ensure that corrections are made in a timely manner so as to not affect the efficient progress of the Work. Should a disagreement occur between the Contractor and the Architect/Engineer over the acceptability of the Work, the Owner, at its sole discretion and in addition to any other remedies provided herein, shall have the right to determine the acceptability, provided that such determination is consistent with standards for construction projects of this type and generally accepted industry standards for workmanship in the State of Florida.

BB. Management of Subcontractors. All Subcontractors shall be compensated in accordance with Article IV. The Contractor shall solely control the Subcontractors. The Contractor shall negotiate all Change Orders and Field Orders with all affected Subcontractors and shall review the costs and advise the Owner and Architect/Engineer of their validity and reasonableness, acting in the Owner's best interest. When there is an imminent threat to health and safety, and Owner's Project Representative concurrence is impractical, the Contractor shall act immediately to remove the threats to health and safety and shall subsequently fully inform Owner of all such action taken. The Contractor shall also carefully review all shop drawings and then forward the same to the Architect/Engineer for review and actions. The Architect/Engineer will transmit them back to the Contractor, who will then issue the shop drawings to the affected Subcontractor for fabrication or revision. The Contractor shall maintain a suspense control system to promote expeditious handling. The Contractor shall request the Architect/Engineer to make interpretations of the drawings or specifications requested of him by the Subcontractors and shall maintain a business system to promote timely response. The Contractor shall inform the Architect/Engineer which shop drawings or requests for clarification have the greatest urgency, so as to enable the Architect/Engineer to prioritize requests coming from the Contractor.

The Contractor shall advise the Owner and Architect/Engineer when timely response is not occurring on any of the above.

CC. Job Requirements.

- (1) The Contractor shall provide each of the following as a part of its services hereunder:
 - (a) Maintain a log of daily activities, including manpower records, equipment on site, weather, delays, major decisions, etc;
 - (b) Maintain a roster of companies on the Project with names and telephone numbers of key personnel;
 - (c) Establish and enforce job rules governing parking, clean-up, use of facilities, and worker discipline;
 - (d) Provide labor relations management and equal opportunity employment for a harmonious, productive Project;
 - (e) Provide and administer a safety program for the Project and monitor for subcontractor compliance without relieving them of responsibilities to perform Work in accordance with best acceptable practice;
 - (f) Provide a quality control program as provided under Section 2.4.C above;
 - (g) Provide miscellaneous office supplies that support the construction efforts which are consumed by its own forces;
 - (h) Provide for travel to and from its home office to the Project Site and to those other places within Manatee County as required by the Project;
 - (i) Verify that tests, equipment, and system start-ups and operating and maintenance instructions are conducted as required and in the presence of the required personnel and provide adequate records of same to the Architect/Engineer;
 - (j) Maintain at the job site orderly files for correspondence, reports of job conferences, shop drawings and sample submissions, reproductions of original Contract Documents including all addenda, change orders, field orders, additional drawings issued subsequent to the execution of the Agreement, Owner/Architect/Engineer's clarifications and interpretations of the Contract Documents, progress reports, as-built drawings, and other project related documents;

- (k) Keep a diary or log book, recording hours on the job site, weather conditions, data relative to questions of extras or deductions; list of visiting officials and representatives or manufacturers, fabricators, suppliers and distributors; daily activities, decisions, observations in general and specific observations in more detail as in the case of observing test procedures, and provide copies of same to Owner/Architect/Engineer;
 - (l) Record names, addresses and telephone numbers of all Contractors, Subcontractors and major suppliers of materials and equipment;
 - (m) Furnish Owner/Architect/Engineer periodic reports, as required, of progress of the Work and Contractor's compliance with the approved progress schedule and schedule of shop drawing submissions;
 - (n) Consult with Owner/Architect/Engineer in advance of scheduling major tests, inspections or start of important phases of the Work;
 - (o) Verify, during the course of the Work, that certificates, maintenance and operations manuals and other data required to be assembled and furnished are applicable to the items actually installed, and deliver same to Owner/Architect/Engineer for review prior to final Acceptance of the Work; and
 - (p) Cooperate with Owner in the administration of grants.
- (2) The Contractor shall provide personnel and equipment, or shall arrange for separate Subcontractors to provide each of the following as a Project Cost:
- (a) Services of independent testing laboratories, and provide the necessary testing of materials to ensure conformance to contract requirements; and
 - (b) Printing and distribution of all required bidding documents and shop drawings, including the sets required by Permitting Authority inspectors.

DD. As-Built Drawings. The Contractor shall continuously review as-built drawings and mark up progress prints to provide as much accuracy as possible. Prior to, and as a requirement for authorizing final payment to the Contractor due hereunder, the Contractor shall provide to the Owner an original set of marked-up, as-built Project Plans and Specifications and an electronic format of those records showing the location and dimensions of the Project as constructed, which documents shall be certified as being correct by the Contractor and the Architect/Engineer. Final as-built drawings shall be signed and sealed by a registered Florida surveyor.

EE. Progress Reports. The Contractor shall forward to the Owner, as soon as practicable after the first day of each month, a summary report of the progress of the various parts of the Work under the Contract, in fabrication and in the field, stating the existing status, estimated time of completion and cause of delay, if any. Together with the summary report, the Contractor shall submit any necessary revisions to the original schedule for the Owner's review and approval. In addition, more detailed schedules may be required by the Owner for daily traffic control.

FF. Contractor's Warranty. The Contractor warrants to the Owner and Architect/Engineer that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements will be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect/Engineer, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

- (1) Contractor shall use its best efforts and due diligence to ensure that during the warranty period, those entities or individuals who have provided direct warranties to the Owner as required by the Contract Documents perform all required warranty Work in a timely manner and at the sole cost and expense of such warranty providers. Any such cost or expense not paid by the warranty providers shall be paid by the Contractor, to include any costs and attorney's fees incurred in warranty-related litigation between Contractor and any Subcontractors.
- (2) The Contractor shall secure guarantees and warranties of Subcontractors, equipment suppliers and materialmen, and assemble and deliver same to the Owner in a manner that will facilitate their maximum enforcement and assure their meaningful implementation. The Contractor shall collect and deliver to the Owner any specific written guaranties or warranties given by others as required by subcontracts.
- (3) At the Owner's request, the Contractor shall conduct, jointly with the Owner and the Architect/Engineer, no more than two (2) warranty inspections within three (3) years after the Substantial Completion Date.

GG. Apprentices. If Contractor employs apprentices, their performance of Work shall be governed by and comply with the provisions of Chapter 446, Florida Statutes.

HH. Schedule of Values. Unit prices shall be established for this Contract by the submission of a schedule of values within ten (10) days of receipt of the Notice to Proceed. The schedule shall include quantities and prices of items equaling the Contract Sum and will subdivide the Work into components in sufficient detail to serve as the basis for progress payments during construction. Such prices shall include an appropriate amount of

overhead and profit applicable to each item of Work. Upon request of the County, the Contractor shall support the values with data which will substantiate their correctness.

II. Other Contracts. The Owner reserves the right to let other Contracts in connection with this Work. The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and execution of their Work, and promptly connect and coordinate the Work with theirs.

ARTICLE III COMPENSATION

3.1 Compensation. The Contract Sum constitutes the total compensation (subject to authorized adjustments) payable to Contractor for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by Contractor shall be at Contractor's expense without change in the Contract Sum.

A. Adjustments. The Contract Sum may only be changed by Change Order or by a written amendment. Any claim for an increase or decrease in the Contract Sum shall be based on written notice delivered by the party making the claim to the other party. Notice of the amount of the claim with supporting data shall be delivered within fifteen (15) days from the beginning of such occurrence and shall be accompanied by claimant's written statement that the amount claimed covers all known amounts (direct, indirect and consequential) to which the claimant is entitled as a result of the occurrence of said event. Failure to deliver a claim within the requisite 15-day period shall constitute a waiver of the right to pursue said claim.

B. Valuation. The value of any Work covered by a Change Order or of any claim for an increase or decrease in the Contract Sum shall be determined in one of the following ways (at Owner's discretion):

- (1) In the case of Unit Price Work, in accordance with Section 3.1.C, below;
or
- (2) By mutual acceptance of lump sum; or
- (3) On the basis of the cost of the Work, plus a negotiated Contractor's fee for overhead and profit. Contractor shall submit an itemized cost breakdown together with supporting data.

C. Unit Price Work. The unit price of an item of Unit Price Work shall be subject to re-evaluation and adjustment pursuant to a requested Change Order under the following conditions:

- (1) If the total cost of a particular item of Unit Price Work amounts to 5% or more of the Contract Sum and the variation in the quantity of the particular item of Unit Price Work performed by Contractor differs by more than 15% from the estimated quantity of such item indicated in the Agreement;
and

- (2) If there is no corresponding adjustment with respect to any other item of Work; and
- (3) If Contractor believes that it has incurred additional expense as a result thereof; or
- (4) If Owner believes that the quantity variation entitles it to an adjustment in the unit price; or
- (5) If the parties are unable to agree as to the effect of any such variations in the quantity of Unit Price Work performed.

3.2 Schedule of Compensation. All payments for services and material under the Contract Documents shall be made in accordance with the following provisions.

A. Periodic Payments for Services. The Contractor shall be entitled to receive payment for Construction Services rendered pursuant to Section 2.4 in periodic payments which shall reflect a fair apportionment of cost and schedule of values of services furnished prior to payment, subject to the provisions of this Section.

B. Payment for Materials and Equipment. In addition to the periodic payments authorized hereunder, payments may be made for material and equipment not incorporated in the Work but delivered and suitably stored at the Project Site, or another location, subject to prior approval and acceptance by the Owner on each occasion.

C. Credit toward Contract Sum. All payments for Construction Services made hereunder shall be credited toward the payment of the Contract Sum as Contractor's sole compensation for the construction of the Project.

3.3 Invoice and Payment. All payments for services and materials under the Contract Documents shall be invoiced and paid in accordance with the following provisions.

A. Invoices. The Contractor shall submit to the Owner periodic invoices for payment, in a form acceptable to the Owner, which shall include a sworn statement certifying that, to the best of the Contractor's knowledge, information and belief, the construction has progressed to the point indicated, the quality and the Work covered by the invoice is in accord with the Project Plans and Specifications, and the Contractor is entitled to payment in the amount requested, along with the cost reports required pursuant to Article II, showing in detail all monies paid out, Project Costs accumulated, or Project Cost incurred during the previous period. This data shall be attached to the invoice.

B. Additional Information; Processing of Invoices. Should an invoiced amount appear to exceed the Work effort believed to be completed, the Owner may, prior to processing of the invoice for payment, require the Contractor to submit satisfactory evidence to support the invoice. All progress reports and invoices shall be delivered to the attention of the Owner's Project Representative. Invoices not properly prepared (mathematical errors, billing not reflecting actual Work done, no signature, etc.) shall be returned to the Contractor for correction.

C. Architect/Engineer's Approval. Payment for Work completed shall be subject to the Architect/Engineer approving the payment requested by the Contractor and certifying the amount thereof that has been properly incurred and is then due and payable to the Contractor, and identifying with specificity any amount that has not been properly incurred and that should not be paid.

D. Warrants of Contractor with Respect to Payments. The Contractor warrants that (1) upon payment of any retainage, materials and equipment covered by a partial payment request will pass to Owner either by incorporation in construction or upon receipt of payment by the Contractor, whichever occurs first; (2) Work, materials and equipment covered by previous partial payment requests shall be free and clear of liens, claims, security interests, or encumbrances, hereinafter referred to as "liens"; and (3) no Work, materials or equipment covered by a partial payment request which has been acquired by the Contractor or any other person performing Work at the Project Site, or furnishing materials or equipment for the Project, shall be subject to an agreement under which an interest therein or an encumbrance thereon is retained by the seller or otherwise imposed by the Contractor or any other person.

E. All Compensation Included. Contractor's compensation includes full payment for services set forth in the Contract Documents, including but not limited to overhead, profit, salaries or other compensation of Contractor's officers, partners and/or employees, general operating expenses incurred by Contractor and relating to this Project, including the cost of management, supervision and data processing staff, job office equipment and supplies, and other similar items.

ARTICLE IV SUBCONTRACTORS

4.1 Subcontracts. At the Owner's request, the Contractor shall provide Owner's Project Representative with copies of all proposed and final subcontracts, including the general and supplementary conditions thereof.

A. Subcontracts Generally. All subcontracts shall: (1) require each Subcontractor to be bound to Contractor to the same extent Contractor is bound to Owner by the terms of the Contract Documents, as those terms may apply to the portion of the Work to be performed by the Subcontractor, (2) provide for the assignment of the subcontracts from Contractor to Owner at the election of Owner, upon termination of Contractor, (3) provide that Owner will be an additional indemnified party of the subcontract, (4) provide that Owner will be an additional insured on all insurance policies required to be provided by the Subcontractor, except workers' compensation, (5) assign all warranties directly to Owner, and (6) identify Owner as an intended third-party beneficiary of the subcontract.

(1) A Subcontractor is a person (or entity) who has a direct contract with Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

(2) A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

B. No Damages for Delay. Except when otherwise expressly agreed to by Owner in writing, all subcontracts shall provide:

"LIMITATION OF REMEDIES – NO DAMAGES FOR DELAY. The Subcontractor's exclusive remedy for delays in the performance of the contract caused by events beyond its control, including delays claimed to be caused by the Owner or Architect/Engineer or attributable to the Owner or Architect/Engineer and including claims based on breach of contract or negligence, shall be an extension of its contract time and shall in no way involve any monetary claim."

Each subcontract shall require that any claims by the Subcontractor for delay must be submitted to the Contractor within the time and in the manner in which the Contractor must submit such claims to the Owner, and that failure to comply with the conditions for giving notice and submitting claims shall result in the waiver of such claims.

C. Subcontractual Relations. The Contractor shall require each Subcontractor to assume all the obligations and responsibilities which the Contractor owes the Owner pursuant to the Contract Documents, by the parties to the extent of the Work to be performed by the Subcontractor. Said obligations shall be made in writing and shall preserve and protect the rights of the Owner and Architect/Engineer, with respect to the Work to be performed by the Subcontractor, so that the subcontracting thereof will not prejudice such rights. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with its sub-subcontractors.

D. Insurance; Acts and Omissions. Insurance requirements for Subcontractors shall be no more stringent than those requirements imposed on the Contractor by the Owner. The Contractor shall be responsible to the Owner for the acts and omissions of its employees, agents, Subcontractors, their agents and employees, and all other persons performing any of the Work or supplying materials under a contract to the Contractor.

4.2 Relationship and Responsibilities. Except as specifically set forth herein with respect to direct materials acquisitions by Owner, nothing contained in the Contract Documents or in any Contract Document does or shall create any contractual relation between the Owner or Architect/Engineer and any Subcontractor. Specifically, the Contractor is not acting as an agent of the Owner with respect to any Subcontractor. The utilization of any Subcontractor shall not relieve Contractor from any liability or responsibility to Owner, or obligate Owner to the payment of any compensation to the Subcontractor or additional compensation to the Contractor.

4.3 Payments to Subcontractors; Monthly Statements. The Contractor shall be responsible for paying all Subcontractors from the payments made by the Owner to Contractor pursuant to Article III, subject to the following provisions:

A. Payment. The Contractor shall, no later than ten (10) days after receipt of payment from the Owner, out of the amount paid to the Contractor on account of such Subcontractor's Work, pay to each Subcontractor the amount to which the Subcontractor is entitled in accordance with the terms of the Contractor's contract with such Subcontractor. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to sub-Subcontractors in a similar manner. After receipt of payment from Owner, if the need should arise to withhold payments to Subcontractors for any reason, as solely determined by Contractor, the Contractor shall promptly restore such monies to the Owner, adjusting subsequent pay requests and Project bookkeeping as required.

B. Final Payment of Subcontractors. The final payment of retainage to Subcontractors shall not be made until the Project has been inspected by the Architect/Engineer or other person designated by the Owner for that purpose, and until both the Architect/Engineer and the Contractor have issued a written certificate that the Project has been constructed in accordance with the Project Plans and Specifications and approved Change Orders. Before issuance of final payment to any Subcontractor without any retainage, the Subcontractor shall submit satisfactory evidence that all payrolls, material bills, and other indebtedness connected with the Project have been paid or otherwise satisfied, warranty information is complete, as-built markups have been submitted, and instruction for the Owner's operating and maintenance personnel is complete. Final payment may be made to certain select Subcontractors whose Work is satisfactorily completed prior to the completion of the Project, but only upon approval of the Owner's Project Representative.

4.4 Responsibility for Subcontractors. As provided in Section 2.4.BB, Contractor shall be fully responsible to Owner for all acts and omissions of the Subcontractors, suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect Contract with Contractor just as Contractor is responsible for Contractor's own acts and omissions.

4.5 Contingent Assignment of Subcontracts. Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that:

- (1) Assignment is effective only after termination of the Contract by the Owner for cause pursuant to Article XIV and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and
- (2) Assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Agreement.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract. Upon such assignment, if the Work has been suspended for more than thirty (30) days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension. Upon such assignment to the Owner, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner

shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE V CHANGES IN WORK

5.1 General. Changes in the Work may be accomplished after execution of the Agreement, and without invalidating the Agreement, by Change Order, Work Directive Change or order for a minor change in the Work, subject to the limitations stated in this Article V and elsewhere in the Contract Documents. A Change Order shall be based upon agreement among the Owner, Contractor and Architect/Engineer; a Work Directive Change requires agreement by the Owner and Architect/Engineer and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Architect/Engineer alone. Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Work Directive Change or order for a minor change in the Work.

5.2 Minor Changes in the Work. The Owner or Architect/Engineer shall have authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such change will be effected by written order signed by the Architect/Engineer and shall be binding on the Owner and Contractor. The Contractor shall abide by and perform such minor changes. Such changes shall be effected by a Field Directive or a Work Directive Change. Documentation of changes shall be determined by the Construction Team, and displayed monthly in the Progress Reports. Because such changes shall not affect the Contract Sum to be paid to the Contractor, they shall not require a Change Order pursuant to Section 5.6.

5.3 Emergencies. In any emergency affecting the safety of persons or property, the Contractor shall act at its discretion to prevent threatened damage, injury, or loss. Any increase in the Contract Sum or extension of time claimed by the Contractor on account of emergency Work shall be determined as provided in Section 5.6. However, whenever practicable, the Contractor shall obtain verbal concurrence of the Owner's Project Representative and Architect/Engineer where the act will or may affect the Contract Sum or Contract Time.

5.4 Concealed Conditions. If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect/Engineer before conditions are disturbed and in no event later than ten (10) days after first observance of the conditions. The Architect/Engineer will promptly investigate such conditions and, if the Architect/Engineer determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect/Engineer determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect/Engineer

shall promptly notify the Owner and Contractor in writing, stating the reasons. If either party disputes the Architect/Engineer's determination or recommendation, that party may proceed as provided in Article VIII.

5.5 Hazardous Materials. In the event the Contractor encounters on the Project Site material reasonably believed to be hazardous, petroleum or petroleum related products, or other hazardous or toxic substances, except as provided in Section 2.4.U, the Contractor shall immediately stop Work in the area affected and report the condition to the Owner and the Architect/Engineer in writing. The Work in the affected area shall not thereafter be resumed except by written amendment, if in fact the material or substance has not been rendered harmless. The Work in the affected area shall be resumed when the Project Site has been rendered harmless, in accordance with the final determination by the Architect/Engineer or other appropriate professional employed by Owner. The Contractor shall not be required to perform without its consent any Work relating to hazardous materials, petroleum or petroleum related products, or other hazardous or toxic substances. In the event the Contractor encounters on the Project Site materials believed in good faith to be hazardous or contaminated material, and the presence of such hazardous or contaminated material was not known and planned for at the time the Contractor submitted its Bid (or Guaranteed Maximum Price proposal), and it is necessary for the Contractor to stop Work in the area affected and delays Work for more than a seven (7) day period, adjustments to the Contract Sum and/or Contract Time shall be made in accordance with this Article V.

5.6 Change Orders; Adjustments to Contract Sum.

A. Change Orders Generally. The increase or decrease in the Contract Sum resulting from a change authorized pursuant to the Contract Documents shall be determined:

- (1) By mutual acceptance of a lump sum amount properly itemized and supported by sufficient substantiating data, to permit evaluation by the Architect/Engineer and Owner; or
- (2) By unit prices stated in the Agreement or subsequently agreed upon; or
- (3) By any other method mutually agreeable to Owner and Contractor.

If Owner and Contractor are unable to agree upon increases or decreases in the Contract Sum and the Architect/Engineer certifies that the work needs to be commenced prior to any such agreement, the Contractor, provided it receives a written Change Order signed by or on behalf of the Owner, shall promptly proceed with the Work involved. The cost of such Work shall then be determined on the basis of the reasonable expenditures of those performing the Work attributed to the change. However, in the event a Change Order is issued under these conditions, the Owner, through the Architect/Engineer, will establish an estimated cost of the Work and the Contractor shall not perform any Work whose cost exceeds that estimated without prior written approval by the Owner. In such case, the Contractor shall keep and present in such form as the Owner may prescribe an itemized accounting, together with appropriate supporting data of the increase in overall costs of the Project. The amount of any decrease in the Contract Sum to be allowed by the Contractor to the Owner for any deletion or change which results in a net decrease in costs will be the amount of the actual net decrease.

5.7 Unit Prices. If unit prices are stated in the Contract Documents or subsequently agreed upon, and if the quantities originally contemplated are so changed in a proposed Change Order that application of the agreed unit prices to the quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices and Contract Sum shall be equitably adjusted.

5.8 Owner-Initiated Changes. Without invalidating the Agreement and without notice to any Surety, Owner may, at any time, order additions, deletions or revisions in the Work. These will be authorized by a written amendment, a Field Directive, a Change Order, or a Work Directive Change, as the case may be. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided). A Work Directive Change may not change the Contract Sum or the Contract Time; but is evidence that the parties expect that the change directed or documented by a Work Directive Change will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Sum or Contract Time.

5.9 Unauthorized Work. Contractor shall not be entitled to an increase in the Contract Sum or an extension of the Contract Time with respect to any Work performed that is not required by the Contract Documents.

5.10 Defective Work. Owner and Contractor shall execute appropriate Change Orders (or written amendments) covering changes in the Work which are ordered by Owner, or which may be required because of acceptance of defective Work, without adjustment to the Contract Sum.

5.11 Estimates for Changes. At any time Architect/Engineer may request a quotation from Contractor for a proposed change in the Work. Within twenty-one (21) calendar days after receipt, Contractor shall submit a written and detailed proposal for an increase or decrease in the Contract Sum or Contract Time for the proposed change. Architect/Engineer shall have twenty one (21) calendar days after receipt of the detailed proposal to respond in writing. The proposal shall include an itemized estimate of all costs and time for performance that will result directly or indirectly from the proposed change. Unless otherwise directed, itemized estimates shall be in sufficient detail to reasonably permit an analysis by Architect/Engineer of all material, labor, equipment, subcontracts, overhead costs and fees, and shall cover all Work involved in the change, whether such Work was deleted, added, changed or impacted. Notwithstanding the request for quotation, Contractor shall carry on the Work and maintain the progress schedule. Delays in the submittal of the written and detailed proposal will be considered non-prejudicial.

5.12 Form of Proposed Changes. The form of all submittals, notices, Change Orders and other documents permitted or required to be used or transmitted under the Contract Documents shall be determined by the Owner. Standard Owner forms shall be utilized.

5.13 Changes to Contract Time. The Contract Time may only be changed pursuant to a Change Order or a written amendment to the Contract Documents. Any claim for an extension or shortening of the Contract Time shall be based on written notice delivered by the party making the claim to the other party. Notice of the extent of the claim with supporting data

shall be delivered within fifteen (15) days from detection or beginning of such occurrence and shall be accompanied by the claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant has reason to believe it is entitled as a result of the occurrence of said event. The Contract time will be extended in an amount equal to time lost due to delays beyond the control of Contractor. Such delays shall include, but not be limited to, acts or neglect by Owner or others performing additional Work; or to fires, floods, epidemics, abnormal weather conditions or acts of God. Failure to deliver a written notice of claim within the requisite 15-day period shall constitute a waiver of the right to pursue said claim.

ARTICLE VI ROLE OF ARCHITECT/ENGINEER

6.1 General.

A. Retaining. The Owner shall retain an Architect/Engineer (whether an individual or an entity) lawfully licensed to practice in Florida. That person or entity is identified as the Architect/Engineer in the Agreement and is referred to throughout the Contract Documents as if singular in number.

B. Duties. Duties, responsibilities and limitations of authority of the Architect/Engineer as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner and Architect/Engineer. Consent shall not be unreasonably withheld.

C. Termination. If the employment of the Architect/Engineer is terminated, the Owner shall employ a successor Architect/Engineer as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect/Engineer.

6.2 Administration. The Architect/Engineer will provide administration of the Agreement as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect/Engineer approves the final Application for Payment. The Architect/Engineer will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

A. Site Visits. The Architect/Engineer will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work complete, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. Unless specifically instructed by Owner, the Architect/Engineer will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect/Engineer will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

B. **Reporting.** On the basis of the site visits, the Architect/Engineer will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. The Architect/Engineer will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect/Engineer will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

6.3 Interpretation of Project Plans and Specifications. The Architect/Engineer will be the interpreter of the requirements of the Project Plans and Specifications. Upon receipt of comments or objections by Contractor or Owner, the Architect/Engineer will make decisions on all claims, disputes, or other matters pertaining to the interpretation of the Project Plans and Specifications.

6.4 Rejection of Non-Conforming Work. Upon consultation with Owner, the Architect/Engineer shall have the authority to reject Work which does not conform to the Project Plans and Specifications.

6.5 Correction of Work. The Contractor shall promptly correct all Work rejected by the Architect/Engineer for being defective or as failing to conform to the Project Plans and Specifications, whether observed before or after the Substantial Completion Date and whether or not fabricated, installed, or completed. The Contractor shall bear all costs of correcting such rejected Work, including compensation for Architect/Engineer's additional services made necessary thereby.

6.6 Timely Performance of Architect/Engineer. The Contractor shall identify which requests for information or response from the Architect/Engineer have the greatest urgency and those items which require prioritizing in response by the Architect/Engineer. The Contractor shall also identify the preferred time period for response and shall request a response time which is reasonably and demonstrably related to the needs of the Project and Contractor. In the event that Architect/Engineer claims that Contractor's expectations for a response are unreasonable, Owner shall require Architect/Engineer to communicate such claim to Contractor in writing together with the specific time necessary to respond and the date upon which such response will be made. In the event that Contractor believes that Architect/Engineer is not providing timely services or responses, Contractor shall notify Owner of same in writing not less than two (2) weeks before Contractor believes performance or response time from Architect/Engineer is required without risk of delaying the Project.

ARTICLE VII OWNER'S RIGHTS AND RESPONSIBILITIES

7.1 Project Site; Title. The Owner shall provide the lands upon which the Work under the Contract Documents is to be done, except that the Contractor shall provide all necessary additional land required for the erection of temporary construction facilities and storage of his materials, together with right of access to same. The Owner hereby represents to the Contractor that it currently has and will maintain up through and including the Substantial Completion Date, good title to all of the real property constituting the Project Site. Owner agrees to resolve, at its expense, any disputes relating to the ownership and use of the Project Site which might arise during the course of construction.

7.2 Project Plans and Specifications; Architect/Engineer. The parties hereto acknowledge and agree that Owner has previously entered into an agreement with Architect/Engineer. Pursuant to the terms of such agreement, the Architect/Engineer, as an agent and representative of Owner, is responsible for the preparation of Project Plans and Specifications which consist of drawings, specifications, and other documents setting forth in detail the requirements for the construction of the Project. All of such Project Plans and Specifications shall be provided either by Owner or the Architect/Engineer, and Contractor shall be under no obligation to provide same and shall be entitled to rely upon the accuracy and completeness of the Project Plans and Specifications provided by the Architect/Engineer and all preliminary drawings prepared in connection therewith. The Contractor will be furnished a reproducible set of all drawings and specifications reasonably necessary for the performance of Contractor's services hereunder and otherwise ready for printing. The Contractor shall be notified of any written modification in the agreement between Owner and Architect/Engineer.

7.3 Surveys; Soil Tests and Other Project Site Information. Owner shall be responsible for providing a legal description and certified land survey of the Project Site in a form and content and with such specificity as may be required by the Architect/Engineer and Contractor to perform their services. To the extent deemed necessary by Owner and Architect/Engineer, and solely at Owner's expense, Owner may engage the services of a geotechnical consultant to perform test borings and other underground soils testing as may be deemed necessary by the Architect/Engineer or the Contractor. Contractor shall not be obligated to provide such surveys or soil tests and shall be entitled to rely upon the accuracy and completeness of the information provided; subject, however, to the provisions of Section 2.4.S hereof. Owner shall provide Contractor, as soon as reasonably possible following the execution of the Contract Documents, all surveys or other survey information in its possession describing the physical characteristics of the Project Site, together with soils reports, subsurface investigations, utility locations, deed restrictions, easements, and legal descriptions then in its possession or control. Upon receipt of all surveys, soils tests, and other Project Site information, Contractor shall promptly advise Owner of any inadequacies in such information and of the need for any additional surveys, soils or subsoil tests. In performing this Work, Contractor shall use the standard of care of experienced contractors and will use its best efforts timely to identify all problems or omissions. Owner shall not be responsible for any delay or damages to the Contractor for any visible or disclosed site conditions or disclosed deficiencies in the Project Site which should have been identified by Contractor and corrected by Owner prior to the execution of the Contract Documents.

7.4 Information; Communication; Coordination. The Owner's Project Representative shall examine any documents or requests for information submitted by the Contractor and shall advise Contractor of Owner's decisions pertaining thereto within a reasonable period of time to avoid unreasonable delay in the progress of the Contractor's services. Contractor shall indicate if any such documents or requests warrant priority consideration. However, decisions pertaining to approval of the Project Schedule as it relates to the date of Substantial Completion, the Project Cost, Contractor's compensation, approving or changing the Contract Sum shall only be effective when approved by Owner in the form of a written Change Order or amendment to the Contract Documents. Owner reserves the right to designate a different Owner's Project Representative provided Contractor is notified in writing of any such change. Owner and Architect/Engineer may communicate with Subcontractors, materialmen, laborers, or suppliers engaged to perform services on the Project, but only for informational purposes. Neither the Owner nor the Architect/Engineer shall attempt to direct the Work of or otherwise interfere with any Subcontractor, materialman, laborer, or supplier, or otherwise interfere with the Work of the Contractor. Owner shall furnish the data required of Owner under the Contract Documents promptly.

7.5 Governmental Body. The Contractor recognizes that the Owner is a governmental body with certain procedural requirements to be satisfied. The Contractor has and will make reasonable allowance in its performance of services for such additional time as may be required for approvals and decisions by the Owner and any other necessary government agency.

7.6 Pre-Completion Acceptance. The Owner shall have the right to take possession of and use any completed portions of the Work, although the time for completing the entire Work or such portions may not have expired, but such taking possession and use shall not be deemed an acceptance of any Work not completed in accordance with the Contract Documents.

7.7 Ownership and Use of Drawings, Specifications and Other Instruments of Service.

- (1) The Architect/Engineer and the Architect/Engineer's consultants shall be deemed the authors and owners of their respective instruments of service, including the Project Plans and Specifications, and will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the instruments of service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be constructed as publication in derogation of the Architect/Engineer's or Architect/Engineer's consultants' reserved rights.
- (2) The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the drawings and specifications provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Project Plans and Specifications or other instruments of service. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the

drawings or specifications on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect/Engineer and the Architect/Engineer's consultants.

7.8 Owner's Project Representative. Owner's Project Representative is Owner's Agent, who will act as directed by and under the supervision of the Owner, and who will confer with Owner/Architect/Engineer regarding his actions. The Owner's Project Representative's dealings in matters pertaining to the on-site Work shall, in general, be only with the Owner/Architect/Engineer and Contractor and dealings with Subcontractors shall only be through or with the full knowledge of Contractor.

A. Responsibilities. Except as otherwise instructed in writing by Owner, the Owner's Project Representative will:

- (1) Attend preconstruction conferences; arrange a schedule of progress meetings and other job conferences as required in consultation with Owner/Architect/Engineer and notify those expected to attend in advance; and attend meetings and maintain and circulate copies of minutes thereof;
- (2) Serve as Owner/Architect/Engineer's liaison with Contractor, working principally through Contractor's superintendent, to assist in understanding the intent of the Contract Documents. As requested by Owner/Architect/Engineer, assist in obtaining additional details or information when required at the job site for proper execution of the Work;
- (3) Report to Owner/Architect/Engineer whenever he believes that any Work is unsatisfactory, faulty or defective or does not conform to the Contract Documents;
- (4) Accompany visiting inspectors representing public or other agencies having jurisdiction over the project; record the outcome of these inspections and report to Owner/Architect/Engineer;
- (5) Review applications for payment with Contractor for compliance with the established procedure for their submission and forward them with recommendations to Owner/Architect/Engineer; and
- (6) Perform those duties as set forth elsewhere within the Contract Documents.

B. Limitations. Except upon written instructions of Owner, Owner's Project Representative shall not:

- (1) Authorize any deviation from the Contract Documents or approve any substitute materials or equipment;

- (2) Exceed limitations on Owner/Architect/Engineer's authority as set forth in the Contract Documents;
- (3) Undertake any of the responsibilities of Contractor, Subcontractors or Contractor's superintendent, or expedite the Work;
- (4) Advise on or issue directions relative to any aspect of the means, methods, techniques, sequences or procedures of construction unless such is specifically called for in the Contract Documents;
- (5) Advise on or issue directions as to safety precautions and programs in connection with the Work;
- (6) Authorize Owner to occupy the project in whole or in part; or
- (7) Participate in specialized field or laboratory tests.

**ARTICLE VIII
RESOLUTION OF DISAGREEMENTS;
CLAIMS FOR COMPENSATION**

8.1 Owner to Decide Disputes. The Owner shall reasonably decide all questions and disputes, of any nature whatsoever, that may arise in the execution and fulfillment of the services provided for under the Contract Documents, in accordance with the Procurement Ordinance.

8.2 Finality. The decision of the Owner upon all claims, questions, disputes and conflicts shall be final and conclusive, and shall be binding upon all parties to the Contract Documents, subject to judicial review as provided in Section 8.5 below.

8.3 No Damages for Delay. If at any time Contractor is delayed in the performance of Contractor's responsibilities under the Contract Documents as the result of a default or failure to perform in a timely manner by Owner or Owner's agents or employees, Contractor shall not be entitled to any damages except for compensation specifically authorized in Article III. Contractor's sole remedy will be a right to extend the time for performance. Nothing herein shall preclude Contractor from any available remedy against any responsible party other than Owner. Contractor shall be responsible for liquidated damages for delay pursuant to Section 3 of the Agreement.

8.4 Permitted Claims Procedure. Where authorized or permitted under the Contract Documents, all claims for additional compensation by Contractor, extensions of time affecting the Substantial Completion Date, for payment by the Owner of costs, damages or losses due to casualty, Force Majeure, Project Site conditions or otherwise, shall be governed by the following:

- (1) All claims must be submitted as a request for Change Order in the manner as provided in Article V.

- (2) The Contractor must submit a notice of claim to Owner's Project Representative and to the Architect/Engineer within fifteen (15) days of when the Contractor was or should have been aware of the fact that an occurrence was likely to cause delay or increased costs. Failure to submit a claim within the requisite 15-day period shall constitute a waiver of the right to pursue said claim.
- (3) Within twenty (20) days of submitting its notice of claim, the Contractor shall submit to the Owner's Project Representative its request for Change Order, which shall include a written statement of all details of the claim, including a description of the Work affected.
- (4) After receipt of a request for Change Order, the Owner's Project Representative, in consultation with the Architect/Engineer, shall deliver to the Contractor, within twenty (20) days after receipt of request, its written response to the claim.
- (5) In the event the Owner and Contractor are unable to agree on the terms of a Change Order, the Owner shall have the option to instruct the Contractor to proceed with the Work. In that event, the Owner shall agree to pay for those parts of the Work, the scope and price of which are not in dispute. The balance of the disputed items in the order to proceed will be resolved after completion of the Work, based upon completed actual cost.
- (6) The rendering of a decision by Owner with respect to any such claim, dispute or other matter (except any which have been waived by the making or acceptance of final payment) will be a condition precedent to any exercise by Owner or Contractor of such right or remedies as either may otherwise have under the Contract Documents or by laws or regulations in respect of any such claim, dispute or other matter.

8.5 Contract Claims and Disputes. After completion of the process set forth in Section 8.4 above, any unresolved dispute under this Agreement shall be decided by the Purchasing Official in accordance with Section 2-26-63 of the Manatee County Code of Laws, subject to an administrative hearing process as provided in Section 2-26-64. The decision of the Board of County Commissioners in accordance with Section 2-26-64 of the Manatee County Code of Laws shall be the final and conclusive County decision subject to exclusive judicial review in circuit court by a petition for certiorari.

8.6 Claims for Consequential Damages. The Contractor and Owner waive claims against each other for consequential damages arising out of or relating to this Agreement. This mutual waiver includes:

- (1) Damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

- (2) Damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article XIV. Nothing contained in this Section 8.6 shall be deemed to preclude an award of liquidated direct damages, when applicable, in accordance with the requirements of the Contract Documents.

ARTICLE IX INDEMNITY

9.1 Indemnity.

A. Indemnification Generally. To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect/Engineer, Architect/Engineer's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorney's fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor or anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Section 9.1.

B. Claims by Employees. In claims against any person or entity indemnified under this Section 9.1 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 9.1.A. shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

9.2 Duty to Defend. The Contractor shall defend the Owner in any action, lawsuit mediation or arbitration arising from the alleged negligence, recklessness or intentionally wrongful conduct of the Contractor and other persons employed or utilized by the Contractor in the performance of the Work. So long as Contractor, through its own counsel, performs its obligation to defend the Owner pursuant to this Section, Contractor shall not be required to pay the Owner's costs associated with the Owner's participation in the defense.

ARTICLE X
ACCOUNTING RECORDS; OWNERSHIP OF DOCUMENTS

10.1 Accounting Records. Records of expenses pertaining to all services performed shall be kept in accordance with generally accepted accounting principles and procedures.

10.2 Inspection and Audit. The Contractor's records shall be open to inspection and subject to examination, audit, and/or reproduction during normal working hours by the Owner's agent or authorized representative to the extent necessary to adequately permit evaluation and verification of any invoices, payments or claims submitted by the Contractor or any of its payees during the performance of the Work. These records shall include, but not be limited to, accounting records, written policies and procedures, Subcontractor files (including proposals of successful and unsuccessful bidders), original estimates, estimating worksheets, correspondence, Change Order files (including documentation covering negotiated settlements), and any other supporting evidence necessary to substantiate charges related to the Contract Documents. They shall also include, but not be limited to, those records necessary to evaluate and verify direct and indirect costs (including overhead allocations) as they may apply to costs associated with the Contract Documents. For the purpose of such audits, inspections, examinations and evaluations, the Owner's agent or authorized representative shall have access to said records from the effective date of the Contract Documents, for the duration of Work, and until three (3) years after the date of final payment by the Owner to the Contractor pursuant to the Contract Documents.

10.3 Access. The Owner's agent or authorized representative shall have access to the Contractor's facilities and all necessary records in order to conduct audits in compliance with this Article. The Owner's agent or authorized representative shall give the Contractor reasonable advance notice of intended inspections, examinations, and/or audits.

10.4 Ownership of Documents. Upon completion or termination of the Contract Documents, all records, documents, tracings, plans, specifications, maps, evaluations, reports, transcripts and other technical data, other than working papers, prepared or developed by the Contractor under the Contract Documents shall be delivered to and become the property of the Owner. The Contractor at its own expense may retain copies for its files and internal use.

ARTICLE XI
PUBLIC CONTRACT LAWS

11.1 Equal Opportunity Employment.

A. Employment. The Contractor shall not discriminate against any employee or applicant for employment because of race, creed, sex, color, national origin, disability or age, and will take affirmative action to insure that all employees and applicants are afforded equal employment opportunities without discrimination because of race, creed, sex, color, national origin, disability or age. Such action will be taken with reference to, but shall not be limited to,

recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff or termination, rates of training or retraining, including apprenticeship and on-the-job training.

B. Participation. No person shall, on the grounds of race, creed, sex, color, national origin, disability or age, be excluded from participation in, be denied the proceeds of, or be subject to discrimination in the performance of the Agreement.

11.2 Immigration Reform and Control Act of 1986. Contractor acknowledges that it is responsible for complying with the provisions of the Immigration Reform and Control Act of 1986, located at 8 U.S.C. Section 1324, et seq., and regulations relating thereto. Failure to comply with the above statutory provisions shall be considered a material breach and shall be grounds for immediate termination of this Agreement.

11.3 No Conflict of Interest. The Contractor warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for the Contractor to solicit or secure the Contract Documents, and that it has not paid or agreed to pay any person, company, corporation, individual, or firm other than a bona fide employee working solely for the Contractor, any fee, commission, percentage, gift or any other consideration, contingent upon or resulting from the award or making of the Contract Documents.

A. No Interest in Business Activity. By accepting award of this Contract, the Contractor, which shall include its directors, officers and employees, represents that it presently has no interest in and shall acquire no interest in any business or activity which would conflict in any manner with the performance of services required hereunder, including without limitation as described in the Contractor's own professional ethical requirements. An interest in a business or activity which shall be deemed a conflict includes but is not limited to direct financial interest in any of the material and equipment manufacturers, suppliers, distributors, or contractors who will be eligible to supply material and equipment for the Project for which the Contractor is furnishing its services required hereunder.

B. No Appearance of Conflict. The Contractor shall not knowingly engage in any contractual or professional obligations that create an appearance of a conflict of interest with respect to the services provided pursuant to the Contract Documents. The Contractor has provided the Affidavit of No Conflict, incorporated into the Contract Documents as Exhibit "C", as a material inducement for Owner entering into the Contract Documents. If, in the sole discretion of the County Administrator or designee, a conflict of interest is deemed to exist or arise during the term of the County Administrator or designee may cancel this Agreement, effective upon the date so stated in a written notice of cancellation, without penalty to the Owner.

11.4 Truth in Negotiations. By execution of the Contract Documents, the Contractor certifies to truth-in-negotiations and that wage rates and other factual unit costs supporting the compensation are accurate, complete and current at the time of contracting. Further, the original Contract Sum and any additions thereto shall be adjusted to exclude any significant sums where the Owner determines the Contract Sum was increased due to inaccurate, incomplete or non-current wage rates and other factual unit costs. Such adjustments must be made within one (1) year after final payment to the Contractor.

11.5 Public Entity Crimes. The Contractor is directed to the Florida Public Entity Crimes Act, Section 287.133, Florida Statutes, specifically section 2(a), and the Owner's requirement that the Contractor comply with it in all respects prior to and during the term of the Agreement.

ARTICLE XII FORCE MAJEURE, FIRE OR OTHER CASUALTY

12.1 Force Majeure.

A. Unavoidable Delays. Delays in any performance by any party contemplated or required hereunder due to fire, flood, sinkhole, earthquake or hurricane, acts of God, unavailability of materials, equipment or fuel, war, declaration of hostilities, revolt, civil strife, altercation or commotion, strike, labor dispute, or epidemic, archaeological excavation, lack of or failure of transportation facilities, or any law, order, proclamation, regulation, or ordinance of any government or any subdivision thereof, or for any other similar cause to those enumerated, beyond the reasonable control and which with due diligence could not have been reasonably anticipated, shall be deemed to be events of Force Majeure and any such delays shall be excused. In the event such party is delayed in the performance of any Work or obligation pursuant to the Contract Documents for any of the events of Force Majeure stated in this Section 12.1, the date for performance required or contemplated by the Contract Documents shall be extended by the number of calendar days such party is actually delayed

B. Concurrent Contractor Delays. If a delay is caused for any reason provided in 12.1.A. or as a result of an extension of time provided by Change Order, and during the same time period a delay is caused by Contractor, the date for performance shall be extended as provided in 12.1.A. but only to the extent the time is or was concurrent.

C. Notice; Mitigation. The party seeking excuse for nonperformance on the basis of Force Majeure shall give written notice to the Owner, if with respect to the Contractor, or to the Contractor if with respect to the Owner, specifying its actual or anticipated duration. Each party seeking excuse from nonperformance on the basis of Force Majeure shall use its best efforts to rectify any condition causing a delay and will cooperate with the other party, except that neither party shall be obligated to incur any unreasonable additional costs and expenses to overcome any loss of time that has resulted.

12.2 Casualty; Actions by Owner and Contractor. During the construction period, if the Project or any part thereof shall have been damaged or destroyed, in whole or in part, the Contractor shall promptly make proof of loss; and Owner and Contractor shall proceed promptly to collect, or cause to be collected, all valid claims which may have arisen against insurers or others based upon such damage or destruction. The Contractor shall diligently assess the damages or destruction and shall prepare an estimate of the cost, expenses, and other charges, including normal and ordinary compensation to the Contractor, necessary for reconstruction of the Project substantially in accordance with the Project Plans and Specifications. Within fifteen (15) days following satisfaction of the express conditions described in subsections (1), (2) and (3) below, the Contractor covenants and agrees diligently to commence reconstruction and to complete the reconstruction or repair of any loss or damage by fire or other casualty to the

Project to substantially the same size, floor area, cubic content, and general appearance as prior to such loss or damage:

- (1) Receipt by the Owner or the trustee of the proceeds derived from collection of all valid claims against insurers or others based upon such damage or destruction, and receipt of other sums from any source such that the funds necessary to pay the Project Cost and any additions to the Project Cost necessitated for repair or reconstruction are available;
- (2) Written agreement executed by the Contractor and the Owner, by amendment to the Contract Documents or otherwise, authorizing and approving the repair or reconstruction and any additions to the Project Cost necessitated thereby, including any required adjustment to the Contract Sum; and
- (3) Final approval by the Owner of the Project Plans and Specifications for such repair or reconstruction and issuance of any required building permit.

12.3 Approval of Plans and Specifications. The Owner agrees to approve the plans and specifications for such reconstruction or repair if the reconstruction or repair contemplated by such plans and specifications is economically feasible, and will restore the Project, or the damaged portion thereof, to substantially the same condition as prior to such loss or damage, and such plans and specifications conform to the applicable laws, ordinances, codes, and regulations. The Owner agrees that all proceeds of any applicable insurance or other proceeds received by the Owner or the Contractor as a result of such loss or damage shall be used for payment of the costs, expenses, and other charges of the reconstruction or repair of the Project.

12.4 Notice of Loss or Damage. The Contractor shall promptly give the Owner written notice of any significant damage or destruction to the Project, defined as loss or damage which it is contemplated by Contractor will increase the Contract Sum or extend the Substantial Completion Date, stating the date on which such damage or destruction occurred, the then expectations of Contractor as to the effect of such damage or destruction on the use of the Project, and the then proposed schedule, if any, for repair or reconstruction of the Project. Loss or damage which the Contractor determines will not affect the Contract Sum or Substantial Completion Date will be reported to Owner and Architect/Engineer immediately, and associated corrective actions will be undertaken without delay.

ARTICLE XIII REPRESENTATIONS, WARRANTIES AND COVENANTS

13.1 Representations and Warranties of Contractor. The Contractor represents and warrants to the Owner that each of the following statements is presently true and accurate:

A. The Contractor is a construction company, organized under the laws of the State of _____, authorized to transact business in the State of Florida, with _____ as the primary qualifying agent. Contractor has all requisite power and authority to carry on its business as now conducted, to own or hold its properties, and to enter into and perform its obligations hereunder and under each instrument to which it is or will be a party, and is in good standing in the State of Florida.

B. Each Contract Document to which the Contractor is or will be a party constitutes, or when entered into will constitute, a legal, valid, and binding obligation of the Contractor enforceable against the Contractor in accordance with the terms thereof, except as such enforceability may be limited by applicable bankruptcy, insolvency, or similar laws from time to time in effect which affect creditors' rights generally and subject to usual equitable principles in the event that equitable remedies are involved.

C. There are no pending or, to the knowledge of the Contractor, threatened actions or proceedings before any court or administrative agency, within or without the State of Florida, against the Contractor or any partner, officer, or agent of the Contractor which question the validity of any document contemplated hereunder, or which are likely in any case, or in the aggregate, to materially adversely affect the consummation of the transactions contemplated hereunder, or materially adversely affect the financial condition of the Contractor.

D. The Contractor has filed or caused to be filed all federal, state, local, or foreign tax returns, if any, which were required to be filed by the Contractor, and has paid, or caused to be paid, all taxes shown to be due and payable on such returns or on any assessments levied against the Contractor.

E. Neither Contractor nor any agent or person employed or retained by Contractor has acted fraudulently or in bad faith or in violation of any statute or law in the procurement of this Agreement.

F. The Contractor shall timely fulfill or cause to be fulfilled all of the terms and conditions expressed herein which are within the control of the Contractor or which are the responsibility of the Contractor to fulfill. The Contractor shall be solely responsible for the means and methods of construction.

G. It is recognized that neither the Architect/Engineer, the Contractor, nor the Owner has control over the cost of labor, materials, or equipment, over a Subcontractor's methods of determining bid prices, or over competitive bidding, market, or negotiating conditions.

H. During the term of the Contract Documents, and the period of time that the obligations of the Contractor under the Contract Documents shall be in effect, the Contractor shall cause to occur and to continue to be in effect those instruments, documents, certificates, and events contemplated by the Contract Documents that are applicable to, and the responsibility of, the Contractor.

I. The Contractor shall assist and cooperate with the Owner and shall accomplish the construction of the Project in accordance with the Contract Documents and the

Project Plans and Specifications, and will not knowingly violate any laws, ordinances, rules, regulations, or orders that are or will be applicable thereto.

J. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective, and that Owner, representatives of Owner, governmental agencies with jurisdictional interests will have access to the Work at reasonable time for their observation, inspecting and testing. Contractor shall give Architect/Engineer timely notice of readiness of the Work for all required approvals and shall assume full responsibility, including costs, in obtaining required tests, inspections, and approval certifications and/or acceptance, unless otherwise stated by Owner.

K. If any Work (including Work of others) that is to be inspected, tested, or approved is covered without written concurrence of Architect/Engineer, it must, if requested by Architect/Engineer, be uncovered for observation. Such uncovering shall be at Contractor's expense unless Contractor has given Architect/Engineer timely notice of Contractor's intention to cover the same and Architect/Engineer has not acted with reasonable promptness in response to such notice. Neither observations by Architect/Engineer nor inspections, tests, or approvals by others shall relieve Contractor from Contractor's obligations to perform the Work in accordance with the Contract Documents.

L. If the Work is defective, or Contractor fails to supply sufficient skilled workers, or suitable materials or equipment, or fails to furnish or perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work, or any portion thereof and terminate payments to the Contractor until the cause for such order has been eliminated. Contractor shall bear all direct, indirect and consequential costs for satisfactory reconstruction or removal and replacement with non-defective Work, including, but not limited to fees and charges of Architect/Engineers, attorneys and other professionals and any additional expenses experienced by Owner due to delays to other Contractors performing additional Work and an appropriate deductive change order shall be issued. Contractor shall further bear the responsibility for maintaining the schedule and shall not be entitled to an extension of the Contract Time or the recovery of delay damages due to correcting or removing defective Work.

M. If Contractor fails within seven (7) days after written notice to correct defective Work, or fails to perform the Work in accordance with the Contract Documents, or fails to comply with any other provision of the Contract Documents, Owner may correct and remedy any such deficiency to the extent necessary to complete corrective and remedial action. Owner may exclude Contractor from all or part of the site, take possession of all or part of the Work, Contractor's tools, construction equipment and machinery at the site or for which Owner has paid Contractor but which are stored elsewhere. All direct and indirect costs of Owner in exercising such rights and remedies will be charged against Contractor in an amount approved as to reasonableness by Architect/Engineer and a Change Order will be issued incorporating the necessary revisions.

N. If within three (3) years after the Substantial Completion Date or such longer period of time as may be prescribed by laws or regulations or by the terms of any applicable special guarantee required by the Contract Documents, any Work is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's

written instructions, either correct such defective Work or if it has been rejected by Owner, remove it from the site and replace it with non-defective Work. If Contractor does not promptly comply with the terms of such instruction, Owner may have the defective Work corrected/removed and all direct, indirect and consequential costs of such removal and replacement will be paid by Contractor. Failing payment by the Contractor and notwithstanding any other provisions of the Contract Documents to the contrary, Owner shall have the right to bring a direct action in the Circuit Court to recover such costs.

13.2 Representations of the Owner. To the extent permitted by law, the Owner represents to the Contractor that each of the following statements is presently true and accurate:

A. The Owner is a validly existing political subdivision of the State of Florida.

B. The Owner has all requisite corporate or governmental power and authority to carry on its business as now conducted and to perform its obligations under the Contract Documents and each Contract Document contemplated hereunder to which it is or will be a party.

C. The Contract Documents and each Contract Document contemplated hereby to which the Owner is or will be a party has been duly authorized by all necessary action on the part of, and has been or will be duly executed and delivered by, the Owner, and neither the execution and delivery thereof nor compliance with the terms and provisions thereof or hereof: (a) requires the approval and consent of any other person or party, except such as have been duly obtained or as are specifically noted herein; (b) contravenes any existing law, judgment, governmental rule, regulation or order applicable to or binding on the Owner; or (c) contravenes or results in any breach of, default under, or result in the creation of any lien or encumbrance upon the Owner under any indenture, mortgage, deed of trust, bank loan, or credit agreement, the charter, ordinances, resolutions, or any other agreement or instrument to which the Owner is a party, specifically including any covenants of any bonds, notes, or other forms of indebtedness of the Owner outstanding on the date of the Contract Documents.

D. The Contract Documents and each document contemplated hereby to which the Owner is or will be a party constitutes, or when entered into will constitute, a legal, valid, and binding obligation of the Owner enforceable against the Owner in accordance with the terms thereof, except as such enforceability may be limited by applicable bankruptcy, insolvency, or similar laws from time to time in effect which affect creditors' rights generally, and subject to usual equitable principles in the event that equitable remedies are involved.

E. There are no pending or, to the knowledge of the Owner, threatened actions or proceedings before any court or administrative agency against the Owner which question the validity of the Contract Documents or any document contemplated hereunder, or which are likely in any case or in the aggregate to materially adversely affect the consummation of the transactions contemplated hereunder or the financial or corporate condition of the Owner.

F. The Owner shall use due diligence to timely fulfill or cause to be fulfilled all of the conditions expressed in the Contract Documents which are within the control of the Owner or which are the responsibility of the Owner to fulfill.

G. During the pendency of the Work and while the obligations of the Owner under the Contract Documents shall be in effect, the Owner shall cause to occur and to continue to be in effect and take such action as may be necessary to enforce those instruments, documents, certificates and events contemplated by the Contract Documents that are applicable to and the responsibility of the Owner.

H. The Owner shall assist and cooperate with the Contractor in accomplishing the construction of the Project in accordance with the Contract Documents and the Project Plans and Specifications, and will not knowingly violate any laws, ordinances, rules, regulations, orders, contracts, or agreements that are or will be applicable thereto or, to the extent permitted by law, enact or adopt any resolution, rule, regulation, or order, or approve or enter into any contract or agreement, including issuing any bonds, notes, or other forms of indebtedness, that will result in the Contract Documents or any part thereof, or any other instrument contemplated by and material to the timely and effective performance of a party's obligations hereunder, to be in violation thereof.

ARTICLE XIV TERMINATION AND SUSPENSION

14.1 Termination for Cause by Owner. This Agreement may be terminated by Owner upon written notice to the Contractor should Contractor fail substantially to perform a material obligation in accordance with the terms of the Contract Documents through no fault of the Owner. In the event Owner terminates for cause and it is later determined by a court of competent jurisdiction that such termination for cause was not justified, then in such event such termination for cause shall automatically be converted to a termination without cause pursuant to Section 14.2.

A. Nonperformance. If the Contractor fails to timely perform any of his obligations under the Contract Documents, including any obligation the Contractor assumes to perform Work with his own forces, or if it persistently or repeatedly refuses or fails, except in case for which extension of time is provided, to supply enough properly skilled workmen or proper materials, or fails, without being excused, to maintain an established schedule (failure to maintain schedule shall be defined as any activity that falls thirty (30) days or more behind schedule) which has been adopted by the Construction Team, or it fails to make prompt payment to Subcontractors for materials or labor, or disregards laws, rules, ordinances, regulations, or orders of any public authority having jurisdiction, or otherwise is guilty of substantial violations of the Agreement the Owner may, after seven (7) days written notice, during which period the Contractor fails to perform such obligation, make good such deficiencies and perform such actions. The Contract Sum, or the actual Cost of the Project, whichever is less, shall be reduced by the cost to the Owner of making good such deficiencies, and the Contractor's compensation shall be reduced by an amount required to manage the making good of such deficiencies. Provided, however, nothing contained herein shall limit or preclude Owner from pursuing additional damages from Contractor as a result of its breach.

B. Insolvency. If the Contractor is adjudged bankrupt, or if it makes a general assignment for the benefit of its creditors, or if a receiver is appointed on account of its

insolvency, then the Owner may, without prejudice to any other right or remedy, and after giving the Contractor and its surety, if any, fourteen (14) days written notice, and during which period the Contractor fails to cure the violation, terminate the Agreement. In such case, the Contractor shall not be entitled to receive any further payment. Owner shall be entitled to recover all costs and damages arising as a result of failure of Contractor to perform as provided in the Contract Documents, as well as reasonable termination expenses, and costs and damages incurred by the Owner may be deducted from any payments left owing the Contractor.

C. Illegality. Owner may terminate the Agreement if Contractor disregards laws or regulations of any public body having jurisdiction.

D. Rights of Owner. The Owner may, after giving Contractor (and the Surety, if there is one) seven (7) days written notice, terminate the services of Contractor for cause; exclude Contractor from the Project site and take possession of the Work and of all Contractor's tools, construction equipment and machinery at the Project site and use the same to the full extent they could be used (without liability to Contractor for trespass or conversion); incorporate in the Work all materials and equipment stored at the Project site or for which Owner has paid Contractor but which are stored elsewhere, and finish the Work as Owner may deem expedient. In such case, Contractor shall not be entitled to receive any further payment beyond an amount equal to the value of material and equipment not incorporated in the Work, but delivered and suitably stored, less the aggregate of payments previously made. If the direct and indirect costs of completing the Work exceed the unpaid balance of the Contract Sum, Contractor shall pay the difference to Owner. Such costs incurred by Owner shall be verified by Owner in writing; but in finishing the Work, Owner shall not be required to obtain the lowest quote for the Work performed. Contractor's obligations to pay the difference between such costs and such unpaid balance shall survive termination of the Agreement. In such event and notwithstanding any other provisions of the Contract Documents to the contrary, Owner shall be entitled to bring a direct action in the Circuit Court to recover such costs.

14.2 Termination without Cause by Owner. The Owner, through its County Administrator or designee, shall have the right to terminate the Agreement, in whole or in part, without cause upon sixty (60) calendar days' written notice to the Contractor. In the event of such termination for convenience, the Owner shall compensate Contractor for payments due through the date of termination, and one subsequent payment to cover costs of Work performed through the date of termination, subject to the terms and conditions of Section 3.1. The Contractor shall not be entitled to any other further recovery against the Owner, including, but not limited to, anticipated fees or profit on Work not required to be performed, or consequential damages or costs resulting from such termination.

A. Release of Contractor. As a condition of Owner's termination rights provided for in this subsection, Contractor shall be released and discharged from all obligations arising by, through, or under the terms of the Contract Documents, and the Payment and Performance Bond shall be released. Owner shall assume and become responsible for the reasonable value of Work performed by Subcontractors prior to termination plus reasonable direct close-out costs, but in no event shall Subcontractors be entitled to unabsorbed overhead, anticipatory profits, or damages for early termination.

B. Waiver of Protest. Contractor hereby waives any right to protest the exercise by Owner of its rights under this Section that may apply under the Procurement Ordinance.

14.3 Suspension without Cause. Owner may, at any time and without cause, suspend the Work or any portion thereof for a period of not more than ninety (90) days by written notice to Contractor, which will fix the date on which Work will be resumed. Contractor shall be allowed an increase in the Contract Sum or an extension of the Contract Time, or both, directly attributable to any suspension if Contractor makes an approved claim therefor.

14.4 Termination Based Upon Abandonment, Casualty or Force Majeure. If, after the construction commencement date (i) Contractor abandons the Project (which for purposes of this paragraph shall mean the cessation of all construction and other activities relating to the Project, excluding those which are necessary to wind down or otherwise terminate all outstanding obligations with respect to the Project, and no recommencement of same within one hundred twenty (120) days following the date of cessation), or (ii) the Project is stopped for a period of thirty (30) consecutive days due to an instance of Force Majeure or the result of a casualty resulting in a loss that cannot be corrected or restored within one hundred twenty (120) days (excluding the time required to assess the damage and complete the steps contemplated under Section 12.2), the Owner shall have the right to terminate the Agreement and pay the Contractor its compensation earned or accrued to date.

14.5 Vacation of Project Site; Delivery of Documents. Upon termination by Owner pursuant to Section 14.2 or 14.4, Contractor shall withdraw its employees and its equipment, if any, from the Project Site on the effective date of the termination as specified in the notice of termination (which effective date shall not be less than two (2) working days after the date of delivery of the notice), regardless of any claim the Contractor may or may not have against the Owner. Upon termination, the Contractor shall deliver to the Owner all original papers, records, documents, drawings, models and other material set forth and described in the Contract Documents.

14.6 Termination by the Contractor. If, through no act or fault of Contractor, the Work is suspended for a period of more than ninety (90) consecutive days by Owner or under an order of court or other public authority, or Owner fails to act on any Application for Payment or fails to pay Contractor any sum finally determined to be due; then Contractor may, upon fourteen (14) days written notice to Owner terminate the Agreement and recover from Owner payment for all Work executed, any expense sustained plus reasonable termination expenses. In lieu of terminating the Agreement, if Owner has failed to act on any Application for Payment or Owner has failed to make any payment as aforesaid, Contractor may upon fourteen (14) days written notice to Owner stop the Work until payment of all amounts then due.

Exhibit A
Title(s) of Drawings and Associated Documents

LS 41A Force Main / Manhole Repairs

Signed and Sealed

Dated
March 8, 2017

(1 page)

Home Owners Association (HOA) Photo / Plans (1 page)

Supporting Documents (13 pages)

(Items are by reference only, not made a part of this Exhibit A)

Exhibit B
Title(s) of Specifications

Lift Station 41A Force Main Repairs

And Manhole Rehabilitation

(Project 462 5104285)

Dated March 2017

(251 pages)

(Items are by reference only, not made a part of this Exhibit B)

Exhibit C

AFFIDAVIT OF NO CONFLICT

COUNTY OF _____,

STATE OF _____,

BEFORE ME, the undersigned authority, this day personally appeared, _____, a principal with full authority to bind _____ hereinafter the "Contractor"), who being first duly sworn, deposes and says:

(a) is not currently engaged or will not become engaged in any obligations, undertakings or contracts that will require the Contractor to maintain an adversarial role against the County or that will impair or influence the advice, recommendations or quality of work provided to the County; and

(b) has provided full disclosure of all potentially conflicting contractual relationships and full disclosure of contractual relationships deemed to raise a question of conflict(s); and

(c) has provided full disclosure of prior work history and qualifications that may be deemed to raise possible question of conflict(s).

Affiant makes this affidavit for the purpose of inducing Manatee County, a political subdivision of the State of Florida, to enter into this Agreement for

Signature

Print Name

SUBSCRIBED to and sworn before me this ____ day of _____, 20__.

[Notary Seal]

Notary Public

My commission expires: _____

Notary Signature

Print Name

Personally Known _____ or Produced Identification _____
Type of Identification Produced _____

Exhibit D
Contractor's Certificate(s) of Insurance

Exhibit E
Contractor's Payment and Performance Bond

Exhibit F
Standard Forms

1. Application for Payment
2. Contract Change Order
3. Administrative Contract Adjustment (ACA)
4. Certificate of Substantial Completion
5. Final Reconciliation Warranty Period
Declaration and Contractor's Affidavit
6. Public Construction Bond

APPLICATION FOR PAYMENT

Project: _____
 From: _____ To: _____

Request No.: _____ Project No.: _____
 Purchase Order No.: _____
 County Bid No.: _____
 Consultant: _____

CONTRACT PAYMENT SUMMARY

Original Contract Amount:		\$	-
Change Order(s):		\$	-
Change order summary:			
Number	Date Approved	Additive	Deductive
SUBTOTALS:		\$	-
Net change order subtotal (Additive less Deductive):		\$	-
Current Contract Amount (CCA): (Original Amount + Change Order(s))		\$	-
	Previous Status	Total WIP	
Value of the Work in Place (WIP)	\$ -	\$ -	
Value of Stored Materials	\$ -	\$ -	
Total Earned (\$ and % of CCA)	\$ -	\$ -	
Retainage (\$ and % of CCA)	\$ -	\$ -	
Net Earned (Total earned minus retainage)		\$	-
TOTAL PREVIOUS PAYMENTS		\$	-
AMOUNT DUE THIS PAYMENT (Net Earned minus Previous Payments)		\$	-

CONTRACTOR'S AFFIDAVIT OF NOTICE

CERTIFICATE: The undersigned CONTRACTOR certifies that all items and amounts shown on this Application for Payment are on account of work performed, materials supplied and/or materials stored on site and paid for by Contractor in accordance with the Contract Documents with due consideration for previous Payment(s), if any, received by the Contractor from the County, and that the Amount Due this Payment shown is now due.

NOTARY:

CONTRACTOR:

State of Florida, County of _____

 Name of person authorized to sign Affidavit of Notice

Sworn to (or affirmed) and subscribed before me
 this _____ day of _____ by

 TITLE

 (Name of person giving notice)

Contractor name, address and telephone no.:

 (Signature of Notary Public - State of Florida)
 Print, Type or Stamp Commissioned Name of
 Notary Public:

Personally Known _____ or Produced Identification _____
 Type of Identification Produced: _____

VERIFICATION, RECOMMENDATION, CONCURRENCES AND APPROVALS

(Signatures)

(Date)

Quantities verified by: _____

Consultant/Engineer: _____

Project Management: _____

Department Head: _____

Payment approved by the
 Board of County Commissioners: _____

Attested to by the Clerk of Circuit Court: _____

PAY APPLICATION SCHEDULE (CONTINUATION SHEET)

KEY: COLS. A THROUGH F ARE FROM ORIGINAL BID

COL. G IS THE CHANGE ORDER NUMBER

PAGE ____ OF ____ PAGES

WIP = WORK IN PLACE

COL. "Q" = 100 x P / (F + J) - MAY NOT EXCEED 100%

ITEM NO.	DESCRIPTION OF WORK	UNIT	UNIT PRICE	QTY	VALUE	CHANGE ORDER NUMBER				WIP = WORK IN PLACE		CURRENT WIP		TOTAL WIP		% Q	
						#	QTY	+/-	+/- VAL	QTY	VALUE	QTY	VALUE	QTY	VALUE		
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P		
TOTALS																	
				\$	-				\$	-		\$	-		\$	-	

ATTACH STORED-MATERIAL SCHEDULE

MANATEE COUNTY
PROJECT MANAGEMENT FORM PM-D-2

NOTE: CONTRACTOR MAY SUBMIT A COMPUTER SPREADSHEET IN LIEU OF FILLING IN THIS FORM IF THE SAME INFORMATION IS PROVIDED.

CONTRACT CHANGE ORDER

(for Total Contract Adjusted Amount Greater than \$1,000,000)

PROJECT: _____

Change Order No.: _____

Contract Amount
(Present Value)

Project Number: _____

NO. OF ITEM	DESCRIPTION OF ITEM AND CHANGE	DECREASE	INCREASE
	BY EXECUTION OF THIS CHANGE ORDER THE CONTRACTOR AGREES THAT ALL CLAIMS FOR ADDITIONAL CONTRACT TIME AND FEES FOR THE ITEMS IN THIS CHANGE ORDER HAVE BEEN SATISFIED.		

TOTAL DECREASE:

TOTAL INCREASE:

Contractor: _____

Address: _____

City / State: _____

Contractor

Signature: _____

Date: _____

THE NET CHANGE OF
ADJUSTS THE CURRENT CONTRACT AMOUNT FROM
TO

____ CALENDAR DAYS ARE ADDED TO THE SCHEDULE
WHICH CHANGES THE FINAL COMPLETION DATE TO
MONTH DAY, YEAR

RECOMMENDATION, CONCURRENCES AND APPROVALS

SIGNATURES

DATE

Consultant / Engineer: _____

Project Manager: _____

Division Manager: _____

Jeff Streitmatter III, P.E., Project Management Division Manager

Manatee County Purchasing: _____

Melissa M. Wendel, CPPO, Purchasing Official

Authority to execute this contract per Manatee County Code, Chapter 2-26,
and per the delegation by the County Administrator effective 1/26/2009

JUSTIFICATION FOR CHANGE

Change Order No :

Project Number:

1. NECESSITY FOR CHANGE:



2. Is change an alternate bid? (If yes, explain)

3. Does change substantially alter the physical size of the project? (If yes, explain)

4 Effect of this change on other "Prime" contractors?

5 Has the Surety and insurance company been notified, if applicable? CONTRACTOR RESPONSIBILITY

ADMINISTRATIVE CONTRACT ADJUSTMENT

Project Name: _____

Contract Adjustment No.: _____

Contract Amount: _____

Project Number: _____

ITEM	DESCRIPTION OF ITEM AND CHANGE	DECREASE	INCREASE
	BY EXECUTION OF THIS ADMINISTRATIVE CONTRACT ADJUSTMENT, THE CONTRACTOR AGREES THAT ALL CLAIMS FOR ADDITIONAL CONTRACT TIME AND FEES FOR THE ITEMS IN THIS ADMINISTRATIVE CONTRACT ADJUSTMENT HAVE BEEN SATISFIED.		

	TOTAL DECREASE:	TOTAL INCREASE:
--	------------------------	------------------------

<p>Contractor: _____</p> <p>Address: _____</p> <p>City/State: _____</p> <p>Contractor Signature: _____ Date: _____</p>	<p>THE NET CHANGE OF</p> <p>ADJUSTS THE CURRENT CONTRACT AMOUNT FROM</p> <p style="text-align: center;">TO</p> <p>CALENDAR DAYS ARE ADDED TO THE SCHEDULE</p> <p>WHICH CHANGES THE FINAL COMPLETION DATE</p> <p style="text-align: center;">FROM</p>
---	---

RECOMMENDATION, CONCURRENCES AND APPROVALS

	SIGNATURES	DATE
Consultant / Engineer:	_____	_____
Project Manager:	_____	_____
Division Manager:	_____	_____
Department Director / Deputy Director	Jeff Streitmatter III, P.E., Project Management Division Manager _____ Sia Mollanazar, P.E., Deputy Director, Engineering Services _____	_____

JUSTIFICATION FOR CHANGE

Contract

Adjustment No.: _____

Project Number: _____

1. Necessity for Change:

2. Does this change alter the scope of work?
(If yes, explain)

3. Effect of this change on other "Prime" contractors.

4. It is the contractor's responsibility to notify the bonding agency.

**FINAL RECONCILIATION, WARRANTY PERIOD DECLARATION
AND CONTRACTOR'S AFFIDAVIT**

Project Title:	Date Submitted:
Contractor Data: Name: Address: City/State/Zip:	Project No:
	Warranty (months):

This Final Reconciliation is for the work performed for Manatee County by the above named contractor, hereinafter called CONTRACTOR, pursuant to the contract dated _____ as amended, and acts as an addendum thereto.

It is agreed that all quantities and prices in the attached Final Pay Estimate No. _____ are correct and that the amount of \$ _____ including retainage is due to the CONTRACTOR, that no claims are outstanding as between the parties, and that the above stated sum represents the entirety of monies owed the CONTRACTOR.

It is further agreed that the warranty period for CONTRACTOR'S work pursuant to the Contract is from _____ to _____

As (title) _____ for CONTRACTOR, I have authority to bind said CONTRACTOR, and as such make this final reconciliation, declaration and affidavit for the purpose of inducing Manatee County to make final payment to CONTRACTOR for work done at/upon _____ under said contract:

CONTRACTOR has paid all social security and withholding taxes accrued in connection with the construction project.

CONTRACTOR has paid all workers' compensation and other insurance premiums incurred in connection with this construction project.

CONTRACTOR has paid for all required permits in connection with this construction project.

All laborers, material, men, suppliers, subcontractors and service professionals who worked for and/or supplied materials, equipment and/or services to the CONTRACTOR under this construction contract have been paid in full.

(Affiant Signature)

NOTARY:

State of Florida, County of _____, Sworn to (or affirmed) and subscribed before me this _____ day of _____, _____, by _____ (person giving notice).

Signature of Notary Public - State of Florida: _____
Print, Type or Stamp Commissioned Name of Notary Public:

Personally Known or Produced Identification
Type of Identification Produced _____

**MANATEE COUNTY GOVERNMENT
PUBLIC CONSTRUCTION BOND**

Bond No. _____
(Enter bond number)

BY THIS BOND, We _____, located at _____, as
(Name of Contractor) (Address)

Principal and _____, a corporation, whose address is
(Name of Surety)

are bound to Manatee County, a political subdivision of the State of Florida, herein called County, in the sum of \$ _____, for payment of which we bind ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally.

WHEREAS, the Contractor has entered into Contract No. 17-1109OV with the County for the project titled Lift Station 41A Force Main Repairs and Manhole Rehabilitation, Whitfield Avenue and County Club Lane (Project 462 5104285), with conditions and provisions as are further described in the aforementioned Contract, which Contract is by reference made a part hereof for the purposes of explaining this bond.

THE CONDITION OF THIS BOND is that if Principal:

1. Performs Contract No. 17-1109OV, between Principal and County for construction of

Lift Station 41A Force Main Repairs and Manhole Rehabilitation, Whitfield Avenue and County Club Lane (Project 462 5104285),

(Title of Project)

the Contract being made a part of this bond by reference, at the times and in the manner prescribed in the Contract; and

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

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

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

Any action instituted by a claimant under this bond for payment must be in accordance with the notice and time limitation provisions in Section 255.05(2), Florida Statutes.

Any changes in or under the Contract documents and compliance or noncompliance with any formalities connected with the Contract or the changes does not affect Surety's obligation under this bond.

DATED ON _____.

CONTRACTOR AS PRINCIPAL

SURETY

Company Name

Company Name

Signature

Signature

Print Name & Title

Print Name & Title

(Corporate Seal)

(Corporate Seal)

AGENT or BROKER

Company Name

Address

Telephone

Licensed Florida Insurance Agent? **Yes** **No**

License #: _____

State of: _____

County of: _____

City of: _____